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**FAUNA
OF
MADHYA PRADESH
(Including Chhattisgarh)**

PART - 3



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**FAUNA OF MADHYA PRADESH
(Including Chhattisgarh)**

(PART-3)

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**Zoological Survey of India
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FAUNA OF MADHYA PRADESH

Part-3

2011

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LAND AND FRESHWATER MOLLUSCA

S.G. PATIL and S.S. TALMALE

Zoological Survey of India, Central Zone Regional Centre
Vijay Nagar, Jabalpur-482002

INTRODUCTION

The phylum Mollusca among invertebrate is one of the important second largest group of animal kingdom on the basis of its species number. They found on land, freshwater and most of them are marine. Out of the seven classes of Mollusca so far only five classes found in India. We are dealing herewith only two classes *i.e.* Gastropoda and Bivalvia.

Mollusca are soft bodied animals and the body in many species is protected by calcareous shell. We are giving herewith only freshwater and land Mollusca. Terrestrial Mollusca are generally found near moist places, under leaf; bark of tree and under stones, whereas freshwater Mollusca are found in various places like lentic and lotic water or embankment or on weed grasses or among macrophytes. The estimated number of Mollusca today varies from 80,000 species Boss (1971) to 1,35,000 species Abbott (1989).

Some of them are intermediate host for trematode parasites for spread of many diseases. The present study includes freshwater Gastropods and Bivalvia and few land Mollusca from MadhyaPradesh. A perusal of literature reveals the work of many Malacologists; mention may be made of Annandale (1919), Agarwal (1976, 1977 & 1995), Agrawal & Mathur (1978), Subba Rao (1989), Subba Rao and Mitra (1975, 1979), Mookerjee *et al.* (2000), Surya Rao *et al.* (2002); and Patil and Talmale (2005); Patil and Ramakrishna (2004).

From the literature compilation and identified collections, the molluscan fauna of Madhya Pradesh is represented by 72 species belonging to 38 genera, under 24 families. This list of land and freshwater Mollusca of MadhyaPradesh State is given on the basis of past and present records and from the recent surveys made in this area. The key is given in the text is based on Ramakrishna and Dey (2007) and Mitra *et al.* (2004) for Freshwater and Land Mollusca respectively.

SYSTEMATIC LIST

(A) FRESHWATER MOLLUSCA

Phylum MOLLUSCA

Class GASTROPODA

Order MESOGASTROPODA

Superfamily VIVIPAROIDEA

Family VIVIPARIDAE (pond snails)

Subfamily BELLAMYINAE

Genus *Bellamyia* Jousseume, 1886

1. *Bellamyia bengalensis* form *typica* (Lamarck)
2. *Bellamyia bengalensis* form *doliaris* (Gould)
3. *Bellamyia bengalensis* form *eburnea* (Annandale)
4. *Bellamyia bengalensis* form *mandiensis* (Kobelt)
5. *Bellamyia dissimilis* (Mueller)

Family AMPULLARIDAE

Genus *Pila* (Bolten) Roeding, 1798

6. *Pila globosa* (Swainson)
7. *Pila virens* (Lamarck)

- Superfamily LITTORINOIDEA
 Family BITHYNIIDAE
 Genus *Bithynia* Leach, 1818
 Subgenus *Digoniostoma* Annandale, 1920
8. *Bithynia (Digoniostoma) cerameopoma* (Benson)
 9. *Bithynia (Digoniostoma) pulchella* (Benson)
 Family THIARIDAE
 Subfamily THIARIINAE
 Genus *Thiara* Roding, 1786
 Subgenus *Thiara* s. str.
 10. *Thiara (Thiara) scabra* (Muller)
 11. *Thiara (Thiara) rudis* (Lea)
 Genus *Melanoides* Olivier, 1804
 12. *Melanoides tuberculata* (Mueller)
 Genus *Tarebia* H & A Adams, 1854
 13. *Tarebia granifera* (Lamarck)
 14. *Tarebia lineata* (Gray)
 Subclass PULMONATA
 Order BASOMMATOPHORA
 Superfamily LYMNAEOIDEA
 Family LYMNAEIDAE
 Genus *Lymnaea* Lamarck, 1799
 15. *Lymnaea (Pseudosuccinea) acuminata* form. *typica* Lamarck
 16. *Lymnaea (Pseudosuccinea) acuminata* form *brevissima* (Annandale & Rao)
 17. *Lymnaea (Pseudosuccinea) acuminata* form *chlamys* Benson
 18. *Lymnaea (Pseudosuccinea) acuminata* form *gracilior* Martens
 19. *Lymnaea (Pseudosuccinea) acuminata* form *patula* Troschel
 20. *Lymnaea (Pseudosuccinea) acuminata* form *rufescens* Gray
 21. *Lymnaea (Pseudosuccinea) luteola* form *typica* Lamarck
 22. *Lymnaea (Pseudosuccinea) luteola* form *australis* Annandale & Rao
 23. *Lymnaea (Pseudosuccinea) luteola* form *impura* Troschel
 24. *Lymnaea (Pseudosuccinea) luteola* form *ovalis* Gray
 25. *Lymnaea (Pseudosuccinea) luteola* form *succinea* Deshayes
 Superfamily PLANORBOIDEA
 Family PLANORBIDAE
 Subfamily PLANORBINAE
 Genus *Gyraulus* Charpentier, 1837
 26. *Gyraulus convexiusculus* (Hutton)
 27. *Gyraulus labiatus* (Benson)
 Family BULLINIDAE
 Subfamily BULININAE
 Genus *Indoplanorbis* Annandale & Prashad, 1921
 28. *Indoplanorbis exustus* (Deshayes)
 Family ANCYLIDAE
 Subfamily FERRISSINAE
 Genus *Ferrissia* Walker, 1903
 29. *Ferrissia verruca* (Benson)
 Class BIVALVIA
 Subclass PTERIOMORPHIA
 Order ARCOIDA
 Superfamily ARCOIDEA
 Family ARCIDAE
 Subfamily ANADARINAE
 Genus *Scaphula* Benson, 1834
 30. *Scaphula celox* Benson, 1836
 Subclass PALEOHETERODONTA
 Order TRIGOINOIDA
 Superfamily UNIONOIDEA
 Family UNIONIDAE
 Subfamily AMBLEMINEAE
 Tribe AMBLEMINI
 Genus *Lamellidens* Simpson, 1900
 31. *Lamellidens corrianus* (Lea)
 32. *Lamellidens marginalis* (Lamarck)
 Genus *Parreysia* Conrad, 1853
 Subgenus *Parreysia* s. st.
 33. *Parreysia (Parreysia) corrugata* Mueller

34. *Parreysia (Parreysia) corrugata* (Mueller)
subsp. *magpoorensis* (Lea)
35. *Parreysia (Parreysia) favidens* (Benson)
36. *Parreysia (Parreysia) rajahensis* (Lea)
Subgenus *Radiatula* Simpson, 1900
37. *Parreysia (Radiatula) occata* (Lea)
38. *Parreysia (Radiatula) shurtleffiana* (Lea)
Subclass HETERODONTA
Order VENEROIDA
Superfamily CORBICULOIDEA
Family CORBICULIDAE
Genus *Corbicula* Mergerle von Muhlfeld
39. *Corbicula striatella* Deshayes
40. *Corbicula occidens* Deshayes
41. *Corbicula inflata* Clessin
42. *Corbicula picta* Clessin
Family PISIDIIDAE
Genus *Pisidium* Pfeiffer
Subgenus *Afropisidium* Kuiper, 1962
43. *Pisidium (Afropisidium) nevilleianum* Theobald
Genus *Sphaerium* Scopoli, 1777
44. *Sphaerium indicum* Deshayes
Order SYSTELLOMMATOPHORA
Family VERONICELLIDAE
Genus *Laevicaulis* Simroth, 1913
45. *Laevicaulis alte* (Ferussac)
(B) LAND MOLLUSCA
Phylum MOLLUSCA
Class GASTROPODA
Subclass PROSOBRANCHIA
Order MESOGASTROPODA
Subclass PULMONATA
Order STYLOMMATOPHORA
Family PUPILLIDAE
Subfamily PUPILLINAE
Genus *Pupilla* Leach in Fleming, 1828
46. *Pupilla diopsis*, Benson
Genus *Pupoides* Pfeiffer, 1854
47. *Pupoides tutulus* (Reeve)
- Family VERTIGINIDAE
Subfamily TRUNCATELLININAE
Genus *Boysia* Pfeiffer, 1849
48. *Boysia boysi* Pfeiffer
Subfamily GASTROCOPTINAE
Genus *Gastrocopta* Wollaston, 1878
49. *Gastrocopta bathyodon* Benson
Family CERASTUIDAE
Genus *Cerastua* Strand, 1928
50. *Cerastua abyssinicus* Pfeiffer
Genus *Rachis* Albers, 1850
51. *Rachis punctatus* (Anton)
52. *Rachis bengalensis* Lamarck
53. *Rachis praetermissus* Blanford
Family FERUSSACIIDAE
Genus *Cecilioides* Ferussac, 1807
Subgenus *Geostilbia* Crosse, 1867
54. *Cecilioides (Geostilbia) balanus* (Reeve)
55. *Cecilioides (Geostilbia) bensoni* Gude
Genus *Coilostele* Benson, 1864
56. *Coilostele scalaris* Benson
Family SUBULINIDAE
Subfamily SUBULININAE
Genus *Subulina* Beck, 1837
57. *Subulina octona* (Bruguere)
Genus *Glessula* Von Martens, 1850
58. *Glessula paupercula* (Blanford)
59. *Glessula mullorum* (Blanford)
Genus *Lamellaxis* Strebel and Pfeffer, 1882
Subgenus *Allopeas* H.B. Baker, 1935
60. *Lamellaxis (Allopeas) gracile* (Hutton)
Subfamily RUMININAE
Genus *Zootecus* Westerlund, 1887
61. *Zootecus chion* (Pfeiffer)
62. *Zootecus insularis* (Ehrenberg)
Family ACHATINIDAE
Genus *Achatina* Lamarck, 1799
Subgenus *Lissachatina* Bequaert, 1951
63. *Achatina (Lissachatina) fulica fulica*
(Bowdich)

- Family STREPTAXIDAE
 Subfamily ENNEINAE
 Genus *Sinoennea* Kobelt, 1904
 64. *Sinoennea planguncula* (Benson)
 Family SUCCINEIDAE
 Subfamily CATINELLINAE
 Genus *Quickia* Odhner, 1950
 65. *Quickia gravelyi* (Rao)
 Family HELICARIONIDAE
 Subfamily SESARINAE
 Genus *Kaliella* Blanford 1863
 66. *Kaliella barrackporensis* Pfeiffer
 Family ARIOPHANTIDAE
 Subfamily ARIOPHANTINAE
 Genus *Ariophanta* Desmoulins, 1829
 67. *Ariophanta laevipes* (Muller)
 Genus *Cryptozona* Morch, 1872
 68. *Cryptozona semirugata* (Beck)
 Subfamily MACROCHLAMYDINAE
 Genus *Macrochlamys* Benson, 1832
 69. *Macrochlamys indica* (Godwin & Austen)
 Family CAMAENIDAE
 Subfamily CAMAENINAE
 Genus *Landouria* Godwin-Austen, 1918
 70. *Landouria hengdanensis* Godwin-Austen
 Genus *Trachia* Albers, 1860
 71. *Trachia asperella* (Pfeiffer)
 72. *Trachia crassicostata* (Benson)
- SYSTEMATIC ACCOUNT**
- A) FRESHWATER MOLLUSCA**
- Key to the families of the Order Mesogastropoda (Freshwater)**
1. Shell limpet shaped, without spiral coil ANCYLIDAE
 - Shell spirally coiled 2
 2. Shell without operculum 3
 - Shell with operculum 6
 3. Shell discoidal or when extended sinistrally coiled 4
 - Shell dextrally coiled LYMNAEIDAE
 4. Shell sinistrally coiled; columnar axis twisted; animals with triangular tentacles PHYSIDAE
 - Shell discoidal or extended; columellar axis not twisted; animals with filiform tentacles 5
 5. Shell discoidal (disc shaped); large, aperture ear shaped BULLINIDAE
 - Shell discoidal or planispiral; small with small aperture PLANORBIDAE
 6. Operculum with concentric lines 7
 - Operculum with spiral lines 8
 7. Shell pyramidal; whorls regularly increasing; operculum horny; animals with gills only, labial palps absent VIVIPARIDAE
 - Shell globose; bodywhorl inflated and larger than spire; operculum calcareous animals with gills and labial palps AMPULARIDAE
 8. Shell turreted or globose; mantle broader fringed and with brood pouch 9
 - Shell globose or conical, mantle broader not fringed, without brood pouch 10
 9. Shell elongate, turreted; columellar callus indistinct; operculum oblong with a terminal nucleus THIARIDAE
 - Shell either roundly ovate or elongate, turreted; columellar callus distinct; operculum round with usually central or subcentral nucleus PLEUROCERIDAE
 10. Animal with gill, generally found in stagnant freshwaters and often extending into brackish waters 11
 - Animal with both gill and branchial chamber, found in hill streams LITTORINIDAE
 11. Operculum calcareous and concentric, as large as aperture; verge bifurcate BITHYNIIDAE
 - Operculum corneous, smaller than aperture; verge not bifurcate STENOTHYRIDAE

Phylum MOLLUSCA
 Class GASTROPODA
 Order MESOGASTROPODA
 Superfamily VIVIPAROIDEA
 Family VIVIPARIDAE (Pond snails)
 Subfamily BELLAMYINAE
 Genus *Bellamyia* Jousseume, 1886

1. *Bellamyia bengalensis* form *typica* (Lamarck)

1822. *Paludina bengalensis* Lamarck, *Hist. nat. Anim. Sans Vert.*, 6(2) : 174.
 1921. *Vivipara bengalensis* : Annandale, *Rec. Indian Mus.*, 22 : 267.
 1989. *Bellamyia bengalensis* form *typica* : Subba Rao, *Handbook : Freshwater molluscs of India* : 45.
 2007. *Bellamyia bengalensis* form *typica* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks*: 79-80. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell thin, spire and body whorl of about equal height. Whorls gradually increasing, less rounded and with rather straight sides. Aperture subcircular with a narrow black margin. Dark bands variable and irregular, alternating broad and narrow bands.

Material examined/Source : Mandsaur Dist. : 1 ex., Neemuch, 31.10.1990, Coll. H.P. Agrawal; 3 exs., Chandrapur Village, 08.11.1990, Coll. R.K. Singh; 4 exs., Near Sitaman, 08.12.1990, Coll. R.K. Singh; Satna Dist. : Maihar, 18.11.1988, Coll. H.S. Sharma; 25 exs., Amar Patan, 18.11.1988, Coll. H.S. Sharma, 11 exs., Amla On Panna, Satna Road, 20.11.1988, Coll. H.P. Agrawal; Panna Dist. : 1 ex., Patai River, Pavai, 20.02.1987, Coll. R.K. Singh; 23 exs., 8 km. east of Panna Resthous, 18.11.1988, Coll. H.P. Agrawal, 6 exs., Byarma River, 19.02.1987, Coll. R.K. Singh, 19 exs., Marla, 22.11.1988, Coll. H.P. Agrawal, 18 exs., 4 exs., 6 km. northeast of p.r.h. beni, 18.11.1988, Coll. H.P. Agrawal; Marla, 24.11.1988, Coll. H.P. Agrawal; Hoshangabad Dist. : 6 exs., Dokri Khera, 01-04-1990, Coll. H.P. Agrawal, 3 exs., Hoshangabad, 01.09.1990, coll. U.A. Gajbe; 7 exs., Sheltercaues, 01.10.1990, Coll. H.P. Agrawal; 45 exs., Tawa River Brige, 01.12.1990, Coll. U.A.

Gajbe; Betul Dist. : 3 exs., C. kulbeh River, Chand Vill., 04.03.1990, Coll. H.S. Sharma; 39 exs., Tawa River, 23.3.1990, Coll. H.S. Sharma; Khandwa Dist. : 21 exs., Narmada Sagar Dam Area, 17.03.1986, Coll. H.P. Agrawal; Balaghat Dist. : 125 exs., Rewa Swriey, 15.10.1986, Coll. D.S. Mathur, Chhindwara Dist. : 7 exs., Pench River, Thilmiti vill., 04.06.1990, Coll. H.S. Sharma; Raigarh Dist. : 27 exs., Dhormjoyganh, 10.02.1991, Coll. H.P. Agrawal, 27 exs., Hamirpur, 26.09.1991, Coll. H.P. Agrawal, Ujjain Dist. : 24 exs., Shipra River, 04.03.1990, Coll. H.P. Agrawal; 125 exs., Lakoda, 11.04.1990, Coll. H.P. Agrawal, Bhind Dist. : 15 exs., Basli Dam, 15.01.1995, Coll. H.S. Sharma; 17 exs., Bashi Dam, 15.01.1995, Coll. H.S. Sharma; Morena Dist. : 16 exs., Fish Farm, 01.03.1995, Coll. H.S. Sharma, 10 exs., Bus Stand, 01.04.1995, Coll. H.S. Sharma; 45 exs., Shankh River, 01.06.1995, Coll. H.S. Sharma.

Distribution : Common throughout India. Madhya Pradesh : Satna, Panna, Hoshangabad, Betul, Mandsaur, Khandwa, Balaghat, Chhindawara, Raigarh, Ujjain, Bhind, Morena.

Elsewhere : Myanmar.

2. *Bellamyia bengalensis* form *doliaris* (Gould)

1843. *Paludina doliaris* Gould, *Proc. Boston Soc. Nat. Hist.*, 1 : 144.
 1989. *Bellamyia bengalensis* form *doliaris* : Subba Rao, *Handbook : Freshwater mollusks of India* : 47.
 2007. *Bellamyia bengalensis* form *doliaris* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 83-84. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell smaller and more conical, last whorl distinctly biangulate.

Material examined/Source : Ramakrishna and Dey (2007)

Distribution : India : Madhya Pradesh, Andhra Pradesh, Bihar, Jharkhand, Maharashtra, Orissa, West Bengal.

Elsewhere : Myanmar.

Remarks : Shell with two spiral ridges or thickened dark bands on the body whorl.

3. *Bellamyia bengalensis* form *eburnea*
(Annandale)

1921. *Viviparus bengalensis* race *eburnea* Annandale, *Rec. Indian Mus.*, 22 : 274, pl. 2, Fig. 1-2.
1989. *Bellamyia bengalensis* form *eburnea* : Subba Rao, Handbook : *Freshwater mollusks of India* : 47.
2007. *Bellamyia bengalensis* form *eburnea* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 80-81. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell narrow with smaller aperture, whorls much less inflated with distinct flattening below the sutures. Body whorl showing a tendency to become biangulate.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Andhra Pradesh, Maharashtra, Orissa and West Bengal.

4. *Bellamyia bengalensis* form *mandiensis*
(Kobelt)

1908. *Viviparus bengalensis* var. *mandiensis* Kobelt, in Martini Chemnitz, *Conch. Cab.* 2 : 414, Pl. 77, figs. 8-9.
1989. *Bellamyia bengalensis* form *mandiensis*: Subba Rao, Handbook : *Freshwater mollusks of India* : 46.
2007. *Bellamyia bengalensis* form *mandiensis*: Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks*: 87-88. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Maharashtra, Bihar, Gujarat, Punjab, Rajasthan, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar, Bangladesh, Sri Lanka.

5. *Bellamyia dissimilis* (Mueller)

1774. *Nertia dissimilis* Mueller, *Hist. Verm. Terr. Fluv.* 2 : 184.
1960. *Viviparus dissimilis* : Styamurti, *Bull. Madras Govt. Mus*; 6(4) : 33-34.
1989. *Bellamyia dissimilis* : Subba Rao, Handbook : *Freshwater mollusks of India* : 48-49.
2007. *Bellamyia dissimilis* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 90-91. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell small, high and narrow, spire swollen, suture deeply impressed, without dark spiral bands. Body whorl subangulate at the periphery.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Common throughout including Madhya Pradesh.

Elsewhere : Bangladesh, Myanmar, Pakistan, Malaysia, Sri Lanka.

Family AMPULLARIDAE

Genus *Pila* (Bolten). Roeding, 1798

6. *Pila globosa* (Swainson)

1822. *Ampullaria globosa* Swainson, *Zool. Illustrations*, Vol. 2(1) : pl. cxix.
1989. *Pila globosa* : Subba Rao, Handbook : *Freshwater mollusks of India* : 58.
2007. *Pila globosa* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 98-99. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell globose with an inflated body whorl and depressed spire. Suture shallow, coloured bands present inside the aperture. The surface is very smooth and glossy. The colour of the shell is brownish olive with irregular red-brown conspicuous spiral bands. It shows remarkable variation in shape and elevation of the spire and body whorl.

Material Examined/Source : Hoshangabad Dist. : 4exs., Railway Bridge, 24.12.1964, Coll. H. Khajuria; 1 ex., Richhai Village, 20.12.1966, Coll. H. Khajuria; 4 exs., Railway Bridge, 24.12.1964, Coll. H. Khajuria; Raigarh Dist. : 1 ex., Jashpwe, 29.09.1991, Coll. H.P. Agrawal; 1 ex., Dhormjoyganh, 10.02.1991, Coll. H.P. Agrawal; 6 exs., Bagicha & Its Surroundings, 30.09.1991, Coll. H.P. Agrawal; Jabalpur Dist. : 4 exs., A Pool Jabalpur-Katni Road, 14.11.1961, Coll. Mohan; 1 ex., Budager Vill., 25.10.1961, Coll. P. Singh; 4 exs., Devtal, Vedinagar, 18.07.1960, Coll. S. Chakrapany; 1 ex., Richhai Village, 20.12.1966, Coll. H. Khajuria; 3 exs., Pachpedi, 19.07.1960, Coll. R.C. Sharma;

3 exs., Madan Mahal, 15.09.1961, Coll. Pooran Singh; 3 exs., Chamanpur, 10.08.1960, Coll. S. Chakrapany; 2 exs., Panagar Village, 24.01.1964; Coll. J.S. Bhatti; 6exs., Amkhas Village, 20.09.1961, Coll. Pooran Singh; 4 exs., Amkhas Village, 20.09.1961, Coll. Pooran Singh; 3 exs., Balasagar Village, 12.03.1960, Coll. S. Chakrapany; 1 ex., Panagar Vill., 17.12.1966, Coll. V.S. Durve; 1 ex., Panagar Vill., 29.12.1966, Coll. V.S. Durve; 1 ex., Amkher vill., 04.04.1967, Coll. H.P. Agrawal; 3 exs., Amkher vill., 19.08.1966, Coll. H.P. Agrawal; Mandla Dist. : 1 ex., Kanha National Park, 12.01.1986, Coll. R.K. Singh; Betul Dist. : 1 ex., Sulemergence Aera, 19.02.1993, Coll. H.P. Agrawal.

Distribution : Throughout India except South India and Punjab. Madhya Pradesh : Hoshangabad, Jabalpur, Raigarh, Mandla, Betul.

Remarks : Many larval trematodes were recorded from this species.

7. *Pila virens* (Lamarck)

1822. *Ampullaria virens* Lamarck, *Hist. nat. anim. Sans Vert.*, 6(2) : 179.
1989. *Pila virens* : Subba Rao, *Handbook : Freshwater mollusks of India* : 60.
2007. *Pila virens* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 98-99. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Suture canalculated with a distinct carination of the whorls on the outside, spire prominent and conical.

Material examined/Source : Ambikapur Dist. : 1 ex., Baikunthur, 10.09.1991, Coll. H.P. Agrawal; Mandla Dist. : 1 ex., Swdian Tal, 04.03.1990, Coll. R.K. Ghosh.

Distribution : Madhya Pradesh : Ambikapur, Mandla; Maharashtra and South India.

Remarks : This species is variable in its colour. The shape of spine also varies and difficult to separate from its closely related species, *Pila globosa*.

Superfamily LITTORINOIDEA

Family BITHYNIIDAE

Genus *Bithynia* Leach, 1818

Subgenus *Digoniostoma* Annandale, 1920

8. *Bithynia (Digoniostoma) cerameopoma* (Benson)

1830. *Paludina cerameopoma* Benson, *Gleanings in Science*, 2 : 125.
1989. *Digoniostoma cerameopoma*: Subba Rao, *Handbook : Freshwater mollusks of India* : 79.
2007. *Bithynia (Digoniostoma) cerameopoma* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 118-119. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell oblong-ovate, whorls five, regularly and rather rapidly increasing, sculpture with very fine, weak spiral striae and weak growth lines. Sutures well impressed. Operculum calcareous. Concave, nucleus sub central.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Assam, Bihar, Maharashtra, Punjab, Rajasthan.

Elsewhere : Pakistan.

9. *Bithynia (Digoniostoma) pulchella* (Benson)

1836. *Paludina pulchella* Benson, *J. Asiat. Soc. Beng.*, 5 : 746.
1989. *Digoniostoma pulchella* : Subba Rao, *Handbook : Freshwater mollusks of India* : 80.
2007. *Bithynia (Digoniostoma) pulchella* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 120-121. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell elongate, spire longer than the body whorl, sutures depressed, umbilicus almost closed, and aperture oval.

Material examined/Source : Bastar Dist. : 2 exs., Ganga Munda Tank, 01.12.1974, Coll. R.K. Singh.

Distribution : Throughout India including Madhya Pradesh and Chhattisgarh.

Elsewhere : Myanmar, Malaya Peninsula.

Family THIARIDAE

Subfamily THIARIINAE

Genus *Thiara* Roding, 1786Subgenus *Thiara* s. str.10. *Thiara (Thiara) scabra* (Muller)

1774. *Buccinum scabrum* Muller. *Hist. Verm. Ten Fluv.*, 2 : 136.
1973. *Thiara (Thiara) scabra* Pace, *Malac Review Suppl.* 1 : 52, pl. 12, fig. 1, 2 pl. 13 fig. 3.
1989. *Thiara (Thiara) scabra* : Subba Rao, *Handbook : Freshwater mollusks of India* : 96.
2007. *Thiara (Thiara) scabra* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 153. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Whorls regularly increasing in size, sutures distinct, whorls often shouldered above and rounded below the row of spines. Shell sculptured with characteristic vertical ribs bearing prominent spines directed obliquely outward, surface with rough spiral striations.

Material examined/Source : Hoshangabad Dist.: 1 ex., Hoshangabad, 01.09.1990, Coll. U.A. Gajbe; Khargone Dist. : 8 exs., Barwani, 12.07.1971, Coll. H. Khajuria.

Distribution : India : Madhya Pradesh (Hoshangabad, Khargone), Kerala, Maharashtra, Pondicherry, Tamil Nadu, West Bengal.

Elsewhere : Indonesia, Java, Mauritius, Scycheles, Timor.

11. *Thiara (Thiara) rudis* (Lea)

1850. *Melania rudis* Lea, *Proc. Zool. Soc. Lond.*, 1850 : 186.
1956. *Thiara rudis* : Benthem Jutting, *Treubia*, 23(2) : 389, fig. 83.
2007. *Thiara (Thiara) rudis* : Ramakrishna and Dey, *Handbook on Indian Freshwater mollusks* : 152. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : Throughout India including Madhya Pradesh.

Elsewhere : Indonesia, Mynmar, Philippines, Sri Lanka.

Genus *Melanoides* Olivier, 180412. *Melanoides tuberculata* (Mueller)

1774. *Nerita tuberculata* Muller, *Hist. Verm. Verm. Terr. Fluv.*, 2 : 191.
1936. *Melania pyramis* : Benson, *J. Asiat. Soc. Beng.*, 5 : 354.
1976. *Melanoids (Melanoides) tuberculata* : Starmuchlar, *Ann. Natur. Hist. Mus. Wien. Wien*, 80 : 591.
1989. *Thiara (Melanoides) tuberculata* : Subba Rao, *Handbook : Freshwater mollusks of India* : 103.
2007. *Melanoides tuberculata* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 161. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell with high spire and moderately large body whorl. Spire five times the height of the aperture. Whorls 10-14, moderately convex, evenly rounded, dark red-brown dots and flames.

Material examined/Source : Jabalpur Dist. : 35 exs., Nala On R.durgavati Samdhi, 26.04.1969, Coll. V.S. Durve; 2 exs., Pariat Tank, 17.07.1968, Coll. H.P. Agrawal; 1exs., PENCH National Park, 24.02.1973, Coll. H. Khajuria; 5 exs., Parit River Katni Rd., 31.05.1969, Coll. V.S. Durve; 15 exs., Gour River, 29.04.1970, Coll. V.V. Rao; 1 ex., PENCH National Park, 01.10.1973, Coll. N.K. Sinha; 15 exs., Lamaghat, 05.07.1969, Coll. V.V. Rao; 30 exs., Lametaghat, 06.07.1967, Coll. V.S. Durve; 29 exs., Bandhogarh Nationalpark, 09.08.1972, Coll. H. Khajuria; 10exs., Hiren River Katni Rd., 29.06.1972, Coll. H.S. Sharma; 1 ex., A Nala Near Bheraghat, 15.05.1969, Coll. V.S. Durve; 8 exs., Hiren River Katangi Rd., 06.10.1969, Coll. V.V. Rao; 4 exs., Bargi Vill., 30.01.1969, Coll. H.P. Agrawal; 1 ex., Pariat, Katni Road, 26.10.1968, Coll. V.S. Durve; 6exs., Pariat, Damoh Road, 10.11.1968, Coll. V.S. Durve; 25 exs., Fugua Nala Dindori, 22.01.1969, Coll. V.S. Durve; 2 exs., Narmada river Onkareshwar, 10.11.1968, Coll. V. V. Rao; Betul Dist. : 2 exs., Dam site area, 18.02.1993, Coll. H.P. Agrawal; 37 exs., Sulemergence Aera, 19.02.1993, Coll. H.P. Agrawal; 345 exs., Nork of Frh, 30.03.1990, Coll. H.S. Sharma; 28 exs., Machna River Banka Village, 20.03.1990, Coll. H.S. Sharma; 28 exs., 1 Km. West of Frh Kotwadi,

22.03.1990, Coll. H.S. Sharma; 1 ex., Amdhane Vill., 26.03.1990, Coll. H.S. Sharma; 35 exs., C. kulbeh River, Chand Vill, 04.03.1990, Coll. H.S. Sharma; 6exs., Chhindwara Area, Pench River, 04.06.1990, Coll. H.S. Sharma; 45 exs., Chhindwara Area, Sayan River, 04.04.1990, Coll. H.S. Sharma; 2 exs., Tawa River, 23.03.1990, Coll. H.S. Sharma; Mandla Dist. : 11 exs., Chuharinala Kanha, 28.02.1986, Coll. R.K. Singh; 20 exs., Jaisingh Nagar, 14.01.1994, Coll. H.P. Agrawal; Bhind Dist. : 5 exs., Bashi Dam, 13.01.1995, Coll. H.S. Sharma; 5 exs., Kunwari River, 13.01.1995, Coll. H.S. Sharma; Hoshangabad Dist. : 2 exs., Brindaban Hill, 13.01.1990, Coll. U.A. Gajbe; 25 exs., Tawa River Brige, 01.12.1990, Coll. U.A. Gajbe; 3 exs., Hoshangabad, 01.09.1990, Coll. U.A. Gajbe; 3 exs., Hoshangabad, 01.09.1990, Coll. U.A. Gajbe; 4 exs., Bhartar Vill., 30.12.1965, Coll. H. Khajuria; Panna Dist. : 5 exs., Patai River, Pavai, 20.02.1987, Coll. R.K. Singh; 1 ex., Byarma River, 19.02.1987, Coll. R.K. Singh; 2 exs., Patai River, Pavai, 19.02.1987, Coll. R.K. Singh; Dewas Dist. : 2 exs., 01.07.1966, Coll. H. Khajuria; Khandwa Dist. : 2 exs., Bank of Narmada, 21.11.1969, Coll. V.V. Rao; Seoni Dist. : 20 exs., Narbada Rly. Bridge, 01.09.1990, Coll. U.A. Gajbe; Bastar Dist. : 1 ex., Moti tank, 01.09.1974, Coll. R.K. Singh; 1 ex., Dalpat Sagar Tank, 13.01.1964, coll. R.K. Singh; 2 exs., Donga Ghat Village, 01.08.1974, Coll. R.K. Singh.

Distribution : Throughout India except Kashmir. Madhya Pradesh : Dewas, Jabalpur, Khandwa, Mandla, Panna, Sagar, Betul, Bhind, Hoshangabad, Seoni. Chhatisgarh : Bastar.

Elsewhere : Australia, North and South Africa, China, Pacific Islands.

Remarks : Widely distributed.

Genus *Tarebia* H & A Adams, 1854

13. *Tarebia granifera* (Lamarck)

1822. *Melania granifera* Lamarck, *Hist. nat. Anim. Sans. Vert.*, 6(2) : 167.

1973. *Thiara (Tarebia) granifera* : Pace, *Mal. Review. Supplement*, 1 : 62, pl. 12, fig. 3, pl. 13, fig. 4.

1989. *Thiara (Tarebia) granifera* : Subba Rao, *Handbook of Freshwater Molluscs of India*, p. 101.

2007. *Tarebia granifera* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 168-169. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : Madhya Pradesh, Andaman and Nicobar Islands, Andhra Pradesh, Bihar, Jharkhand, Maharashtra, Manipur, Meghalaya, Mizoram, Tripura, West Bengal.

Elsewhere : Formosa, Malagasy, Malaysia, Myanmar, Pacific Islands, Philippines, Taiwan.

14. *Tarebia lineata* (Gray)

1828. *Helix lineata* Gray. In woods's Index Test supp., p 24, fig. 68. Type locality : Ganges.

1915. *Thiara (Tarebia) lineata* Preston. *Fauna of British India. Mollusca (Freshwater Gastropoda : Pelecypoda)* : 34.

1989. *Thiara (Tarebia) lineata* : Subba Rao, *Handbook : Freshwater mollusks of India* : 101.

2007. *Tarebia lineata* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 169-170. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell elongate, conical, rows of nodules less distinct, rather obsolete on the lower whorls, dark spiral lines distinct, apex acute.

Material examined/Source : Mandla Dist. : 10 exs., Chuharinala, Kanha, 28.02.1986, Coll. R.K. Singh; Hoshangabad Dist. : 35 exs., Tawa River Brige, 13.01.1990, Coll. U.A. Gajbe; 59 exs., Brindaban Hill, 13.01.1990, Coll. U.A. Gajbe; 8 exs., Hoshangabad, 01.09.1990, Coll. U.A. Gajbe; 29 exs., Hasdeo River, Manendragarh, 10.08.1991, Coll. H.P. Agrawal; Betul Dist. : 37 exs., 1 Km. West of Frh Kotwadi, 22.03.1990, Coll. H.S. Sharma; 14 exs., Dam Site area, 18.02.1993, Coll. H.P. Agrawal; 2 exs., Sulemergence Aera, 17.02.1993, Coll. H.P. Agrawal.

Distribution : India : Madhya Pradesh (Mandla, Hoshangabad, Betul), Andhra Pradesh, Assam, Bihar, Maharashtra, Uttar Pradesh, West Bengal.

Elsewhere : Bhutan, Myanmar, Sri Lanka.

Subclass PULMONATA
 Order BASOMMATOPHORA
 Superfamily LYMNAEOIDEA
 Family LYMNAEIDAE
 Genus *Lymnaea* Lamarck, 1799

15. *Lymnaea (Pseudosuccinea) acuminata*
 form *typica* Lamarck

1822. *Limnaea acuminata* Lamarck, *Hist. Nat. Anim. Sans. Vert.*, 6(2) : 160.
 1925. *Limnaea acuminata* : Annandale and Rao, *Rec. Indian Mus.*, 27 : 177.
 1989. *Lymnaea acuminata* form *typica* : Subba Rao, *Handbook : Freshwater mollusks of India* : 127.
 2007. *Lymnaea acuminata* form *typica* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 198-199. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell thin, ovate, spire short, acuminate, body whorl much inflated, a little angular above, with a large aperture.

Material examined/Source : Jabalpur Dist. : 10 exs., Khandari, 25.02.1964, Coll. H. Khajuria; 3 exs., Ganga Sagar, 12.02.1960, Coll. P. Singh; 14 exs., Salibada, 01.02.1961, Coll. P. Singh; 2 exs., Barala, 10.11.1961, Coll. S. Chakrapany; 40 exs., Baleha Tank Panagar Vill., 30.08.1968, Coll. V.S. Durve; 3 exs., Balsagar Tank, Nagpur Rd., 02.06.1971, Coll. H.S. Sharma; 12 exs., Surajla Tank On Nagpur Rd., 29.12.1967, Coll. H.P. Agrawal; 5 exs., Heron River Katangi Road 06.10.1969, Coll. V.V. Rao; 30 exs., Baleha Tank Panagar Vill., 11.09.1967, Coll. V.V. Rao; 25 exs., A Tank In Gandhigram Vill., 10.08.1968, Coll. H.P. Agrawal; 7 exs., Shahpura Bridge , 18.04.1968, Coll. V.S. Durve; 7 exs., Heron River Katangi Rd., 06.05.1969, Coll. V.S. Durve; 10 exs., Pariat River, Katni Road, 31.05.1969, Coll. V.S. Durve; 35 exs., Pariat River, 27.05.1969, Coll. V.S. Durve; 4 exs., Amkhas, Nagpur road, 18.09.1968, Coll. H.P. Agrawal; 60 exs., A Nala near Bheraghat, 15.05.1969, Coll. V.S. Durve; 1 ex., Biidagar Tank, Katni Road, 30.07.1969, Coll. H.S. Sharma; 4exs., Amkhas, Nagpur Road, 23.05.1968, Coll. H.S. Sharma; 2 exs., Budagar Tank, Katni Road, 16.10.1970, Coll. D.K. Ghosal; Mandla Dist. : 3 exs., Mahatra S.of Dindori,

22.10.1963, Coll. J.S. Bhatti; 7 exs., Balsagar of Tewar Vill., 13.03.1963, Coll. Raja Ram; 20 exs., Vill. Khargahna, 28.10.1963, Coll. J.S. Bhatti; 6 exs., Swdian Tal, 04.03.1990, Coll. R.K. Ghosh; Khandwa Dist. : 55 exs., Narmada Sagar Dam Area, 17.03.1986, Coll. H.P. Agrawal; Gwalior Dist. : 12 exs., Tekanpur, 02.09.1995, Coll. H.P. Agrawal; Ambikapur Dist. : 3 exs., Manindagarh, 10.10.1991, Coll. H.P. Agrawal; Morena Dist. : 24 exs., Kuanri River, 01.05.1995, Coll. H.S. Sharma; 2exs., Shankh River Noorabad, 01.06.1995, Coll. H.S. Sharma; Betul Dist. : 44exs., Amdhane Vill., 26.03.1990, Coll. H.S. Sharma; Damoh Dist. : 23 exs., Damoh and Vicinity, 17.01.1994, Coll. H.P. Agrawal; Balaghat Dist. : 2 exs., Supkhar, 04.03.1990, Coll. R.K. Ghosh; Panna Dist. : 11 exs., Patai River, 20.02.1987, Coll. R.K. Singh; 1 ex., Byarma River, 19.02.1987, Coll. R.K. Singh; 6 exs., Benisagar, 17.11.1988, Coll. H.P. Agrawal; 3 exs., Gunowe, 22.02.1987, Coll. R.K. Singh; Raigarh Dist. : 5 exs., Dhormjoyganh, 10.02.1991, Coll. H.P. Agrawal; Bastar Dist. : 4 exs., Dalpat sagar Tank, 13.01.1974, Coll. R.K. Singh; 1 ex., Dalpat Sagar Tank, 01.11.1974, Coll. R.K. Singh; Hoshangabad Dist. : 115 exs., Sheltacaveg, 01.10.1990, Coll. U.A. Gajbe; 1 ex., Joga, 24.12.1965, Coll. M.L. Koshta; 35 exs., Tawa River brige, 01.12.1990, Coll. U.A. Gajbe; Khargone Dist. : 1 ex., Gwrudlshwar, 23.12.1971, Coll. H. Khajuria.

Distribution : Throughout India including Madya Pradesh (Ambikapur, Betul, Khargone, Panna, Raigarh, Mandla, Gwalior, Hoshangabad, Mandsaur, Balaghat, Jabalpur, Damoh, Morena, Ratlam); Chattisgarh (Bastar).

Elsewhere : Bangladesh, Myanmar, Pakistan.

16. *Lymnaea (Pseudosuccinea) acuminata*
 form *brevissima*
 (Annandale & Rao)

1925. *Limnea brevissima* Annandale and Rao, *Rec. Indian Mus.*, 27 : 182.
 1989. *Lymnaea acuminata* form *brevissima*: Subba Rao, *Handbook : Freshwater mollusks of India* : 127.
 2007. *Lymnaea acuminata* form *brevissima* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 199-200. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : Jabalpur Dist. : 8 exs., Madan Mahal, 11.09.1962, Coll. S. Chakrapany.

Distribution : Madhya Pradesh (Jabalpur); Maharashtra (Nagpur).

**17. *Lymnaea (Pseudosuccinea) acuminata*
form *chlamys* Benson**

1836. *Lymnaea chlamys* Benson, *J. Asiat. Soc. Beng.*, 5 : 744.
1989. *Lymnaea acuminata* form *chlamys*: Subba Rao, *Handbook : Freshwater mollusks of India* : 127.
2007. *Lymnaea acuminata* form *chlamys*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 200-201. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : Jabalpur Dist. : 8exs., Pahari Khera Vill. 26.11.1963, Coll. J.S. Bhatti.

Distribution : Through out India including Madhya Pradesh (Jabalpur) and Chhattisgarh (Subba Rao, 1989; Ramakrishna and Dey, 2007).

**18. *Lymnaea (Pseudosuccinea) acuminata*
form *gracilior* Martens**

1880. *Limnaea acuminata* var. *gracilior* Martens, *Conch. Mittheil.*, 1 : 77.
1989. *Lymnaea acuminata* form *gracilior* : Subba Rao, *Handbook : Freshwater mollusks of India* : 127.
2007. *Lymnaea acuminata* form *gracilior* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 201-202. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : 8exs., Shukalpura Vill., 25.10.1963, Coll. J.S. Bhatti.

Distribution : Throughout India : Madhya Pradesh (Mandla), Maharashtra, Assam, Bihar, Jharkhand, Kerala, Orissa, Uttar Pradesh, West Bengal (Ramakrishna and Dey, 2007).

Elsewhere : Myanmar.

**19. *Lymnaea (Pseudosuccinea) acuminata*
form *patula* Troschel**

1836. *Limnaea patula* Troschel, *Arch. Naturgesch.*, 3 : 167.
1989. *Lymnaea acuminata* form *patula*: Subba Rao, *Handbook : Freshwater mollusks of India* : 127.
2007. *Lymnaea acuminata* form *patula*: Ramakrishna and

Dey, *Handbook on Indian Freshwater molluscs* : 204-205. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell narrower than in *typica*, spire relatively large, anterior extremity of aperture tapering.

Material examined/Source : Jabalpur Dist. : 4 exs., Tewar vill., 16.08.1962, Coll. P. Singh; 7 exs., Balkharu Vill., 29.01.1962, Coll. S. Chakrapany; 4 exs., Tewar Vill., 29.01.1962, Coll. P. Singh; Shahadol Dist. : 6 exs., Amarkantak, 18.05.1962, Coll. S. Chakrapany.

Distribution : Throughout India including Madhya Pradesh (Jabalpur, Shahdol) and Chhattisgarh (Ramakrishna and Dey, 2007).

Elsewhere : Myanmar, Nepal, Pakistan.

**20. *Lymnaea (Pseudosuccinea) acuminata*
form *rufescens* Gray**

1822. *Limnaea rufescens* Gray, in Sowerby's *Genera of Shells*, 1 : pl. 178, fig. 2.
1829. *Lymnaea (Pseudosuccinea) acuminata* form *tonapii* : Ray and roychowdhuri, *Proc. Zool. Soc. Calcutta*, 22(1) : 47-48.
1989. *Lymnaea acuminata* form *rufescens*: Subba Rao, *Handbook : Freshwater mollusks of India* : 127.
2007. *Lymnaea acuminata* form *rufescens*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 205-206. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell narrower than in typical form, spire longer, aperture uniformly less expanded. Shell reddish in colour.

Material examined/Source : Jabalpur Dist. : 10 exs., Barela Village, 10.11. 1961, Coll. S. Chakrapany; 4 exs., Richhai Village, 13.05.1963, Coll. H. Khajuria; 15 exs., Nunsar Vill., 24.03.1964, Coll. H.P. Agrawal; 1 ex., Maharaj Pur Pariat River, 05.07.1963, Coll. S. Chakrapany; 10 exs., Bhiloda vill., 13.03.1964, Coll. J.S. Bhatti; 5 exs., Chakdhi Tank Godheri Vill., 21.05.1963, Coll. S. Chakrapany; Mandla Dist. : 1 ex., Kakar Talao, 22.10.1963, Coll. J.S. Bhatti; 12 exs., Mohatra Vill. At Dindori, 22.10.1963, Coll. J.S. Bhatti; 1 ex., Village Gorakhpur (Dindori), 23.10.1963, Coll. J.S. Bhatti; 2exs., Amarkantak Road (Dindori), 24.10.1963, Coll. J.S. Bhatti;

5 exs., Village Kohka (Dindori), 29.10.1963, Coll. J.S. Bhatti.

Distribution : Throughout India including Madhya Pradesh (Jabalpur, Mandla) and Chhattisgarh (Ramakrishna and Dey, 2007).

Elsewhere : Bangladesh, Myanmar, Pakistan.

21. *Lymnaea (Pseudosuccinea) luteola* form *typica* Lamarck

1822. *Limnaea luteola* Lamarck, *Hist. Nat. Anim. Sans. Vert.*, 6(2) : 160.

1989. *Lymnaea (Pseudosuccinea) luteola* form *typica*: Subba Rao, *Handbook : Freshwater mollusks of India* : 129.

2007. *Lymnaea (Pseudosuccinea) luteola* form *typica* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 209-210. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell less inflated, thin and glossy, relatively smaller and laterally compressed, spire gradually tapering and more produced, aperture narrow.

Material examined/Source : Jabalpur Dist. : 32 exs., Supatal On Nagpur Rd., 29.11.1967, Coll. H.P. Agrawal; 140 exs., Panagar Tank Katni Rd., 10.08.1968, Coll. H.P. Agrawal; 1 ex., Narmad Sagar Dam Area, 26.09.1985, Coll. H.P. Agrawal; 2 exs., Barala, 10.11.1961, Coll. S. Chakrapany; 40 exs., Tamar River Bargi Vill., 30.01.1969, Coll. H.P. Agrawal; 27 exs., Panagar Tank, 29.11.1967, Coll. H.P. Agrawal; 5 exs., Bhida vill., 18.11.1967, Coll. H. Khajuria; 24 exs., Budagar Tank Katni Rd., 12.05.1970, Coll. H.S. Sharma; 50 exs., A Tank in Tawar vill., 15.05.1969, Coll. V.S. Durve; 38 exs., Budagar Tank, Katni Road, 25.11.1969, Coll. H.P. Agrawal; 56 exs., Padaria vill., Dindori Road, 23.01.1969, Coll. H.P. Agrawal; 50 exs., Amkhas, Nagpur Road, 03.06.1969, Coll. V.S. Durve; 8 exs., Suvajla Tank, 11.09.1967, Coll. V.V. Rao; 15 exs., Panagar Tank (panagar Vill), 15.04.1968, Coll. H.P. Agrawal; 50 exs., Panagar Tank Katni Rd., 29.09.1968, Coll. V.S. Durve; 4 exs., Bheraghat, 02.12.1969, Coll. H. Khajuria; 16 exs., Budagar Tank Katni Rd., 17.04.1971, Coll. V.V. Rao; 2 exs., A Tank in Gandhigram Vill., 11.09.1967, Coll. V.V. Rao; 3 exs., Sukha

Tank, Patan Road, 01.06.1969, Coll. V.S. Durve; 15 exs., Amkhas Nagpur Rd., 18.09.1968, Coll. H.P. Agrawal; 25 exs., A Tank In Tawar Vill., 15.05.1969, Coll. V.S. Durve; 1 ex., A Nala near Bheraghat, 15.05.1969, Coll. V.S. Durve; 15 exs., A Tank In Tawar Vill., 15.05.1969, Coll. V.S. Durve; 40 exs., Panagar Tank Katni Rd., 10.08.1968, Coll. H.P. Agrawal; 8 exs., Budanagar Tank, Katni Road, 24.04.1960, Coll. H.P. Agrawal; 1 ex., Budagar Tank Katni Rd., 16.10.1970, Coll. D.K. Ghoshal; 1 ex., Pachpadi, 11.06.1970, Coll. V.V. Rao; 1 ex., Baleha Tank Panagar Vill., 22.04.1968, Coll. H.P. Agrawal; 10 exs., A Tank In Uran Village, 24.03.1965, Coll. H.P. Agrawal; Betul Dist. : 98 exs., Chhindwara area, Sanyan river, 04.04.1990, Coll. H.S. Sharma; 1 ex., Mach Nariver, 24.03.1990, Coll. H.S. Sharma; 3 exs., Machna River Banka Village 20.03.1990, Coll. H.S. Sharma; 7 exs., Amdhane Vill., 26.03.1990, Coll. H.S. Sharma; Khandwa Dist. : 65 exs., Ajnal River, 09.05.1985, Coll. H.P. Agrawal; 47 exs., Kaveri River, 10.04.1985, Coll. H.P. Agrawal; Damoh Dist. : 226 exs., IIs vicinity, 19.10.1992, Coll. H.P. Agrawal; 169 exs., Dharampura, 21.01.1994, Coll. H.P. Agrawal; 176 exs., Nohta, 20.01.1994, Coll. H.P. Agrawal; 96 exs., Damoh & Vicinity, 17.01.1994, Coll. H.P. Agrawal; 57 exs., Bandakpur, 19.01.1994, Coll. H.P. Agrawal; Hoshangabad Dist. : 3 exs., Brindaban Hill, 13.01.1990, Coll. U.A. Gajbe; 45 exs., Hata, 18.01.1994, Coll. H.P. Agrawal; Mandsaur Dist.: 1 ex., Kachanara & Surroundings, 28.10.1990, Coll. H.P. Agrawal; 13 exs., Pipalia, 29.10.1990, Coll. H.P. Agrawal; Chhindwara Dist. : 37 exs., Chawar Pani, 01.07.1990, Coll. U.A. Gajbe; Sagar Dist. : 25 exs., Bina and Vicinity, 01.05.1994, Coll. H.P. Agrawal; 35 exs., Bamora, Bina, 01.07.1994, Coll. H.P. Agrawal; 2 exs., Jaisingh Nagar, 14.01.1994, Coll. H.P. Agrawal; 1 ex., Bharta Deo, 09.10.1991, Coll. R.K. Singh; Shivpuri Dist. : 1 ex., S.S.S. Club; 19.09.1975, Coll. R.K. Singh; Gwalior Dist. : 10 exs., Bhitwar, 02.10.1995, Coll. H.P. Agrawal; 8 exs., Morar, 02.03.1995, Coll. H.P. Agrawal; 11 exs., Mastura, 02.07.1995, Coll. H.P. Agrawal; Ambikapur Dist.: 6 exs., Ambikapur, 10.05.1991, Coll. H.P. Agrawal; Raigarh Dist. : 32 exs., Dhormjoyganh,

10.02.1991, Coll. H. P. Agrawal; Panna Dist. : 2 exs., Gunour, 22.02.1987, Coll. R.K. Singh; Mandla Dist. : 23 exs., Swdian Tal, 04.03.1990, Coll. R.K. Ghosh; 5 exs., Moti Nala, 04.03.1990, Coll. R.K. Ghosh; 1 ex., Kanha, 04.03.1990, Coll. R.K. Ghosh; 8 exs., Mukhi Sodhar Tank Kanha, 12.01.1986, Coll. 12.01.1986; 10 exs., Menhar Nala, Kanha, 28.02.1986, Coll. R.K. Singh; Ujjain dist. : 8 exs., Shipra River, 11.03.1990, Coll. H.P. Agrawal; 92 exs., Lakoda, 11.04.1990, Coll. H.P. Agrawal; Dewas Dist. : 2 exs., Majhgaon Ghat, 01.06.1966, Coll. H. Khajuria; Bastar Dist. : 7 exs., Dalpat Sagar Tank, 01.11.1974, Coll. R.K. Singh; 4 exs., Moti Tank, 01.09.1974, Coll. R.K. Singh; 3 exs., Ganga Munda Tank, 01.12.1974, Coll. R.K. Singh; 21 exs., Dalpat Sagar Tank, 13.01.1974, Coll. R.K. Singh.

Distribution : Throughout India (Ramakrishna and Dey, 2006); Madhya Pradesh (Jabalpur, Chhindwara, Sagar, Shivpuri, Damoh, Gwalior, Ambikapur, Raigarh, Panna, Mandla, Ujjain, Dewas, Betul, Mandsaur, Hoshangabad, Khandwa); Chhattisgarh (Bastar).

Elsewhere : Bangladesh, Myanmar, Nepal, Pakistan.

22. *Lymnaea (Pseudosuccinea) luteola* form *australis* Annandale & Rao

1925. *Limnaea (Pseudosuccinea) luteola* form *australis* Annandale and Rao, *Rec. Indian Mus.*, 27 : 184-185.
1989. *Lymnaea (Pseudosuccinea) luteola* form *australis* : Subba Rao, *Handbook : Freshwater mollusks of India* : 129.
2007. *Lymnaea (Pseudosuccinea) luteola* form *australis*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 210. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell smaller than *typica*, spire comparatively longer, last whorl well rounded, suture shallow.

Material examined/Source : Jabalpur Dist. : 16 exs., Pahari Khera Vill., 26.11.1963, Coll. J.S. Bhatti; 7 exs., Ganga Sager Tank, 23.05.1961, Coll. Pooran Singh; 10 exs., A Tank in Uran Village, 24.03.1965, Coll. H.P. Agrawal.

Distribution : Throughout India. Madhya Pradesh (Jabalpur).

Elsewhere : Bangladesh, Myanmar, Pakistan, Sri Lanka.

23. *Lymnaea (Pseudosuccinea) luteola* form *impura* Troschel

1837. *Limnaea impura* Troschel, *Arch. Naturgesch.* 3 : 172.
1989. *Lymnaea (Pseudosuccinea) luteola* form *impura*: Subba Rao, *Handbook : Freshwater mollusks of India* : 129.
2007. *Lymnaea (Pseudosuccinea) luteola* form *impura* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 211. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell smaller than *typica*, spire comparatively longer, last whorl well rounded, suture shallow.

Material examined/Source : Jabalpur Dist. : 2 exs., Panagar Village, 24.01.1964, Coll. J.S. Bhatti; 65 exs., Lametaghat, 30.01.1962, Coll. S.Chakrapany; 6 exs., Salibada, 01.02.1961, Coll. P. Singh; 3 exs., Ganga Sagar, 12.02.1960, Coll. P. Singh; Mandla Dist. : 12 exs., Shukalpur Vill., 25.10.1963, coll. J.S. Bhatti; 8 exs., Madiarns Vill., 25.10.1963, Coll. J.S. Bhatti.

Distribution : India : Madhya Pradesh (Jabalpur, Mandla); Andhra Pradesh, Assam, Himachal Pradesh, Kerala, Maharashtra, Nagaland, Orissa. *Elsewhere* : Myanmar, Sri Lanka.

24. *Lymnaea (Pseudosuccinea) luteola* form *ovalis* Gray

1822. *Limnaea ovalis* Gray, in Sowerby's *Gen. Rec. Foss. Shells* : pl. 178.
1989. *Lymnaea (Pseudosuccinea) luteola* form *ovalis* : Subba Rao, *Handbook : Freshwater mollusks of India* : 129.
2007. *Lymnaea (Pseudosuccinea) luteola* form *ovalis* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 212. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Jabalpur Dist. : 24 exs., Nunsar Vill., 24.03.1964, Coll. H.P. Agrawal; 1 ex, Patan Village, 24.03.1964, Coll. H.P. Agrawal; 5 exs., Madan Mahal, 11.09.1962,

Coll. S. Chakrapany; 5 exs., Tewra Village, 16.08.1962, Coll. P. Singh; 4 exs., Balkharu vill., 19.01.1962, Coll. S. Chakrapany; 4 exs., Barala, 10.11.1961, Coll. S. Chakrapany; 2 exs., Amkhas, 10.12.1966, Coll. V.S. Durve; 10 exs., Pariat River On Katni Rd., 11.11.1965, Coll. H.P. Agrawal; 1 ex., Bel Sagur At Tewar Vill., 13.03.1963, Coll. Raja Ram; 1 ex., Sukha Vill On Patan Rd., 30.07.1965, Coll. H.P. Agrawal; 1 ex., Richhai Vill., 02.06.1966, Coll. V.V. Rao; 7 exs., Surajala Tank, 17.12.1966, Coll. V.S. Durve; 4 exs., Tewar Vill., 16.04.1964, Coll. H.P. Agrawal; 1 ex., Madan Mahal, 20.01.1967, Coll. H. Khajuria; 2 exs., Madan Mahal, 11.12.1965, Coll. M.L. Koshta; 2 exs., Bhiloda Village, 24.07.1965, 24.07.1965, Coll. D.N.N. Basu; Mandla Dist. : 1 ex., Rest House, Dindori, 11.07.1963, Coll. J.S. Bhatti; 1 ex., Richhai Village, 13.05.1963, Coll. H. Khajuria; 2 exs., Village Koorra, 23.10.1963, Coll. J.S. Bhatti; 2 exs., Vill. Gorakhpur, Coll. J.S. Bhatti.

Distribution : Common throughout India including Madhya Pradesh (Jabalpur, Mandla).

Elsewhere : East Indies, Myanmar, Sri Lanka.

25. *Lymnaea (Pseudosuccinea) luteola* form *succinea* Deshayes

1834. *Limnaea succinea* Deshayes, *Voy. Belang. Zool. P.* 418.
1989. *Lymnaea (Pseudosuccinea) luteola* form *succinea*: Subba Rao, *Handbook : Freshwater mollusks of India* : 129.
2007. *Lymnaea (Pseudosuccinea) luteola* form *succinea* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 213. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell larger than in preceding species, last whorl much inflated without any compression, spire short and abruptly acuminate.

Material examined/Source : Jabalpur Dist. : 2 exs., Surajala Tank, 17.12.1966, Coll. V.S. Durve; 1 ex., Panagar vill., 26.08.1965, Coll. H. Khajuria; 1 ex., Belkharu village, 16.08.1965, Coll. H.P. Agrawal; Mandla Dist. : 2 exs., A Kuchha Pond N.w.vill., 19.10.1963, Coll. J.S. Bhatti.

Distribution : India : Madhya Pradesh (Jabalpur, Mandla), Andhra Pradesh, Jharkhand, Kashmir, Kerala, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh.

Elsewhere : Java.

Superfamily PLANORBOIDEA

Family PLANORBIDAE

Subfamily PLANORBINAE

Genus *Gyraulus* Charpentier, 1837

26. *Gyraulus convexiusculus* (Hutton)

1849. *Planorbis convexiusculus* Hutton, *J. Asiat. Soc. Beng.*, 18(2) : 657.
1956. *Gyraulus convexiusculus* : Benthem Jutting, *Treubia*, 23(2) : 463.
1989. *Gyraulus convexiusculus* : Subba Rao, *Handbook : Freshwater mollusks of India* : 142.
2007. *Gyraulus convexiusculus*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 234-235. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Maximum diameter, rarely exceeds 5mm, whorls 4 or 5 rounded, suture well defined peripheri subangulate, closely and obliquely striate, umbilicus wide all the whorl distinctly seen above, aperture ovate lunate.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : Common throughout in India including Madhya Pradesh.

Elsewhere : Iran to Philippines and Japan.

27. *Gyraulus labiatus* (Benson)

1850. *Planorbis labiatus* Benson, *Ann. Mag. Nat. Hist.*, (2)5 : 350.
1925. *Gyraulus labiatus* : Annandale, *Rec. Indian Mus.*, 27 : 109.
1989. *Gyraulus labiatus*: Subba Rao, *Handbook : Freshwater mollusks of India* : 155.
2007. *Gyraulus labiatus*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 237-238. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Andhra

Pradesh, Himachal Pradesh, Maharashtra, Mizoram, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Myanmar.

Family BULLINIDAE

Subfamily BULININAE

Genus *Indoplanorbis* Annandale & Prashad, 1921

28. *Indoplanorbis exustus* (Deshayes)

1834. *Planorbis exustus* Deshayes, in Belanger, *Voy. Indes-Orientales*, p. 417, pl. 1, figs, 11-13.
1956. *Indoplanorbis exustus* : Benthem Jutting, *Treubia*, 23(2) : 471.
1989. *Indoplanorbis exustus* : Subba Rao, *Handbook : Freshwater mollusks of India* : 142.
2007. *Indoplanorbis exustus*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 253-254. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell large, thick, discoidal, sinistral, rounded at periphery, aperture ear-shaped, suture deeply impressed.

Material examined/Source : Jabalpur Dist. : 1 ex., Bhiloda Village, 18.11.1967, Coll. H. Khajuria; 7 exs., Bhiloda Village, 24.07.1965, Coll. D.N. Basu; 4 exs., Bhita Vill., 20.02.1965, Coll. H. Khajuria; 3 exs., Gandhigram Tank Katni Rd., 10.05.1966, Coll. V.S. Durve; 1 ex., Richhai, 16.02.1965, Coll. H. Khajuria; 2 ex., Gohitel In Barala Vill., 13.04.1965, Coll. H.P. Agrawal; 13 exs., Rani Durgavati Samadhi, 24.11.1964, Coll. H.P. Agrawal; 20 exs., Madan Mahal, 20.01.1967, Coll. H. Khajuria; 7 exs., Ganga Sagar, 12.02.1960, Coll. P. Singh; 13 exs., Devtal, Vedinagar, 15.03.1961, Coll. P. Singh; 10 exs., Devtal, Vedinagar, 19.07.1960, Coll. R.C. Sharma; 6 exs., Tewar vill. Tank, 16.05.1964, Coll. H.P. Agrawal; 5 exs., Baleha Tank, Nagpur road, 29.12.1966, Coll. V.S. Durve; 4 exs., Indrawati, Maha Deo Ghat, 14.01.1974, Coll. R.K. Singh; 6 exs., Garhá, 30.08.1961, Coll. Pooran Singh; 17 exs., Karmatu Vill.on Patan Rd, 09.03.1966, Coll. H.P. Agrawal; 12 exs., Amkhare, Medical College, 19.03.1963, Coll. Raja Ram; 1ex., Pahari Khera Vill., 26.02.1963, Coll. J.S. Bhatti; 1 ex., Pahari Khera Vill., 26.02.1963, Coll. J.S. Bhatti; 14 exs.,

Guari Vill., 27.09.1962, Coll. H. Khajuria; 6 exs., Shahpura Vill., 25.08.1962, Coll. P. Singh; 2 exs., Tewar Vill., 16.08.1962, Coll. P. Singh; 3 exs., Richhai Village, 13.05.1963, Coll. H. Khajuria; 6 exs., Balkharu Vill., 19.01.1962, Coll. S. Chakrapany; 12 exs., A Tank in Bhiloda Vill., 13.03.1964, Coll. J.S. Bhatti; 7 exs., Gora Bazar, 18.09.1961, Coll. Pooran Singh; 21 exs., Devtal Tank, 30.05.1961, Coll. S. Chakeajpany; 9 exs., Budugar Tank Katni Rd., 12.05.1970, Coll. H.S. Sharma; 33 exs., Surajla Tank Nagpur Rd., 17.12.1966, Coll. V.V. Durve; 20 exs., Medical College Area, 13.09.1966, Coll. H.P. Agrawal; 25 exs., Tewar Vill., 16.04.1964, Coll. H.P. Agrawal; 15 exs., Baleha Tank Panagar Vill., 02.08.1967, Coll. V.S. Durve; 2 exs., Madan Mahal, 02.09.1962, Coll. S. Chakrapany; 1 ex., Gandhigram, Katni Road, 10.08.1968, Coll. H.P. Agrawal; 14 exs., Subta Tank, Patan Road, 01.06.1969, Coll. V.S. Durve; 28 exs., Budagar Tank, Katani Road, 25.02.1969, Coll. H.P. Agrawal; 1 ex., Supatal Madan Mahal, 28.03.1963, Coll. S. Chakrapany; 2 exs., Panagar Tank, Katani Road, 27.09.1968, Coll. V.V. Durve; 5 exs., Belkharu Vill., 17.08.1965, Coll. H.P. Agrawal; 3 exs., Panager Tank, Katni Road, 27.12.1968, Coll. V.S. Durve; 26 exs., Nunsar Vill., 24.03.1964, Coll. H.P. Agrawal; 6 exs., A Tank In Uran Vill., 24.03.1964, Coll. H.P. Agrawal; 8 exs., Budagar Tank, Katani Road, 18.01.1969, Coll. V.V. Durve; 3 exs., A Tank in Tower Vill., 15.05.1969, Coll. V.S. Durve; 6 exs., Panagar Tank, 29.11.1967, Coll. H.P. Agrawal; 5 exs., Rechhai Vill., 20.04.1965, Coll. H.P. Agrawal; 3 exs., A Tank In Gandhigram Vill., 11.09.1967, Coll. V.V. Rao; 15 exs., Panagar Tank Katni Rd., 10. 05.1966, Coll. V.S. Durve; 8 exs., Amkhas, 10.12.1966, Coll. V.S. Durve; 7 exs., Adhar Tank Katni Rd., 19.08.1968, Coll. V.S. Durve; 35 exs., Panagar Vill., 17.12.1966, V.S. Durve; 3 exs., Budagar Lowk Katni Rd., 17.04.1971, Coll. V.V. Rao; 1 ex., Richhai Vill., 02.09.1966, coll. V.V. Rao; 2 exs., Budag Tank Katni Rd., 30.07.1969, Coll. H.S.Sharma; 4 exs., Surajda Tank on Nagpur Rd, 29.11.1969, Coll. H.P. Agrawal; 7 exs., Budagar Tank Katni Rd, 24.04.1969, Coll. H.P. Agrawal; 3 exs., A Tank in Garha Vill., 20.03.1965, Coll.

M.L. Koshta; 20 exs., A Tank in Garha Vill., 10.12.1966, Coll. V.S. Durve; 2 exs., Panagar Tank, 30.09.1967, Coll. H.P. Agrawal; 4 exs., Richhai Vill., 29.04.1964, Coll. H.P. Agrawal; 8 exs., Panagar Tank Katni Rd., 30.08.1968, Coll. V.S. Durve, 1 exs., Supatal Tank Katni Rd., 29.11.1967, Coll. H.P. Agrawal, 13 exs., Amkhas Tank Nagpur Rd., 29.07.1967, Coll. V.S. Durve; 11 exs., Urama Vill. Tank, 23.04.1964, Coll. H.P. Agrawal; 4 exs., Panagar Tank Katni Rd., 27.07.1968, Coll. H.P. Agrawal; 5 exs., Pangar Vill. Tank, 30.09.1965, Coll. H.P. Agrawal; 1 ex., Amkhas, 25.09.1964, Coll. H.P. Agrawal; 7 exs., Tewar Vill., 06.05.1965, Coll. H.P. Agrawal; 2 exs., Pariat River Katni Rd., 10.05.1966, Coll. V.S. Durve; 2 exs., Amkhas, 19.08.1966, Coll. H.P. Agrawal; 6 exs., Baleha Tank, 18.12.1967, Coll. H.P. Agrawal; 1 ex., Pari Village, 16.04.1964, Coll. H.P. Agrawal; 1 ex., Budagar Tank Katni Rd., 16.06.1971, Coll. H.S. Sharma, 7 exs., Bhita Vill., 27.11.1964, Coll. Raja Ram; 3 exs., Sukha Village On Patan Rd., 30.07.1965, Coll. H.P. Agrawal; 3 exs., Supatal On Nagpur Rd., 17.12.1966, Coll. V.S. Durve; 6 exs., Tank in Padaria Vill., 27.11.1965, Coll. H.P. Agrawal; 1 ex., Baleha Tank Panagar Vill., 29.06.1968, Coll. H.P. Agrawal; 2 exs., Tank Near Panagar, 26.08.1965, Coll. H. Khajuria; 25 exs., Baleha Tank, 11.09.1967, Coll. V.V. Rao; 10 exs., Panagar Tank, 01.10.1968, Coll. H.S. Sharma; Mandla Dist. : 9 exs., Manyan Tank, 29.05.1966, Coll. H. Khajuria; 4 exs., Pachpedi, 19.07.1960, Coll. R.C. Sharma; 6 exs., Vill. Koora N. of Dindori, 29.10.1963, Coll. J.S. Bhatti; 100 exs., Vill. Gorakhpur, 23.11.1963, Coll. J.S. Bhatti; 2 exs., Shukalpur Vill., 25.10.1963, Coll. J.S. Bhatti; 3 exs., Koora Village Of Dindori, 23.10.1963, Coll. J.S. Bhatti; 25 exs., Vill. Koora N. of Dindori, 29.10.1963, Coll. J.S. Bhatti; 1 ex., Amarkantak Road Dindori, 24.10.1963, Coll. J.S. Bhatti; 8 exs., Vill. Kakartalaw, 22.10.1963, Coll. J.S. Bhatti; 30 exs., Patan Vill., 21.10.1963, Coll. J.S. Bhatti; 8 exs., Swdian Tal, 04.03.1990, Coll. R.K. Ghosh; 6 exs., Kanha Fout Range Moti Nala, 04.03.1990, Coll. R.K. Ghosh; 83 exs., Kanha Fout Range Moti Nala, 04.03.1990, Coll. R.K. Ghosh; 4 exs., Kanha Fout Range Moti Nala, 04.03.1990, Coll.

H.S. Sharma; 13 exs., Mukhi Sodhar Tank Kanha, 12.01.1986, Coll. R.K. Singh; 11 exs., Suplhae C Tank Kanha, 12.01.1986, Coll. R.K. Singh; 74 exs., Suplhae C Tank Kanha, 12.01.1986, Coll. R.K. Singh; Panna Dist. : 1 ex., Benisagare, 17.11.1988, Coll. H.P. Agrawal; 2 exs., Gunour, 22.02.1987, Coll. R.K. Singh; 2 exs., Byarma River, 19.02.1987, Coll. R.K. Singh; Shivpuri Dist. : 25 exs., S.S.S. Club, 10.02.1975, Coll. R.K. Singh; 2 exs., S.W. of Range Office, 10.05.1975, Coll. H. Khajuria; 75 exs., S.S.S. Club, 10.02.1975, Coll. R.K. Singh; Hoshangabad Dist. : 20 exs., Sheltacaveg, 01.10.1990, Coll. U.A. Gajbe; Sagar Dist. : 2 exs., Jaisingh Nagar, 14.01.1994, Coll. H.P. Agrawal; 11 exs., Dhangarh, 01.08.1994, Coll. H.P. Agrawal; 25 exs., Khurai & Its Vicinity, 10.10.1992, Coll. H.P. Agrawal; 28 exs., Malkotra & Its Vicinity, 10.12.1992, Coll. H.P. Agrawal; 21 exs., Garhakota, 16.10.1992, Coll. H.P. Agrawal; 21 exs., Banda, 15.10.1992, Coll. H.P. Agrawal; 20 exs., Sagar, 14.10.1992, Coll. H.P. Agrawal; 18 exs., Rehliandils, 17.10.1992, Coll. H.P. Agrawal; Ujjain Dist. : 35 exs., Lakoda, 11.04.1990, Coll. H.P. Agrawal; 11 exs., Shipra River, 11.03.1990, Coll. H.P. Agrawal; 36 exs., Near Kalideh, 30.08.1990, Coll. R.K. Singh; Ambikapur Dist. : 9 exs., Ambikapur, 10.05.1991, Coll. H.P. Agrawal; 16 exs., Manendragarh, 10.10.1991, Coll. H.P. Agrawal; 2 exs., Ambikapur, 10.05.1991, Coll. H.P. Agrawal; 24 exs., Baikunthpur, 10.09.1991, Coll. H.P. Agrawal; Balaghat Dist. : 9 exs., Supkhar, 04.03.1990, Coll. R.K. Ghosh; Hoshangabad Dist. : 4 exs., Tawa River Brige, 01.12.1990, Coll. U.A. Gajbe; Raigarh Dist. : 5 exs., Bagicha & Its Surroundings, 30.09.1991, Coll. H.P. Agrawal; 72 exs., Hamirpur, 26.09.1991, Coll. H.P. Agrawal; 249 exs., Jashpwe, 29.09.1991, Coll. H.P. Agrawal; 96 exs., Dhormjoyganh, 10.02.1991, Coll. H.P. Agrawal; Mandasaur Dist. : 1 ex., Ratangarh, 11.01.1990, Coll. H.P. Agrawal; 5 exs., Near Manasa, 15.08.1990, Coll. R.K. Singh; 18 exs., Near Gandhisagar, 17.08.1990, Coll. R.K. Singh; 11 exs., Mundelli Village, Malharga, 14.08.1990, Coll. R.K. Singh; 6 exs., Neemuch, 31.10.1990, Coll. H.P. Agrawal; 1 ex., Chandrapur Village, 08.11.1990, Coll. R.K. Singh; Bhind Dist. : 5 exs.,

Forest Nursery, 01.11.1995, Coll. H.S. Sharma; Gwalior Dist. : 165 exs., Dabra Rest House, 19.09.1994, Coll. H.P. Agrawal; 11 exs., Panniar, 09.04.1994, Coll. H.P. Agrawal; Betul Dist.: 11 exs., Machna River Banka Village, 20.03.1990, Coll. H.S. Sharma; 7 exs., Sulemergence Aera, 19.02.1993, Coll. H.P. Agrawal; 2 exs., Chhindwara Area, Sayan Riv, 04.04.1990, Coll. H.S. Sharma; Ratlam Dist. : 105 exs., Amrit Sagar, 24.10.1990, Coll. H.P. Agrawal; Khargone Dist. : 1 ex., Nargaew Vill., 20.02.1971, Coll. H. Khajuria; Chhindwara Dist. : 2 exs., Bhartadeo, 09.10.1991, Coll. R.K. Singh; Damoh Dist. : 18 exs., IIs Vicinity, 19.10.1992, Coll. H.P. Agrawal; 2 exs., Damoh, 17.01.1994, Coll. H.P. Agrawal; 1 ex., Bangaon, 21.10.1992, Coll. H.P. Agrawal; Morena Dist. : 5 exs., Shankh River Noorabad, 01.06.1995, Coll. H.S. Sharma; Bastar Dist. : 38 exs., Ganga Munda Tank, 01.12.1974, Coll. R.K. Singh; 69 exs., Dalpart Sagar Tank, 13.01.1974, Coll. R.K. Singh; 15 exs., Doga Ghat vill., 01.08.1974, Coll. R.K. Singh; 43 exs., Dalpat Sagar Tank, 01.11.1974, Coll. R.K. Singh; 16 exs., Moti Tank, 01.09.1974, Coll. R.K. Singh.

Distribution : Widely distributed in India : Madhya Pradesh (Jabalpur, Morena, Sagar, Betul, Ambikapur, Damoh, Gawlior, Chhindwara, Mandsaur, Raigarh, Mandla, Ratlam, Khandwa, Bhind, Ujjain, Hoshangabad, Balaghat, Shivpuri, Panna); Chhattisgarh (Bastar).

Elsewhere : Bangladesh, Iran, Pakistan, Persia, Sri Lanka, Myanmar, Malaya, Indo-China, Tibet, Thailand, Vietnam, Sumatra, Java, Celebes.

Family ANCYLIDAE

Subfamily FERRISSINAE

Genus *Ferrissia* Walker, 1903

29. *Ferrissia verruca* (Benson)

1855. *Ancylus verruca* Benson, *Ann. Mag. Nat. Hist.*, (2)15 : 12.

1989. *Ferrissia verruca* : Subba Rao, *Handbook : Freshwater mollusks of India* : 139.

2007. *Ferrissia verruca*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 258. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Throughout India including Madhya Pradesh.

Elsewhere : Sri Lanka

Key to the families of class Bivalvia (Freshwater)

1. Shell internally non nacreous2
- Shell internally nacreous4
2. Hinge with numerous lamelliform teeth and edentulous in the middle ARCIDAE
- Hinge with limited number of teeth but never edentulous3
3. Shell thick and large; ligament very strong and external; hinge straight with three cardinal teeth and strong serrated anterior and posterior lateral teeth CORBICULIDAE
- Shell thin and small; ligament not very strong and internal; hinge curved with two small cardinal teeth and smooth lateral teeth
..... PISIDIIDAE
4. Shell irregular, inequivalve and attached to substratum with one valve
..... AETHERIIDAE
- Shell regular, equivalve and valve not attached to substratum UNIONIDAE

Class BIVALVIA

Subclass PTERIOMORPHIA

Order ARCOIDA

Superfamily ARCOIDEA

Family ARCIDAE

Subfamily ANADARINAE

Genus *Scaphula* Benson, 1834

30. *Scaphula celox* Benson, 1836

1836. *Scaphula celox* Benson, *J. Asiat. Soc. Beng.*, 5 : 750. pl. 7, figs. 2, 3.

1867. *Scaphula celox*: Blanford, *J. Asiat. Soc. Beng.*, 36(2) : 71, pl. 3, figs. 14, 15.

1915. *Scaphula celox*: Preston, *Fauna Brit. India Mollusca*, (Freshwater Gastropoda And Pelecypoda). P. 129.

2007. *Scaphula celox*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 268. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh (River Cane, near Banda (Bundel Khand); Orissa, Uttar Pradesh, West Bengal.

Subclass PALEOHETERODONTA

Order TRIGOINOIDA

Superfamily UNIONOIDEA

Family UNIONIDAE

Subfamily AMBLEMINEAE

Tribe Amblemini

Genus *Lamellidens* Simpson, 1900

31. *Lamellidens corrianus* (Lea)

1834. *Unio corrianus* Lea, *Trans. Amer. Philos. Soc.*, 6(2) : 65, pl. 9, fig. 25.

1900. *Lamellidens corrianus* : Simpson, *Proc. U.S. Natn. Mus.*, 22 : 857.

1989. *Lamellidens corrianus*: Subba Rao, *Handbook : Freshwater mollusks of India* : 165.

2007. *Lamellidens corrianus* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 283. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell elongate, elliptical; umbone slightly inflated; periostracum smooth and dark brown; dorsal margin almost straight and long; cardinals two in each valve.

Material examined/Source : Jabalpur Dist. : 1 ex., Pench National Park, 01.10.1973, Coll. N.K. Sinha; 2 exs., Pariat Water Tank, 23.06.1961, Coll. R.C. Shrama; 1 ex., Pariat Tank, 06.09.1966, Coll. V.S. Durve; Mandla Dist. : 4 exs., Chakrar River On Dindori, 26.10.1963, Coll. J.S. Bhatti; 1 ex., Chakrar River, 26.10.1963, Coll. J.S. Bhatti; Bhind Dist. : 1 ex., Basli Dam, 15.01.1995, Coll. H.S. Sharma; Khargone Dist. : 8 exs., Nargaew vill., 12.07.1971, Coll. H. Khajuria; Betul Dist. : 9 exs., A Nala 1 Km, Frh Kata Wade, 23.03.1990, Coll. H.S. Sharma; 1 ex., Banka Village, Machana Vill; 20.03.1990, Coll. H.S. Sharma.

Distribution : Common throughout India :

Madhya Pradesh (Jabalpur, Mandla, Bhind, Khargone, Betul, Mandla).

Elsewhere : Bangladesh, Myanmar.

32. *Lamellidens marginalis* (Lamarck)

1819. *Unio marginalis* Lamarck, *Hist. Nat. Anim. Sans. Vert.*, 4 : 79.

1900. *Lamellidens marginalis* : Simpson, *Proc. U.S. natn. Mus.*, 22 : 854.

1989. *Lamellidens marginalis*: Subba Rao, *Handbook : Freshwater mollusks of India* : 168.

2007. *Lamellidens marginalis*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 288-289. Publ. : Director, Zool. Surv. India, Kolkata.

Diagnostic characters : Shell oblong ovate, valves covered by blackish brown periostracum with light brown border along ventral margin., Umbo not elevated, posterior side broad, roundedly angular, margin produced, narrow wing, dorsal margin slightly curved, central margin slightly contracted in middle, hinge with two cardinals in right valve, interior nacreous.

Material examined/Source : Jabalpur Dist. : 3 exs., Pench National Park, 24.02.01, Coll. N.K. Sinha; 1 ex., Pench National Park, 01.10.1973, Coll. N.K. Sinha; 1 ex., Shahpura, 14.06.1966, Coll. V.S. Durve; 1 ex., Shahpura, 05.12.1966, Coll. V.S. Durve; Balaghat Dist. : 1 ex., Mukhi, 04.03.1990, Coll. R.K. Ghosh; 2 exs., Supkhar, 04.03.1990, Coll. R.K. Ghosh; Mandla Dist. : 1 ex., Machhrrar River On Dindori, 30.10.1963, Coll. J.S. Bhatti; 1 ex., Machhray River, Dindori, 30.10.1963, Coll. J.S. Bhatti; 1 ex., Chakrar River Dindori, 26.10.1963, Coll. J.S. Bhatti; Betul Dist. : 1 ex., Sulemergence Aera, 19.02.1993, Coll. H.P. Agrawal; 19 exs., Tawa River, 23.03.1990, Coll. H.S. Sharma; Chhindwara Dist. : PENCH River, 04.06.1990, Coll. H.S. Sharma; 6 exs., Penoh River, Sighandi Vill, 04.05.1990, Coll. H.S. Sharma; 3 exs., Ramdoha Riv., 04.03.1990, Coll. H.S. Sharma; 10 exs., PENCH River Jhilmili Villa, 04.06.1990, Coll. H.S. Sharma; Panna Dist. : 1 ex., Byarmariver, 19.02.1987, Coll. R.K. Singh; Khargone Dist. : 28 exs., Bank of Narmada River, 12.07.1971, Coll. H. Khajuria; Bhind Dist. : 2 exs., Kunwari River, 13.01.1995, Coll. H.S.

Sharma; Khandwa Dist. : 1 ex., Narmada Sagar Dam Area, 17.03.1986, Coll. H.P. Agrawal.

Distribution : Widely distributed in India : Madhya Pradesh (Balaghat, Mandla, Betul, Chhindwara, Jabalpur, Panna, Khargone, Bhind).

Elsewhere : Bangladesh, Myanmar, Sri Lanka.

Genus *Parreysia* Conrad, 1853

Subgenus *Parreysia* s. st.

33. *Parreysia (Parreysia) corrugata* Mueller

1774. *Mya corrugata* Muller, *Verm. Terr. Et. Fluv.*, pt. 2, p. 214, no. 398.

1900. *Parreysia corrugata* : Simpson, *Proc. U.S. natn. Mus.*, 22 : 841.

1989. *Parreysia (Parreysia) corrugata*: Subba Rao, *Handbook : Freshwater mollusks of India* : 179.

2007. *Parreysia (Parreysia) corrugata* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 296. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell elliptic to oval, smooth, scarcely inequilateral; umbones prominent; lunule well marked; sculptured with somewhat radiating, oblique, linear ridges, ventral margin convex, cardinal teeth strong, not lamellar; green in colour.

Material examined/Source : Panna Dist. : 1 ex., Patai River, Pavai, 20.02.1987, Coll. R.K. Singh; Betul Dist. : 7 exs., Tawa River, 23.03.1990, Coll. H.S. Sharma; 1 ex., Sulemergence Aera, 19.02.1993, Coll. H.P. Agrawal; 2 exs., Chand Vill., Chhindwara Ar, 04.03.1990, Coll. H.S. Sharma; Morena Dist. : 3 exs., Kuanri River, 01.05.1995, Coll. H.S. Sharma; Chhindwara Dist. : 1 ex., Penoh River, Sighandi Vill, 04.05.1990, Coll. H.S. Sharma; Khandwa Dist. : 1 ex., Narmada Sagar Dam Area, 17.03.1986, Coll. H.P. Agrawal; Balaghat Dist. : 3 exs., Supkhar, 04.03.1990, Coll. R.K. Ghosh; Mandla Dist. : 1 ex., Chakrar River Dindori, 26.10.1963, Coll. J.S. Bhatti.

Distribution : Widely distributed throughout India : Madhya Pradesh (Panna, Betul, Morena, Chhindwara, Khandwa, Balaghat, Mandla).

Elsewhere : Bangladesh, Myanmar, Sri Lanka.

34. *Parreysia (Parreysia) corrugata* (Mueller) subsp. *nagpoorensis* (Lea)

1859. *Unio nagpoorensis* Lea, *Proc. Acad. Nat. Sci., Philad.*, 3 : 331.

1859. *Unio wynegungaensis* Lea, *Proc. Acad. Nat. Sci., Philad.*, 3 : 331.

1900. *Parreysia corrugata* (Mueller) sub var. *nagpoorensis* : Simpson, *Proc. U. S. natn. Mus.*, 22 : 842.

1989. *Parreysia (Parreysia) corrugata* (Mueller) subsp. *nagpoorensis*: Subba Rao, *Handbook : Freshwater mollusks of India* : 180.

2007. *Parreysia (Parreysia) corrugata* (Mueller) subsp. *nagpoorensis* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 298. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell oval, thick, greenish, sculptured with zigzag markings arranged in rows, concentrated at umbonal region; dorsal margin evenly sloping, anteriorly rounded, posterior end obtusely pointed.

Material examined/Source : Jabalpur Dist. : 3 exs., Shahpura, 14.06.1966, Coll. V.S. Durve; 1 ex., Gwarighat, 08.04.0963, Coll. V.S. Durve, 7 exs., Shahpura, 18.03.1967, Coll. V.S. Durve; 2 exs., Shahpura, 17.05.1967, Coll. V.S. Durve; 15 exs., Shahpura Vill., 20.01.1967, Coll. V.S. Durve; 3 exs., Narmada River At Manot, 16.11.1963, Coll. H. Khajuria; 3 exs., Pench National Park, 24.02.1973, Coll. N.K. Sinha; 17 exs., Narmada River of Bilpather, 26.03.1964, Coll. J.S. Bhatti; 3 exs., Tilwara ghat, 25.02.1961, Coll. R.C. Sharma; 1 ex., Hiren River Katangi Road, 13.03.1964, Coll. J.S. Bhatti; 15 exs., Shahpura Vill., 20.01.1967, Coll. V.S. Durve; Betul Dist. : 1 ex., Chhindwara Area, Pench River, 04.06.1990, Coll. H.S. Sharma; Khargone Dist. : 1 ex., Bank of Narmada River, 02.08.1971, Coll. V.V. Rao; Hoshangabad Dist. : 1 ex., Narmada River Bridge, 01.09.1990, Coll. U.A. Gajbe.

Distribution : India : Madhya Pradesh (Jabalpur, Betul, Khargone, Hoshangabad), Maharashtra, Andhra Pradesh, Assam, Gujarat, Orissa, Tamil Nadu, West Bengal.

Elsewhere : Bangladesh.

35. *Parreysia (Parreysia) favidens* (Benson)

1862. *Unio favidens* Benson, *Ann. Mag. Nat. Hist.*, (3) **10** : 188.
1900. *Parreysia favidens* : Simpson, *Proc. U.S. natn. Mus.*, **22** : 842.
1989. *Parreysia favidens* : Subba Rao, *Handbook : Freshwater mollusks of India* : 180.
2007. *Parreysia (Parreysia) favidens*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 299. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell thicker, larger and more inequilateral, both anterior and posterior margins angulate, cardinal teeth strong and broad.

Material examined/Source : Jabalpur Dist. : 3 exs., Pariat Water Tank, 23.06.1961, Coll. R.C. Sharma; 5 exs., Pench National Park, 24.02.1973, Coll. N.K. Sinha; 1 ex., Pariat River Katni Road, 11.11.1965, Coll. H.P. Agrawal; Damoh Dist. : 10 exs., Taradehi Village; 14.03.1960, Coll. H. Khajuria; Chhindwara Dist. : 32 exs., Pench River Jhilmili Village, 04.06.1990, Coll. H.S. Sharma.

Distribution : India : Madhya Pradesh (Jabalpur, Damoh, Chhindwara), Maharashtra, Andhra Pradesh, Assam, Bihar, Jharkhand, Meghalay, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh, Pakistan.

36. *Parreysia (Parreysia) rajahensis* (Lea)

1841. *Unio rajahensis* Lea, *Proc. Am. Phil. Soc.*, **2** : 30.
1900. *Parreysia rajahensis* : Simpson, *Proc. U.S. natn. Mus.*, **22** : 844.
1989. *Parreysia (Parreysia) rajahensis* : Subba Rao, *Handbook : Freshwater mollusks of India* : 185.
2007. *Parreysia (Parreysia) rajahensis*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 308-309. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Maharashtra, Bihar, West Bengal.

Subgenus *Radiatula* Simpson, 1900

37. *Parreysia (Radiatula) occata* (Lea)

1859. *Unio occatus* Lea, *Proc. Acad. Nat. Sci., Philad.*, **4** : 3.

1915. *Nodularia (Nodularia) occata* : Preston, *Fauna Brit. India Mollusca*, (Freshwater Gastropoda And Pelecypoda). P. 138.

1989. *Parreysia (Radiatula) occata*: Subba Rao, *Handbook : Freshwater mollusks of India* : 1921.

2007. *Parreysia (Radiatula) occata*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 323. Publ. : Director, *Zool. Surv. India*, Kolkata.

Diagnostic characters : Shell elongate, variable in shape, sculpture restricted to the upper half of the valves in the adult whereas in the young one the whole shell surface sculptured, posterior umbonal carina very distinct.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Assam, Manipur, Meghalaya, Rajasthan, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh, Myanmar, United Kingdom.

38. *Parreysia (Radiatula) shurtleffiana* (Lea)

1856. *Unio shurtleffiana* Lea, *Proc. Acad. Acad. Nat. Sci. Philad.*, **8** : 94.

1989. *Parreysia (Radiatula) shurtleffiana*: Subba Rao, *Handbook : Freshwater mollusks of India* : 192.

2007. *Parreysia (Radiatula) shurtleffiana* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 327. Publ. : Director, *Zool. Surv. India*, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh, Maharashtra, Bihar, Orissa, Uttar Pradesh.

Subclass HETERODONTA

Order VENEROIDA

Superfamily CORBICULOIDEA

Family CORBICULIDAE

Genus *Corbicula* Mergerle von Muhlfield

39. *Corbicula striatella* Deshayes

1854. *Corbicula striatella* Deshayes, *Proc. Zool. Soc. Lond.*, **22** : 344.

1989. *Corbicula striatella*: Subba Rao, *Handbook : Freshwater mollusks of India* : 204.

2007. *Corbicula striatella* : Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 343. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Balaghat Dist. : 1 ex., Mukhi, 04.03.1990, Coll. R.K. Ghosh; Jabalpur Dist. : 3 exs., Pariet River At Maharajpur, 05.07.1963, Coll. S. Chakrapany; 6 exs., Bheraghat, 24.03.1960, Coll. H. Khajuria; 6 exs., Bheraghat, 21.03.1960, Coll. H. Khajuria; 4 exs., Shahpura, 17.05.1967, Coll. V.S. Durve; 1 ex., Pench Nationak Park, 24.02.1973, Coll. N.K. Sinha; 11 exs., Narmada River, Bilpather, 26.03.1964, Coll. J.S. Bhatti; 7 exs., Chakrar River On Dindori, 26.10.1963, Coll. J.S. Bhatti; 4 exs., Gour River of Gouriyaghat, 15.06.1963, Coll. H. Khajuria; 1 ex., Hiran River On Kantgi Road, 13.03.1964, Coll. J.S. Bhatti; Betul Dist. : 9 exs., Banka Village, Machana Vil, 20.03.1990, Coll. H.S. Sharma; Mandla Dist. : 9 exs., Narmada River Shahartra, 21.11.1963, Coll. H. Khajuria; 15 exs., Narmada River At Manot, 16.11.1963, Coll. H. Khajuria; 1 ex., Machhar River On Dindori, 30.10.1963, Coll. J.S. Bhatti.

Distribution : Common throughout India : Madhya Pradesh (Balaghat, Jabalpur, Betul, Mandla):

Elsewhere : Afghanistan, Bangladesh, Myanmar, Pakistan, Sri Lanka.

40. *Corbicula occidens* Deshayes

1854. *Corbicula occidens* Deshayes, *Cat. Brit. Mus. Conchif.*, p. 223.

1915. *Corbicula occidens* : Preston, *Fauna of British India, Mollusca (Freshwater Gastropoda & Pelecypoda)* : 216.

Material examined/Source : Balaghat Dist. : 1 ex., Mukhi, 04.03.1990, Coll. R.K. Ghosh; Jabalpur Dist. : 4 exs., Shahpara, 15.05.1967, Coll. V.S. Durvve; 2 exs., Gwarighat, 24.06.1964, Coll. D.N. Basu; Chhindwara Dist. : 1 ex., Pench River, Sighandi Vill, 04.05.1990, Coll. H.S. Sharma;

Distribution : India : Madhya Pradesh (Balaghat, Jabalpur, Chhindwara); Sikkim; Bengal.

41. *Corbicula inflata* Clessin

1879. *Corbicula inflata* Clessin, in Martini & Chemnitz, p. 179, pl. 31, figs. 14, 15.

1915. *Corbicula inflata* : Preston, *Fauna of British India, Mollusca (Freshwater Gastropoda & Pelecypoda)* : 220.

Material examined/Source : Jabalpur Dist. : 11 exs., Bilpather Village, 26.03.1964, Coll. J.S. Bhatti.

Distribution : India : Madhya Pradesh (Jabalpur).

42. *Corbicula picta* Clessin

1879. *Corbicula picta* Clessin, in Martini & Chemnitz, p. 179, pl. 31, figs. 12, 13.

1915. *Corbicula inflata*: Preston, *Fauna of British India, Mollusca (Freshwater Gastropoda & Pelecypoda)* : 220-221.

Material examined/Source : Jabalpur Dist. : 6 exs., Gwarighat, 24.06.1964, Coll. D. N. Basu; Khargone Dist. : 3 exs., Bank Of Narmada River, 12.10.1971, Coll. H. Khajuria.

Distribution : India : Madhya Pradesh (Jabalpur, Khargone).

Family PISIDIIDAE

Genus *Pisidium* Pfeiffer

Subgenus *Afropisidium* Kuiper, 1962

43. *Pisidium (Afropisidium) nevillianum* Theobald

1876. *Pisidium nevillianum* Theobald, *J. Asiat. Soc. Beng.*, 45 : 288.

1925. *Pisidium nevillianum* : Prashad, *Rec. Ind. Mus.*, 27 : 412, pls. 7 & 8.

2007. *Pisidium (Afropisidium) nevillianum*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs*: 354. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : India : Madhya Pradesh (Narmada River); Uttar Pradesh.

Elsewhere : Bangladesh.

Genus *Sphaerium* Scopoli, 1777

44. *Sphaerium indicum* Deshayes

1854. *Sphaerium indicum* Deshayes, *Proc. Zool. Soc. Lond.*, 22 : 342.

1989. *Sphaerium (Sphaerium) indicum* : Subba Rao, *Handbook : Freshwater molluscs of India* : 213.

2007. *Sphaerium indicum*: Ramakrishna and Dey, *Handbook on Indian Freshwater molluscs* : 360. Publ. : Director, Zool. Surv. India, Kolkata.

Material examined/Source : Ramakrishna and Dey (2007).

Distribution : Throughout Indian Plains (including Madhya Pradesh), Himalayas.

Order SYSTELLOMMATOPHORA

Family VERONICELLIDAE

Genus *Laevicaulis* Simroth, 1913

45. *Laevicaulis alte* (Ferussac)

1821. *Vaginulus alte* Ferussac, *Tabl. Syst. Linaces*, p. 14.

1961. *Laevicaulis alte* : Ray, *Treubia*, 25 : 275.

1979. *Laevicaulis alte* : Subba Rao and Mitra, *Rec. zool. Surv. India*, 75 : 10.

Material examined/Source : Khargone Dist. : 3 exs., Gwrudlshwar, 20.12.1971, Coll. H. Khajuria; Sagar Dist. : 1 ex., Sagar, 14.10.1992, Coll. H.P. Agrawal; Jabalpur Dist. : 1 ex., Napier Town, 17.08.1960, Coll. R.C. Sharma; 1 ex., Pachpedi, 30.07.1967, Coll. H.P. Agrawal; 1 ex., Napier Town, 10.03.1960, Coll. R.C. Sharma.

Distribution : India : Madhya Pradesh (Khargone, Sagar, Jabalpur); Maharashtra (Pune). *Elsewhere* : East Africa, Mauritius, Reunion, Madagascar, Sri Lanka, Hong Kong, China, Formosa, Indonesia, New Caledonia and Loyalty Islands.

Remarks : It is widely distributed tropical species.

B) LAND MOLLUSCA

Phylum MOLLUSCA

Class GASTROPODA

Subclass PROSOBRANCHIA

Order MESOGASTROPODA

Key to the families of order Mesogastropoda

1. Shell elongate-ovate or conoid, longer than broad 3
 - Shell depressed, broader than long 2
2. Shell with thickened and reflected peristome CAMAENIDAE

- Shell with simple peristome
 - ARIOPHANTIDAE/HELICARIONIDAE
- 3. Shell small, upto 5mm in length 4
 - Shell larger, above 5mm in length 6
- 4. Columella concave and truncate at base
 - FERUSSACIIDAE
 - Columella convex or straight, rounded at base 5
- 5. Last whorl scarcely broader than the penultimate whorl, not ascending in front ...
 - PUPILLIDAE
 - Last whorl broader than the penultimate whorl, ascending in front VERTIGINIDAE
- 6. Shell with denticulate aperture
 - STREPTAXIDAE
 - Shell with simple aperture 7
- 7. Shell very large and swollen, seldom below 50 mm in length ACHATINIDAE
 - Shell small, and narrow, seldom exceeding 30 mm in length 8
- 8. Spire equal or shorter than the last whorl in length 9
 - Spire larger than the last whorl in length
 - SUBULINIDAE
- 9. Shell thin, imperforate, last whorl constituting 75% to 90% of the total length, columella not reflected SUCCINEIDAE
 - Shell fairly thick, perforate, last whorl equal or slightly larger than spire, columella reflected CERASTUIDAE

Subclass PULMONATA

Order STYLOMMATOPHORA

Family PUPILLIDAE

Subfamily PUPILLINAE

Genus *Pupilla* Leach in Fleming, 1828

46. *Pupilla diopsis*, Benson

1863. *Pupa diopsis* Benson, *A.M.N.H.* ser. 3, xii, p. 427.

1914. *Pupilla diopsis* : Gude, *Fauna of British India, Mollusca*, 2 : 284.

Material examined/Source : Gude (1914).

Distribution : India : Madhya Pradesh (Narmada valley).

Genus *Pupoides* Pfeiffer, 1854

47. *Pupoides tutulus* (Reeve)

1849. *Bulimus tutulus* (Benson) Reeve, *Conch. Icon.*, 5 *Bulimus*, pl. 84, fig. 625.

1914. *Pupoides tutulus* : Gude, *Fauna of British India, Mollusca*, 2 : 261.

2004. *Pupoides tutulus* : Mitra, Dey and Ramakrishana, *Pictorial Handbook—Indian Land Snails* : 119-120.

Material examined/Source : Mitra *et al.* (2004).

Distribution : India : Madhya Pradesh, Maharashtra, Bihar, Delhi, Gujrat, Rajasthan, Uttar Pradesh.

Family VERTIGINIDAE

Subfamily TRUNCATELLININAE

Genus *Boysia* Pfeiffer, 1849

48. *Boysia boysii* Pfeiffer

1846. *Tomogeres boysii* (Benson) Pfeiffer, *Symb. Hist. Helic.*, 3 : 82.

1914. *Boysia boysii*: Gude, *Fauna Brit. India, Mollusca*, 2 : 297.

2004. *Boysia boysii*: Mitra, Dey and Ramakrishana, *Pictorial Handbook—Indian Land Snails* : 123.

Material examined/Source : Mitra *et al.* (2004).

Distribution : India : Madhya Pradesh, Rajasthan (drier part of Central India).

Subfamily GASTROCOPTINAE

Genus *Gastrocopta* Wollaston, 1878

49. *Gastrocopta bathyodon* Benson

1863. *Pupa bathyodon* Benson, *A.M.N.H.* ser. 3, xii, p. 426.

1914. *Bifidaria bathyodon*: Gude, *Fauna Brit. India, Mollusca*, 2 : 290-291.

2004. *Gastrocopta bathyodon*: Mitra, Dey and Ramakrishana, *Pictorial Handbook—Indian Land Snails* : 124.

Material examined/Source : Gude (1914), Mitra *et al.* (2004).

Distribution : India : Madhya Pradesh : Hoshangabad.

Family CERASTUIDAE

Genus *Cerastua* Strand, 1928

50. *Cerastua abyssinicus* Pfeiffer

1838. *Buliminus habessinicus*(Ruppell), Beck, *Index Moll.* p. 68 (nom. Nud.).

1845. *Bulimus abyssinicus* (Rupp.), Pfeiffer, *Zeit. Malak.* ii, p. 157.

1914. *Cerastua abyssinicus*: Gude, *Fauna Brit. India, Mollusca*, 2 : 263.

Material examined/Source : Gude (1914).

Distribution : India : Madhya Pradesh : Mandla (Narmada Valley).

Genus *Rachis* Albers, 1850

51. *Rachis punctatus* (Anton)

1839. *Butinus punctatus* Anton. *Verzeich conch* : 42.

1914. *Rachis punctatus* : Gude, *Fauna Brit. India, Mollusca*, 2 : 277..

2004. *Rachis punctatus* : Mitra, Dey and Ramakrishana, *Pictorial Handbook—Indian Land Snails* : 140.

Diagnostic characters : Shell ovately conical, distinctly perforate, marked with transverse streaks throughout and a single narrow chocolate band below the periphery, pale white; whorls 7-8, fairly rounded, last whorl with a single band, rarely an indistinct second band exists, apex acute; aperture ovate, peristome slightly thickened; columella dilated and reflected.

Material examined/Source : Khandwa Dist. : 12 exs., Narmada Sagar Dam Area, 21.09.1985, Coll. H.P. Agrawal; Chhindwara Dist. : 4 exs., Umara Nala, 17.09.1991, Coll. R.K. Singh; 1 ex., Amawada, 09.12.1991, Coll. R.K. Singh; Jabalpur Dist. : 1 ex., Pench National Park, 14.01.1973, Coll. N.K. Sinha; 3 exs., Pachpedi, 01.05.1964, Coll. H.P. Agrawal; 2 exs., Tilwara Ghat, 07.07.1967, Coll. H.P. Agrawal; 1 ex., Sita Pahar, 06.11.1967, Coll. H.P. Agrawal; 2 exs., Pachpedi, 09.10.1967, Coll. H. Khajuria; Damoh Dist. : 3 exs., Damoh, 17.01.1994, Coll. H.P. Agrawal; 5 exs., Bandakpur, 20.10.1992, Coll. H.P. Agrawal; Ratlam Dist. : 47 exs., Near Sailana, 21.08.1990, Coll. R.K. Singh; 12 exs., A lot, 04.12.1991, Coll. R.K. Singh; Mandsaur Dist. : 1 ex., Near Jajudam,

13.08.1990, Coll. R.K. Singh; 12 exs., Manasa, 04.07.1991, Coll. R.K. Singh; Ujjain Dist. : 3 exs., Bherogarh, 30.08.1990, Coll. R.K. Singh; 8 exs., Near Nagda, 28.08.1990, Coll. R.K. Singh; 11 exs., Near Badnagar, 09.05.1990, Coll. R.K. Singh; 9 exs., Jasinhpur Village, 09.04.1990, Coll. R.K. Singh; 5 exs., Narda, 04.04.1991, Coll. R.K. Singh; Khargone Dist. : 5 exs., Gavana Vill. Gurudeshwar, 21.11.1969, Coll. D.K. Ghoshal.

Distribution : India : Madhya Pradesh (Ujjain, Khargone, Ratlam, Mandsaur, Jabalpur, Damoh, Chhindwara, Khandwa), Goa, Jharkhand, Maharashtra, Tamil Nadu, Uttar Pradesh, Orissa and West Bengal.

Elsewhere : Africa, Sri Lanka.

Remarks : Common.

52. *Rachis bengalensis* Lamarck

1822. *Bulimus bengalensis* Lamarck, *Hist. Nat. Anim. Sans. Vert.*, 6(2) : 124.

1914. *Rachisellus bengalensis* : Gude, *Fauna of British India, Mollusca*, 2 : 273.

2004. *Rachis bengalensis* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 139 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Diagnostic characters : Shell ovate, narrowly perforate, thin, nearly transparent, smooth, faintly spirally striate. Pale white or yellowish white, with 3-4 chocolate bands, the lower ones of which are more prominent; whorls 6, not much rounded, last whorl swollen; aperture oval, wide, peristome thin a little reflected; columellar margin dilated.

Material examined/Source : Jabalpur Dist. : 2 exs., Sita Pahar, 07.05.1965, Coll. H.P. Agrawal; 2 exs., Rani Durgawati Samadhi, 08.12.1967, Coll. H.P. Agrawal; 1 ex., Pachpedi, 07.03.1965, Coll. H.P. Agrawal; Khandwa Dist. : 26 exs., Narmada Sagar Dam Area, 28.09.1985, Coll. H.P. Agrawal; 10exs., Narmada Sagar Dam Area, 10.05.1985, Coll. H.P. Agrawal; Sarguja Dist. : 2 exs., Ew F.r.h. mainpat, 16.01.1975, Coll. S.K. Mishra.

Distribution : India : Madhya Pradesh (Jabalpur, Khandwa, Sarguja), Maharashtra, Orissa, Tripura, West Bengal.

Elsewhere : Bangladesh, Myanmar.

Remarks : Commonly found attached to stems, branches or leaves of trees.

53. *Rachis praetermissus* Blanford

1861. *Bulimus praetermissus* Blanford, *J. A. S. B.* xxx, p. 360.

1914. *Rachisellus praetermissus* : Gude, *Fauna of British India, Mollusca*, 2 : 275.

Material examined/Source : Ujjain Dist. : 3 exs., Bherogarh, 30.08.1990, Coll. R.K. Singh; Sarguja Dist. : 1 ex., Ew of F.r.h. mainpat, 27.01.1975, Coll. R.K. Singh.

Distribution : India : Madhya Pradesh (Ujjain, Sarguja).

Family FERUSSACIIDAE

Genus *Cecilioides* Ferussac, 1807

Subgenus *Geostilbia* Crosse, 1867

54. *Cecilioides (Geostilbia) balanus* (Reeve)

1850. *Achatina balanus* (Benson) Reeve, *Conch. Icon.*, 5, *Achatina*, pl. 20, fig. 109.

1914. *Caecilioides (Geostilbia) balanus* : Gude, *Fauna of British India, Mollusca*, 2 : 374.

2004. *Caecilioides (Geostilbia) balanus* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 148-149 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Material examined/Source : Mitra et al. 2004.

Distribution : India : Madhya Pradesh, Gujarat, Kashmir, Rajasthan, Uttar Pradesh and South India, drier parts of the country.

55. *Cecilioides (Geostilbia) bensoni* Gude

1914. *Caecilioides (Geostilbia) bensoni* : Gude, *Fauna of British India, Mollusca*, 2 : 375.

2004. *Caecilioides (Geostilbia) bensoni* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 149 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Material examined/Source : Mitra et al. 2004.

Distribution : India : Madhya Pradesh, Gujarat, Rajasthan, On plains. Drier parts.

Genus *Coilostele* Benson, 1864

56. *Coilostele scalaris* Benson

1864. *Coilostele scalaris* Benson, *Ann. Mag. Nat. Hist.*, (3)13 : 136.

1914. *Coilostele scalaris* : Gude, *Fauna of British India, Mollusca*, 2 : 376.

2004. *Coilostele scalaris*: Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 150 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra *et al.* 2004.

Distribution : India : Madhya Pradesh, Kashmir, Rajasthan, Uttar Pradesh.

Elsewhere : Sind.

Family SUBULINIDAE

Subfamily SUBULININAE

Genus *Subulina* Beck, 1837

57. *Subulina octona* (Bruguiere)

1789. *Bulimus octona* Bruguiere, *Encycl. Meth. Vers.*, 1 : 325.

1914. *Subulina octona* : Gude, *Fauna of British India, Mollusca*, 2 : 341.

2004. *Subulina octona* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 152 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Khargone Dist. : 5 exs., Barwani Rest House, 02.12.1971, Coll. V.V. Rao; Jabalpur Dist. : 2 exs., Sita Pahar, 25.09.1966, Coll. V.V. Rao; 1 ex., Pachpedi, 25.09.1966, Coll. H. Khajuria; 2 exs., Tilwara Ghat, 25.09.1966, Coll. H.P. Agrawal; Mandsaur Dist. : 1 ex., Near Jajudam, 13.08.1990, Coll. R.K. Singh.

Distribution : India : Madhya Pradesh (Khargone, Jabalpur, Mandsaur), Maharashtra, Kerala, Andaman and Nicobar Islands, Tamil Nadu.

Elsewhere : Widely distributed through out America (North and South), Europe; Mauritius, Scychelles, Sri Lanka, West Africa etc.

Genus *Glessula* Von Martens, 1850

58. *Glessula paupercula* (Blanford)

1861. *Achatina paupercula* Blanford, *J. A. S. B.* xxx, p. 362, pl. 1, fig. 16.

1914. *Glessula paupercula* : Gude, *Fauna of British India, Mollusca*, 2 : 431.

Material examined/Source : Jabalpur Dist. : 3 exs.; Sita Pahar, 06.11.1967, Coll. H. Khajuria; 2

exs., Rani Durgawati Samadhi, 25.09.1966, Coll. H.P. Agrawal; Khargone Dist. : 2 exs., Gavana Vill.gurudeshwar, 23.12.1971, Coll. H. Khajuria;

Distribution : India : Madhya Pradesh (Jabalpur, Khargone), Tamil Nadu.

59. *Glessula mullorum* (Blanford)

1861. *Achatina mullorum* Blanford, *J. A. S. B.* xxx, p. 362, pl. 1, fig. 17.

1914. *Glessula mullorum*: Gude, *Fauna of British India, Mollusca*, 2 : 437.

Material examined/Source : Jabalpur Dist. : 2 exs., Sita Pahar, 15.07.1967, Coll. H. Khajuria; 4 exs., Tilwara Ghat, 14.08.1966, Coll. H. Khajuria.

Distribution : India : Madhya Pradesh (Jabalpur), Tamil Nadu.

Genus *Lamellaxis* Strebel and Pfeffer, 1882

Subgenus *Allopeas* H.B. Baker, 1935

60. *Lamellaxis (Allopeas) gracile* (Hutton)

1834. *No. 5, Bulimus* ? Hutton, *J. Asiat. Soc. Beng.*, 3 : 84.

1914. *Opeas gracile* : Gude, *Fauna of British India, Mollusca*, 2 : 355.

2004. *Lamellaxis (Allopeas) gracile* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 152 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Ujjain Dist. : 1 ex., Jasinghpur Village, 09.04.1990, Coll. R.K. Singh; Jabalpur Dist. : 2 exs., Sita Pahar, 25.09.1966, Coll. H.P. Agrawal; 1 ex., Tilwaraghat, 25.09.1966, Coll. H. Khajuria; 3 exs., Pachpedi, 25.09.1966, Coll. H. Khajuria; Khargone Dist. : 3 exs., Barwani Rest House, 24.12.1971, Coll. H. Khajuria; Mandsaur Dist. : 2 exs., Near Bhanpur, 16.08.1990, Coll. R.K. Singh.

Distribution : Throughout India : Madhya Pradesh (Ujjain, Jabalpur, Khargone, Mandsaur).

Elsewhere : Most common in south east Asia.

Subfamily RUMININAE

Genus *Zootecus* Westerlund, 1887

61. *Zootecus chion* (Pfeiffer)

1856. *Bulimus chion* Pfeiffer, *P. Z. S.* p. 332.

1914. *Zootecus chion* : Gude, *Fauna of British India, Mollusca*, 2 : 355.

Material examined/Source : Mandasaur Dist. : 11 exs., Near Manasa, 15.08.1990, Coll. R.K. Singh; 11 exs., Near Gandhisagar, 17.08.1990, Coll. R.K. Singh; Hoshangabad Dist. : 5 exs., Shaffer Caves, 01.10.1990, Coll. U.A. Gajbe.

Distribution : India : Madhya Pradesh (Mandasaur, Hoshangabad), Maharashtra, Andhra Pradesh, Punjab.

Elsewhere : Afghanistan.

62. *Zootecus insularis* (Ehrenberg)

1831. *Pupa insularis* Ehrenberg, *Symb. Phys. Anim. Evert.*, Series 1, p.3.

1914. *Zootecus insularis* : Gude, *Fauna of British India, Mollusca*, 2 : 367.

2004. *Zootecus insularis* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 165 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Material examined/Source : Jabalpur Dist. : 3 exs., Sita Pahar, 25.09.1966, Coll. H. Khajuria; 4 exs., Rani Durgawati Samadhi, 25.09.1966, Coll. H.P. Agrawal.

Distribution : India : Drier regions of the country. Madhya Pradesh (Jabalpur), Andhra Pradesh, Bihar, Delhi, Gujrat, Kashmir, Maharashtra, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh.

Elsewhere : Africa, Arab countries, Myanmar, Sri Lanka.

Family ACHATINIDAE

Genus *Achatina* Lamarck, 1799

Subgenus *Lissachatina* Bequaert, 1951

63. *Achatina (Lissachatina) fulica fulica* (Bowdich)

1822. *Achatina fulica* 'Lamarck' Bowdich, *Elements of Conchology*, 1, pl. 13, fig. 8.

2004. *Achatina fulica fulica* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 166 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Material examined/Source : Mitra *et al.* (2004).

Distribution : India : Throughout the country except north-west region.

Elsewhere : Malagasy, Mauritius, Scyelles, Singapore, Zanzibar.

Family STREPTAXIDAE

Subfamily ENNEINAE

Genus *Sinoennea* Kobelt, 1904

64. *Sinoennea planguncula* (Benson)

1863. *Pupa planguncula* Benson, *Ann. Mag. Nat. Hist.*, (3)12 : 426.

1908. *Ennea planguncula*: Blanford & Godwin-Austen, *Fauna of British India, Testacellidae and Zonitidae*, p. 23.

2004. *Sinoennea planguncula* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 180 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Material examined/Source : Mitra *et al.*, 2004.

Distribution : India : Madhya Pradesh, Andhra Pradesh, Orissa.

Remarks : Not common (Mitra *et al.*, 2004).

Family SUCCINEIDAE

Subfamily CATINELLINAE

Genus *Quickia* Odhner, 1950

65. *Quickia gravelyi* (Rao)

1924. *Succinea gravelyi* Rao, *Rec. Indian Mus.*, 26 : 401.

1971. *Quickia gravelyi* : Patterson, *Mal. Rev.*, 4 : 171.

2004. *Quickia gravelyi* : Mitra, Dey and Ramakrishna, *Pictorial Handbook- Indian Land Snails* : 205 (Publ. : Director, *Zool. Surv. India*, Kolkata).

Material examined/Source : Khargone Dist. : 28 exs., Barwani, 02.07.1971, Coll. V.V. Rao; Jabalpur Dist. : 2 exs., Sita Pahar, 25.09.1966, Coll. H. Khajuria.

Distribution : India : Madhya Pradesh (Khargone, Jabalpur), Maharashtra, Andhra Pradesh, Tamil Nadu.

Family HELICARIONIDAE

Subfamily SESARINAE

Genus *Kaliella* Blanford 1863

66. *Kaliella barrackporensis* Pfeiffer

1952. *Helix barrackporensis* Pfeiffer, *Proc. Zool. Soc. Lond.*, 1852 : 156.

1908. *Kaliella barrakporensis* : Blanford & Godwin-Austen, *Fauna of British India, Mollusca*, (Testacellidae & Zonitidae) p. 258.

2004. *Kaliella barrakporensis* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 211 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra et al. (2004).

Distribution : India : Widely distributed from Kashmir to Kanya Kumari.

Elsewhere : Bangladesh, Myanmar, Pakistan, Sri Lanka.

Family ARIOPHANTIDAE

Subfamily ARIOPHANTINAE

Genus *Ariophanta* Desmoulins, 1829

67. *Ariophanta laevipes* (Muller)

1856. *Helix laevipes* Muller, *Hist. Ver.*, 2 : 22.

1908. *Ariophanta laevipes* : Blanford and Godwin-Austen, *Fauna of British India, Mollusca, Testacellidae & Zonitidae* : 29.

2004. *Ariophanta laevipes* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 226-227 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Balaghat Dist. : 1 ex., Mukki, 22.01.1991, Coll. R.K. Ghosh; 46exs., Mukki, 24.01.1991, Coll. R.K. Ghosh.

Distribution : Madhya Pradesh (Balaghat), Maharashtra, Andhra Pradesh, Gujrat.

Remarks : Common in gardeners.

Genus *Cryptozonia* Morch, 1872

68. *Cryptozonia semirugata* (Beck)

1837. *Galaxis semirugata* Beck, *Ind. 1837* : 42.

1908. *Ariophanta semirugata* : Blanford and Godwin-Austen, *Fauna of British India, Mollusca, Testacellidae & Zonitidae* : 35.

2004. *Cryptozonia semirugata* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 236-237 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra et al. (2004).

Distribution : India : Peninsular part of the country, from Gujarat southwards.

Elsewhere : Sri Lanka.

Subfamily MACROCHLAMYDINAE

Genus *Macrochlamys* Benson, 1832

69. *Macrochlamys indica* (Godwin & Austen)

1908. *Macrochlamys indica* Blanford & Godwin-Austen, *Fauna of British India, Mollusca, Testacellidae & Zonitidae* : 95.

2004. *Macrochlamys indica* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 255-256 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra et al. (2004).

Distribution : India : Common throughout, except the drier parts of north-west region.

Elsewhere : Bangladesh, Sri Lanka.

Family CAMAENIDAE

Subfamily CAMAENINAE

Genus *Landouria* Godwin-Austen, 1918

70. *Landouria hengdanensis* Godwin-Austen

1918. *Landouria hengdanensis* Godwin-Austen, *Rec. Indian Mus.*, 8 : 608.

2004. *Landouria hengdanensis* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 312 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra et al (2004)

Distribution : India : Madhya Pradesh, Arunachal Pradesh, Maharashtra.

Genus *Trachia* Albers, 1860

71. *Trachia asperella* (Pfeiffer)

1846. *Helix asperella* Pfeiffer, *Symb. Hist. Helic.*, 3 : 78.

1914. *Planispira (Trachia) asperella* : Gude, *Fauna of British India, Mollusca*, 2 : 155.

2004. *Trachia asperella*: Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 314-315 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra et al (2004).

Distribution : India : Madhya Pradesh, Andhra Pradesh, Maharashtra.

72. *Trachia crassicosata* (Benson)

1848. *Helix crassicosata* Benson, *Ann. Mag. Nat. Hist.*, (2)2 : 159.

1914. *Planispira (Trachia) crassicosata* : Gude, *Fauna of British India, Mollusca*, 2 : 158.

2004. *Trachia crassicostata* : Mitra, Dey and Ramakrishna, *Pictorial Handbook—Indian Land Snails* : 315-316 (Publ. : Director, Zool. Surv. India, Kolkata).

Material examined/Source : Mitra *et al.* (2004).

Distribution : Peninsular India.

made in this area. Off course this is not a final picture and it seems that many species still remain to be described for which more surveys are needed which will undoubtedly reveal the existence of much more species than what is known today.

SUMMARY

An attempt has been made here to give a consolidated list of land and freshwater mollusc species reported from Madhya Pradesh. The present paper depicts altogether 72 species belonging to 38 genera, under 24 families. This list of land and freshwater Mollusca of Madhya Pradesh State is given on the basis of past and present records and from the recent surveys

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REFERENCES

- ABBOTTS, T. T. 1989. *Compendium of Land shells*, American Malacologists Inc. Melborn.
- AGARWAL, H.P. 1976. Report on the land mollusca of Jabalpur (Mollusca : Stylammatophora). *Newsl. zool. Surv. India*, 2(3) : 105-107.
- AGARWAL, H.P. 1977. A report on the Mollusca from Madhay National Park, Shivpuri, Madhya Pradesh. *Newsl. zool. Surv. India*, 3(5) : 284-287.
- AGARWAL, H.P. 1995. Mollusca. In : *Fauna of Kanha Tiger Reserve, Fauna of Conservation Areas No. 7* : 33-39 (Published by Director, Zool. Surv. India, Calcutta).
- AGARWAL, H.P. and MATHUR, D.S. 1978. On a Collection on Molluscs from Sarguja (M.P.). *Indian Zoology*. XIX(L) : 121-124.
- ANNANDALE, N. 1919. The fauna of certain small streams in Bombay Presidency, *Rec. Indian Mus.*, 16 : 117-120.
- ANNANDALE, N. and PRASHAD, B. 1919. Some freshwater Mollusca from the Bombay Precidency, *Rec. Indian Mus.*, 16 : 139-152, pls. 4,5.
- BLANFORD, W.R. 1863. "Descriptions of *Cremnoconchus syhadrensis* and *Lithotis rupicola* two new generic forms of Mollusca inhabiting cliffs in the Western Ghats of India. *Ann. Mag. nat. Hist.* (3)12 : 184-187. pl. 4.
- BLANFORD, W.T. 1870. Contributions to Indian Malacology, No.XI Descriptions of new species of *Paludomus*, *Cremnoconchus*, *Cyclostoma* and of Helicidae from various parts of India. *J. asiat. Soc. Beng.*, 39(2) : 9-25, pl. 3.
- BLANFORD, W.T. 1880. Contributions to Indian Malacology No.XII, Descriptions of new land and freshwater shells from Southern and Western India, Burmah, the Andaman Islands. *J. asiat. Soc. Beng.*, 49(2) : 181-222, pl. I,II.
- BLANFORD, W.T. & GODWIN AUSTEN H.H. 1908. The fauna of British India, including Ceylon and Burma: Mollusca testacellidae and Zonitidae. Taylor & Francis, London.

- GUDE, G.K. 1914. The fauna of British India including Ceylon and Burma Mollusca II (Iroknomorphidae Tanellidae) Taylor and Francis, London.
- GUDE, G.K. 1921. The fauna of British India including Ceylon and Burma Mollusca III Land operculate, Taylor & Francis, London.
- HORA, S.L. 1926. On some interesting features of the Western Ghats, *J. Bombay nat. Hist. Soc.*, **31** : 447-449.
- MITRA, S. C., DEY, A. and RAMAKRISHNA. 2004. Pictorial Handbook-Indian Land Snails (Selected species) : 1-344 (Published- Director, *Zool. Surv. India*, Kolkata)
- MUKHERJEE, H.P. THAKUR, D.K. MITRA, S.C. and BARUA, S., 2000. Mollusca : Fauna of Tripura. *Rec. zool. Surv. India, State Fauna Series*, **7(4)** : 323-355.
- PATIL S.G. 2003. Occurrence of freshwater Bivalves (Bivalvia : Unionidae) in Pusad, Yavatmal district, Maharashtra, *Zoos Print Journal*, **18(9)** : 1195.
- PATIL, S.G. and RAMAKRISHNA. 2004. Mollusca In : *Fauna of Pench National Park, Conservation Area Series*, **20** : 141-158 (Published by the Director, *Zool. Surv. India*, Kolkata).
- PATIL, S.G. and RAMAKRISHNA. 2005. Freshwater Mollusca, In : *Fauna of Nathsagar Wetland and Jaikwadi Bird Sanctuary (Maharashtra), Wetland Ecosystem Series*, **7** : 101-114 (Published by the Director, *Zool. Surv. India*, Kolkata).
- PATIL, S.G. 2005. Freshwater Mollusca of Melghat Tiger Project Maharashtra State (Published by the Director, *Zool. Surv. India*, Kolkata).
- PATIL, S.G., RAMAKRISHNA and S.C. MITRA. 2006. Mollusca. In : *Fauna of Tadoba–Andhari Tiger Reserve (Maharashtra), Conservation Area Series*, **25** : 161-176. (Published by the Director, *Zool. Surv. India*, Kolkata).
- PATIL, S.G. and TALMALE, S.S. 2003. Occurrence of a pestiferous land Mollusca from Maharashtra. On new host plants *Bionotes*, **5(3)** : 71.
- PATIL, S.G. and TALMALE, S.S. 2004. Biodiversity of a few aquatic fauna in Melghat Tiger Reserve, District Amaravati, Maharashtra. In : Proceedings of Symposium on three decades of project Tiger in Melghats, 8-9 October, 2004. Melghat Tiger Reserve, Technical Bulletin No. **25** : 42-48.
- PATIL, S.G. and TALMALE, S.S. 2005. A new record of land planeria and mollusca predated on earthworms. *Bionotes*, **7(4)** : 121.
- PATIL, S.G. and TALMALE, S.S. 2005. A checklist of land and freshwater mollusca of Maharashtra State. *Zoos' Print Journal*, **20(6)** : 1912-1913.
- PRESTON, H.B. 1915. Fauna of British India including Ceylon and Burma, Mollusca (Freshwater Gastropoda and Pelecypoda), London, xix + 244 pp.
- RAMAKRISHNA and DEY, ANIRUDHA. 2007. Handbook on Indian freshwater molluscs : 1-399. (Published- Director, *Zool. Surv. India*, Kolkata)
- RAO, H.S. 1925. On certain succineid Molluscs from the Western Ghats, Bombay Presidency. *Rec. Indian Mus.*, **27** : 385-400.
- RAO, V.T. and RAMADOSS, F. 1953. Damage to vegetable crops by slugs observed in the Krishna District and the experiments on their control. *J. Zool. Soc. India*, **5** : 211-216.

- SUBBA RAO, N.V. 1989. Handbook freshwater Molluscs of India, Ed. Director, *Zoological Survey of India*, Calcutta 289 pp.
- SUBBA RAO, N.V. and MITRA, S.C. 1975. On collections of Mollusca from Poona and adjacent districts. *Newsl. Zool. Surv. India*. 1(4) : 77-79.
- SUBBA RAO, N.V. and MITRA, S.C. 1979. On land and freshwater Molluscs of Pune district, Maharashtra. *Rec. Zool. Surv. India*, 75 : 1-37.
- SURYA RAO, K.V., S.C. MITRA and S. MAITRA. 2002. Mollusca of Ujani Wetland. Wetland ecosystem series 2 fauna of Ujani, 110-115.
- TONAPI, G.T. and MULHERKAR, LEELE. 1963. On the freshwater molluscs of Poona, *J. Bombay nat. Hist. Soc.*, 60(1) : 104-120. Map., pls. i-v.
- TONAPI, G.T. 1971. Studies on the freshwater and amphibious Mollusca of Poona with notes on their distribution Part II. *J. Bombay nat. Hist. Soc.*, 68(1) : 115-126.

FRESHWATER OSTRACODS (ARTHROPODA : CRUSTACEA)

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INTRODUCTION

Freshwater Ostracods are common in India. Most of them are benthic, some occur among aquatic vegetation and algal mats, and a few are planktonic. Their role in an aquatic ecosystem is well established (Hoff, 1942). Ostracods form an important component in the food of aquatic macro organisms (Forbes, 1888, Kornicker and Sohn, 1971). They serve as ecological indicators (Puri, 1964), and acts as secondary hosts for a number of fish parasites (Hoff, 1942; Hoffmann, 1967). They are used as stratigraphic markers (Moore, 1961; Howe, 1969).

Taxonomy of Ostracods has mainly been studied in America, Europe and South Africa. Consolidated work on Indian Ostracods was published by Victor & Fernando (1979), which was mostly based from southern part of India. Besides, the Indian Ostracods have been reported by Klie (1927), Arora (1931), Hartmann (1964). Deb (1972, 1973 & 1978), Victor and Michael (1975) and Battish (1978, 1981) have reported several new records/species of Ostracods from other states of India but no work has been done on Ostracods of Madhya Pradesh and Chhattisgarh except the work done by the authors mentioned in the following paragraph.

The work on freshwater Ostracod fauna of Madhya Pradesh (at present Madhya Pradesh & Chhattisgarh) has been undertaken to record the occurrence of Ostracod species in this region and

to review the taxonomic status of these species in relation to reported species of India. Hitherto, no comprehensive account on the Ostracoda fauna of Madhya Pradesh & Chhattisgarh is available, although some scattered papers published by Harshey and Victor (1983), Harshey & Srinivasan (1984), Harshey & Shrivastava (1983 & 1987), Harshey & Patil (1988), Thilak *et al.*, (1994).

MATERIALS AND METHODS

Originally the study area of this project was Madhya Pradesh which is recently divided into two states, Madhya Pradesh & Chhattisgarh. Madhya Pradesh is in the central part of the country, having an area of 308000 sq. km. It has a topography that is crossed from north to south by plains separated by upland areas. Madhya Pradesh receives an average annual rainfall of about 1200 mm (nearly 50 in), of which 90 percent falls during the monsoon season. It has total 45 districts of which 20 were surveyed for Ostracoda samples. Chhattisgarh has been carved out from the state of Madhya Pradesh on 1st November 2000 and is surrounded by Andhra Pradesh and Orissa. Area of the state is 135,100 Sq.km. It has total 18 districts of which 4 were surveyed for Ostracoda samples. Average rainfall more or less similar to Madhya Pradesh.

Taxonomic studies are based on the Ostracoda collection made from various districts of Madhya Pradesh & Chhattisgarh. About 350 samples from various freshwater bodies like lakes, ponds,

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ditches, wells and rivers were collected for this project. Apart from these collections samples collected by other workers were also used. All the material collected and identified are deposited at Central Regional Station, Zoological Survey of India, Jabalpur, Madhya Pradesh.

Collections were made by using cone shaped plankton net No.10/25 made of the bolting silk of mesh size 154/67 μ . Several sweeps were made just above the substratum of the habitat and also among weeds. The bottom of the habitat was also disturbed to ensure the collection of Ostracods living in the upper most layer of the substratum. Samples were immediately fixed and preserved in 10% formalin. The Ostracods were later separated and transferred to vials containing 70% methanol. The soft parts were separated by removing the shell. The soft parts were transferred to a clean glass slide, and the appendages were teased out in a drop of polyvinyl lacto phenol / glycerin. The appendages were arranged in the desired positions and the preparation was allowed to dry for 10-12 hours. Then a cover slip was placed over the dissection using a fresh drop of mountant. Identification was carried under a stereomicroscope.

SYSTEMATIC LIST

Due to the difference of approaches amongst the workers, no stable classification of Ostracods has been achieved as yet. Many schemes of classification have been proposed so far (Moore, 1961; Van Morkhoven, 1962; Pokorny, 1965; Hartmann & Puri, 1974; Victor & Fernando, 1979 etc.). In this work the scheme of classification adopted by Victor & Fernando (1979) has been followed with some alterations in the light of current investigations. All the 42 species collected during this study belong to the super family Cypridacea Baird, 1845, which in turn divided into four families. The complete classified list is given below.

Class CRUSTACEA

Subclass OSTRACODA Latrielle, 1806

Order PODOCOPIDA Muller, 1894

Suborder PODOCOPA Sars, 1866

Superfamily CYPRIDACEA Baird, 1845

Family CYPRIDIDAE Baird, 1845

Subfamily CYPRIDINAE Baird, 1845

Genus *Cypris* O.F. Muller, 1776

1. *Cypris subglobosa* Soweby, 1840

Genus *Pseudocypris* Daday, 1908

2. *Pseudocypris dravidensis* Victor & Michael, 1979

Genus *Strandesia* Vavra, 1895

3. *Strandesia perakensis* Victor & Fernando, 1981

4. *Strandesia neelimae* Harshey & Shrivastava, 1987

5. *Strandesia weberi* (Moniez), 1892

6. *Strandesia madhuriae* Harshey & Shrivastava, 1987

7. *Strandesia purpurascens* (Brady), 1886

8. *Strandesia odiosa* (Moniez), 1892

9. *Strandesia victori* Harshey & Srinivasan 1984

10. *Strandesia rotunda* Hartmann, 1964

11. *Strandesia parva* Hartmann, 1964

12. *Strandesia elongata* Hartmann, 1964

13. *Strandesia indica* Hartmann, 1964

14. *Strandesia meghnae* Harshey & Shrivastava 1987

Genus *Cyprinotus* Brady, 1866

15. *Cyprinotus nudus* Victor & Michael, 1975

Genus *Hemicypris* Sars, 1903

16. *Hemicypris pyxidata* (Moniez) 1892

17. *Hemicypris anomala* (Klie) 1938

18. *Hemicypris falcatus* Victor & Fernando 1976.

Genus *Heterocypris* Claus, 1892

19. *Heterocypris* sp.

Subfamily DOLEROCYPRIDINAE

Genus *Dolerocypris* Kaufmann, 1900

20. *Dolerocypris sinensis* Sars, 1903

Genus *Astenocypris* Muller, 1912

21. *Astenocypris papyracea* (Sars), 1981

22. *Tanycypris pellucida* (Klie), 1932
 Subfamily HERPETOCYPRIDINAE
 Kaufmann, 1900
 Genus *Stenocypris* Sars, 1889
23. *Stenocypris derupta* Vavra, 1906
24. *Stenocypris hislopi* Ferguson, 1969
25. *Stenocypris major* (Baird), 1859
26. *Stenocypris distincta* Victor & Fernando, 1977
27. *Stenocypris orientalis* Victor & Fernando, 1981
28. *Stenocypris jabalpurensis* Harshey & Patil, 1988
 Genus *Parastenocypris* Hartmann, 1964
29. *Parastenocypris biswasi* (Deb) 1982
 Genus *Chrissia* Hartmann, 1957
30. *Chrissia humilis* (Klie) 1932 spp. *indica*
31. *Chrissia formosa* (Klie) 1939.
 Subfamily CYPRIDOPSINAE Kaufmann, 1900
 Genus *Cypridopsis* Brady, 1868
32. *Cypridopsis dispar* Hartmann, 1964
 Genus *Oncocypris* G.W. Muller, 1898
33. *Oncocypris pustulosa* Gurney, 1916
 Genus *Pseudocyprretta* Klie, 1932
34. *Pseudocyprretta maculata* Klie, 1932
 Subfamily CYPRETTINAE Hartmann, 1964
 Genus *Cyprretta* Vavra, 1895.37
35. *Cyprretta globosa* Brady, 1877
36. *Cyprretta raciborskii* (Grochmalicki), 1915
37. *Cyprretta turgida* (Sars), 1896
38. *Cyprretta seurati* Gauthier, 1929
 Family CANDONIDAE Kaufmann, 1900
 Subfamily CYCLOCYPRIDINAE Kaufmann, 1900
 Genus *Physocyprria* Vavra 1898
39. *Physocyprria furfuracea* (Brady), 1886
40. *Physocyprria crenulata* (Sars), 1961
 Family NOTODROMADIDAE Kaufmann, 1900
 Genus *Centrocypris* Vavra, 1897
41. *Centrocypris matthaii* (Arora), 1931

Family ILYOCYPRIDIDAE Kaufmann, 1900

Genus *Ilyocypris* Brady & Norman, 1889

42. *Ilyocypris* sp.

SYSTEMATIC ACCOUNT

Family CYPRIDIDAE Baird, 1845

Subfamily CYPRIDINAE Baird, 1845

1. *Cypris subglobosa* Sowerby

1840. *Cypris subglobosa* Sowerby, in J.C. Malcomson *Trans. Geol. Soc. London. Seer.*, 9.5.47.

1972. *Cypris subglobosa* Sowerby; I. Okubo, *Res. Bull. Shujitsu J. Coll. Okayama*, 1 : 61-67, 4 pls.

1979. *Cypris subglobosa* Sowerby; Victor & Fernando, *Rec. zool. Surv. India*, 74 : 159-161.

Material examined : Madhya Pradesh : 5 exs, 4.5.1978, Balsagar, coll. D.K. Harshey; 3 exs., 1.8.1978 ; 15 exs., 4.8.1978, Balsagar, Jabalpur, 6 exs., 4.7.1979; 10 exs, 24.12.1984, Ranital; 3 exs., 1.6.1990, Ranital, Jabalpur, all coll D.K. Harshey. 10 exs., 24.9.2005, Bhoj Wetland, Bhopal; 3 exs., 27.9.2005, Bhoj Wetland, Bhopal; 6 exs., 7.11.2006, Bhoj Wetland, Bairagarh, Bhopal; 2 exs., 10.3.2008, Budagar tank, Jabalpur, all coll. J. Thilak. Chhattisgarh : 3 exs., 7-2-90; Bijapur, Dantewada, coll. R.K. Ghose.

Diagnostic characters : Valves subglobular, both anterior and posterior margins broadly rounded; both anterior and posterior margins hairy; surface with thickly set thimble shaped depressions and hairs. Length 1.42-1.45 mm; height 0.92-0.94 mm. Natatory setae barely reaching the tips of terminal claws. Furcal rami symmetrical, slender; subterminal claw slightly more than ½ the length of the terminal claw, both claws pectinate; dorsal seta setulate, more than ½ the length of the subterminal claw; terminal seta short, dorsal margin lined with small spines for more than ½ the length of the ramus.

Distribution : India : Andhra Pradesh, Kerala, Chhattisgarh (Dantewada), Madhya Pradesh (Bhopal, Jabalpur), Maharashtra and Tamil Nadu.

Elsewhere : Malaysia, Philippines, Russia, Sri Lanka, U.S.A and Yougoslavia.

2. *Pseudocypris dravidensis* (Victor & Michael)

1975. *Cypris globulosa* Victor and Michael, *J. Nat. Hist.*, **9** : 366.
 1979. *Cypris dravidensis* Victor and Fernando, *Rec. zool. Surv. India.* **74** : 164.

Material examined : Madhya Pradesh : 11 exs., 19.10.1981, Balsagar, Jabalpur, coll. D.K. Harshey; 11 exs 24.09.2006.

Diagnostic characters : Valves globular; right valve with a distinct flange. Valve surface punctate. Furcal rami symmetrical; dorsal seta more than ½ the length of the subterminal claw, both the terminal and subterminal claws pectinate; dorsal margin armed with short spines.

Distribution : India : Madhya Pradesh (Jabalpur), Maharashtra and Tamil Nadu.

Remarks : It is observed that the carapace and soft part morphology of the species *Cypris dravidensis* (Victor and Fernando) collected during the present study notably resembles to the genus *Pseudocypris* Daday, 1908 except the lateral alae. Therefore the species is described here as the genus *Pseudocypris*.

3. *Strandesia perakensis* Victor and Fernando

1981. *Strandesia perakensis* Victor and Fernando, *Arch. Hydrobiol. Suppl.* **58** : 496.

Material examined : Madhya Pradesh : 6 exs. 22.9.1980, Balsagar, Jabalpur, coll. P.D. Rane.

Diagnostic characters : Valve surface with 10-12 posteriorly directed spines. Carapace moderately inflated, valves subovate.

Distribution : India : Madhya Pradesh (Jabalpur).

Elsewhere : Indonesia and Malaysia.

4. *Strandesia neelimae* Harshey and Shrivastava.

1987. *Strandesia neelimae* Harshey and Shrivastava, *J. Curr. Biosci.*, **4**(2) : 46.

Material examined : Madhya Pradesh : 5 ex., 3.10.1981, Panagar tank, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Carapace moderately inflated. Valves unequal. Right valve having 10

spines at the posterior end. Surface both the valves striated and with blue spots.

Distribution : India : Madhya Pradesh (Jabalpur).

5 *Strandesia weberi* (Moniez), 1892

1982. *Cypris weberi* Moniez. *Zoologisch Ergebnisse nieder Liansch Ost. Indien.* 129.
 1979. *Strandesia weberi* (Moniez) Victor and Fernando. *Can. J. Zool.*, **57** : 7.

Material examined : Madhya Pradesh : 7 exs. 31.12.1980, Balsagar, Jabalpur distt, coll. D.K. Harshey; 1.6.1990, Shahpura Road, Jabalpur, coll. R.K. Singh; 8 exs. 12.09.1991, Amarwara, Chhindwara, coll. R.K. Singh; Chhattisgarh : 12 exs. 31.01.1990, Kutru, Dantewada, coll. R.K. Ghose.

Diagnostic characters : It is a distinct species with a long spine on the right valve and two short spines of unequal length on the anterior margin of the left valve.

Distribution : India : Madhya Pradesh (Chhindwara, Jabalpur), Chhattisgarh (Dantewada).

Elsewhere : Sri Lanka, Malaysia, Philippines and Indonesia.

Remarks : Harshey and Shrivastava (1982) reported this species for the first time from India. Indian species show longer posterior spine on the right valve than that of Philippines specimens and also differs from Malaysian specimens in which posterior spine of right valve is steeply pointed downwards.

6. *Strandesia madhuriae* Harshey and Shrivastava

1987. *Strandesia madhuriae* Harshey and Shrivastava *J. Curr. Biosci.*, **4**(2) : 44-45.

Material examined : Madhya Pradesh : 5 exs. 3.10.81, Panagar, Jabalpur distt. coll. D.K. Harshey.

Diagnostic characters : Carapace moderately inflated in lateral view, surface with striations. Anterior margin broadly rounded than the posterior margin. Posterior margin of each valve has a spine.

Distribution : India : Madhya Pradesh (Jabalpur).

7. *Strandesia purpurascens* (Brady)

1886. *Cypris purpurascens* Brady, *J. Lim. Soc. Zool.*, **19** : 29.
1977. *Strandesia purpurascens* (Brady) Neal. *Aspects of Ecology and Zoogeography of Recent and Fossil Ostracoda*—The Hague (Junk) : 273.
1979. *Strandesia purpurascens* (Brady), Victor & Fernando, *Rec. zool. Surv. India*, **74** : 17

Material examined : Madhya Pradesh : 3 exs. 11.04.1980, Balsagar tank, Jabalpur, coll. S.G. Patil; 4 exs., 27.09.2005, Bhoj Wetland, Bhopal, coll. J. Thilak.

Diagnostic characters : Valves sub-elliptical, laterally elongated, both anterior and posterior margins rounded; hairy. Length of valves—0.80-0.85 mm, height—0.40-0.44 mm. Natatory setae of the second antenna smooth and reaching the tips of the toothed terminal claws ; sensory club three segmented. Furcal rami symmetrical; terminal & subterminal claws slender with spines; terminal seta little longer than the terminal claw and smooth; dorsal seta setulate.

Distribution : India : Madhya Pradesh (Bhopal, Jabalpur), Tamil Nadu.

Elsewhere : Indonesia, Malaysia, Thailand & Sri Lanka.

Remarks : Victor and Fernando reported this species from India (1979) and Malaysia (1981). In Malaysian specimens spines of furcal rami are in groups, but in present specimens spines are continuous, similar to their Indian specimens.

8. *Strandesia odiosa* (Moniez)

1892. *Cypris odiosa* Moniez, *Zoologische Ergebnisse Niederlandisch Ost. Indien*-M Weber, 131.
1979. *Strandesia odiosa* (Moniez) : Victor & Fernando, *Can. J. Zool.*, **57** : 7-10.

Material examined : Madhya Pradesh : 20 exs., 3.10.1980, Balsagar, Jabalpur, coll. H.P. Agrawal; 5 exs., 22.11.1981, Barela, Jabalpur, coll. U.A. Gajbe; 5 exs., 27.10.1990, Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valves sub ovate in lateral view; anterior and posterior margins broadly

rounded. Length of valves 2.16-2.18 mm, height 1.9-2.1 mm. Furcal rami symmetrical; posterior margins with strong spines arranged in six linear groups.

Distribution : Madhya Pradesh (Jabalpur).

Elsewhere : Indonesia, Malaysia, Philippines.

Remarks : A similar species *Strandesia flavescens* Klie was also collected from this region, which is smaller in size and it is treated as a junior synonym of *Strandesia odiosa* (Victor & Fernando, 1979).

9. *Strandesia victori* Harshey and Srinivasan

1984. *Strandesia victori* Harshey and Srinivasan, *Biovigyanam*, **13**(2) : 104.

Material examined : Madhya Pradesh : 4 exs. 3.11.1980, Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Each valve punctuate with reticulations and three prominent blue spots. Furca curved and short.

Distribution : India : Madhya Pradesh (Jabalpur).

10. *Strandesia rotunda* Hartmann

1964. *Strandesia rotunda* Hartmann, *Int. Rev. gesamen. Hydrobiol. Syst. Beih.*, **3** : 112.

Material examined : Madhya Pradesh : exs. 25.09.1981, Napier Town, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valves ovate; valve surface hairy. Terminal seta of furca $3/4^{\text{th}}$ the length of terminal claw, smooth. Length 0.83-0.86 mm and height 0.51-0.53.

Distribution : Gujarat, Maharashtra, Madhya Pradesh (Jabalpur), Kerala & Tamil Nadu.

11. *Strandesia parva* Hartmann, 1964

1964. *Strandesia parva* Hartmann, *Int. Rev. gesamen. Hydrobiol. Syst. Beih.*, **3** : 119.
1979. *Strandesia parva* Hartmann : Victor & Fernando, *Rec. Zool. Surv. India*, **74** : 176.

Material examined : Madhya Pradesh : 8 exs., 25.9.1981, Napier Town, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Left valve overlaps the right; surface punctate. Length-1.17-1.28 mm, height - 0.63-0.61 mm. Terminal seta of the furca approximately half the length of the terminal claw, smooth ; both the claws smooth ; dorsal margin armed with inconspicuous spines along the entire length.

Distribution : India : Kerala, Madhya Pradesh (Jabalpur), Maharashtra & Rajasthan.

12. *Strandesia elongata* Hartmann

1964. *Strandesia elongata* Hartmann *Int. Rev. Gesamten Hydrobiol. Syst. Beih.*, 3 : 98.

1979. *Strandesia elongata* Hartmann : Victor & Fernando, *Rec. Zool. Surv. India*, 74 : 169.

Material examined : Madhya Pradesh : 6 exs. 9.1.1979, Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valves sub-elliptical; elongate, entire margin of the valve lined with densely packed hairs except dorsally, valve surface hairy and punctate. Length of valves 0.72-0.81 mm; height 0.30-0.38 mm. Natatory setae of second antenna smooth, barely reaching the tips of terminal claws. Furcal rami symmetrical; terminal and subterminal claws slender, dorsal margin of the entire ramus lined with delicate spines.

Distribution : India : Andhra Pradesh, Goa, Tamil Nadu, Kerala & Madhya Pradesh (Jabalpur).

13. *Strandesia indica* Hartmann

1964. *Strandesia indica* Hartmann, *Int. Rev. Gesamten Hydrobiol. Syst. Beih.*, 3 : 101.

1979. *Strandesia indica* Hartmann, Victor & Fernando, *Rec. Zool. Surv. India*, 74 : 169-171.

Material examined : Madhya Pradesh : 10 exs. 1.11.1978, Balsagar, Jabalpur, coll. P.D. Rane; 25 exs., 6.9.1994, Pahargarh, Morena, coll. R.K. Singh.

Diagnostic characters : Valves sub-elliptical, entire margin of the valve hairy except dorsally; valve surface sparsely hairy and punctate. Length 0.88-0.96 mm, height 0.45-0.48 mm. Natatory setae of second antenna smooth, slightly reaching beyond the tips of the terminal claws. Furcal rami

symmetrical, long and slender; terminal & subterminal claws slender, lined with spines on the dorsal edge; terminal seta hairy, little shorter than terminal claw.

Distribution : India : Gujarat, Tamil Nadu, Kerala, West Bengal, Madhya Pradesh (Jabalpur, Morena).

14. *Strandesia meghnae* Harshey and Shrivastava

1987. *Strandesia meghnae* Harshey and Shrivastava, *J. Curr. Biosci.*, 4(2) : 44.

Material examined : Madhya Pradesh : 6 exs., 14.10.1981, Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valve ovate in lateral view, anterior margin broadly rounded than posterior. Valve surface punctate. Natatory setae of antenna plumose. Maxillary spines toothed. Furcal rami symmetrical, curved anteriorly on dorsal side and posteriorly on ventral side.

Distribution : India : Madhya Pradesh (Jabalpur).

15. *Cyprinotus nudus* Victor and Michael

1975. *Cyprinotus nudus* Victor and Michael, *J. Nat. Hist.* 9 : 361.

Material examined : 10 exs., 23.10.1981, Barela, Jabalpur, coll. S.G. Patil.

Diagnostic characters : Valves subovate, unequal; left valve larger than the right, valve surface smooth. Length-1.2-1.3 mm, height - 0.7-0.8 mm. Furcal rami symmetrical, nearly straight; dorsal seta nearly ½ the length of terminal claw; dorsal margin of ramus hairy.

Distribution : India : Tamil Nadu & Madhya Pradesh (Jabalpur).

16. *Hemicypris pyxidata* (Moniez)

1892. *Cyprinotus pyxidatus* Moniez, *Landische Ost. Indien*, 2 : 134.

1903. *Hemicypris pyxidata* (Moniez) : Sars, *Arch. Math. Naturv. Kristiania*, 25 : 3-44.

Material examined : Madhya Pradesh : 18 exs. 10.09.1991, Bhartadeo, Chhindwara, coll. R.K.

Singh; 5 exs. Alot, Ratlam, coll. R.K. Singh; 20 exs. 06.09.1994, Jagved Nagar, Morena, coll. R.K. Singh; 3 exs., 28.9.2005, Bhoj Wetland, Bhopal, coll. J. Thilak.

Diagnostic characters : Valves subovate, unequal; right valve overlaps the left, left valve tuberculate, anterior and posterior margins rounded and hairy, valve surface dotted. Length of valves 0.93-0.98 mm, height 0.66-0.68 mm. Furcal rami symmetrical, slightly curved, sub terminal and terminal claws pectinate, dorsal seta longer than the subterminal claw, setulate, terminal seta short.

Distribution : India : Tamil Nadu & Madhya Pradesh (Bhopal, Chhindwara, Morena, Retlam).

Elsewhere : Sri Lanka & Sumatra.

17. *Hemicypris anomala* (Klie)

1938. *Hemicypris anomala* Klie. *Bull. Biogeogra. Soc. Jpn.* 8 : 23.

1979. *Hemicypris anomala* (Klie), Victor & Fernando, *Rec. Zool. Surv. India.* 74 : 183.

Material examined : Madhya Pradesh : 13 exs. 10.09.1994, Rampurkala, Morena, coll. R.K. Singh.

Diagnostic characters : Valves sub-triangular, unequal, left valve tuberculated ; valve margins hairy; valve surface with short hairs. Length 0.70-0.75 mm, height 0.42-0.45 mm. Natatory setae of the second antenna reaching beyond the tips of the terminal claws ; sensory club two segmented. Furca symmetrical, straight; dorsal seta more than $\frac{3}{4}$ the length of subterminal claw; terminal seta less than $\frac{1}{2}$ the length of terminal claw; dorsal margin of the ramus finely spinose.

Distribution : India : Tamil Nadu, Kerala, Maharashtra & Madhya Pradesh (Morena).

Elsewhere : Formosa

18. *Hemicypris falcatus* Victor and Fernando

1976. *Hemicypris falcatus* Victor and Fernando, *Can. J. Zool.* 54 : 1806-1810.

Material examined : Madhya Pradesh : 6 exs., 14.10.1981, Balsagar, Jabalpur, coll. D.K. Harshey

Diagnostic characters : Valves subovate; right valve larger overlapping the left; left valve tuberculated; anterior and posterior margins rounded and with long hairs; surface smooth. Length of valves 0.86-0.90 mm, height 0.5mm. Furca symmetrical, straight ; dorsal seta setulate about $\frac{3}{4}$ the length of sub terminal claw ; terminal seta more than $\frac{1}{2}$ the length of sub terminal claw.

Distribution : India : Madhya Pradesh (Jabalpur).

19. *Heterocypris* sp.

Material examined : Madhya Pradesh : 5 exs., 23.10.1981, Barela, Jabalpur, coll. U.A. Gajbe.

Diagnostic characters : Valves subovate; not tumid; unequal; left valve overlaps the right; left valve tuberculate.

This species could be identified up to generic level.

Subfamily DOLEROCYPRIDINAE

20. *Dolerocypris sinensis* Sars

1903. *Dolerocypris sinensis* Sars, *Archive for Mathematik og. Naturvidenskab.*, 25 : 37.

1981. *Dolerocypris sinensis* Sars : Victor and Fernando *Zool. J. Linn. Soc.*, 72 : 110-112.

Material examined : Madhya Pradesh : 6 exs., 21.8.1978, Balsagar, Jabalpur, coll. P.D. Rane.

Diagnostic characters : Carapace compressed, valves elongate. Dorsum smoothly arched. Length 2.06-2.08 mm. Furcal rami symmetrical, slightly arched terminal seta smooth, posterior margin of the ramus smooth.

Distribution : India : Madhya Pradesh (Jabalpur).

Elsewhere : Afghanistan, Canada, France, Germany, Iran, Japan, Rumania, USSR and Yugoslavia.

21. *Astenocypris papyracea* (Sars)

1903. *Leptocypris papyracea* Sars, *Archiv for Mathematik og. Naturvideskab.* 25(8) : 28.

1981. *Astenocypris papyracea* (Sars), Victor and Fernando, *Zoo. Linn. Soc.* 72 : 108.

Material examined : Madhya Pradesh : 5 exs., 19.10.1981, Balsagar, Jabalpur, coll. S.G. Patil; 11 exs., 18.10.1982, Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valves elongate, unequal in lateral view. Valve surface striate. Furcal rami symmetrical, stout and strongly developed, both terminal and sub terminal claws heavily toothed. Posterior margin of ramus armed with prominent teeth.

Distribution : India : Madhya Pradesh (Jabalpur).

Elsewhere : Japan, Malaysia, Philippines, Russia and Sumatra.

22. *Tanocypris pellucida* Tribel

1932. *Dolerocypris pellucida* Klie, *Arch. Hydrobiol. suppl.*, **11** : 482, Fig. 63-65.

1937. *Strandesia camaguensis* Tressler, *Int. Rev. gesamten Hydrobiol.*, **34** : 198, Figs 36-39.

1981. *Tanocypris pellucida* Victor & Fernando *Zool. Linn. Soc.*, **72** : 114-116.

Material examined : Madhya Pradesh : 3 exs. 18.01.1991 Kanha Village, Mandla, coll R.K. Ghose; 2 exs. 18.09.1994, Barhi, Morena, coll. R.K. Singh.

Diagnostic characters : Valves compressed, unequal, right valve larger overlaps the left at anteriorly and posteriorly. Length 1.45-1.48 mm; Height : 0.55-0.58 mm. Furcal rami symmetrical, robust, both claws toothed. Furcal attachment has dorsal attachment and the ventral branch reduced to stump.

Distribution : India : Madhya Pradesh (Mandla, Morena).

Elsewhere : Malaysia, Philippines, Russia and Sumatra.

Subfamily STENOCYPRINAE

23. *Stenocypris derupta* Vavra

1906. *Stenocypris derupta* Vavra. *Zool. Jb. Syst.*, **23** : 426.

1979. *Stenocypris derupta* Vavra : Victor & Fernando, *Rec. Zool. Surv. India*, **74** : 195-196.

Material examined : Madhya Pradesh : 4 exs.

2.1.1978, Balsagar, Jabalpur, coll. P.D. Rane; 2 exs. 3.10.1980, Balsagar, Jabalpur. coll. H.P. Agrawal. Chhattisgarh : 3 exs., 31-1-1990, Kutru, Dantewada, coll. R.K. Ghose.

Diagnostic characters : Valves elongate, anterior margin rounded and posterior margin pointed. Prominent septa along the anterior margin. Length of valves 2.5 mm-2.6 mm. Furcal rami asymmetrical. Right ramus with heavy denticulation on dorsal margin, left ramus with faint spines.

Distribution : India : Andhra Pradesh, Chhattisgarh (Dantewada), Madhya Pradesh (Jabalpur), Maharashtra and Tamil Nadu.

Elsewhere : Java, Philippines, Sri Lanka and Sumatra.

24. *Stenocypris hislopi* Ferguson

1969. *Stenocypris hislopi* Ferguson in J.W. Neale (ed). *The Taxonomy, Ecology and Morphology of recent Ostracoda* : 69.

Material examined : Madhya Pradesh : 3 exs. 10.3.08, Budagar tank, Jabalpur; 1 ex., 7.11.2006, Bhoj Wetland, Bairagarh, Bhopal; all Coll. J. Thilak. Chhattisgarh : 15 exs., 28-2-1990, Kutru, Dantewada, coll. R.K. Ghose.

Diagnostic characters : Valves elongate; anterior and posterior margins rounded; left valve overlaps the right; septa forming a prominent band along the margins except dorsally ; surface with punctation; anterior, posterior and ventral margins hairy. Length 1.38-1.63 mm, height 0.56-0.70 mm. Furcal rami asymmetrical; dorsal setae absent; terminal & subterminal claws toothed. Right ramus slightly curved, dorsal margin toothed. Left ramus straight, dorsal margin smooth.

Distribution : India : Andhra Pradesh, Chhattisgarh (Dantewada), Madhya Pradesh (Bhopal, Jabalpur), Maharashtra and Tamil Nadu.

25. *Stenocypris major* (Baird)

1859. *Cypris cylindrica* Baird, *Bull. Dept. Zool. Punjab*, **1** : 233.

1981. *Stenocypris major* (Baird). Victor and Fernando, *Mitt. Hamb. Zool. Mus. Inst.*, **78** : 155.

Material examined : Madhya Pradesh : 10 exs. 4.8.1978, Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valve margins hairy, surface punctuated. Length 1.88-2.15 mm, height 0.73-0.88 mm. Radial band of septa prominent, of uniform width anteriorly and posteriorly. Furcal rami asymmetrical, right ramus curved, the dorsal margin heavily toothed. Left ramus relatively straight with few teeth on the distal end.

Distribution : India : Andhra Pradesh, Karnataka, Kerala, Madhya Pradesh (Jabalpur) and Tamil Nadu.

Elsewhere : Europe, Indonesia, Japan, Malaysia, Philippines and Sumatra.

26. *Stenocypris distincta* Victor & Fernando

1975. *Stenocypris distincta* Victor & Fernando, *Zool. J. Linn. Soc.*, 64(1) : 79-83.

1979. *Stenocypris distincta* Victor & Fernando, *Rec. Zool. Surv. India*, 74 : 196.

Material examined : Madhya Pradesh : 3 exs, 31.12.1980, Balsagar, Jabalpur, coll. D.K. Harshey; 5 exs., 23.7.1980, Panagar, Jabalpur, coll. D.K. Harshey; 3 exs., 10.3.08, Budagar tank, Jabalpur, coll. J. Thilak.

Diagnostic characters : Valve's anterior and posterior margins rounded, radial band of septa prominent, valve surface with puncta & hairs. Length 2.83-3.21 mm; height 1.02-1.18 mm. Furcal rami asymmetrical, terminal & sub terminal claws of both rami toothed, dorsal seta absent; right ramus curved, dorsal margin heavily toothed, left ramus straight, dorsal margin with groups of teeth covering one quarter of length.

Distribution : India : Andhra Pradesh & Madhya Pradesh (Jabalpur).

27. *Stenocypris orientalis* Victor & Fernando

1981. *Stenocypris orientalis* Victor & Fernando, *Mitt. Hamb. Zool. Mus. Inst.* 78 : 158.

Material examined : Madhya Pradesh : 15 exs. 10.09.1992, Bhartadeo, Chhindwara, coll. R.K. Singh.

Diagnostic characters : Valves from above

elliptical, elongate, radial band of septa present. Length : 1.75-1.80 mm. height : 0.70-72 mm. Furcal rami asymmetrical, dorsal seta absent.

Distribution : India : Madhya Pradesh (Chhindwara).

Elsewhere : Malaysia & Philippines

28. *Stenocypris jabalpurensis* Harshey & Patil

1988. *Stenocypris jabalpurensis* Harshey & Patil, *J. Curr. Biosci.*, 5(1) : 6-10.

Material examined : Madhya Pradesh : 10 exs. 15.2.1982, Ranital Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valves elongate, straight in the middle. Valve surface sparsely hairy and punctuate, radial band of septa broad anteriorly. Length 1.63-1.68 height : 0.64-0.66 mm. Natatory seta of second antenna reaching beyond the tips of terminal claws. Sensory club three segmented. Furcal rami asymmetrical.

Distribution : India : Madhya Pradesh (Jabalpur).

29. *Parastenocypris biswasi* (Deb)

1972. *Stenocypris biswasi* Deb, *J. Zool. Soc. India*. 1 : 91.

1982. *Parastenocypris biswasi* (Deb), Harshey and Victor, *Mitt. Hamb. Zool. Mus. Inst.* 117.

Material examined : Madhya Pradesh : 3 exs., 10.11.1980, Madan Mahal, Dargah Sharif; 2 exs., 31.12.1980, Madan Mahal, Dargah Sharif, Jabalpur, coll. D.K. Harshey; 3 exs., 31.12.1980, Madan Mahal hills, 25 exs., 24.10.1981 Madan Mahal hills, Jabalpur; 8 exs., 12.6.1990, Balsagar, Jabalpur, all coll. D.K. Harshey. Chhattisgarh : 15 exs., 28-2-1990, Kutru, Dantewada, coll. R.K. Ghose.

Diagnostic characters : Valves very elongate laterally; anterior margin of valve rounded and posterior margin pointed, pore canals prominent, valve surface with minute hairs. Length 4.20-4.30 mm, height 1.30 mm. Furca asymmetrical, straight, right ramus armed with strong spines, left ramus with relatively weak spines.

Distribution : India : Chhattisgarh (Dantewada), Madhya Pradesh (Jabalpur) & Rajasthan.

Remarks : Deb (1972) described *Stenocypris biswasi* as a new species from Rajasthan, India. It was also collected during this study from Jabalpur, Madhya Pradesh, and redescribed as *Parastenocypris biswasi* by Harshey and Victor (1982) giving detailed account of the species.

30. *Chrissia humilis* (Klie) ssp. *Indica*

1932. *Stenocypris humilis* Klie, *Arch. Hydrobiol.* **22** : 476.
 1964. *Chrissia humilis* (Klie) Hartmann, *Int. Rev. Gesamten Hydrobiol. Syst. Beih.*, **3** : 122.
 1979. *Chrissia humilis* (Klie) : Victor & Fernando, *Rec. zool. Surv. India*, **74** : 203.

Material examined : Madhya Pradesh : 10 exs., 23.7.1980, Panagar, Jabalpur, coll. D. K. Harshey. Chhattisgarh : 16 exs., 7-2-1990, Bijapur, Dantewada, coll. R.K. Ghose.

Diagnostic characters : Left valve slightly larger than the right; valve margin devoid of radial band of septa; surface hairy. Furcal ramus asymmetrical; dorsal margin of right ramus with spines for ½ the length, dorsal margin of left ramus smooth.

Distribution : India : Maharashtra, Kerala, Chhattisgarh (Dantewada), Madhya Pradesh (Jabalpur), Tamil Nadu & West Bengal.

Elsewhere : Malaysia.

31. *Chrissia formosa* (Klie)

1939. *Stenocypris formosa* Klie, *Bull. Bio. Geogr. Soc. Japan.* **8** : 28.
 1981. *Chrissia formosa* (Klie), Victor & Fernando, *Mitt. Hamb. Zool. Mus. Inst.* **78** : 152.

Material examined : Madhya Pradesh 12 exs. 19.09.1991, Bhartadeo, Chhind-wara, coll. R.K. Singh.

Diagnostic characters : Valves elongate in lateral view, greatest height in the middle, anterior and posterior margin rounded. Antenna with five smooth natatory setae, slightly reaching beyond the tips of terminal claws. Four claws toothed. Furcal rami asymmetrical. Right ramus broader, slightly curved; anterior margin with three inconspicuous depressions.

Distribution : India : Madhya Pradesh.

Elsewhere : Formosa and Philippines.

Subfamily CYPRIDOPSINAE Kaufmann, 1900

32. *Cypridopsis dispar* Hartmann

1964. *Cypridopsis dispar* Hartman, *Revue der gesa Hydrobiol.*, **3** : 136.
 1979. *Cypridopsis dispar* Hartman, Victor & Fernando, *Rec. zool. Surv. India.* **74** : 206.

Material examined : Madhya Pradesh : 6 exs. 05.09.1994, Sabalgarh, Morena, coll. R.K. Singh.

Diagnostic characters : Valve's anterior and posterior margins rounded, hairy, right valve overlaps the left, valve surface covered with minute hairs. Length 0.56-0.60 mm, height 0.29-0.36 mm. Natatory setae of second antenna smooth, reaching the tips of terminal claws. Furcal ramus reduced to a flagellum.

Distribution : India : Andhra Pradesh, Karnataka, Madhya Pradesh (Morena), Maharashtra & Tamil Nadu.

33. *Oncocypris pustulosa* Gurney

1916. *Oncocypris pustulosa* Gurney, *Proc. Zool. Soc. London*, **1** : 340.
 1979. *Oncocypris pustulosa* Gurney Victor & Fernando *Rec. zool. Surv. India*, **74** : 212.

Material examined : Madhya Pradesh : 8 exs. 20.12.1980. Madan Mahal, Jabalpur, coll. R.K. Singh; 1 ex., 27-9-2005, Bhoj Wetland, Bhopal, coll. J. Thilak.

Diagnostic characters : Valves tumid, ventral margin straight; marginal zone of valves tuberculate and hairy; surface with fine granulation and tuberculation super imposed with circular depressions. Length 0.60-0.62 mm; height 0.40-0.41 mm. Natatory setae of second antenna reaching beyond the tips of the terminal claws. Furca reduced to a flagellum.

Distribution : Kerala & Madhya Pradesh (Bhopal, Jabalpur).

34. *Pseudocypretta maculata* Klie

1932. *Pseudocypretta maculata* Klie, *Arch. Hydrobiol. Suppl.*, **11** : 485.

1979. *Pseudocypretta maculata* Klie, Victor & Fernando
Rec. zool. Surv. India 74 : 213.

Material examined : Madhya Pradesh : 6 exs.
11.04.1980, Balsagar, Jabalpur, coll. S.G. Patil.

Diagnostic characters : Valves sub triangular; right valve overlaps the left; anterior and posterior margins rounded with pore canals; valve surface with minute puncta and few short hairs. Length 0.45-0.46 mm; height 0.30-0.32 mm. Natatory setae of second antenna well developed, reaching the tips of terminal claws. Furca reduced.

Distribution : Tamil Nadu, Kerala & Madhya Pradesh (Jabalpur).

Subfamily CYPRETTINAE Hartmann

35. *Cypretta globosa* (Brady)

1877. *Cypridopsis globosa* Brady, *J. Linn. Soc. Zool.* 19 : 303.

1977. *Cypretta globosa* (Brady). Neal, in *Aspects of Ecology and Zoogeography of Recent and Fossil Ostracoda*, 275.

Material examined : Madhya Pradesh : 2 exs.,
19-10-1981, Balsagar, Jabalpur, coll. S.G. Patil.

Diagnostic characters : Small, valve surface smooth, punctuate, anterior margin with well defined septa. Length 0.52-0.56 mm, Furcal rami well developed, symmetrical, slender and flexible.

Distribution : India : Madhya Pradesh (Jabalpur).

Elsewhere : Indonesia, Malaysia, Philippines, Sri Lanka.

36. *Cypretta raciborskii* (Grochmalicki)

1915. *Cypridopsis raciborskii* Grochmalicki, *An. Akad. Wiss. Krakon. Math. Nat. Ke Reine.* 13 : 235.

1981. *Cypretta raciborskii* Victor & Fernando, *Insy. Revue ges. Hydrobiol.*, 66(3) : 426.

Material examined : Chhattisgarh : 18 exs.,
28.01.1990., Kutru, Dantewada, coll. R.K. Ghose; Madhya Pradesh : 1 ex., 27-9-2005, Bhoj Wetland, Bhopal, coll. J. Thilak.

Diagnostic characters : Carapace tumid with broadly pointed anterior and angular posterior end. Valve surface punctate and sparsely hairy. Valves

unequal, right valve overlapping left anterior and posteriorly. Furcal rami weakly developed.

Distribution : India weakly developed : Chhattisgarh (Bastar), Madhya Pradesh (Bhopal).

Elsewhere : Indonesia and West Malaysia.

37. *Cypretta turgida* (Sars)

1894. *Cypridopsis minna* (King) Sars *Math Naturv Kl.*, 5 : 30.

1963. *Cypretta turgida* (Sars) : Chapman *Hydrobiologia*, 22 : 12.

1981. *Cypretta turgida* (Sars) : Victor & Fernando, *Int. Revue. Ges. Hydrobiol.*, 66(3) : 430.

Material examined : Madhya Pradesh : 3 exs.
15.6.1981, Nunsar Patan, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valve oval in shape dorsally. Anterior margin narrow, posterior margin broadly rounded. Prominent radial band of septa on the anterior margin. Furcal rami symmetrical, dorsal seta and terminal seta reduced.

Distribution : India : Madhya Pradesh (Jabalpur).

Elsewhere : New Zealand, North Western Australia, South Africa, Sumatra, West Indies, West Samoa.

38. *Cypretta seurati* Gauthier

1929. *Cypretta seurati* Gauthier, *Bull. Soc. Hist. Nat. Af. N.* 20 : 158.

Material examined : Madhya Pradesh : 24 exs.,
03.02.1991, Kanha, Mandla, coll. R.K. Ghose; 16 exs. 19. 09.1991, Bhartadeo, Chhindwara, coll. R.K. Singh.

Diagnostic characters : Carapace tumid, subovate in lateral view, valves unequal, right valve overlaps the left anteriorly and posteriorly. Valve surface pitted and sparsely pilose. Both valves have septa. Wavy simulations in germ septa in the left valve. Furcal rami long, slender, symmetrical & weakly developed.

Distribution : India : Madhya Pradesh (Chhindwara, Mandla).

Elsewhere : East Malaysia, Japan, North Africa, Philippines.

Family CANDONIDAE

Subfamily CYCLOCYPRIDIINAE

39. *Physocypria furfuracea* Brady

1886. *Cypris furfuracea* Brady, Linn. Soc. London. Journ., 19 : 229.

1979. *Physocypria furfuracea* (Brady), Victor and Fernando, Rec. zool. Surv. India, 74 : 215.

Material examined : Madhya Pradesh : 10 exs. Balsagar, Jabalpur, coll. D.K. Harshey.

Diagnostic characters : Valves subovate, anterior and posterior margins rounded; valve margins hairy; right valves with prominent tubercles on anterior and posterior margins; left valve smooth. Length 0.49-0.53 mm; height 0.29-0.31 mm. Furcal rami symmetrical, short and stout.

Distribution : India : Andhra Pradesh, Gujarat, Madhya Pradesh (Jabalpur), Maharashtra & Tamil Nadu.

Elsewhere : Sri Lanka.

40. *Physocypria crenulata* (Sars)

1903. *Cypria crenulata* Sars, Archive for Mathematik of Naturv. Oslo. 25 : 13.

1961. *Physocypria crenulata* (Sars), Victor & Fernando, J. Nat. Hist. 15 : 763.

Material examined : Madhya Pradesh : 1 ex. 01.07.1978, Budagarh, Jabalpur, coll. D.K. Harshey; 10 exs. 05-9-1994, Sabalgarh, Morena, coll. R.K. Singh.

Diagnostic characters : Carapace compressed laterally. Valve unequal, right valve overlaps left valve. Anterior margin of valves narrowly rounded than the posterior margin; faint stimulations present in both anterior and posterior margins. A prominent flange present on, the left margin. Furcal rami slightly curved, stout stumpy, symmetrical. Terminal and subterminal claws equal. Posterior seta placed at the middle of the ramus, more than ½ the length of the ramus.

Distribution : India : Madhya Pradesh (Jabalpur, Morena).

Elsewhere : Brazil, Indonesia, Java, Malaysia, Philippines and Sumatra.

Family NOTODROMATIDAE

41. *Centrocypris matthaii* (Arora)

1931. *Eucypris matthaii* Arora, Bull. Dept. Zool. Punjab. Univ. 25 : 85.

1979. *Centrocypris matthaii* (Arora), Victor & Fernando, Rec. zool. Surv. India. 74 : 219.

Material examined : Madhya Pradesh : 4 exs. 04.09.1994, Jagved Nagar, Morena, coll. R.K. Singh.

Diagnostic characters : Valves sub quadrate; anterior & posterior margins broadly rounded; valve margins spiny; surface heavily tuberculate with a sparse distribution of hairs. Length 0.97 mm; height 0.62 mm. Furcal rami symmetrical, straight; terminal and sub terminal claws slender and long; dorsal seta more than half the length of sub terminal claw, densely setulate, terminal seta short; dorsal margin with delicate hairs. Furcal rami slightly curved.

Distribution : Madhya Pradesh (Morena) & Tamil Nadu.

Family ILYOCYPRIDIDAE

42. *Ilyocypris* sp.

Material examined : Madhya Pradesh : 5 exs. 11.06.1982, Gwarighat, Jabalpur, coll. S.G. Patil

Diagnostic characters : Valves sub quadrate; laterally compressed; surface pitted, tuberculate. Natatory setae of second antenna well developed. Furca well developed, short and symmetrical.

Distribution : India : Madhya Pradesh (Jabalpur).

Remarks : This species could be identified up to generic level.

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REFERENCES

- ARORA, G.L. 1931. Fauna of Lahore 2 Entomostraca (Water fleas) of Lahore. *Bull. Dep. Zool. Punjab University*. **1** : 62-100.
- BATTISH, S.K. 1978. A new genus and new species of *Cypridid* Ostracod from India, with notes on its biology. *Zoological J. linn. Soc.*, **64** : 283-292.
- BATTISH, S.K. 1981. Freshwater Ostracods of the subfamily Cyprinotinae from Punjab, India with description of eight new species. *Jour. Nat. Hist. Soc.*, **15** : 645-669.
- DEB, M. 1972. Two new species of *Stenocypris* Sars, 1889. *J. zool. Soc. India*, **1** : 91-95.
- DEB, M. 1973. First record of the genus *Sclerocypris*, Sars 1924 (Crustacea : Ostracods) from India with description of two new species. *J. zool. Soc. India*, **25** : 47-52.
- DEB, M. 1978. Notes on a collection of Ostracods from Delhi. *Rec. zool. Soc. Surv. India*, **67** : 309-313.
- FORBES, S.A. 1888. Studies on the food of freshwater fishes. *Bull. Ill. Lab. Nat. Hist.* **2** : 433-538.
- HARSHEY, D.K and VICTOR, R. 1983. On *Parastenocypris biswasi* (Deb), 1972-A freshwater Ostracoda (Crustacea : Ostracoda) from India. *Mitt. Hamb. Zool. Mus. Inst.*, **80** : 177-182.
- HARSHEY, D.K. and SRINIVASAN, A.K. 1984. A new species of *Strandesia* Vavra, 1895(Crustacea : Ostracoda) from India. *Biovigyanam*, **13**(2) : 104-106.
- HARSHEY, D.K. and SHRIVASTAVA, A.K. 1983. Some new records of freshwater ostracods from India. *Curr. Sci.*, **15** : 741.
- HARSHEY, D.K, SHRIVASTAVA, A.K. and PATIL, S.G. 1987. Three new species of *Strandesia* Vavra, 1895 (Crustacea : Entomostraca) from India. *J. Curr. Sci.*, **4**(2) : 43-48.
- HARSHEY, D.K. and PATIL, S.G. 1988. A new species of the genus *Stenocypris* Sars (Crustacea : Ostracoda) from India. *J. Curr. Biosci.*, **5**(1) : 6-10.
- HARSHEY, D.K. 1996. On some new records of fresh water Ostracods (Crustacea : Entomostraca) from India. *Rec. zool. Surv. India*, **95**(3-4) : 215-227.
- HARSHEY, D.K. 2008. Crustacea (Ostracoda). *Faunal Diversity of Jabalpur District, Madhya Pradesh*. Edited by the Director, *Zoological Survey of India*, Kolkata. 63-75.
- HARTMANN, G. 1964. Asiatische Ostracoden. Systematische und zoogeographische Untersuchungen. *Int. Rev. gesmaten. Hydrobiol. Syst. Beih.*, **3** : 1-155.
- HARTMANN, G and PURI, H.S. 1974. Summary of Neontological and Paleontological Classification of Ostracoda. *Mitt. Hamb. Zool. Mus. Inst.*, **70** : 7-73.
- HOWE, H. V. 1969. Homonymy and other man created afflictions of Recent Ostracoda. In Neale, J.W. (ed.) *The Taxonomy, Morphology and Ecology of Recent Ostracoda*. Oliver and Boyd. Edin. 533 pp.
- KLIE, W. 1927. Zur ke nutnis der Mikrofauna Von British Indian *Rec. Indian. Mus.* **1** : 157-165.
- KORNICKER, L.S. and SOHN I.G. 1971. Viability of Ostracode eggs egested by fish and effects of digestive fluids on Ostracode shells, ecologic and paleologic implications. *Bull. Centre Rech. Pau.*, **5** : 125-135.

- MOORE, R.C. 1961. Treatise on Invertebrate Paleontology, Part Q Arthropoda. 3. Crustacean : Ostracoda, *Geol. Soc. America and University of Kansas Press*. 442.
- POKORNY, V. 1965. *Principles of Zoological Micropaleontology*. Vol. 2. Neale, J.W (ed). Pergamon Press Ltd. New York. 465 pp.
- PURI, H.S. 1964. Ostracods as ecological and paleoecological indicators. *Publicazioni della Stazione Zoologica di Napoli*. 33 supplemento (Symposia, 1963).
- THILAK JAYASREE, RAO, K.S, SINGH. K. ANIL and KUMAR SUNIL: 1994. Observations on the Ostracoda fauna of central India with special reference to the western Narmada basin. *J. Aqu. Biol. Fish.* Vol. 1(2) : 41-50.
- VAN MORKHOVEN, F.P.C.M. 1962. *Post Paleozoic Ostracoda, their morphology, taxonomy and economic use*. Vol. 1 General. Elsevier Publishing Company. New York. 204 pp.
- VICTOR, R and FERNANDO, C.H. 1979. Freshwater Ostracods from India. *Rec. zool. Surv. India*, **74** : 147-242.
- VICTOR, R and MICHEAL, R.G. 1975. Nine new species of freshwater Ostracods from Madurai area in southern India. *F. Nat. Hist.*, **9** : 361-376.
- VICTOR, R and FERNANDO, C.H. 1981. Freshwater ostracods (Crustacea : Ostracoda) of the subfamily Dolerocypridinae Triebel, 1961 from Southeast Asia. *Zoological Journal of the Linnean Society*, **72** : 107-116.

CLADOCERA (ARTHROPODA : CRUSTACEA)

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INTRODUCTION

The order Cladocera belongs to Subclass Branchiopoda of class Crustacea are commonly known as "Waterfleas", a primitive group of microcrustaceans. This study was stimulated mainly by their importance in biological processes in water ecosystems as biological indicators, particularly in paleocological studies. Cladocera invariably constitute a dominant component of freshwater zooplankton, play an important role in aquatic food chain and also contribute significantly to zooplankton dynamics and secondary productivity in freshwater ecosystems. Among the zooplankton communities Cladocera is an interesting group not only for taxonomic and distributional studies but also in view of the ecological and reproductive strategies employed in their life cycles with alternating parthenogenetic and gamogenic phases, phenotypic changes associated with cyclomorphosis even within the populations of a single species and the rare occurrence of distinctly diamorphic males. Further, the Cladocera in general and members of family Chydoridae in particular are well known to be "Guide forms" in establishing the trophic and developmental history of lakes especially in the Quarternary epoch, since the disarticulated parts of the exoskeleton are deposited as well preserved remains in ancient lake. These remains can give considerable insight into past condition of lakes and large and ancient water bodies. These Cladocera are important ecological markers and significant in paleoecological studies (Smirnov and Times,

1983). They are primary consumers directly utilizing primary producers and hence determine to a large extent the energy flow of the ecosystem. The systematic knowledge and mechanisms influencing their ecological efficiency are of great importance. They occupy a definite ecological niche in the freshwater ecosystem. They feed on green unicellular or filamentous algal matter and in tern a major food source for animals like Copepods and insect larvae. Some aquatic adult insects and almost all fishes feed heavily on Cladocera. Cladocera like *Moina* and *Daphnia* mainly feed on small microscopic bacteria which are one of the major components of polluted water bodies. Role in the reduction bacterial number in polluted oxidation ponds was studied and proved by Leodolff (1965). In measuring the effects of industrial effluents and metallic poisons was well studied on *Daphnia* and their cardiac mechanisms provide a very sensitive physiological index for noting the effects of toxic material. Cladocera usually inhabit every type of habitat in littoral, limnatic and benthic zones of freshwater lakes, muddy pools, ponds, marshes, streams, flowing riverwaters, and even brackish waters and about 8 species are truly marine.

HISTORICAL REVIEW

Very few information was available on Cladocera fauna of Madhya Pradesh and so far no attempt has been made to study the Madhya Pradesh freshwater Cladocera comprehensively. Hence this study was initiated. Several zooplankton samples were collected by various

tour parties of Zoological Survey of India, Central Regional Station, Jabalpur from various freshwater habitats. Present study bases on above material and from few earlier published records. Persual of available literature reveals that our knowledge on cladocera fauna of various Indian states is scattered and inadequate. Most earlier study on Cladocera was started in 1860 by Baird, worked out Cladocera from Nagpur (old central India); Gurney, 1906 and 1907 worked on West Bengal fauna ; Daday, 1911 worked on Bangalore – Karnataka fauna; Brehm, 1950, 1953, 1963, studied Cladocera fauna from Assam, West Bengal, Meghalaya, Central India, Kashmir, Nilgiri hills, Bihar, Himachal Pradesh and Rewa of Madhya Pradesh; Biswas, 1964 and 1971 published good account on fauna of cladocera from Simla hills, Nefa and Rajasthan; Nasar, 1977 worked on cladocera of Bihar; Nayar, 1971 worked out Cladocera from Rajasthan; Patil, 1976 worked on Meghalaya and Manipur; Patil and Gouder worked out Cladocera from Dharwad. Petkovski, 1973 studied cladocera from Gujarat state; Michael & Sharma, 1988 has published fauna of India of Cladocera : Branchiopoda and reported and recorded 90 species of Cladocera from different localities all over India. Raghunathan, 1988 studied Cladocera from Kerala; Raghunathan and Rane 2001, studied Cladocera from Nagarhole National Park and Niligiri Biosphere Reserve. Rane 1979, 1983, 1984, 1985, 1986, 1987, 1990 studied Cladocera fauna of Madhya Pradesh; Rane, 1992, 1993, 2001, 2002, 2004, 2005, 2006, 2008 published Cladocera fauna from Maharashtra state; Saini & Singh, 1984 studied Cladocera from Rewa, Madhya Pradesh; Sharma, 1978 studied Cladocera from West Bengal; Shirgur & Naik studied Cladocera from Bombay, Maharashtra; Venkataraman, 1983, 1991, 1992, 1993 studied Cladocera from Andaman and Nicobar islands, Bharatpur, Rajasthan, Tamil Nadu; Venkataraman & Das, 2000 studied Cladocera from Tripura state; Yousf and Qadri, 1977, 1978 published Cladocera fauna from Kashmir state.

MATERIAL AND METHODS

This study focuses on the taxonomy and distribution of Cladocera fauna in Madhya Pradesh state as a whole. In Madhya Pradesh state the order Cladocera is represented by six families namely : Sididae, Daphniidae, Moinidae, Bosminidae, Macrothricidae and Chydoridae.

During this study many limnetic and littoral and muddy bottoms of freshwater habitats such as lakes, ponds, marshes, reservoirs, dams, rivers, streams and miscellaneous water bodies were sampled throughout Madhya Pradesh state. Cladocera samples were collected by using plankton net of mesh size about 150 μ m with circular mouth of 45 cms in diameter, made up of bolting silk. The fauna was collected in shallow water among the vegetations and in open water by taking both vertical and horizontal hauls. The nets also dragged close to the bottom to avoid excessive stirring of mud to collect Cladocera living on the substratum. In small shallow ponds buckets of water could be hauled and poured through a fine meshed net which will serve the purpose for limnetic species. For weed inhabiting or benthic forms a net with long handle and a wire meshed lid to sieve off the obstructing algae and weeds should prove efficient. All samples preserved in 10% formalin in the field itself. 5% concentration of formalin or 70% alcohol is ideal for the preservation of most Cladoceran species. However those with thin carapace could also be preserved in 80% ethanol. Subsequent to collection, sorting can be done under the stereo binocular microscope at low magnification. Temporary slides was made using glycerine and important diagnostic characters were studied by using Stereoscopic compound microscope with higher magnification. Drawings were made with use of camera lucida and measurements were taken by using a calibrated ocular micrometer. The measurements of the described taxa have been given in millimeters (mm).

MORPHOLOGY AND TERMINOLOGY

The vast majority of Cladocera range size from about 0.2 to 3.00 mm. (except *Leptodora kindtii* Focke) whose female reaching a length of 18 mm. Most species are transparent, especially those which inhabits in open waters while other found among the weed beds of littoral and benthic zones are darkly pigmented with shades of yellow, brown or red. All have a distinct head and a body covered by a fold of cuticle, which extends backward and downward from the dorsal side of the head and constitutes a bivalve carapace. The junction of head and body is sometimes marked by a depression, the cervical sinus or notch. Cladocera have two light-sensitive organs in the head, large compound eye and the smaller ocellus. The eye has numerous or few lenses and is capable of being rotated by three muscles on each side. It is most conspicuous organ, by its size, dark pigment and its constant motion during life. The compound eye is usually present; the ocellus is more variable. The ocellus is sometimes absent; sometimes rudimentary ; sometimes larger than eye; and may be the sole organ of sensitive to light. In the head are also brain, the optic ganglion with its numerous nerves to the eye, the antennal muscles and the anterior part of the digestive track. The head bears two pairs of sensory appendages. (1) First antennae or the antennules which carries sense-hairs, the olfactory setae (usually placed at the end), and also ordinarily have one or more lateral sense hairs. (2) Second antenna, usually called merely antennae, which are main organ of locomotion; they are large swimming appendages, with stout basal joint bearing two branches or rami which in turn carry long plumose setae. The number of the antennary setae can be expressed by a formula. The type of locomotion depends on the size of antennae, the length and number of the setae, and the size of the antennal muscles. The head also bears the mouth parts, the mandibles, maxillules, maxillae and the upper (labrum) and lower (paragnatha) lips. The part in front of the eye is known as the vertex. There is usually a beak in front of or between the antennules which is known as rostrum, whose size and shape has taxonomic value. The carapace called bivalve, is really a one

piece. It has very different shapes, it may appear nearly square, oval or round. It may bears hairs, spines, along the ventral edge. It may be single spine at the superoposteal angle or each valve may have one or more spines at inferoposteal angle. The inner wall of carapace is far than the outer and through it some respiratory exchange occurs. The blood circulate freely in the space between the walls. The heart an oval or elongated sac lies just back of the head on the dorsal side. There are no blood vessels, but the circulation passes along definite courses through a complex series of passages all over the body. The blood corpuscles are present. The shell gland at the anterior part of valves serves the function of excretion and osmoregulation. The body lies freely within the valves and is divided into appendage bearing thorax and abdomen. Attached to the ventral side of body are the ordinarily five or sometimes six pairs of legs. They are mainly flattened structures bearing numerous hairs and long setae. This generally create current of water through valves, bring oxygen for respiration and particles of food. Cladocera are normally eating all the times. On the dorsal surface of the abdomen there are often one to several finger like projections, the abdominal processes. They often function to retain eggs in the brood chamber. The abreptor (often called postabdomen) is jointed to the rest of body and bent forward; dorsal side of it have two abdominal setae which often very long. At the end of the postabdomen are two terminal claws. Concave side of claw provided with spines and teeth of various size. These pattern are often taxonomically important. There are few large spines at the base of claw and are reffered to as basal spines. There may be anal spines, lateral spines on the postabdomen. First leg of males is modified into stout hook shaped structure which serves to clasp the females.

This study focuses on taxonomy & distribution of Cladocera in Madhya Pradesh state as a whole. In Madhya Pradesh, the order Cladocera is represented by six families namely : Sididae, Daphniidae, Moinidae, Macrothricidae, Bosminidae and Chydoridae.

SYSTEMATIC LIST

- Phylum ARTHROPODA
 Class CRUSTACEA
 Subclass BRANCHIOPODA (Calman, 1909)
 Superorder DIPLOSTRACA
 Gernetaecker, 1866
 Order CLADOCERA Calman, 1909
 Suborder EUCLADOCERA Erikson, 1934
 Superfamily SIDIDAE (Ctenopoda Sars, 1901)
 Family I. SIDIDAE Baird, 1850
 Genus 1. *Diaphanosoma* Fischer, 1850
 1. 1951. *Diaphanosoma senegalensis* Gauthier
 2. 1985. *Diaphanosoma excisum* Sars
 3. 1894. *Diaphanosoma sarsi* Richard
 Genus 2. *Pseudosida* Herrick, 1884
 4. 1898. *Pseudosida bidentata* var. *szalayi* (Daday)
 Genus 3. *Latonopsis* Sars, 1888
 5. 1888. *Latonopsis australis* Sars
 Genus 4. *Latona* Straus, 1820
 6. 1985. *Latona narendrai* Rane.
 Genus 5. *Sarsilatona* Korovchinsky, 1985
 7. 1983. *Sarsilatona fernandoi* (Rane)
 Family II. DAPHNIIDAE Straus, 1820
 Genus 6. *Ceriodaphnia* Dana, 1853
 8. 1885. *Ceriodaphnia cornuta* Sars.
 9. 1900. *Ceriodaphnia affinis* Lilljeborg.
 10. 1785. *Ceriodaphnia quadrangula* (O.F. Muller).
 Genus 7. *Daphnia* O.F. Muller, 1785
 11. 1885. *Daphnia lumholtzi* Sars
 12. 1986a. *Daphnia sumanae* (Rane)
 13. 1986b. *Daphnia sarojae* Rane
 14. 1990. *Daphnia madhuriae* Rane
 15. 1853. *Daphnia carinata* King
 Genus 8. *Simocephalus* Schoedler, 1858
 16. 1776. *Simocephalus vetulus* (O.F. Muller)
 17. 1841. *Simocephalus serrulatus* Koch.
 18. 1985a. *Simocephalus serrulatus surekhae* (Rane)
 19. 1985 b. *Simocephalus vamani* Rane
 20. 1983. *Simocephalus acutirostratus vidyae* (Rane)
 21. 1986. *Simocephalus acutirostratus gajareae* (Rane).
 Subfamily SCAPHOLEBERINAE Dumont and Pensaert, 1983
 Genus 9. *Scapholeberis* Schoedler, 1858
 22. 1776. *Scapholeberis macronata* (O.F. Muller)
 23. 1888. *Scapholeberis kingi* Sars
 Family III. MOINIDAE Goulden, 1968
 Genus 10. *Moinodaphnia* Herrick, 1887
 24. 1853. *Moinodaphnia macleayi* (King)
 Genus 11. *Moina* Baird, 1850
 25. 1874. *Moina micrura* Kurz
 26. 1987. *Moina dodhui* Rane
 Family IV. MACROTHRICIDAE Norman and Brady, 1867
 Genus 12. *Macrothrix* Baird, 1843
 27. 1853. *Macrothrix spinosa* King
 Genus 13. *Echinisca* Lievin, 1848
 28. 1930. *Echinisca capensis monodi* (Gauthier)
 29. 1886. *Echinisca triserialis* (Brady)
 Genus 14. *Ilyocryptus* Sars, 1862
 30. 1862. *Ilyocryptus spinifer* Herrick
 Genus 15. *Guernella* Richard, 1892
 31. 1892. *Guernella raphaelis* Richard
 Genus 16. *Grimaldina* Richard, 1892
 32. 1892. *Grimaldina brazzai* Richard
 Family V. BOSMINIDAE Sars, 1865
 Genus 17. *Bosmina* Baird, 1845
 33. 1785. *Bosmina longirostris* (O.F. Muller).
 Genus 18. *Bosminopsis* Richard, 1895
 34. 1897. *Bosminopsis dietersi* Richard
 Family VI. CHYDORIDAE Stebbing, 1902
 Subfamily ALONINAE Frey, 1967
 Genus 19. *Pleuroxus* Baird, 1853
 35. 1820. *Pleuroxus aduncus* Jurine
 36. 1900. *Pleuroxus similes* Vavra

- Genus 20. *Alonella* Sars, 1862
 37. 1854. *Alonella excisa* (Fischer)
 Genus 21. *Chydorus* Leach, 1816
 38. 1901. *Chydorus eurynotus* Sars
 39. 1966. *Chydorus eurynotus bremhi* Biswas
 40. 1898. *Chydorus ventricosus* Daday
 41. 1893. *Chydorus faviformis* Birge
 42. 1894. *Chydorus barroisi* Richard
 Genus 22. *Dunhevedia* King, 1853
 43. 1853. *Dunhevedia crassa* King
 44. 1891. *Dunhevedia crassa cilio-caudata* (Sovinsky)
 45. 1898. *Dunhevedia serrata* Daday
 46. 1901. *Dunhevedia odontoplax* Sars
 Genus 23. *Pseudochydorus* Fryer, 1968
 47. 1912. *Pseudochydorus globosus caelatus* Wereschagin
 Genus 24. *Dadaya* Sars, 1901
 48. 1898. *Dadaya macrops* (Daday)
 Genus 25. *Leydigia* Kurz, 1875
 49. 1884. *Leydigia acanthocercoides* (Fischer)
 50. 1885. *Leydigia australis* Sars
 Genus 26. *Kurzia* Dybowski and Grochowski, 1894
 51. 1875. *Kurzia latissima* (Kurz)
 52. 1898. *Kurzia longirostris* Daday
 Genus 27. *Graptoleberis* Sars. 1862a
 53. 1851. *Graptoleberis testudinaria* (Fischer)
 Genus 28. *Camptocercus* Baird, 1843
 54. 1985. *Camptocercus latikae* Rane
 Genus 29. *Euryalona* Sars, 1901
 55. 1898. *Euryalona orientalis* (Daday)
 Genus 30. *Biapertura* Smirnov, 1974
 56. 1860. *Biapertura affinis* (Leydig)
 57. 1853. *Biapertura karua* (King)
 58. 1901. *Biapertura verrucosa* (Sars)
 Genus 31. *Oxyurella* Dybowski & Grochowski, 1894
 59. 1984. *Oxyurella sangramsagari* Rane

- Genus 32. *Indialona* Petkovski, 1966
 60. 1966. *Indialona ganapati* Petkovski
 Genus 33. *Notoalona* Rajpaksha & Fernando, 1987
 61. 1898. *Notoalona globulosa* (Daday)
 Genus 34. *Alona* Baird, 1843
 62. 1862. *Alona rectangula* Sars
 63. 1874. *Alona rectangular pulchra* Hellich
 64. 1862. *Alona costata* Sars
 65. 1862. *Alona guttata* (Sars)
 66. 1853. *Alona pulchella* King
 67. 1853. *Alona diaphana* King
 68. 1898. *Alona macronyx* Daday
 69. 1897. *Alona karelica* Stenroos
 Genus 35. *Eurycercus* Baird, 1843
 70. *Eurycercus* sp.

Key to the families of Cladocera

- 1a. Six pairs of legs of similar structure
 SIDIDAE Baird, 1850
 b. Five pairs of legs of different structure
 2
 2a. Dorsal ramus of antennae 4 segmented,
 b. Ventral ramus 3 segmented 5
 3a. Antennules not mobile
 DAPHNIDAE Straus, 1820
 b. Antennules mobile 4
 4a. Antennule situated on anteroventral end of head MACROTHRICIDAE Baird, 1843
 b. Antennules situated on the ventral margin of the head but not at anterior end
 MOINIDAE Goulden, 1967
 5a. Antennules fused with the rostrum, forming proboscis like structure
 BOSMINIDAE Sars, 1895
 b. Antennules are at base, both rami of Antennae 3-segmented
 CHYDORIDAE Stebbing, 1902

Family I SIDIDAE Baird, 1850

Key to the genera and species of Sididae
(Generic diagnosis of the genera with only one species are not given.)

- 1a. Postabdomen with anal spines
.....*Diaphanosoma* Fischer, 1850
- b. Postabdomen with anal spines2
2. Rostrum present
.....*Pseudosida* Herrick, 1850
- b. Rostrum absent, without tongue shaped process on the ventral side of the head, head and body not well demarked from each other, anal spines in groups and basal spines are three
..... *Latonopsis* Sars...3
3. Head and body separated from each other due to distinct impression in between. Two basal spines, and the anal spines are single in number at ventral side of postabdomen; small species
..... *Latona* Straus, 1820...4
4. Head and body not separated from each other, postabdomen with clusters of 4-5 anal spines inside the postabdomen and claw with large basal spines are three in numbers. Large species *Sarsilatona* Korovchinsky, 1985

Genus *Diaphanosoma* Fischer, 1850

This genus is represented by three species in the examined material from Madhya Pradesh.

Key to the species of *Diaphanosoma*

- 1a. Large fleshy head, distal part of ventral shell margin with short row of gradually diminishing setae, followed by rows of denticles
..... *D. senegalensis* Gauthier, 1951...b.
- b. Distal part of ventral shell margin with large spines, head comparatively small2
- 2a. Shell duplicature rounded at distal end
..... *D. sarsi* Richard, 1894a...b
- b. Shell duplicature joining ventral shell margin at nearly right angle....*D. excisum* Sars, 1885

1. *Diaphanosoma senegalensis* Gauthier, 1951

1951. *Diaphanosoma senegalensis* Gauthier, *Alger* : 43-45, pl. ix, a-j.
1952. *Diaphanosoma hydrocephalus* Brehm, *Zool. Anz.*, **149** : 138-140, abb. 1-4.

Material examined : 35 exs., 23-5-1980; Balsager tank, Behind medical college, Shahpura road, Jabalpur dist, coll. P.D. Rane.

Diagnostic characters: Female : Carapace oblong with posterodorsal corner with distinct angle and dorsal margin slightly arched. Ventral margin almost straight; distal part of ventral shell margin with short gradually decreasing setae, followed by row of denticles. Shell duplicature narrow. Head and eye markedly large, eye located near the anterior ventral margin of valves, claw short ; with three basal spines which increasing in length distally and setae on the concave margin.

Distribution: India : MadhyaPradesh, Maharashtra & South India.

Elsewhere : Africa.

2. *Diaphanosoma excisum* Sars, 1885

1885. *Diaphanosoma excisum* Sars, *Norske, Vidensk. Selsk. Forhandl. Christiania.*, **8** : 13-18, Pl.2, figs. 1-3.
1933. *Diaphanosoma paucispinosum* Brehm, *Arch. Hydrobiol Suppl.*, **II** : 656-659, fig. 3.

Material examined : 14 exs., 7-9-1984; Madan Mahal tank; 10 exs., 29-7-1984; Padwar tank, Jabalpur dist, all coll. P.D. Rane.

Diagnostic characters : Female : Body large, carapace almost oblong and rounded anteriorly. Eye small. Posteroventral corner broadly rounded with variable number of (mostly 6-7) marginal denticles followed by delicate cilia. Postabdomen narrow with fine setules. Claw with three basal spines, decreasing size proximally, claw serrated on the distal convex surface. Shell duplicature joining ventral shell margin at nearly right angle.

Distribution : India : Andaman and Nicobar Islands, Rajasthan, Tamilnadu, Tripura, Maharashtra, Kerala, Assam and West Bengal.

Elsewhere : Australia, common in tropical regions and subtropics.

3. *Diaphanosoma sarsi* Richard 1894a

1894a. *Diaphanosoma sarsi* Richard, *Revue biol du Nord France*, vi : 365, pl.15, figs 1-8.

Material examined : 5 exs., 2-4-1981, Tewar tank; 6exs., 6-3-1982, Sukri tank, Jabalpur dist, all coll. P.D. Rane.

Diagnostic characters : Carapace oblong in outline, transversely truncated behind. Posteroventral corner obliquely cut off and armed with a series of small denticles (12-20) followed by small setae. Head narrow, slightly tapering distally. Eyes large and antennae not reaching hind edge of carapace. Claw narrow with three basal spines rapidly decreasing in size proximally.

Distribution : India : New Delhi, Tamil Nadu, West Bengal, Rajasthan, Bihar, Meghalaya.

Elsewhere : Pantropical.

Genus *Pseudosida* Herrick, 1884

4. *Pseudosida bidentata* var. *szalayi* (Daday, 1898)

1884. *Pseudosida bidentata* Herrick, *Geol. and Nat. Hist. Survey. Minnesota-Ann. Rep.*; 12 : 1-191.

1898. *Pseudosida szalayi* Daday, *Termes. Fuzetek. Budapest*, 21 : 64-66, figs. 33 a-d.

Material examined : 2 exs., 2-2-91, Gorah tank on Nagpur Road, Jabalpur dist., coll. P.D. Rane.

Diagnostic Characters : Female : Body elongated, oval, short head; eye relatively small situated near to the anteroventral corner. Rostrum present, no fornix or cervical glands. Antennules unsegmented, long and attached to the posteroventral part of head, with long basal part, with olfactory setae, on each side and a long flexible flagellum. Antenna not extending beyond the posterior margin of valves. Ventral margin of valves with series of long setae followed by series of spinules on the posteroventral corner. Postabdomen with about 10 clusters of spinules. Claw long with 3 basal spines and very small spine like process proximal to them.

Distribution : India : Andaman and Nicobar Islands, Rajasthan, Tamil Nadu, Tripura and Maharashtra.

Elsewhere : Many parts of tropics or near tropics. Sumatra, Srilanka, Malaysia, South Africa, South America and South-East Asia.

Genus *Latonopsis* Sars, 1886

5. *Latonopsis australis* Sars, 1886

1888. *Latonopsis australis* Sars, *Fortn. Vidensk. Selsk. Christiania*; 7 : 6-15., Pl.1, figs. 1-6.

1892. *Latonopsis accidentalis* Birge, *Trans. Wis. Acad. Sci. Arts and Letters*, 4 : 383-386. Pl. 13, figs. 1-5.

Material examined : 10 exs., 1-1-1979; Adhartal on Sihora road, 7 exs., 8-2-1982; Bohariband tank, Jabalpur dist, all coll P.D. Rane.

Diagnostic characters : Female : Head large without distinct rostrum, with antennules on the ventral side. Antennules with sparsely spaced setae and situated on the the thick base. Body elongated; ventral margin of valve with numerous long setae, three setae at the posteroventral corner especially long. Eye located in the middle of head; ocellus minute, located immediately in front of the base of the labrum. Shell gland with two branches, posterior branch much longer than anterior. Postabdomen small, with 7 marginal spines; lateral setae irregularly located. Claw large, with two slightly curved basal spines and with a few denticles on concave margin.

Distribution : India : Rajasthan, Tripura, Tamil Nadu, Maharashtra, West Bengal.

Elsewhere : Australia, Sri Lanka.

Genus *Latona* Straus, 1820

6. *Latona narendrai* Rane, 1985

1985. *Latona narendrai* Rane, *J. Bombay Nat. Hist. Soc.*, 82(2) : 387- 389, figs. 1-3.

Material examined : 6 exs, 25-3-1981; temporary water pool near Sahastradhara, Mandala distt, M.P, coll. Narendra Rane.

Diagnostic characters : Female : Body flattened, nearly quadrangular, Infero-postal and supro-postal angles rounded. Long setae on posterior margin of valve; setae almost present along the entire ventral margin. Distinct dorsal impression between head and shell. Head very large with small tongue-shaped projection on ventral

side, rounded, sometimes more than half the total length of body. Eye placed centrally, with numerous lenses and large pigmented area. Rostrum absent. Hepatic caeca two branched. Shell gland with both branches equal in length. Ocellus present. Postabdomen conical, slightly lobular near the distal end; abdominal setae long two jointed, born on a pair of papillae. Terminal claw with two basal spines, distal one larger than proximal. Postabdomen with 7 marginal denticles. Antennules in female with basal part and one long slender flagellum. Olfactory setae 5-6 attached on one side of basal part. Colour greenish-white but not transparent.

Distribution : Endemic species only found from type locality.

Genus *Sarsilatona* Korovchinsky 1985

7. *Sarsilatona fernandoi* (Rane, 1983)

1983. *Latonopsis fernandoi* Rane, *Crustaceana*, 45(1) : 82-84, figs. 1-4.

1993. *Sarsilatona fernandoi* (Rane, 1983), *Biom.* 6(1) : 41-44; figs. 1-10.

Material examined : 9 exs., 22-12-1978; Gorah tank & Balsagar tank in front of LIC building, Nagpur road, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Body massive, fleshy, head short, not separated from trunk by dorsal impression; no distinct fornicate plates laterally above the oral region. Eye relatively small situated closer to the dorsal side of head. Ocellus smaller than eye. Antennules relatively large with rather large cylindrical base. Swimming antenna massive with strong basipodite, biramous, rami flattened; dorsal ramus 2 and ventral ramus 3 segmented; setae on them are unequal length. Setae on antenna : (9-10)-12 / 0-2-3. Ventro-anterior margin of the carapace with long feathered setae based on conical bases and row of dense clusters of minute spinules. Postabdomen with large pointed triangular prominences situated on dorsal postabdominal margins. Postabdomen with 14-16 clusters of 3-5 lancet shaped anal spines. Terminal claw with three thin basal spines. Semicircular part of claw with row of thin setules at outer

margin and 8-10 large spines at inner margin. Length-2.1 to 2.34 mm.

Distribution : This species is endemic to Madhya Pradesh, India, only found at type locality.

Remarks : Rane, 1983 described this new species as *Latonopsis fernandoi* sp. nov, due to its peculiar postabdominal structure with row of lancet shaped lateral spines in group of 3 to 5. Later Korovchinsky, (1985) erected new genus *Sarsilatona* and included 3 species *Pseudosida papuana* Daday (1900), *Latonopsis serricauda* Sars and *Sarsilatona behningi* sp. nov. was described. Our species having many similar characters but with some distinct different characters. Therefore Rane (1993) relocated the original species *Latonopsis fernandoi* Rane to new genus erected by Korovchinsky – *Sarsilatona*.

Family II. DAPHNIIDAE Straus, 1820

Key to the genera of Daphniidae

- 1a. Rostrum present2
- b. Rostrum absent ... *Ceriodaphnia* Dana 1853
- 2a. Without any cervical sinus, valve with elongated spine posteriorly.....
.....*Daphnia* O.F. Muller, 1785
- b. Cervical sinus present3
- 3a. Postabdomen conically tapering, valve without spine posteriorly (Not recorded in collection of Madhya Pradesh)
.....*Daphniopsis* Sars, 1903a
- b. Postabdomen not conically tapering4
- 4a. Valves obscurely reticulated and with some striae. Ventral body straight and with lateral spine.....*Scapholebris* Schoedler, 1858
- b. Valves transversely striated
..... *Simocephalus* Schoedler, 1858

Genus *Ceriodaphnia* Dana, 1853

Key to the species of genus *Ceriodaphnia*

1. Head produced anteriorly into a short conical beak, claw without pecten, small species about 0.5 mm ... *Ceriodaphnia cornuta* Sars, 1885

2. Head not angulate and without spine. Claw with small group of teeth at proximal part, antennules with thick seta laterally near the tip, large species about 1 mm
..... *Ceriodaphnia affinis* Lilljeborg, 1900
3. Head angulated, not inflated of antennule, claw finely denticulate, antennule with hair like lateral seta near the tip
Ceriodaphnia quadrangula (O.F. Muller 1776).

8. *Ceriodaphnia cornuta* Sars, 1885

1885. *Ceriodaphnia cornuta* Sars, *Norske, Vidensk, Selsk, Forhandl. Christiania*, 8 : 26-28, pl. 5, figs. 1-3.
- 1894b. *Ceriodaphnia rigaudi* Richard, *Revne, Biol. Nord. France*, 6 : 367.

Material examined : 10 exs., 2-2-1982, Balsager tank; 5 exs., 7-8-1984, Budhagar tank; 30 exs., 3-9-1985, Baldeo tank; 4 exs., 19-4-1986; Sadar tank, Jabalpur distt, M.P. all. coll. P.D. Rane.

Diagnostic characters : Female : Head small, depressed and separated from the carapace by a dorsal impression and without rostrum. Head with an acute beak on the ventral side. Antennule short and broad with long seta laterally and group of sensory seta on the apex. Eye large, ocellus small. Valves reticulate with large polygonal meshes. Postabdomen moderately broad with 4 to 5 curved denticles. Claw stout, curved with a series of setules along the concave surface. Ehippial female (reproductive female) : Smaller than parthenogenetic female with rather blunt posterior spine. Dorsal margin of valve is highly arched anteriorly. Ehippium saddle shaped, yellow in colour with deep hexagonal cells at ventral side, central nucleus and star shaped markings of cells on dorsal side.

Remarks: This species was originally described from Australia by Sars (1894). There are two distinct forms of this species : hornless & horned forms. Horned forms are included in *C. cornuta* and hornless forms are in *C. rigaudi*. Fernando (1980) suggested that detailed studies on morphology, ecology & physiology are required to define the exact systematic status of these both species.

Distribution : India : West Bengal, Bihar, Andhra Pradesh, Karnataka, Madhya Pradesh, Rajasthan, Tamil Nadu, Meghalaya, Gujarat, Maharashtra, Andaman & Nicobar Islands, Tripura.

Elsewhere : Eastern Australia and S. Australia, Japan, China, South East Asia, South Africa, Egypt, South America, Sri Lanka, Palestine and other tropical regions.

9. *Ceriodaphnia affinis* Lilljeborg, 1900

1900. *Ceriodaphnia affinis* Lilljeborg, *Nova Acta Regiae Soc. Sci. Upsal*, p. 19.
1968. *Ceriodaphnia affinis* Rey and Jean, *Cah. O.R.S.T.O.M., Hydrobiol.*, 11 (3-4) : 89-90, pl. 7, figs. 4-c.

Material examined : 5 exs., 13-4-1982, Gangasagar tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Head moderate in size, as high as two thirds that of valves. The antennules are short, not extending beyond the vertex of head ; lateral sense hair turn forward with thick base i.e. straight up right to the axis. The eye is large almost filling the head. The valves which are oval in shape are pointed at the posterior margin. The postabdomen is of medium width. Postabdominal claw with a dense group of teeth in the proximal part but not immediately near base. The rest of claw is covered by continuous dense denticulation.

Distribution : This is the first record of this species from India.

Elsewhere: Sudan, Algeria, Sahara, Lake Chad, Ontario.

10. *Ceriodaphnia quadrangula* (O.F. Muller, 1785)

1785. *Daphnia quadrangula* O.F. Muller, *Lipsiae et. Havniae* P. 90, tab. xiii, figs. 3-4.
1919. *Ceriodaphnia spinata* Henrey, *Proc. Royal. Soc. N.S.W.*, 52, pp 466-467, pl xl, figs. 1, 2.

Material examined : 4 exs., 11-11-1985., Hanumantal, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Carapace

rounded quadrangular in outline, posterior protuberance distinctly produced and far above the axis of the body. Valves reticulated but not often plainly marked. Head angulate but not inflated in front of antennules. Antennules small, sensory setae near the apex. Eye of moderate size. Postabdomen slightly narrowing towards the apex, sinuate above anal spines; with 7-9 anal spines. Claw large and finely setulate. Ocellus situated at the base of antennules. Distinct notch between head and carapace separates head from rest of the body.

Distribution : India : Kashmir, Ladhak, South India (Savantwadi & Nilgiri hills).

Elsewhere : Throughout Europe, Central Asia and Greenland.

Genus *Daphnia* O.F. Muller, 1785

Key to the species of the genus *Daphnia*

1. Anterior end of head produced into a spine of variable length, fornices extremely well developed forming lateral wing like spines on both side
..... *Daphnia lumholtzi* Sars, 1885....2
 2. Anterior end of head not produced in to helmet shape of spine fornix are not expanded. Anteriorly head ends into a knob like structure, sinuate ventral side of postabdomen. Dorsal side of head & body have deep notch, carapace is not reticulated and ventral margin of male with several plumose setae
..... *Daphnia sumanea* (Rane, 1986)....3
 - 3 Head & body not demarked by a notch, carapace is reticulated with deep rectangular cells; dorsal edge of postabdomen straight but not sinuate
..... *Daphnia sarojae* (Rane, 1986)....4.
 4. Head not produced into helmet shaped spine above and with rostrum not in contact with ventrolateral carapace margin, antennae densely ciliated, strong rows of dorsal spines about 77 and ventral spines about 115 to 121 at the dorsal and ventral side of valve, dorsal margin of postabdomen straight, 6 strong spines present all over the tail
..... *Daphnia madhuriae* Rane, 1990....5
5. Head without any crest (helmet). Rostrum recurved generally close to in contact with ventrolateral carapace margin. Antennular mounds set close to rostrum
..... *Daphnia carinata* King, 1853

11. *Daphnia lumholtzi* Sars, 1885

1885. *Daphnia lumholtzi* Sars, *Norske. Vidensk. Selsk forland. Christiania*, 8 : 18-26, pl. 1, figs. 1-10.

Material examined : 100 exs., 20-3-1981, Premnagar tank on gupteswar road, Jabalpur distt, M.P. coll. P.D. Rane.

Diagnostic characters : **Female :** Length 1.1-1.4 mm (without tail spine). Carapace broadly oval with posterior long spine. Head produced anteriorly in the form of a helmet of variable length. Dorsal and ventral margin of valve with a series of small spines. Rostrum somewhat variable in shape. Antennular mounds very well developed, situated close to rostrum. Eye large ocellus small. Fornices extremely well developed, laterally expanded like wing like spine. Postabdomen tapering distally with 10-13 anal spines and group of lateral setae. Claw stout, curved with three groups of setae. Parthenogenetic female with 5 eggs in the brood pouch.

Male : Small, length about 1 mm. Head set off from the carapace by a distinct depression above the heart. Tail spine is about ½ the length of carapace. Anterior projecting crest on the head, like a small spine. Antennules nearly as long as head with strong flagellum. Antennule with 5 olfactory setae and spine like seta between the olfactory setae and base of flagellum. Eye large, ocellus conspicuous. Abdominal process reduced into small bulges. Postabdomen narrow near the claw. Dorsal margin of postabdomen strongly sinuate. 5-6 spines below the indentation, posterior most two are placed submarginally. Claw with 3 pecten with 8-14-44 teeth respectively. Middle pecten with large teeth than proximal and distal pecten. Ventral margin of carapace with long marginal setae.

Ehippial (reproductive) *female* : Length 1.6 mm, larger than parthenogenetic female. Body relatively broad. Two reproductive eggs present in the ehippium. Eggs well separated from each other by unmalanized dark ehippial matrix. Ehippium well developed hook shaped anterior prolongation. Dorsal margin dark brown with about 8 large but rather widely separated spine. Egg chambers are laterally protruded out.

Distribution : India : West Bengal, Orissa, Andhra Pradesh, Rajasthan, Tamil Nadu, Bihar, Tripura.

Elsewhere : Australia, Egypt and widely spread in Asia, Africa, Pakistan, Sri Lanka, Nepal.

12. *Daphnia sumanae* (Rane, 1983) comb. nov.

1986. *Daphniopsis sumanae* Rane, *J. Bombay Nat. Hist. Soc.*, 3 : 638-640 figs. 1-12.

Material examined : 18 exs (females), 6 exs (males), 17-12-1980, a ditch in the Narmada river at Sahastradhara about 6 kms North of Mandla, Mandla distt, M.P., coll. P.D. Rane.

Diagnostic characters : Female : Head relatively large without helmet, Anterior lateral margin of the head above the eye almost straight which gives appearance like triangular head. Ocellus small, triangular. Rostrum small, obtuse at tips looks like knob. There is marked convexity at the base of small antennule. Fornix strongly prominent. There is slight bulging of shell at the ventral side near the joint of spine. Claw with three pecten, all unequal in size. Two ehippial eggs lying at right angles to the dorsal margin. Tips of eggs strongly pointed. Ehippium reticulated with dense circles and hairs. Length-2.4 mm.

Male : Similar to female in general shape. Body size 1.1 mm. Head almost as long as one third of valve. Fornix expanded. Eyes comparatively larger than females with many refractive bodies. Antennules with large flagellum narrowing evenly to the distal end. The inner ventral margin of valve with dense row of feathered setae. Postabdomen with small reduced abdominal processes. Dorsal side of the postabdomen sinuate with small 6-7

anal spines. Pectinate claw. Small specimens have small spine above the head.

Distribution : This is endemic species only found at type locality in Madhya Pradesh.

Remarks : This species originally placed in genus *Daphniopsis* Dana 1852, but prof. W.P. William (Per Comm. University of Adelaide, Australia) suggested that this species should put in genus *Daphnia* as it exhibit the main diagnostic character presence of posterior tail spine (absent in genus *Daphniopsis*). The original species is relocated herewith in genus *Daphnia*.

13. *Daphnia sarojae* Rane, 1986

1986. *Daphnia sarojae* Rane, *J. Bombay Nat. Hist. Soc.*, Bombay. 83(3) : 641-642, Figs. 1-10.

Material examined : 96 exs (females), 5 exs (males), 26-6-1983, rain puddle near rice field on shahpura road about 6 kms from Jabalpur, Jabalpur distt, M.P., coll. P.D. Rane.

Diagnostic characters : Female : Carapace, seen laterally, rounded and oval in outline, with spine generally long more than one third of valve length and slightly turned obliquely upwards; denticles of dorsal edge extending beyond the cervical region and denticles of ventral edge starting almost from the join of head and carapace. Head of moderate size and defined from the carapace above by a slight concavity of dorsal margin. Helmet may present in early developing stages. Eyes and ocellus present. Rostrum small, pointed. Ventral margin of head concave and sinuate near the rostrum. Antennule small, knob like. Fornix well developed. Carapace distinctly reticulated all over by deep rectangular or squarish cells. Dorsal margin of postabdomen straight but not sinuate. There are 10-12 anal denticles. Claw straight, pectinate with proximal and distal pecten. Proximal pecten with 8-9 teeth arranged in half circles, distal pecten with 18-19 large equal teeth. There are five hairs extending from distal pecten to the end claw. Three hairy abdominal processes present. Length 2.2 mm.

Male : Similar to female in general shape of body. Antennule with long flagellum narrowing

evenly to the distal end. Large eye, no abdominal process and hook at first leg. Postabdomen much narrowed with small 4 anal spines. Claw with pecten. Rostrum obtuse.

Distribution : This is endemic species only found at type locality of Jabalpur distt. of Madhya Pradesh state.

14. *Daphnia madhuriae* Rane and Jafri, 1990

1990. *Daphnia madhuriae* Rane and Jafri, *Crustaceana* (Leiden), 59(1) : 62-68, figs. 1- 23.

Material examined : 40 exs (females), 20 exs. (males), 7-3-1983, Pariat tank 10 Kms east of Jabalpur, Amarkantak road Jabalpur distt and 10 exs. (females) and 10 exs. (males), 27-7-1985, Sri. Ganesh temple tank, Indore, Indore distt, all coll. P.D. Rane.

Diagnostic characters : Female : Length 1.84-2.30 mm. Head moderately large, semicircular seen from sides., anterior head with slight trace of frontal concavity. Compound eye moderately large situated near frontal edge of head with 10 lenses. Ocellus absent. Helmet on head unpronounced. Fonix laterally expanded. Rostrum pointed not in contact with ventrolateral carapace margin. Antennule mound strongly pronounced situated near the rostrum. Antennules small, embedded in pit, anterior part of antennules with 6 or 7 olfactory setae, projects beyond the ventral margin of head. Head reticulated with hexagonal cells. Antenna well developed, densely covered all over with thin spine like setae. These setae arranged in circles. Dorsal ramus 3 segmented, ventral with 4 segments. Antennal formula 1-1-3/0-0-1-3. Hepatic caeca large, almost circular. Shell spine large, slender, inserted just above the middle of the valve; encircled by 6 rows of strong spines. Carapace with about 77 strong dorsal spines and ventral spines 115-121. Postabdomen with 9-12 strong marginal anal spines. Abdominal setae long, two segmented with thin hairs all over. Pectenate claw with three pectens, first with 9-12, second with 18-21 and third with 50-55 teeth. Five abdominal process. Parthenogenetic female with 2 to 5 developing eggs, nearly up to 8.

Ephippial female : Length 2.15-2.44 (without tail spine). Body rather broad, densely reticulated, rostrum less pointed. 3rd, 4th, 5th abdominal processes larger and more hairy. Two ephippial eggs lies obliquely. Egg chamber dark brown black ; separated by wide area of unmalanized light yellow matrix. Ephippium with 47 large equal spines on dorsal dark strip and anterior out shoot with 27 spines. Reproductive females are even larger than largest parthenogenetic females in the crowded population.

Male : Length 1.2 mm. Carapace oblong, shell spine well developed broader than female. Ocellus absent, head without crest dorsally. Rostrum undeveloped. Antennules large with well developed flagellum anteriorly. Antennule with 7 to 8 Olfactory setae. A large spine like seta present between the junction of flagellum and olfactory setae. Abdominal processes reduced. Dorsal margin of postabdomen with large indentation with 4 or 5 anal spines. Claw similar to female but more stout. First leg with a large slender hook and a long setae.

Distribution : It is endemic species only found at type localities of Jabalpur and Indore distts of M.P.

15. *Daphnia carinata* King, 1853

1853. *Daphnia carinata* King., *Pap and Proc. R. Soc. Vandiemann land*, Hover town, 2(2) : 246, pl. 1 and VI A.

Material examined : 12 exs., 12-4-1981, Panagar tank on Sihora road about 20 Kms north of Jabalpur, Jabalpur distt, M.P., coll. P.D. Rane.

Diagnostic characters : Female : Length 2 to 2.3 mm (excluding tail spine). Tail spine half or slightly more than the length of body. Carapace broadly oval but slender in small and juvenile individuals. Head large with anterior margin roughly semicircular in shape. Helmet in adult female usually absent but may be present in juveniles. Antennular mound very small and set very close to the rostrum. Rostrum slightly recurved almost in contact with the antero-ventral corner of the valve. Ventral margin of head straight to slight concave. Eye moderately large, set nearer

to anterior margin of head towards the rostrum. Intestinal caecae large 'S' shaped, thick with cellular lining inside. Antennae are moderately large. The distal segment of each ramus with three denticles. Three abdominal processes, second is almost straight. Third is one and a half times larger than second, sparsely covered with hairs. Dorsal margin of postabdomen almost straight with 10-11 anal teeth, 2-9 appear to be placed submarginally; followed by 10-13 small spines. Many rows of small spinules present on the poster-dorsal margin of postabdomen. Dorsal margin of carapace with 50-55 spines and ventral margin with 70-90 spines.

Male : Body oblong, 1.2 to 1.3 mm in length. Tail spine usually half the length of the body slightly placed dorsally to the central axis of body. Rostrum undeveloped. Eye is large almost filling anterior part of head. Ocellus conspicuous. Antennule small, flagellum well developed which is of same length as basal segment. Abdominal processes reduced to small bulges. Dorsal margin of postabdomen elongate, straight with small indentation distally. 9 anal spines present. Claw appears more stouter than claw of female, with usually 3 pectens of spines.

Ephippium : Length of ephippium about 1 mm. Colour dark yellow with eggs about 32 spines on the dorsal side of egg chamber and 19 on the anterior prolongation. Spines decrease in size towards each end. Only ephippium were found in the collection, no female specimen was found.

Distribution : India : Simla hills (H.P.); Mysore, Banaras, Meerut, Surat, Rajasthan, Tamil Nadu, Bihar, West Bengal, Goa, Orissa, Andhra Pradesh, Tripura, Manipur, Punjab, Haryana.

Elsewhere : Australia, Egypt and wide spread in Asia, Indonesia, Sri Lanka, Africa.

Genus *Simocephalus* Schoedler, 1858

Key to the species and subspecies of the genus *Simocephalus*

- 1a. Vertex rounded, without spines, without pectin. Ocellus elongated
Simocephalus vetulus (O.F Muller, 1776)....2
2. Vertex angulate, spinous. Ocellus usually

rhomboidal.....
..... *Simocephalus serrulatus* (Koch, 1841)

- b. Vertex angulate, no spines on head, ocellus rhomboidal. Antennules with ventrally situated 4-5 pointed denticles, inner pectinate claw with small teeth of 28-30 *Simocephalus serrulatus surekhae* Rane, 1985a....3
3. Vertex rounded without spinules, head not produced into an acute projection, body reticulation in the form of bricklike pattern, large distal pectinate claw of 7-18 teeth *Simocephalus vamani* Rane 1985b....4
- 4a. Head produced into an acute small projection, large pectinate claw of straight 15-16 teeth. Small species 2 to 2.1 mm in length
Simocephalus acutirostratus vidyae (Rane, 1983)
- b. Head produced into an acute large projection, pectinate claw with slightly curved 15-21 teeth, large species with length 3.33 mm
Simocephalus acutirostratus gajareae (Rane, 1986)

16. *Simocephalus vetulus* (O.F. Muller, 1776)

1776. *Daphne vetula*, O.F. Muller, *Zool. Daniae Prodrromus Seu Animatum Norvegiae, etc. Havninae*, p. 199, No. 2399.
1858. *Simocephalus vetulus* : Schoedler, *Branch der Umg. Von. Berlin*, p. 18.
1868. *Simocephalus vetulus* Muller, *Naturhistorisk Tidsschrift*, V, p-122, Tab. I, figs. 26-27.
1889. *Simocephalus vetuloides* Sars, *Zool. Mus. Imp. Acad. Sci.*, 3 : 5-6, pl. VI, figs. 11-12.

Material examined : Sexs., 3-4-1985, Kundam tank ; 10exs ., 10-4-85, Padwar tank, Jabalpur distt, M.P., all coll. P.D. Rane.

Diagnostic characters : Female : Carapace broadly oval or rhomboid in shape. Dorsal margin moderately to strongly arched. No posterior spine present. Posterior corner with blunt angle, posterior part of dorsal margin with distinct denticles. Head small with large eye and elongated ocellus. Postabdomen very broad, deeply emarginated with about 10 anal spines and a long curved and denticulate claw.

Distribution : India : West Bengal, Tamil Nadu, Rajasthan, Punjab, Kashmir, Bihar, Uttar Pradesh, Andaman and Nicobar Island, Tripura, Maharashtra.

Elsewhere : Tibet, England, Australia, Switzerland, Turkey, Russia, Sri Lanka, North and South America.

Remarks : Some specimens in the same collections with a denticulate protuberance similar to sub species *Simocephalus vetulus vetuloides* (Sars, 1898) are not separately described as they are in the same samples.

17. *Simocephalus serrulatus* (Koch, 1841)

1841. *Daphnia serrulatus* Koch, *Friedrich, Pustel, Rosemberg, Heft; 8* : 35-37.

1900. *Simocephalus serrulatus* Lillijeborg, *Nova acta Regiae. Societas Scientiarum, Upsaliccusis*, 3(19) : 179, pl.20, figs 9-16.

Material examined : Female : 7 exs., 2-2-1978, Deotal tank, Nagpur road; 8 exs., 21-12-1985, Sukri tank on Nagpur road, Jabalpur distt., M.P, all coll. P.D. Rane.

Diagnostic characters : Female : Carapace broadly oval or some what rhomboidal in outline; slightly widened behind. Dorsal margin evenly arched and ventral margin bulging in middle and posterior protuberance denticulated slightly above the median axis of body. Head comparatively small; with dorsal margin evenly curved and front forming below an acute angle armed with a number of minute denticles. Rostral projection small. Postabdomen broad, with 4 large and 4 small anal denticles. Large anal denticles with groups of hair near bases. Postabdominal claw nearly straight with spinulation at both outer and inner margin of dorsal side. Outer margin with 2 pectens of 35 small and 50 distal teeth which decreasing towards the tip of claw. Inner margin with continuous row of large teeth. Eye comparatively large, ocellus small rhomboidal in shape, carapace all over with hexagonal deep reticulation.

Distribution : India : Tamil Nadu, Meghalaya, Rajasthan, Tripura, Maharashtra.

Elsewhere : Australia, Sri Lanka, Africa, China, Europe, South East Asia, North and South America, Java, New Zealand.

18. *Simocephalus serrulatus surekhae* (Rane, 1985a) Comb. nov.

1985. *Simocephalus surekhae*, Rane

Material examined : 11 exs., 5-10-1981, Kola tank near Deotal on Nagpur road, Jabalpur distt, M.P.; coll. P.D. Rane.

Diagnostic characters : Female : Carapace seen laterally is broad, oval or somewhat rhomboidal in outline, with well marked protuberance posteriorly; dorsal margin evenly curved; posterior edge of valve nearly straight and rather oblique, joining the ventral edge at a well marked angle. Posterior half of the dorsal margin strongly denticulate; paired hook like, which continued to the terminal protuberance with small equal denticles attached submarginally. Head small angulate, with dorsal margin evenly curved. Rostrum absent. Antennules with 10 terminal aesthetasces and lateral sensory seta originate from knob like expansion. 3-4 large spines present laterally along the anterior edge of the antennules. Eye large, with refractive bodies conspicuous. Ocellus small, rhomboidal. Very large tongue like expansion present at the margin of head, clothed with several large hairs. Valves with distinct pattern of polygon cells at various places. Postabdomen broad posteriorly, with acute supra-anal angle ; with anal denticles 11-12 on both side, with groups of hairs on inner margin. Postabdominal claw nearly straight, spinuated both on outer and inner margin. Length of female, 1.8 to 2.4.

Distribution : It is endemic sub-species only found at type locality and recorded from Jabalpur district only.

19. *Simocephalus vamani* Rane, 1985b

1985. *Simocephalus vamani* Rane, *Bull. zool. Surv. India*, 7(2-3) : 225-229, figs. 4-9.

Material examined : 33 exs., 7-7-1980, a tank in front of Hanuman mandir near Deotal, Nagpur road, Jabalpur distt. M.P, coll. P.D. Rane.

Diagnostic characters : Female : Carapace, seen laterally, sub-rhomboid in outline; being only slightly expanded behind ; very small protuberance behind in the middle; posterior dorsal margin evenly curved and situated just above the said protuberance. Posterior part of the carapace denticulate, the denticles continued on terminal protuberance but not the hind edge of valve. Anterior half of ventral margin with several feathered setae, 4 to 5 of them are thickened and become tuft. Valve strongly punctuate and reticulated with rectangular cells. Head small; fornix expanded; eye and ocellus present mostly squarish or sometimes rounded; vertex rounded over. Rostrum projection small pointed. Pair of antennules present below the rostrum with large sensory papilla arise on knob like expansion, 9-10 terminal sensory setae present. Postabdomen less broad, with supra anal angle produced. Anal denticles 7 to 9. Claw pectinate with 17-18 large teeth. Inner margin of claw with one row of small teeth. Antenna with large basal segment with setae formula 0-0-1-3/1-1-3. Two abdominal process present and about 16 to 17 parthenogenetic eggs present in brood pouch. Length of female 2.17mm.

Distribution : This is endemic species only found from type locality of Jabalpur distt of M.P.

20. *Simocephalus acutirostratus vidyae* (Rane, 1983)

1983. *Simocephalus vidyae* Rane, *Crustaceana*, 45(2) : 154-156, figs. 1-4.

Material examined : 2 exs., 3-8-1981, road side ditch near rice field, Tewar, Bhedhaghat road, Jabalpur distt, M.P., coll. P.D. Rane.

Diagnostic characters : Female : Carapace broadly oval or somewhat rhomboid in outline, with well marked protuberance in middle. Posterior part of dorsal margin of valve strongly denticulate, the denticles continued on terminal lobed protuberance and hind edges of valve. Head prominent, fornix greatly expanded, front pointed, faintly reticulated. Vertex angulate, rostral projections very long. Eye comparatively large; ocellus small, rhomboid or rounded. Postabdomen broad, with supra-anal angle rather produced. Anal denticles 6-7 on each

side. Apical claw slender nearly straight with pecten of large 15-16 teeth and row of fine teeth distally. Teeth on pecten increase in size from proximal to distal end. Antennules of female with very long sense hair. Colour reddish-brown. Length 2.16 to 2.59 mm. Male unknown.

Distribution : This sub-species has endemic distribution only found in type-locality of Jabalpur distt of Madhya Pradesh.

Remark : Present species have general characters similar to species *Simocephalus acutirostratus* (King, 1853) found at Kodaikanal, South India by Brehm, 1953. Present species transferred and relocated as the form of sub species of *S. acutirostratus*. The difference in size *S. acutirostratus* length is upto 2 mm, while *S. vidyae* have size range from 2.16 to 2.59 mm and the claw pecten teeth in *S. acutirostratus* are 10-12 which are similar in size throughout and in *S. vidyae* have pecten of 15-16 teeth and their size increases from proximal to distal end.

21. *Simocephalus acutirostratus gajareae* (Rane, 1986)

1986. *Simocephalus vidyae gajareae* (Rane)

Material examined : 9 exs., 18-7-1982, Balsagar tank behind medical college, 7 kms south west on Shahpura road, jabalpur distt., M.P., coll. P.D. Rane.

Diagnostic characters : Female : Carapace seen laterally, broadly rectangular with bilobed protuberance in the middle axis of body; dorsal margin almost straight and curved posterior part situated at some distance above the protuberance; hind edge of valve straight, oblique and joining the inferior edge at an obtuse angle. One-third posterior part of the dorsal margin strongly denticulate, the denticles being continued on terminal lobed protuberance and hind edges of valve. Head very prominent having fornix greatly expanded. Front of head pointed like a beak. Vertex angulate, rostral projection very large. Eye large without refractive bodies; ocellus small, rhomboidal, sometimes triangular. Postabdomen broad with supra-anal angle slightly produced. Anal

denticles 8 on each side. Apical claw with small proximal pecten with 6-7 teeth and distal pecten with large 15-21 teeth. The proximal pecten teeth straight while that of distal pecten slightly bend towards the tip of claw. Antennules slightly curved with large sensory hair at upper margin, arising from knob like expansion and 9 sensory setae present at tip. Colour blackish-green. Length of female is 3.3mm and 32 developing embryos inside brood pouch. Ehippial female smaller than parthenogenetic female. Length 2.2 mm. Colour of ehippium is yellow with slightly darker along circular border.

Male : Unknown.

Distribution : This species has endemic distribution as it has reported only from type locality of Jabalpur distt, M.P.

Remarks : This sub species has general characters similar to *Simocephalus acutirostratus* from South India, therefore the original sub species *S. v. gajareae* has been relocated and transferred to *S. acutirostratus*. Both differs in many characters. i. Size – *S. acutirostratus*.- 2 mm while in *S. a. gajareae*–3.2 mm. ii. Protuberance–In *S. acutirostratus* : Protuberance rounded while *S. a. gajareae* it is bilobed. iii. The pectinate claw in *S. acutirostratus* pectin with 10-12 teeth all are of same size and straight while in *S. a. gajareae* the pecten with 15-21 teeth and they are bent slightly towards the tip of claw.

Subfamily SCAPHOLEBERINAE Dumont and Pensaert 1983

Genus *Scapholeberis* Schoedler, 1858

Key to the genus and species *Scapholeberis*

- 1a. Colour whitish green; head large with sclerotised crest above the head like thorn shape extention, postabdomen large, ventral side of the postabdomen almost half circular with 5-7 anal spines small. Species range from 0.4 to 0.7 mm
Scapholeberis mucronata (O.F. Muller, 1776).
- b. Colour blackish-brown, head dorsally broad rounded, postabdomen at ventral side almost rectangular with four large and two small anal

spines, large species up to 1 mm
..... *Scapholeberis Kingi* G.O Sars, 1888

22. *Scapholeberis mucronata* (O.F. Muller, 1776)

1776. *Scapholeberis mucronata* (O.F. Muller) *Havniae*, 264 pp.

Material examined : (After Saini & Singh, 1984) Cladocera from Rewa distt. This species collected from river Behar, Tamas and Lakhauribag, Semaria, Mauganj ponds. Coll. Saini & Singh.

Diagnostic characters : Female : Body and feet covered by bivalve shell, five pairs of feet, intestine with two hepatic caeca, valves arched dorsally; posterior and ventral margin straight; at their junction a spine. Antennule very small, sucker plate laminated, infolded and flat. Head has arched crest. Anal corner of postabdomen usually rounded, 3 pectinate claw weakly differentiated. Colour of the species white- greenish.

Distribution : India : As Saini & Singh it is recorded from Rewa distt.no other records of this species.

Elsewhere : Palaearctic and North Holarctic forms, also recorded from Subarctic North America, Central Europe, Central France, North Italy, European, USSR, Western Siberia.

23. *Scapholeberis kingi* G.O. Sars, 1888

1853. *Daphnia mucronata* King, *Pap. r. Soc. Candiemens land*, 2, 255-256, pl. vi E.

1888. *Scapholeberis kingi* Sars, *Forhandlinger i. Videnskabs selskabet I Christiania*, P. 68.

1903. *Scapholeberis kingi*: Sars *Archiv for math. og naturv.*, xxv, 8, p 8, pl. 1, figs. 2a-c.

Material examined : 3 exs., 10-9-1983, Panagar tank on Sihora road ; 2 exs., Kantangi tank on Damoh road, Jabalpur distt; 40 exs., 3-4-1983, at Holkar tank, Indore, Indore distt; all coll. P.D. Rane.

Diagnostic characters : Body oval, quadrangular and rounded dorsally. Head small, slightly depressed, rostrum rounded and projecting ventrally. Eye large, ocellus small situated closer to the rostrum than to the eye. Antennule short

located behind the rostrum. Posteroventral corner of each valve produced into short spine pointing backwards. Valves with lines and reticulation. Postabdomen short, broad – rectangular with 5-6 anal spines. Claw curved dorsally with spinules along the concave surface. Colour of the species yellowish- black. Length upto 0.4 mm to 1 mm.

Distribution : India : Andaman and Nicobar Islands, Assam, Kashmir, Meghalaya, Rajasthan, Tamil Nadu, Maharashtra, West Bengal, Tripura.

Elsewhere : Australia, South East Asia, Middle East, Africa, Sri Lanka, Phillipines, North and South America, Germany, China, Thailand, Indonesia.

Family MOINIDAE Goulden, 1968

Key to the genera of family MOINIDAE

- 1a. Ocellus present, body laterally compressed
..... *Moinodaphnia* Herrick, 1887
- b. Ocellus usually absent, body thick and heavy
..... *Moina* Baird, 1850

Key to the species of family MOINIDAE

- 1a. Ocellus present, one large abdominal process, horse-shoe shaped, valves quadrate
..... *Moinodaphnia macleayi* (King, 1853)
- b. Ocellus absent, small species, less than 1mm. ventral margin of valves with 11-25 long setae, head with supraocular depression
..... *Moina micrura* Kurz, 1874
- c. Large species more than 1.5mm, ventral margin of valve with 80-85 stout setae, head without supraocular depression
..... *Moina dodhui* Rane, 1874

Genus *Moinodaphnia* Herrick, 1887

24. *Moinodaphnia macleayi* (King, 1853)

1853. *Moina macleayi* King, *Pap. Proc. R. Soc. Van. Diemans, Land.*, 2 : 251-252, Pl. 5.

1886. *Moina submucronata* Brady, *J. Linn. Soc., Zoology*, 19 : 294, pl. 37, figs. 4-5.

Material examined : 1ex., 9-4-1983, Pariat tank, 10 kms East on Amarkantak road, Jabalpur distt., coll. P.D. Rane; 1ex., 27-9-1982, Bharna tank,

Jabalpur distt, coll. D.K. Harshey.

Diagnostic characters : Female : Head small, rounded and trigonal in shape, with distinct cervical depression. Eye large, filling anterior part of head. Ocellus small, situated closer to antennules than to eye. Antennules slender with long lateral setae and group of sensory setae on the apex. Ventral margin of valve rounded with series of short marginal spines. Abdominal process large, horse-shoe shaped. Postabdomen with an elongated distal end, with 8-10 feathered teeth and a bident tooth, and with 7-11 feathered teeth. Labral keel with few setules on ventral margin. Valve tumid in posterior region crested and marked with oblique striae. Claw with fine setae on the concave margin. Length 0.6 mm.

Distribution : India : South India, West Bengal, Andaman & Nicobar Islands, Rajasthan, Tamil Nadu.

Elsewhere : Widely distributed in tropics and Australia.

Genus *Moina* Baird, 1850

25. *Moina micrura* Kurz, 1874

1820. *Monoculus rectirostris* Jurine, *Paris*, : 134-145, pl. 13, figs. 3-4.

1874. *Moina micrura* Kurz, *sitzber K. Wiss. Wein. Math. Nat.*, 69 : 13-15, pl.1, fig.1.

1892. *Moina dubia* Guerne, et. Richard, *Mem. Soc. Zool. France*; 5 : 527-530, figs 1-2.

Material examined : 9 exs., 30-4-1983, Premnagar tank; 9 exs., 30-4-1983, Premnagar tank; 10 exs., 2-2-1985, water pool near Madan Mahal ; 8exs., 21-4-1984, Sadar tank; 20 exs., 5-9-1985, Hathital tank; Jabalpur distt, M.P, all coll P.D. Rane.

Diagnostic characters : Female : Head large with well developed supraocular depression. Eye large, no setule either on head or valve. Ventral margin of valve with 11-20 long setae followed by groups of short setae on posterior margin. Antennules are large, thin, with long basal seta. Postabdomen short, slender with distal conical part. Distal margin of postabdomen with bident tooth and 5-9 feathered lateral setae decreasing size

proximally. Claw large and curved, ventral base of claw with pecten of 3-7 teeth.

Distribution : India : Tamil Nadu, Maharashtra, Kerala, Rajasthan, West Bengal, Punjab, Haryana, Bihar, Karnataka, Tripura.

Elsewhere : Africa, Syria, USSR, France, Phillipines, N. America, South East Asia, Europe.

26. *Moina dodhui* Rane, 1987

1987. *Moina dodhui* Rane, *Crustaceana* Leiden, 52(3) : 243-250, figs.1-22.

Material examined : 22 exs., 10-12-1980, Madan mahal ditch near premnagar, Nagpur road, Jabalpur distt; 50exs., 29-2-1984, a ditch near Shipra river near railway bridge about 8 kms from Ujjain, Ujjain Distt, all coll P.D. Rane.

Diagnostic characters : *Female* : Carapace oblong laterally and head flattened in front. The head distally separated from the shell, head is broadly rounded, no supraocular depression. Eye large occupying most of the central part. The antennules are long, robust and pointed at both ends. The sensory seta large originates from lateral margin. Antenna very stout covered with hairs all over the rami. The two sensory setae at base are almost as long as the basipod. There is no distinct reticulation but valve has somewhat granular appearance. The ventral shell rim carries row of 80-85 stout setae, followed by shorter teeth in groups of 6-9. Postabdomen broad and long ; the distal conical part about one third of total length. 10-11 long feathered teeth and and large bidentate tooth present on postabdomen. Claw with hairs on the concave surface. Length of female 1.5 mm, ephippial female 1.1mm. Ephippium light yellow covered all over with pentagonal and hexagonal cells. Ephippium contains two eggs, lie dorso-ventrally.

Male : Body of male like of female is not covered with hairs; and lacks of a supraocular depression. Eye large brown occupies the end of head; two long antennules originate below the eye. The antennules bent at some distance before the middle, two sensory setae originate near this bend. The ventral shell rim has 35-38 marginal setae.

The first leg of male has large, recurved hooks. The postabdomen of male is broader than female; long hairs on the dorsal margin and 10-11 lateral feathered teeth. The claw armed with 12-14 teeth along the concave margin of claw, sometime has appearance of a pecten.

Distribution : This species is endemic to the type locality not found at other localities.

Family V. MACROTHRICIDAE Baird, 1843

Key to the genera of Macrothricidae

1. Postabdomen very large with long spines....
..... *Ilyocryptus* Sars, 1862a
- Postabdomen of medium size with small spines
..... 2
- 2a. Antennules widening distally, guts without loops, exopodite of leg iv with three bristles
..... *Macrothrix* Baird, 1843
- b. Antennules not widening distally, same length throughout, exopodite of leg iv with two bristles *Echinisca* Lievin 1848

Genus *Macrothrix* Baird, 1843

27. *Macrothrix spinosa* King

1843. *Macrothrix spinosa* King, *Pap. Proc. R. Soc. Van. Diemans Land.*, 2 : 256, pl.VI F.

1915. *Macrothrix spinosa dentata* Phyfair, *Proc. Linn. Soc. N.S. Wales*, 34 : 140-141, pl. 8. figs. 1-2.

Material examined : 7 exs., 19-4-1983, Budhagar tank, Jabalpur distt. coll. P.D. Rane.

Diagnostic characters : *Female* : Length 0.4-0.42 mm. In lateral view body oval, head and carapace divided from each other by crumpled shaped structure. Dorsal margin finely serrated in places, edge of head and valves. Head rounded, ventral margin slightly concave with pointed prominence of anteroventral corner near rostral region. Antennules enlarged at apex; anterior margin with several fine incision and rows of setules. Dorsal surface of shell with squamous sculpturing. Eye large, ocellus small located near the tip of rostrum. Postabdomen short, bilobed with row of minute lateral spines. Claw short and serrated on the concave surface.

Distribution : India : Andaman and Nicobar Islands, Manipur, Tripura, Rajasthan, Tamil Nadu, Maharashtra.

Elsewhere : Cosmopolitan.

Genus *Echinisca* Lievin, 1848

Key to the species of *Echinisca*

1a. Posteroventral margin of valve fringed with long setae

....*Echinisca capensis monodi* Gauthier, 1930

b. Posteroventral margin with short setae

..... *Echinisca triserialis* (Brady, 1886)

28. *Echinisca capensis monodi* Gauthier, 1930

1930. *Macrothrix capensis var monodi* Gauthier, *Bull. Mus. Nat. Hist. Natur. Paris*, 11 : 92-116.

1969. *Guernella monodi* Rey and Saint-Jean, *Annales de Limnologie* : 177-182.

Material examined : 9 exs., 6-5-1983, Ranital tank on the Damoh Road, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 1-1.1 mm. Body shape oval, dorsal margin broadly rounded, posterodorsal corner with or without projection. Antennules cylindrical typical of the genus, long, slightly bend, not dilated at their extremity; 4 sharp stout spines at their inner margin, sometimes they appears in pair, while at extremity there are half rings of spines. The postabdomen typical to this species, part anterior to the anus is densely setiferous; the anus guarded by a pair of typical flaps: posterior to the anus the ventral edge of the postabdomen with a row of minute teeth. Carapace convex dorsally, ventral margin evenly rounded with a series of long setae at the posteroventral corner. Postabdomen bilobed, dorsal distal margin rounded with 4-5 denticles on anal groove. Claw short, curved, strong, chitinous with a tough setae in the middle. Ventral distal margin is also with fine hairs. Natatorial setae with large anterior segment.

Distribution : India : Tripura, Goa.

Elsewhere : Sri Lanka, Malaysia and Africa.

29. *Echinisca triserialis* (Brady, 1886)

1886. *Macrothrix triserialis* Brady, *J. Linn. Soc. Lond. (Zool)*, London, 19, 295, Pl. 47, figs. 16-20.

1976. *Echinisca triserialis* Smirnov, *Zool. Inst. Acad. Nauk.Ossr. New Ser.*, 112 : 109-110, figs. 81-83.

Material examined : 1 ex., 1-4-1984, Amkhas tank; 3 exs., Medical college tank; 5exs., 29-7-1984, Gorah tank, Jabalpur distt, M.P, all coll P.D. Rane.

Diagnostic characters : Female : Length- 0.4-0.6 mm. Body oval, dorsal margin of valve with slight cervical depression. Eye large, ocellus small and situated nearest to the apex of rostrum than to eye. Antennule long with long lateral setae, and notches on anterior margin and sensory seta situated near to base. Antennae short with a longest seta having two or three longer spines in the middle. Postabdomen bilobed with rows of spines increasing in size proximally. Claw short and serrated without basal spines.

Distribution : India : Andaman & Nicobar Islands, Madhya Pradesh, Rajasthan, Tamil Nadu, Kerala, West Bengal, Madhya Pradesh and Maharashtra.

Elsewhere : Senegal-Africa, Kenya, Angola, Chad-Africa, Malwa lake-Nyassa, Tanganyka, Uganda, Nigeria, Srilanka, Phillipines, Australia.

Genus *Ilyocryptus* Sars, 1862

30. *Ilyocryptus spinifer* Herrick, 1882

1882. *Ilyocryptus spinifer* Herrick, *10th Annual Rep. Geol. and Nat. Hist. Survey. Minn.*, 235-252.

Material examined : 7 exs., 3-4-1980, Engineering college tank; 1 ex., 7-7-1982, Supatal tank on Nagpur road, Jabalpur distt., M.P, all.coll. P.D. Rane.

Diagnostic characters : Female : Length 0.8 to 0.9 mm. Carapace triangular, dorsal outline slightly convex. Posterior and ventral margin of carapace forming large continuous curve. Carapace and head shield retained during the moulting. Head small, eye large, ocellus small situated about halfway between eye and base of antennules. Antennules long with group of sensory setae on

distal end. Valves with a series of long feather like setae on ventral side. Postabdomen with slight depression in the middle. Preanal margin with 12 denticles upto anal groove and with five long and stout spines on the lateral surface.

Distribution : India : Andaman & Nicobar Islands, Meghalaya, Rajasthan, Tamil Nadu, Tripura and Madhya Pradesh.

Elsewhere : North America, China, Australia and Cuba.

Genus *Guermella* Richard, 1892

31. *Guernella raphaelis* Richard, 1892

1892. *Guernella raphaelis* Richard, *Mem. Soc. Zool. France*. 5 : 213-225.

Material examined : 2 exs., 27-2-1983, Gorah tank on Nagpur road, in front of LIC building, Jabalpur, M.P., coll. P.D. Rane.

Diagnostic characters : Length 0.4–0.5 mm. Body oval, carapace delicate, tumid with broad reticulate cells, mostly well marked at posterior dorsal region, head and shell region. Eye moderately large, situated anterior to the middle portion of head. Ocellus small, present at the tip of the rostrum near the bases of antennules. Rostrum with small triangular protuberance in between the bases of two antennules. Labral plate small, not so well marked. Two large thick and broad antennules. Apex of the antennules with 3-4 large triangular denticle like outgrowth, extending into 6-8 terminal olfactory setae. 4-6 lateral hairs present at lateral margin. One large bristle on the dorsal side near the base of antennules. Length of large antennule is about 1/4th the length of body and width and length ratio is 1 : 4. Antenna large stout with thick basal segment. Basal segment with long thick seta at proximal side and one long thin seta at distal end near the joint of two rami of antenna. Dorsal side of basal segment with few serrations and covered with 3-4 rows of half circular cells. Outer ramus of antenna 4 segmented, inner is 3 segmented. Antennal formula 0-0-03 / 1-1-3. Ventral margin with minute denticles; sometimes they are converted into long spines near postero-lateral

margin of valve. Postabdomen small with two small hook shaped claws, bases of which are club shaped. Dorsal margin of postabdomen evenly rounded without any anal teeth. Slight notch present at base of natatorial setae which are bend at their distal end. Small elongated oval head pore present at junction of head and carapace.

Distribution : India : Dharwad- Karnataka. This is the second report of this species from India.

Elsewhere : Srilanka, Chad–Africa.

Genus *Grimaldina* Richard, 1892

32. *Grimaldina brazzai* Richard, 1892

1892. *Grimaldina brazzai* Richard, *Mem. Soc. Zool. Fr.*, 5 : 213-226.

1968. *Grimaldina brazzai* Rey and Jean, *Cah. O.R.S.T.O.M., Hydrobiol.*, Vol.II (3-4), p. 97, figs. 13.

Material examined : 3 exs., 3-4-1980, Amakhas tank on Nagpur Road, Jabalpur distt. M.P., coll. P.D. Rane.

Diagnostic characters : Ehippial female : Length 0.8 to 0.9 mm. Length of ehippium 0.65mm and width 0.5 mm. Body broadly oval to quadrangular; compressed with all margin of valve slightly convex. Head with small rostrum and large triangular labrum with pointed tip. Head with large eye and small ocellus. Ocellus is nearer to bases of antennules than eye. Distinct crest above the eye arises from tip of the rostrum to bases of antenna. Antennules thin, long about 20% body length with fine serrations, about 10, both on dorsal and ventral margin. 6 denticles like projections at anterior end, from olfactory setae arise. Ventral margin of valve with several stout unequal setae; become long at posteroventral margin. Both dorsolateral and ventrolateral angle of carapace evenly rounded, slight hump at posterodorsal angle. Antenna well developed with serrated margin. Antennal formula 0-0-1-3/1-1-3. Two small setae present at the bases of basal segment. Ehippium rounded, quadrangular, with dark brown core area surrounded by light yellow ring. One circular egg which covered all over with rounded cells. Postabdomen enormous, much compressed, roughly semielliptical. The prenal part

divided by a notch into two parts of which anterior is smaller. Dorsal margin of postabdomen has 3 lobes, junction of 1st and 2nd with one large stout spine. 1st lobe has large curved 10 spines, other lobes with fine marginal spinules. Claw recurved, small, denticulate with one small and one large basal spine.

Distribution : This is very rare species of this genus only collected in one sample. Recorded first time in India.

Elsewhere : Congo–Africa, South America.

Family BOSMINIDAE Sars, 1865

Key to the genera and species of Bosminidae

- 1a. Antennules of female not united at the base, almost parallel to each other
.. *Bosmina longirostris* (O.F. Muller, 1776)
- b. Antennule united at base and diverging at apex
.....*Bosminopsis deitersi* Richard 1895

Genus *Bosmina* Baird, 1845

33. *Bosmina longirostris* O.F. Muller, 1776

1776. *Lynceus longirostris* O.F. Muller, *Havnia* : 76, tab. 10, figs. 7-8.

1862. *Bosmina longirostris* Sars, Forhandi. Vidensk. Selesk. *Christiania* : 162.

Material examined : 14 exs., 2-4-1979, Adhartal, coll. D.F. Singh ; 25 exs., 20-2-1980, Pariat tank, coll. S.G. Patil; 11 exs., 12-12-1980, Amkhas tank, Jabalpur distt, coll. P.D. Rane.

Diagnostic characters : Female : Length : 0.35-0.39 mm. Body oval, with highest width in the middle and dorsal side evenly curved. Body transparent, colour whitish yellow. Ventro-posterior margin with two mucrons. Two antennules markedly bent at tips, with olfactory setae situated one third portion away from base. Antenna very small with 3 and 4 segmented rami. Rostrum small with thin setae on the upper margin. Eye large, present near the base of rostrum with distinct eye lenses. Postabdomen quadrate, with two pectinate claw, claw with proximal 5-7 teeth and distal with 7-10 teeth. Lower part of postabdomen slightly protrudes out with 3-4 large curved spines.

Distribution : India : Kashmir, Meghalaya, West-Bengal, Maharashtra, Tripura.

Elsewhere : Cosmopolitan.

34. *Bosminopsis deitersi* Richard, 1895

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

Material examined : 100 exs., 12-4-1979, Pariat tank, Jabalpur; 26 exs., 23-3-1981 Narmada river at Bhedhaghat, 13 Kms N/W of Jabalpur, Jabalpur distt, M.P., all coll. P.D. Rane.

Diagnostic characters : Female : Body oval, posterodorsal corner of valves distinct, posteroventral corner with small mucro-like processes and one or two spinules before it. Head large with a long rostrum with two lateral branches. Eye large, antennules long united with each other at basal part and with 5-6 sensory setae on the ventral side near apex. Valve with polygonal reticulation. Dorsal margin with cervical depression. Postabdomen broad and tapering distally with about 4-6 small spines on the post-anal edge followed by a row of setae proximally. Claw large, separated with large basal spine.

Distribution : India : Delhi, Rajasthan, Maharashtra, West-Bengal, Tripura, Kashmir, Kerala.

Elsewhere : South-East Asia, Africa, North & South America.

Family CHYDORIDAE Stebbing, 1902

Key to the subfamilies of Chydoridae

- 1a. Two separate main head pores and two pores situated between main pores
..... CHYDORINAE Stebbing, 1902
- b. Two and three main pores and small two pores situated lateral to main pores at distance
..... ALONINAE, Frey, 1967

Key to genera of subfamily Chydorinae

1. Valves with setae on entire posterior margin 2
- Valves with setae situated on the ventral margin at anterior half and the inner side of ventral margin of posterior half 3

2. Rostrum long *Pleuroxus* Baird, 1843
 – Rostrum short and blunt
 *Alonella* Sars, 1862a
3. Labrum with plate shaped process4
 – Labrum without plate shaped process
 *Pseudochydorus* Fryer, 1968
4. Body spherical postabdomen long, anus
 situated on its functional ventral side
 *Chydorus* Leach, 1816
 – Body oval, postabdomen rounded, anus
 situated on its functional posterior side
 *Dunhevedia* King, 1853

Genus *Pleuroxus* Baird

Key to the species of genus *Pleuroxus*

1. Postabdomen with rounded distal end2
 – Postabdomen with truncated distal end3
2. Anal denticles irregularly distributed on
 postabdomen. Preanal corner not projecting
 *P. aduncus* (Jurine, 1820)
 Anal denticles regularly distributed and the
 preanal corner slightly projecting
 *P. similis* Vavra, 1900

35. *Pleuroxus aduncus* (Jurine, 1820)

1820. *Monoculus aduncus* Jurine, Paris, p. 152-153, pl. 15, figs. 7-8.
 1858. *Chydorus aduncus* Schoedler, *Jahrb. Louisenst. Realschupe*, Berlin, p. 27.
 1900. *Pleuroxus aduncus* Lilljeborg, *Nova. Acta. Reg. Soc. Sci. Upsala*, Ser III, 19 : 541-545, Figs 11-17.

Material examined : 4 exs., 7-7-1983, Gulava tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Posteroventral corner of valves with 1-3 posteriorly directed denticles. Height of posterior margin of valve about one third of maximum height. Dorsal margin strongly convex ; ventral margin with feathered setae. Rostrum long, pointed and directed downwards. Antennules reaching about middle of rostrum, with sensory setae in the middle of anterior margin. Plate of labrum convex anteriorly and with slightly pointed apex. Ocellus smaller

than eye. Postabdomen short, tapering distally. Anal denticles small, irregularly distributed forming groups of 8-10. Lateral setae present. Claw with two basal spines. Length : 0.52 mm.

Distribution : India : Rajasthan, Maharashtra, Madhya Pradesh, Himachal Pradesh, Kashmir.

Elsewhere : W. Pakistan, Central Asia and N & S America.

36. *Pleuroxus similis* Vavra, 1900

1900. *Pleuroxus similes* Vavra, *Hamburger Magalhaensische Sammelreise* 2, Hamburg, p. 23-24, fig. 6.

Material examined : 6 exs., 10-4-1977, Deshi Nata, Kanha National park, Mandla distt. coll. P.L. Kankane.

Diagnostic characters : Female : Length 0.4 mm. Body with uniformly curved dorsal margin. Posteroventral corner of valves with 1-3 rather blunt denticles. Valve without reticulation, ventral margin with feathered setae. Rostrum long pointed down-wards reaching level of ventral margin of valve. Antennules terminating far from apex of rostrum. Plate of labrum with convex anterior margin. Eye and ocellus present. Postabdomen elongated, tapering towards distal end ; preanal corner moderately distinct. Anal spines 13-14 and increase in size gradually towards distally. Claw with two basal spines ; first is half the length of second. Colour of specimens shows variations from yellow to dark brown. Intestine with loops and with caecum.

Distribution : India : Kashmir, West Bengal, Madhya Pradesh.

Elsewhere : Australia, Chile, Northern Caucasus, Taskent in USSR, Sri Lanka.

Genus *Alonella* Sars, 1862

37. *Alonella excisa* (Fischer, 1854)

1853. *Lynceus nanus* Lilljeborg, *Lund.* 15 : 206.
 1854. *Lynceus excisus* Fischer, *Bull. Soc. Imp. Nat. Mosc.* 27 : 423-434.
 1988. *Alonella excisa* (Fischer) : Michael and Sharma, *Fauna of India, Cladocera*, 262pp.

Material examined : 9 exs., 3-4-1985, Jaljira tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 0.28-0.35 mm. Posterior margin of valve straight, slightly angular, about half the maximum height. Posteroventral corner of valve slightly protrudes out in the form of blunt denticle. Posterior half portion strongly reticulated with polygonal cells. Fine longitudinal striations and dots are present inside these polygons. Rostrum blunt. Antennules not reaching the apex of rostrum and with sensory seta distal to the middle. Plate of labrum with convex anterior margin and blunt apex. Postabdomen long with 7-8 anal denticles and 6-8 groups of lateral setules. Claw with two basal spines. Ocellus slightly smaller than eye, placed nearer to eye than to apex of rostrum.

Ephippial female : Length about 0.3mm. Ephippium dark brown and oval. The postabdomen larger than parthenogenetic female with smaller anal denticles. Ephippium having dark reticulated hexagonal cell whose margin are slightly thickened.

Male : Length : 0.23-0.25 mm. Male smaller than female with distinct curved hook at the first leg. Posterodorsal angle is situated higher than the female. Reticulation same as female. Antennules with larger terminal esthetascs. Labrum with slight notch in the middle. Postabdomen narrowing, without anal denticles but several small setules all over the dorsal margin. Claw with two basal spines and vasdeference opens at the base of claw.

Distribution : India : Kashmir, Madhya Pradesh and Tripura.

Elsewhere : Cosmopolitan.

Remark : Male and reproductive female has been described first time here which are not known before.

Genus *Chydorus* Leach, 1816

Key to the species of genus *Chydorus*

- 1a. Valves without deep polygons 2
 b. Valves with deep polygons
 *Chydorus faviformis* Birge, 1893

- 2a. Plate of labrum with denticles
 *Chydorus barroisi* (Richard, 1894)
 b. Plate of labrum with out denticles 3
 3a. Plate of labrum pointed ventrally, species more than 0.5 mm
 *Chydorus ventricosus* Daday, 1898
 b. Plate of labrum rounded apex, less than 0.5 mm *Chydorus eurynotus* Sars, 1901....4
 4. Plate of labrum with button or nipple shaped apex
Chydorus eurynotus brehmi Biswas (1966)

38. *Chydorus eurynotus* Sars, 1901

1901. *Chydorus eurynotus* Sars, *Archiv for math. Og. Naturv.*, 33(3) : 70, Pl. III, figs. 3a-c.
 1983. *Chydorus eurynotus* : Smirnov and Times, *Rec. Aust. Mus.*, 1 : 29-31, fig. 30.

Material examined : 3 exs., 5-7-1985, Madan Mahal tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 0.35-0.44 mm. Posteroventral corner of valve rounded without denticle. Valve smooth without any reticulation. Rostrum pointed. Head shield with rounded posterior margin. Antennules thick, not reaching apex of rostrum. Setae on antennae 0-0-3/0-1-3. Plate of labrum broadly rounded, slightly depressed anteroventrally. Postabdomen with projecting preanal corner. Row of anal denticles about 10-12, continued into row setae. Claw with two basal spines. Intestine forming loops.

Distribution : India : Maharashtra, Rajasthan, Madhya Pradesh; third record of species from India.

Elsewhere : Lake Chad-Africa, Kenya, Angola, East Africa, Tanganyika, lake Malwi-Nyassa, Australia.

39. *Chydorus eurynotus brehmi* Biswas, 1966

- 1936b. *Chydorus* sp. Brehm, *Mem. Connecticut Acad of Arts and Sci.*, Yale North India expedition, X, p. 297, figs. 5.
 1966. *Chydorus brehmi* Biswas, *Crustaceana*, 11(2) : 113-114, fig. 1.
 1974. *Chydorus eurynotus brehmi* : Smirnov, *Fauna of U.S.S.R. Chydoridae*, NTIS, Springfield, p. 378.

Material examined : 3 exs., 4-7-1984, Deotal tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnosis : Female : Length 0.45-0.5 mm. Carapace almost spherical in lateral view, dorsal margin articulate in middle, posterior part almost straight. Head slightly curved with acute rostrum. Labrum laterally convex, ending into button or nipple shaped protuberance. Valve without any sculpture. Antennules end far before apex of rostrum. Postabdomen with distinct preanal corner with about 12 anal spines and several groups of lateral setae, scattered irregularly, distributed on sides of postabdomen. Ocellus half as long as eye; situated nearer to eye than to apex of rostrum.

Distribution : India : Nilgiri hills, Jaipur-Rajasthan, Maharashtra. This is a new record of the this subspecies from Madhya Pradesh state.

Elsewhere : This is endemic subspecies only found in India only.

40. *Chydorus ventricosus* Daday, 1898

1898. *Chydorus ventricosus* Daday, *Termes, Fuzetek.*, **21** : 1-23, figs. 10a-d.

1986. *Chydorus ventricosus* : Rajpaksha and Fernando, *Can. J. Zool.*, **64** : 818-832, figs. 1-6.

Material examined : 10 exs., 1-3-1983, Adhartal tank, on Sihora Road, Jabalpur distt, M.P., coll. P.D. Rane.

Diagnostic characters : Female : Length 0.74 mm. Body oval, posterodorsal and posteroventral corners of valves rounded with denticles. Ventral margin strongly bulged in the middle, with marginal setae anterior to the bulge and submarginal setae posterior to the bulge. Valve with faint polygons. Rostrum long, pointed. Antennules thick about half length of rostrum. Labral plate long, curved anteriorly and broadly pointed. Postabdomen long with distinct preanal corner with 9-10 anal denticles at dorsal margin. Claw situated along concave surface with two basal spines.

Distribution : India : Andaman & Nicobar Islands, Tripura, Gujarat, Rajasthan, Tamil Nadu and Maharashtra.

Elsewhere : South-East Asia, Sri Lanka, China & Africa.

41. *Chydorus faviformis* Birge, 1893

1893. *Chydorus faviformis* Birge, *Trans. Wis. Acad. Sci. Arts and Letts.*, p. 307-308, Pl. XIII, figs. 7-8.

1901. *Chydorus eurynotus* Sars, *Arch. Bath. Nat.*, **23** : 1-102.

1959. *Chydorus faviformis* : Frey, *Int. Revue. Ges. Hydrobiol.*, **47**(4), p. 40, fig. 60.

Material examined : 2 exs., 30-4-1983, Premnagar tank; 4 exs., 21-4-1984, Sadar tank; 6 exs., 5-5-1984, Sukri tank, Jabalpur distt., M.P., all coll P.D. Rane.

Diagnostic characters : Female : 0.45 mm. Shape rounded and oval. Posteroventral and posterodorsal corner of valve not distinct. Valve and head shield with deep hexagonal cells. Ocellus smaller than eye situated much closer to the eye than apex of rostrum. Labral plate with convex anterior margin and blunt apex. Postabdomen with 8-10 anal spines. Claw with two basal spines.

Distribution : India : Kashmir, Tripura, Maharashtra.

Elsewhere : South East Asia, Australia, China & North America.

42. *Chydorus* (- *Ephemeroporus*) *barroisi* (Richard, 1894a)

1894a. *Pleuroxus barroisi* Richard, *Revue. Biol. Nord. France*, **18** : 375-377, figs. 9-12.

1895. *Chydorus barroisi* Sars, *Vidensk. Selesk. Skrifter, I math. Naturvv. Klasses*, 1-56.

1982. *Ephemeroporus barroisi* (Richard) : Frey, *Hydrobiologia*, **86** : 233-237, pl. 1.

Material examined : 5 exs., 21-4-1984, Medical college tank ; 2 exs., 3-4-1985, Sadar tank, Jabalpur distt, M.P., all coll. P.D. Rane.

Diagnostic characters : Female : Length 0.24 to 0.26 mm. Body elliptical in shape with a spine in the posteroventral corner. Carapace ornamental with striations and hexagonal cells. Labrum with produced apex and with 3-5 serrated denticles on the anterior margin. Postabdomen with 7-9 unequal anal spines middle 3 are straight and large and

long basal spines. Claw with two basal spines and setae on the concave margin.

Distribution : India : Andaman & Nicobar Islands, Gujarat, Rajasthan, Tamil Nadu, Tripura, Maharashtra, West Bengal & Kerala.

Elsewhere : Syria, South America, North America, Sahara, Lake Malwi (Nyassa), Sudan, Nigeria, China, Lake Chad, U.S.S.R, Sri Lanka, Phillipines, Nepal, Australia.

Remarks : Frey, 1982 erected a new genus *Ephemeroporus* on the basis of the character that large median head pore only occur in the first instar and when revised this genus placed sp. *barroisi* and other five known species and two new species into this new genus.

Genus *Dunhevedia* King, 1853

Key to the species of *Dunhevedia*

1. Plate of labrum without denticles2
Plate of labrum with serrated margin with 10-15 denticles
..... *Dunhevedia serrata*, Daday, 1898
2. Anterior margin of labrum without tubercle shaped convexity. Posteroventral corner of valve with denticle and accessory denticle above it
Dunhevedia crassa ciliocaudata Sovinski, 1891...3
3. Labral tubercles are acute pointed with small accessory denticle present above the main denticle
..... *Dunhevedia odontoplax* Sars, 1901

43. *Dunhevedia crassa* King, 1901

1853. *Dunhevedia crassa* King, *Pap. R. Soc. Van. Diemens. Land.*, 2 : 243-263.

1971. *Dunhevedia crassa crassa* Smirnov, *U.S.S.R Acad. Sci. Zool. Institute Nova : Ser. 101, Leningrad*, 539 pp.

Material examined : India : 2 exs., 8-7-1981, Dargah tank on Madan Mahal, Jabalpur distt. M.P. coll. P.D. Rane.

Diagnostic characters : Female : Length 0.38-0.5 mm. Body oval, posteroventral corner pf valve

with pointed denticle about 10 micron in length. Plate of labrum triangular, with blunt apex; anterior margin slightly concave without denticle. Ventral margin of valve with small feathered setae which are longest in the middle. Maximum height slightly before middle. Posterior margin almost straight. Valve with pattern of hexagons. Antennules thick, slightly tapering distally, ending slightly before apex of rostrum, lateral sensory setae situated on a tubercle. Postabdomen oval with 12-14 anal denticles, and number of groups of lateral setae. Claw with basal spine and with setae on the concave margin. Ocellus situated near the eye than apex of rostrum. Width of eye 30 micron and ocellus 10 micron.

Distribution : India : West Bengal, Rajasthan, Andaman & Nicobar Islands, Gujarat, Tamil Nadu, Maharashtra, Tripura, Madhya Pradesh.

Elsewhere : South-East Asia, Australia, U.S.S.R, Sri Lanka, Phillipines, Venezuela, Eastern Australia.

44. *Dunhevedia crassa ciliocaudata* (Sovinsky, 1891)

1891. *Alona ciliocaudata* Sovinsky, *Zapiski Kievskongo Obschestus Estestvoispytatelei* 11(2) : 159-160, Pl. III, figs. 33-36.

1974. *Dunhevedia crassa ciliocaudata* : Smirnov, *Fauna of U.S.S.R, Chydoridae, NTIS, Springfield*, pp. 394-395, figs. 363.

Material examined : 1ex., 27-7-1984, Gupteshawar tank, Jabalpur distt, M.P. coll. P.D. Rane.

Diagnostic characters : Female : Length 0.5mm. Posteroventral corner of valve with denticle. Sometimes with accessory denticle above it. Anterior margin of labral plate with strong convexity and blunt apex. Ocellus smaller than eye and situated halfway between eye and apex of rostrum. Postabdomen with 11-12 anal spines and transverse row of setae almost on whole surface. Middle setae of ventral margin of valve are rather long followed by about 30 feathered setae started submarginally.

Distribution : India : Maharashtra, North India, Kashmir.

Elsewhere : Poland, USSR.

Remark : This is first record of the species from Madhya Pradesh state.

45. *Dunhevedia serrata* Daday, 1898

1898. *Dunhevedia serrata* Daday, *Termes. Fuzetek*, 21 : 32-33, fig.13.

1910a. *Dunhevedia serrata* Daday, *Zoologica*, 59, 1-5, pp. 126-127, pl. 6, figs. 26, 27, 28.

Material examined : 2 exs., 23-8-1984, Adhartal tank ; 1 ex., 3-4-1985, Kundam tank; 1ex., 10-4-1985, Padwar tank, Jabalpur distt, M.P, all coll. P.D. Rane.

Diagnostic characters : Female : Length 0.5 to 0.6 mm. length about 1.55 times the maximum height. Valve with distinct posterodorsal corner with 2 denticles, dorsal is smaller than ventral one. Valve with pattern of hexagons. Rostrum blunt. Plate of labrum triangular with serrated anterior margin, with 10-12 hook shaped denticles which are directed downwards. Plate of labrum with pointed ventral end. Ventral margin of valve with feathered setae which are longest in the middle. Maximum height of valve is in the middle. Antennules thick, slightly tapering distally, ending slightly before the apex of rostrum. Lateral sensory setae situated on tubercle distal to middle of anterior margin of antennules. Setae on antennae: 0-0-3/0-1-3. Postabdomen elongated, oval with distinct concavity at the dorsomiddle region and posterior region slightly protrude out. 15-25 sharp dorsal anal denticles, directed posteriorly and numerous lateral groups of setae. Ocellus situated half way between the eye and apex of rostrum. Claw with basal spine and with setae on the concave margin.

Distribution : India : Tamil Nadu, Maharashtra, Madhya Pradesh, Andaman & Nicobar Islands, Rajasthan & Tripura.

Elsewhere : Africa, SriLanka, New Guinea and North America.

46. *Dunhevedia odontoplax* Sars, 1901

1901. *Dunhevedia odontoplax* Sars, *Archiv. For. Mat. Og. Naturv.*, 23(3) : 76, pl. 11, Figs. 6, 6a, 6b.

Material examined : 2 exs., 7-8-1980, Ganjital tank; 1ex., 21-1-1984, Amkhas tank; 2 exs., 3-3-1984, Indrana tank , Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 0.47-0.50 mm. Body oval, dorsal side evenly arched and ventral side almost straight. Postero-ventral corner of valve with a denticle and valve posterior to that is slightly undulating. Ventral margin of valve with long feathered setae. Last 1/3 part with longest setae. Valve without pattern of hexagonal reticulation. Antennules thick, slightly tapering distally, ending slightly before apex of rostrum. Lateral sensory seta situated on the tubercle. Plate of labrum triangular with pointed apex and a blunt denticle present at antero-middle region. Eye present, ocellus less than half length of eye. Postabdomen large usually oval, dorsal side with 25 moderately large anal denticles. Several groups of lateral setae present. Dorsal margin of claw evenly curved with one basal spine about half the length of claw.

Distribution : India : This is first record of this species from India.

Elsewhere : South America, Chad.

Remarks : Specimens of Jabalpur are similar to specimens described by Rey and Jean (1968) from lake Chad; with little developed small blunt tubercle at anteromiddle region of labrum. There are different types of tubercles/denticles on labral plate described by various authors. Sars (1901) acute pointed, Harding (1955) almost rounded blunt ; Stingelin (1913) acute pointed with small accessory denticle present above the main denticle. According to Harding (1955), the posteroventral angle of valve bears large denticle and a accessory denticle behind it but most of specimens from Jabalpur have only one denticle. Jabalpur specimens have comparatively large postabdomen with about 25 recurved anal spines and basal spine large about one third of claw. While typical forms described by Smirnov (1974) from lake Titicaca, have postabdomen rather small with 11 to12 small straight anal spines and basal spine about one fifth the length of the claw.

Genus *Pseudochydorus* Fryer, 196847. *Pseudochydorus globosus caelatus*
Wereschagin, 1912

1912. *Pseudochydorus globosus caelatus* Wereschagin, *Trudy Gidrobiologicheskoe Stantsii na Glubokom Ozere*, 4 : 130.
1914. *Pseudochydorus globosus caelatus* : Smirnov, *Fauna of U.S.S.R, NTIS*, U.S. Dept of Commerce, Springfield, 1(2) P.403.

Material examined : Female : Length 0.55 mm. Body spherical, ventral margin of valves closed without gap. Colour light yellow with dark black patch at the junction of the head shield and valve. Body distinctly pitted. Ventral setae of valve situated on inner surface of valve and those in the posterior half at a distinct distance from the margin. Valve slightly longer than high. Posteroventral corner rounded, without denticles. Rostrum pointed, directed ventrally. Head shield with rounded posterior margin. Antennules thick, fleshy, not reaching the apex of rostrum. Anterior margin with a sensory seta at its distal half region. Esthetases on the obliquely truncate distal margin. Labrum without plate shaped process. Ocellus smaller than eye. Postabdomen narrow, almost uniformly wide. Dorsal distal corner rounded not produced lateral setae present. 8-9 almost equal anal denticles. Claw stout with row of teeth like setae on concave margin and one long basal spine. Outer branch of leg 1 with 2 strong hook shaped setae.

Distribution : India : This subspecies records first time in India.

Elsewhere : Western Belorussia (U.S.S.R).

Remarks : This subspecies in general appears similar to typical *Pseudochydorus globosus* (Baird, 1893) but mainly differs in the presence of pits on the body. The claw of this subspecies appears more strongly developed and first leg with strong hook like seta which bordered with teeth is also unique character only to *Pseudochydorus globosus caelatus*.

48. *Dadaya macrops* (Daday, 1898)

1898. *Alona macrops* Daday, *Anhansheft zum XXI. Bande der Termeszetráji Füzetek, Budapest*, pp. 38-39, figs. 17.

1901. *Dadaya macrops* Sars, *Archiv for math. Og naturv.*, 23(3) : 73-74, pl.11, figs. 5a, 5b.

1974. *Dadaya macrops* Smirnov, *Fauna of U.S.S.R-Chydoridae, N.T.I.S*, Springfield, 1(2) : 398-401, figs. 368, 369.

Material examined : 1ex., 3-3-1983, Ranital tank; 2 exs., 7-3-1983, Belbagh tank, Jabalpur distt, M.P, all coll P.D. Rane.

Diagnostic characters : Female : Length : 0.35-0.37 mm. Head small, much depressed. Dorsal and ventral margin of valve convex. Posteroventral corner of valve rounded, without a denticle. Valve with pattern hexagon. Antennules projecting markedly beyond apex of rostrum. Rostrum short and broad. Labrum with beak like process. Eye very large, with few lenses, ocellus nearly as large as eye-elongated. Postabdomen of moderate size, compressed, somewhat broadened behind anus and narrowing towards apex, about 10-12 marginal anal denticles, the preanal corner projecting. Claw small, with one small basal spine.

Distribution : India : Rajasthan, Tamil Nadu.

Elsewhere : Africa, Australia, Malaysia and Neotropical regions, Sri Lanka, Paraguay, Nuginia, Sahara, Tanganika, America, Australia, Phillipines, Africa, New-South whales, Australia.

Subfamily ALONINAE Frey, 1967

Key to the genera of subfamily ALONINAE

1. Three main head pores 2
 - One or two main head pores 6
2. Lateral setae of postabdomen large and in groups *Leydigia* Kurz, 1875
 - Lateral setae of postabdomen not large 3
3. Postabdomen of varying form but narrow or very long 4
 - Postabdomen long and narrow 5
4. Head shield with broadly rounded anterior margin; projecting in anteriorly lateral view *Graptoleberis* Sars, 1862b
 - Anterior margin of head shield not broadly rounded; not projecting in lateral view *Alona* Baird, 1843

5. Rostrum projecting.....
*Kurzia* Dybowski and Grochowski, 1894
 - Rostrum not projecting
 *Camptocercus* Baird, 1843
6. Two main head pores7
 - One main head pore8
7. Main head pores narrowly connected.....
 *Biapertura* Smirnov, 1971
 - Main head pores separate.....
 *Oxyurella* Dybowski & Grochowski, 1894
8. Body much longer than high, large anal teeth
 *Euryalona* Sars, 1901
 - Body slightly longer than high, anal teeth
 absent, one head pore
 *Indialona* Petkovski, 1966
9. Two bean shaped thickening as head pores;
 Anal teeth small and many submerged setae
 like spines
 *Notoalona* Rajapaksa & Fernando, 1987

Genus *Leydigia* Kurz, 1875

Key to the species of genus *Leydigia*

1. Postabdomen not narrowing distally, widest
 in distal part. Distal group of lateral
 setae each with 2 setae
 *Leydigia acanthocercoides* (Fischer, 1854)
2. Postabdomen slightly narrowing distally,
 widest in the middle. Distal groups of lateral
 setae with three setae each.....
 *Leydigia australis* Sars, 1885

49. *Leydigia acanthocercoides* (Fischer, 1854)

1854. *Lynceus acanthocercoides* Fischer, *Bull. Soc. Imp. Nat. Mosc* : 431-433, pl. III, figs 21-22.

1875. *Leydigia acanthocercoides* Kurz, *Sitzber. ACAD, Wiss. Wein, Math. Nat* 69 : 40-46.

Material examined : 2 exs., 7-10-1984, Bargi reservoir ; 1 ex., 5-9-1985, Barella tank, Jabalpur distt, M.P., all coll. P.D. Rane.

Diagnostic characters : Female : Body size 0.89 mm. Valve with longitudinal lines. Rostrum short, blunt, antennules not reaching apex of

rostrum. Plate of labrum with setae on anterior margin. Ocellus triangular, larger than eye. Postabdomen broadly rounded and margin concave. Lateral part of anus with several rows of setae. Lateral groups consist of 2 setae each. Anal spine very small. Two small terminal groups of cilia near claws. Claws with out basal spine.

Distribution : India : West Bengal, Rajasthan, Gujarat, Andaman & Nicobar Islands, Tamil Nadu.

Elsewhere : South-East Asia, Ethiopia, Neotropic and U.S.S.R, Indo-Malayan, Holartic.

50. *Leydigia australis* Sars, 1885

1885. *Leydigia australis* Sars, *Forhandlinger i Videnskabs Selskabet i Christiania*, pp. 35-43, pl. 7, 8.

Material examined : 2 exs., 3-3-1983, Tilgawa tank, Jabalpur distt, M.P., coll. P.D. Rane.

Diagnostic characters : Length 0.6 to 0.8 mm. Valve without sculpture, but very fine longitudinal lines all over. Postero-dorsal corner blunt. Postero-ventral corner rounded without denticle. Antennules almost reaching apex of the rostrum. Plate of labrum with hairs at anterior margin. Antennule with sensory seta on outer side near the distal end. Postabdomen slightly narrowed distally widest in the middle. Dorsal side of postabdomen with about 10-11 lateral large setae in the group of 2-3 each, distal setae longest in each group, proximal seta shortest. In addition 12-14 groups of spinnules present. Claws without basal spine.

Distribution : India : Firstly recorded from India.

Elsewhere : Queensland, Australia, Africa.

Genus *Kurzia* Dybowski and Grochowski, 1894

Key to the species of the genus *Kurzia*

1. Antennules almost reaching apex of rostrum
 *Kurzia latissima* (Kurz, 1875)...2
2. Antennules reaching to the middle of rostrum
 *Kurzia longirostris* (Daday, 1898)

51. *Kurzia latissima* (Kurz, 1875)

1875. *Alona latissima* Kurz, *K. Acad. Wiss. Wein. Math. Nat.*, 70 : 46-47, pl.2, figs. 13-15.

1959. *Kurzia latissima* : Frey, *Int. Rev. Ges. Hydrobiol.*, 44 : 35, figs. 12-14.

Material examined : 1 ex., 27-9-1982, Bharna tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 6.7 mm. Posterodorsal corner rounded, situated slightly below level of maximum height. Posteroventral corner rounded, without denticles. Valve marked with longitudinal lines. Head and valves forming semicircular arch. Dorsal keel present, head keel present. 3 connected head pores. Rostrum long. Antennules almost reaching apex of rostrum. Postabdomen long, narrow, slightly tapering distally; with 12 marginal anal spines. Claw with basal spine, row of setae on concave margin.

Distribution : West Bengal. First record from Madhya apradesh.

Elsewhere : Holarctic and Neotropical regions and European U.S.S.R.

52. *Kurzia longirostris* (Daday, 1898)

1898. *Alona longirostris* Daday, *Termes. Fiizetek.*, 21 : 34, fig. 14, a-b.

1956. *Kurzia longirostris* Harding, *Explor. Hydrobiol. Lac. Tanganyika Result. Scientifique.*, 3 : 73, fig. 15.

Material examined : 6exs., 7-8-1981, A tank 4 kms east of Katangi on Damoh road, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 0.45-0.7 mm. Shape rectangular somewhat tapers towards the posterior margin, dorsal margin slightly curved, posterodorsal angle obtuse. Valves marked with longitudinal lines. Rostrum relatively long and slightly curved ventrally, apex or rostrum in line with median line of body. 3 Head pores in the head shield. Antennules reaching middle of rostrum. Antenna not reaching middle of rostrum. Plate of labrum with pointed apex. Ocellus smaller than eye. Postabdomen tapering distally. Preanal corner not projecting. Anal denticles 18-20. Claw with basal spine and row of setae on concave margin.

Distribution : India : West Bengal. This is the first record from Madhya Pradesh.

Elsewhere : Sri Lanka, Asia, Africa, America, Australia.

Genus *Graptoleberis* Sars, 1862

53. *Graptoleberis testudinaria* (Fischer, 1851)

1851. *Lynceus testudinarius* Fischer, *Mem. Acad. Sci. St. Petersb. Mem. Sav. Etrang.*, 7 : 13.

Material examined : 5 exs., 10-1-1980, Patan tank ; 2 exs., 30-4-1983, Umaria tank, Jabalpur distt ; 10 exs., 2-4-1982, Bada Talab, Bhopal, Bhopal distt, M.P, all coll P.D. Rane.

Diagnostic characters : Female : Length 0.76 mm. Dorsal margin of body convex, ventral margin almost straight. Ventral margin of valves with setose setae decreasing in size towards posteroventral corner but not reaching it. Posteroventral corner of valve with two denticles. Head body with polygonal cells. Three connected head pores and two lateral pores. Rostral margin very wide. Antennules with a sensory seta at distal end with esthetases of different length. Plate of labrum with rounded apex. Ocellus smaller than eye. Postabdomen tapering distally and with distinct preanal corner. Anal margin with row of anal spines. Eight groups of lateral setae. Claw with a small basal spine and fine setae along concave margin.

Distribution : India : Kashmir, Kumaon – W. Himalayas, Maharashtra, Madhya Pradesh.

Elsewhere : Cosmopolitan.

Genus *Camptocercus* Baird, 1843

54. *Camptocercus latikae* Rane, 1985

1985. *Camptocercus latikae* Rane, *Crustaceana*, 48(2) : 114-116, figs. 1-8.

Material examined : 13 exs., 14-10-1980, Gorah tank in front of LIC building on Nagpur road near Madan Mahal, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length of female 0.49-0.96 mm. Body oval, laterally compressed with narrow, long, denticulate postabdomen. Valve with 20-21 halfcircular longitudinal lines sometimes with cross connections, which appears like brick-pattern.

Posteroventral corner of valve with 3 small denticles directed posteriorly with fine spinnules between them. Rostrum pointed, slightly directed anteriorly. Head keel present. Antennule large but not reaching apex of rostrum, with two spines on upper side and one sensory seta arising from bulb like process on lower side. Antenna three segmented, slightly larger than antennules. Setae on antenna 0-0-3/0-1-3. Plate of labrum with pointed apex and small spine on posterior side. A dark band present between ocellus and rostrum. Ventral margin of valve with unequally spaced setae. Postabdomen long, narrowing distally with small preanal and large postanal part. Postanal part with 18-19 anal denticles distal to anus. First 1-2 anal denticles comparatively large with pointed apex. Remaining denticles increase in size from proximal to distal, with 2-3 small denticles at lateral margin. Three small denticles present between base of claw and first large anal denticle of postabdomen. Claw with a basal spine and a row of about 14 spinnules on concave margin, which become larger distally. Terminal two spinnules larger than others, and followed by five hairs on the three quarter remaining part of the claw. Basal spine also with five hairs along its ventral margin. Ocellus smaller than eye, situated slightly nearer to eye than apex of rostrum. First leg with three setae on outer branch of endite. Basal setule on first and second setae is hook-shaped with flagellum, laterally. Second seta largest and third smallest, about one-third as long as second.

Distribution : This is an endemic species only found from type locality of Madhya Pradesh.

Genus *Euryalona* Sars, 1901

55. *Euryalona orientalis* (Daday, 1898)

1898. *Alonopsis orientalis* Daday, *Termes, Fuzetek*, 21 : 45-48, figs. 21-22.

1905. *Euryalona orientalis* Daday, *Zoologica. Stuttgart*, pl. XI, figs. 14-15.

Material examined : 2 exs., 3-4-1978, a ditch near Bada Mahadeo, Pachmadi ; 30 exs., 21-8-1982, Tewar tank, on Shahpura road, Madhya Pradesh, all coll. P.D. Rane.

Diagnostic characters : Female : Length 1 mm. Posteroventral corner of valves rounded, without denticles. Ventral margin of valves with blunt process before middle and setae arising there from some distance of the margin. Anterior margin of valve with fine setae. Antennule reaching apex of rostrum. Plate of labrum with convex anterior margin and blunt apex. Ocellus smaller than eye and situated halfway between eye and apex of rostrum. Postabdomen narrow and slightly curved with about 20 anal denticles, decreasing in size proximally. Claw with basal spine and with setae on proximal half of concave margin.

Distribution : India : Tamil Nadu, West Bengal, Maharashtra.

Elsewhere : Shore of Gulf Mexico, North - East China, Indo-Malayan, Ethiopian and Neotropical regions.

Genus *Biapertura* Smirnov, 1971

Key to the species of genus *Biapertura*

1. Posteroventral corner of valve with denticles *B. karua* (King, 1853)
Posteroventral corner of valves without denticles 2
2. Plate of labrum with denticles, valves tuberculated *B. verrucosa* (Sars, 1901)
Plate of labrum without denticles, valves not tuberculated 3
3. Postabdomen not widening distally. Anal spines large, lateral setae not projecting beyond margin of postabdomen
..... *B. affinis* (Leydig, 1860)

56. *Biapertura affinis* (Leydig, 1860)

1860. *Lynceus affinis* Leydig, *Naturgeschichte der Daphniden*, Tübingen., 223, pl. IX, Figs. 68-69.

1971. *Biapertura affinis* : Smirnov, *U.S.S.R. Acad. Sci. Zool. Institute. Nova. Ser.* No. 101, Leningrad, pp. 462-467, figs. 582-587.

Material examined : 2 exs., 29-9-1982, Patan tank; 6exs, 8-7-1985, Hanumantal tank, Jabalpur distt, all coll P.D. Rane; 3exs., 11-5-1985, Chunabatti tank near BHEL, Bhopal distt, coll M.L. Kosta.

Diagnostic characters : Female : Length 0.8 mm. Body oblong in outline, maximum height in the middle region. Posteroventral corner of valve with rows of groups of setae continuing as a row of spinules on the posterior margin. Valves marked with longitudinal lines. Two main head pores on head shield, with narrow connection between them. Antennules not reaching apex of rostrum. Spines are present on segments of antennae. Plate of labrum with convex anterior margin. Ocellus is smaller than eye, situated near to eye than to apex of rostrum. Postabdomen uniformly wide, dorsal margin rounded with 12-16 anal denticles. Lateral groups of setae on concave margin. Setae on antennae : 0-0-3/1-1-3; with spines on proximal segment of exopodite and on both distal segments. A spinule present at joint of the segments of the distal setae.

Distribution : India : Kashmir, Gujarat, West Bengal, Maharashtra, Madhya Pradesh.

Elsewhere : U.S.S.R, Central Asia, Australia, Sri Lanka, Nepal, Cosmopolitan between 40 latitude North & South.

57. *Biapertura karua* (King, 1853)

1853. *Alona karua* King *Proceed. Roy. Soc. Tasmania*. II, P. 260, pl. VIII.
1897. *Alona mulleri*. Richard, *Mem. Soc. Zool. France*, X, p.292, figs. 39-41.
1971. *Biapertura karua* Smirnov, *U.S.S.R, Acad. Sci. Zool. Institute. Nova. Ser. No. Leningrad*, pp. 479-480, figs. 600-603.

Material examined : 1 ex., 21-5-1979, Narmada river at Hoshangabad ghat, Hoshangabad distt; 3 exs., 1-2-1983, Gangasagar tank ; 5 exs., 10-9-1984, Panager tank, Jabalpur distt, all coll. P.D. Rane.

Diagnostic characters : Female : Length 0.27-0.29 mm. Maximum height of valves before the middle. Posteroventral corner of valve with 2-3 separate denticles. Valves with lines and pattern of polygons and weak striations. Two connected head pores on head shield. Antennule almost reaching apex of rostrum. Setae on antennae 0-0-3/0-1-3. Postabdomen with broadly rounded distal margin. Preanal corner not projecting, anal margin

concave. About 8 small anal denticles; 8 groups of lateral setae isolated or in groups, projecting beyond dorsal margin of postabdomen. Claw with very small basal spine. Plate of labrum rounded. Large eye and small ocellus present. Ocellus situated near to eye than the tip of the rostrum. Ventral marginal setae small and equally spaced. Abdominal part not long and without dorsal process.

Distribution : India : Tamil Nadu, Himachal Pradesh, Kerala, Gujarat, Maharashtra & Rajasthan. This is the first record of the species from Madhya Pradesh.

Elsewhere : Australia, Sudan, South Africa, Kenya, Angola, Chad, Congo, Sahara, Malawi-Nyassa, Australia, Sri Lanka, Nepal.

58. *Biapertura verrucosa* (Sars, 1901)

1901. *Alona verrucosa* Sars, *Arch. Math. Nat.*, 23 : 56-57, pl. IX, figs. 7,7a.
1988. *Biapertura verrucosa* : Michael and Sharma, *Fauna of India, Cladocera*, ed. Zool. Surv. India, Calcutta, p. 210, figs. 73 a-d.

Material examined : 2 exs., 27-3-1978, Mahakaleshwar Kunda, Ujjain distt, 11exs., 2-2-1982, Belbag tank, Damoh road, Jabalpur distt; all coll. P.D. Rane.

Diagnostic characters : Female : Length 0.32 mm. Posteroventral corner of valve rounded. Valves with tubercles. Head shield with two main connected head pores and two small lateral head pores. Antennules almost reaching apex of rostrum. Plate of labrum with incision at lower portion of labral plate but no distinct denticle anteriorly. Ocellus smaller than eye and situated nearer to eye than to apex of rostrum. Postabdomen short with curved dorsal margin and rounded distal margin. Anal margin projecting and situated in the middle of dorsal margin of postabdomen. Postabdomen with 6-8 anal spines and lateral setae rather large and in groups. Claw with basal spine and setae on concave margin.

Distribution : India : Maharashtra & Gujarat. This is the first record of this species from Madhya Pradesh.

Elsewhere : Indo-Malayan, Ethiopian and Neotropical regions.

Genus *Oxyurella* Dybowski and Grochowski, 1894

59. *Oxyurella sangramsagari* Rane, 1984

1984. *Oxyurella sangramsagari* Rane, *Bombay. Nat. Hist. Soc.*, Bombay, 83(3) : 665-667, figs. 1-7; Table-1.

Material examined : 1 ex, (male), 15 exs (females), 1-12-1978, Sangramsagar tank behind medical college, Jabalpur, Madhya Pradesh, coll. P.D. Rane.

Diagnostic characters : *Male* : Length 0.45 mm. Body oval, posteroventral of valves rounded without denticles but row of spinules on the inner side. Rostrum blunt. Valve without lines. Antennules not reaching apex of rostrum. Esthetases of different length projecting beyond apex of rostrum. Antennules with a two segmented sensory papilla present on lateral side near apex. Plate of labrum rounded, with a slight concavity to the upper side. Post-abdomen narrowing distally with large curved hook shaped and one small anal denticle; 5-6 groups of lateral setae in the middle of post abdomen. There was distinct incision at the base of claw. Claw slightly bent at its distal end with two basal spines; distal larger about slightly less than half length of the claw and situated at about 1/4th of the total length of claw from base. Ventral side of valve with setae along its entire margin. First leg with two chitinized hooks on the base of outer ramus of endite which serves for attachment of the valve of female. Hook with large bunch of setae at the base.

Female : Length-0.6 mm. Female is larger than male with lines on the valves. Ventral margin of valve with setae along its entire margin. Antennules not reaching apex of rostrum. Plate of labrum rounded. Rostrum with blunt apex. Postabdomen slightly narrowing distally, with 13 anal denticles decreasing in size proximally; distal denticle longest and a small curved denticle before it. Claw with three basal spines. Proximal two smaller and distal one larger, about less than half length of the claw. Group of lateral setae present on the postabdomen.

Distribution : India : This species is endemic to the Jabalpur distt. Madhya Pradesh as this species only found at type locality.

Genus *Indialona* Petkovski, 1966

60. *Indialona ganapati* Petkovski, 1966

1966. *Indialona ganapati* Petkovski, *Fragmenta Balcanica Musei Macedonici Scientia raw naturalium*, V.2 : 157-165, pl. 1-9.

Material examined : 12 exs., 7.7.1982, Narmada river, Bhedaghat, about 7 Kms north of Jabalpur, Shahpura road, Jabalpur distt. M.P, coll. P.D. Rane.

Diagnostic characters : *Female* : Length-0.27-0.29 mm. Body nearly circular. Valve without any pattern of polygons. Posterodorsal corner valves distinct and posteroventral corner rounded without spinule. Valve with sparse setae on ventral margin. Antennules almost reaching apex of the rostrum. Ocellus smaller than eye situated halfway between eye and apex of rostrum. Postabdomen, tapering towards base of claw without dorsal corner, with 4-5 groups of setae on lateral surface. Pre and postanal parts of postabdomen with anal denticles almost absent. Claw with one basal spine. Labral plate rounded with notch at apex. Ventral bulge of valve with few grouped setae and setae posterior to it arise from small protuberance.

Ephippial female : Length 0.29 mm. Body oval with anterior and posterior corners evenly rounded. Dorso-posterior half of ephippial female heavily chitinized. Height relatively larger than parthenogenetic female. Carapace around the resting eggs heavily pigmented. Ephippium with single egg.

Male : Length-0.25 mm. Height rather narrow than parthenogenetic female. Length – height ratio 10 : 6. Males are characterized by their large cigar shaped antennules which are equal in width throughout their length. First leg with a pair of strong copulatory hooks, with a knob like structure at their base. Postabdomen broad but rather smaller in size as compared to the female. Basal spine large, about more than half the length of terminal claw. Terminal claw similar to that of female except the length, is much short. Claw with one basal spine.

Distribution : India : Gujarat, (Ahmedabad); Madhya Pradesh, (Bhopal), Maharashtra (Ujani wetland.).

Elsewhere : Endemic species only found in India.

Genus *Notoalona* Rajapaksha and Fernando, 1987

61. *Notoalona globulosa* (Daday, 1893)

1898. *Alona globulosa* Daday, *Termes, Fuzetek*, **21** : 1-123.

1997. *Notoalona globulosa* Rajapaksha & Fernando, *Hydrobiologia*, **144** : 131-153.

Material examined : 2 exs., 30-1-1978, Kanha National Park, Mandla distt; 1 ex., 2-4-1981, Amkhas tank., 5 exs., 2-7-1982, Ganjital tank, Shivora road ; 2 exs., 21-4-1984, Bhiloda tank, Jabalpur distt, all coll. P.D. Rane.

Diagnostic characters : Female : Valve with striations. Rostrum short and blunt. Antennules not reaching apex of rostrum. Ocellus smaller than eye, situated closer to the eye than to the apex of rostrum. Labrum serrated on anteroventral margin. Postabdomen long with 12-13 anal denticles. Claw long with short basal spine. Typical bean shaped head pores, row of submarginal setae along posterior half of the ventral margin and typical branched setae on the first leg are diagnostic characters of this species.

Distribution : India : Andaman & Nicobar Islands, Madhya Pradesh, Maharashtra, Tamil Nadu.

Elsewhere : South-East Asia, Neotropical and Neoarctic region.

Genus *Alona* Baird, 1843

Key to the species of *Alona*

- 1a. Valve with longitudinal and transverse lines forming rectangular pattern, body smooth, posteroventral corner without denticle, basal spine small ... *Alona rectangula* Sars, 1862a
- b Valves with pits
Alona rectangula pulchra Hellich, 1874...2.
- 2a. Postabdomen and groove not bordered by cluster of spinules, anal denticles more than

10; postabdomen with protruding end
..... *Alona costata* Sars, 1862b.

- b. Postabdominal anal groove deep and with cluster of spinules, anal denticles less than 10; postabdomen with pointed distal end
..... *Alona guttata* Sars, 1862b...3.

- 3a. Basal spine large, about less than one third length of claw, anal denticles not in groups, postabdomen elongated
..... *Alona pulchella*, King 1854

- b. Basal spine thin, about more than one third length of claw, anal denticles in group of 3, postabdomen large and broad
..... *Alona diaphana* King, 1853...4

- 4a. Basal spine at claw more than half length of claw, postabdomen long & narrowed, anal denticles isolated, labrum with deep notch on anterior side
..... *Alona macronyx* Daday, 1898

- b. Basal spine at claw less than half length of claw, postabdominal distal part slightly protruded out with group of large 4-5 large anal denticles decreasing in size proximally. Labrum with rounded apex
..... *Alona karelica* Strenroos, 1897

62. *Alona rectangula* Sars 1862

1862. *Alona rectangula* Sars, 1862, *Forh. Vid. Selsk. Christiania*, p. 160.

1974. *Alona rectangula* Smirnov, *NTIS, Springfield*, pp. 425-428, figs. 392-394.

Material examined : 1 ex., 3-4-1978, Kundan tank ; 1 ex., 28-3-1984, Padwar tank; 3 exs., 27-7-2984, Gupteswar tank, Jabalpur distt, M.P., all coll P.D. Rane.

Diagnostic characters : Female : Length 0.4-0.5 mm. Valves with rounded posterodorsal and posteroventral corner. Valves with longitudinal line or sometimes rows of tubercles. Head with three connected head pores. Head shield with rounded posterior margin. Setae on antenna 0-0-3/1-1-3. Lateral spines present on proximal segment of exopodite on second segment of endopodite and on both distal segments. Plate of labrum with

convex ventral margin. Postabdomen wide, with rounded dorsal distal margin. Anal margin slightly concave, with lateral rows of setae. Seven to nine anal spines, sometimes in groups. The distal spine of the group is largest. Claw with a row of setae in proximal three fourth of the concave margin. Ocellus as large as eye. Valves without pits. Posteroventral corner of valve without denticles. Anal margin with two groups of setae. The setae of second distal group projecting from beyond the margin of postabdomen. Claw with a basal spine.

Distribution : India : Ladakh, Gujarat, Rajasthan, Meghalaya, Kashmir, West Bengal, Maharashtra.

Elsewhere : North America, Africa, U.S.S.R, Malaysia, South East Asia.

63. *Alona rectangula pulchra* Hellich, 1874

1874. *Alona rectangula pulchra*, Hellich, *Sitzungs Ber der konigle bohmischen Gesellsch der Wissen, in Prag.*, p. 219, fig. 404.

Material examined : 2 exs., 27-7-1984, Gupteshwar tank, Jabalpur distt, M.P, coll. P.D. Rane.

Diagnostic characters : Female : Length 0.43mm. The general structure of body same as that of *Alona rectangula* except here the body is pitted all over. Claw with basal spine and plate of labrum with rounded anterior margin.

Distribution : India : This is the 1st record of this specimen from India

Elsewhere : Europe and Australia.

64. *Alona costata* Sars, 1862

1862. *Alona costata* Sars, *Forhandl. Vidensk. Seask. Christiania* : 286 p.

Diagnostic characters : Female : Length 0.6 mm. Valve with rounded posterodorsal and posteroventral corner. Valve with longitudinal reticulation with interconnections. Posterior margin of valves with a row of spinnules on its inner margin. Antennules not reaching apex of rostrum. Antennal setae : 0-0-3 / 1-1-3. Plate of labrum

rounded. Ocellus much smaller than eye and situated half way between eye and apex of rostrum. Postabdomen short and tapering distally, dorsal margin almost straight and preanal corner only slightly projecting beyond the base of claws. Anal spines 11-12, decreasing in size proximally. Group of lateral setae present in a row, the distal setae being longest in each groups. Anal margin almost straight. Claw with basal spine.

Male : Length : 0.4 mm. Valve with rounded posterodorsal and posteroventral corner. Antennule reaching apex of rostrum. Postabdomen narrowing distally. Vasdeferans opening ventrally at the base of claws. Anterior side of endite of first leg with group of thick setae and distinct curved claw. Postabdomen with small extension just above the claw and minute anal denticles dorsally up to the half the region.

Distribution : India : Himachal Pradesh, Uttar Pradesh, Manipur, Maharashtra. This is the first record of this species from Madhya Pradesh state.

Elsewhere : Sudan, North & South America, South Africa, U.S.S.R, Australia, Nepal, Sri Lanka.

65. *Alona guttata* (Sars, 1862)

1862. *Alona guttata* Sars, *Forhandle. Selsk. Cristinania*, pp. 287-289.

1974. *Alona guttata* Smirnov, *NTIS, U.S Dept of commerce, Springfield*, 1(2), pp. 465-466, fig. 450.

Material examined : 2 exs., 8-12-1983, Katangi pond; 6 exs., 8-12-1983, Balkhera tank, Jabalpur distt, M.P, all coll. P.D. Rane.

Diagnostic characters : Female : Length 0.3-0.4 mm. Body oval in shape with rounded posterodorsal and posteroventral corners. Antennules not reaching the apex of rostrum. Plate of labrum rounded. Ocellus smaller than eye, situated halfway between eye and apex of rostrum. Postabdomen with 9 anal spines and indistinct lateral group of setae. Claw with basal spine. Anal margin slightly concave.

Distribution : Himachal Pradesh, Rajasthan, Tamil Nadu, Maharashtra. This is the first record of this species from Madhya Pradesh.

66. *Alona pulchella* (King, 1853)

1853. *Alona pulchella* King, *Pap. Proc. R. Soc. Van. Diemens Land.*, 2 : 260, pl. 8B.

1933. *Alona arenaria* Brehm. *Arch. Hydrobiol., Suppl.* 11 : 631 -771.

Material examined : 3exs., 1-4-1978, Sukri tank; 1ex., 4-3-1980, Umaria tank; 3 exs., 29-3-1981, Jalwara tank ; 1ex., 2-4-1983, Padwar tank; 1 ex., 22-7-1984, Hanuman tank, Jabalpur distt, M.P, all coll P.D. Rane.

Diagnostic characters : Female : Length 0.5-0.57 mm. Posterodorsal and posteroventral corner of valve rounded. Valve without any reticulation. Antennules not reaching apex of rostrum. Plate of labrum convex at anterior margin and with pointed apex. Three head pores present, not connected to one another. Ocellus is smaller than eye situated between eye and rostrum. Postabdomen large with parallel dorsal and ventral margin. Preanal corner distinct but not projecting. About 10 anal denticles present. Group of lateral setae present, distal setae longest in each group. Claw with large basal spine.

Distribution : India : Gujarat, West Bengal, Tamil Nadu, Maharashtra. First record from Madhya Pradesh.

Elsewhere : Australia, Sudan-Africa, South Africa, North Africa, Sahara, Lake Chad, Congo, Malawi-Nyassa, South America, Nigeria, Philippines.

67. *Alona diaphana* King, 1853

1853. *Alona diaphana* King, *Papers and proceed. Roy. Soc. Tasmania*, II, 256-262, figs. 22A and 22E.

Material examined : 3exs., 26-12-1983, Sangramsagar tank; 3exs., 1-6-1984, Supatal tank; 8 exs., 3-4-1985, Jaljira tank; 1 ex., 10-4-1985, Palwar tank, Jabalpur distt, M.P. all coll. P.D. Rane.

Diagnostic characters : Female : Length 0.49-0.50 mm. Maximum height slightly before the middle of body. Dorsal margin of head forming a smooth curve with dorsal margin of valve. Posterodorsal margin slightly curved upward and posteroventral corner rounded. Ventral margin of valve with concavity at the anterior part with

feathered setae, which passes on the posteroventral corner, into a row of short hairs which is continues on the posterior margin with slightly large, stout, equally spaced setae. Rostrum blunt. Antennules ending a short distance before apex of rostrum, with olfactory setae of different length. Plate of labrum rounded. Setae on antenna 0-0-3 / 0-0-3. The three distal setae are long, almost reaching the middle of valve. Postabdomen widest in the middle; tapering distally. Postanal part is large than the projecting preanal part. Postanal part with 12-14 groups of anal denticles; about 12 groups of lateral setae present. Claw with fine setules on the concave margin and one large basal spine. Ocellus smaller than eye. Valve without any type of reticulation and three head pores connected with each other on the head pores.

Distribution : This is first record of this species from India.

Elsewhere : Sudan, Egypt, Kenya, Sahara, Chad, Tanganyika, Nigeria.

68. *Alona macronyx* Daday, 1898

1898. *Alona macronyx* Daday, *Termitud. Fuz.* 21 : 35-37, figs. 15a-15c.

1983. *Indialona jabalpurensis* Rane, *J. Bombay Nat. Hist. Soc. Bombay*, 80 : 194-195, figs. 1-4.

Material examined : 3 exs., 8-3-1982, Madan Mahal tank; 7exs., 22-4-1985, Sangramsagar tank, Jabalpur distt, M.P, all coll P.D. Rane.

Diagnostic characters : Female : Length 0.51 mm. Body slightly long than high. Valve compressed laterally. Posterodorsal corner of valve slightly projecting. Posteroventral corner rounded with 6 equally spaced denticles. Valve with longitudinal lines. Rostrum blunt. Antennules ending before apex of rostrum. Anal denticles about 30. Claw with basal spine. Ocellus one third of length of eye.

Distribution : India : Maharashtra and first record of species from Madhya Pradesh.

69. *Alona karalica* Stenroos, 1897

1897. *Alona karalica* Stenroos, *Acta. Soc. Pro. Fauna et flora Fennica*, XV, 2 : 52-53, figs. 5, 6.

Material examined : 1 ex., 21-7-1984, Bohriband reservoir ; 2 exs., 1-8-1984, Umaria tank, Jabalpur distt, M.P, all coll P.D. Rane.

Diagnostic characters : *Female* : Length 0.38-0.4 mm. Posterodorsal and posteroventral corner of valve rounded. Ventral margin of valve straight, with setae. Faintly reticulation on the valve. Rostrum blunt. Antennules almost reaching apex of rostrum. Posterior margin of antennules with a sensory seta. Plate of labrum almost squarish. Postabdomen uniformly wide. Dorsal distal end projecting beyond the base of claw. Anal margin slightly concave. Anal denticles are in groups. Claw with small basal spine. Ocellus smaller than eye, situated halfway between eye and rostral apex.

Distribution : First record from India.

Elsewhere : European U.S.S.R, Malaysia, Venezuela. Only record of this species from oriental region i.e from Malaysia (Idris & Fernando, 1981).

Subfamily EURYCERCINAE, Kurz, 1875

Genus *Eurycercus* Baird, 1843

70. *Eurycercus* sp.

Material examined : 2 exs., 27-7-1984, Exoskeletons from Bhiloda tank in front of medical college, Jabalpur, M.P, coll P.D. Rane. Head shields recorded by Fernando & Kandarua (1984).

Distribution : This genus is recorded from Kashmir and now recorded from Madhya Pradesh.

SUMMARY

Sixty one species, eight subspecies, one sp. total seventy type of Cladocera are recorded from Madhya Pradesh, belonging to 6 families

(including 3 subfamilies) and 35 genera. Freshwater habitats in Madhya Pradesh mostly harbour Indo-Malayan, Palaearctic and tropical elements. Chydoridae is largest having 35 species, which is incidently one of the largest groups occurring anywhere in the world. Many endemic new subspecies occurs in this reported cladoceran fauna : *Simocephalus serrulatus surekhae* (Rane), *Simocephalus acutirostratus vidyae* (Rane), *Simocephalus acutirostratus gajaree* (Rane) and new species *Latona narendrai* Rane, *Sarsilatona fernandoi* (Rane), *Daphnia sumanae* (Rane) (relocated from genus *Daphnopsis*), *Daphnia sarojae* Rane, *Daphnia madhuriae* Rane, *Moina dodhui* Rane, all these sp / subsp are new to science and Madhya Pradesh and only reported / recorded from type locality only. Rare reporting *Eurycercus* sp only in the form of skeleton is an important finding from this region. *Echinisca capensis mondoi* earlier recorded from only Tripura is second time recorded from India. *Moina oryzae* Igor Hude. 1987 described new species from ricefields of Tamil Nadu.

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REFERENCES

- BAIRD, W. 1860 Description of two new species of Entomostracous Crustacea from India. *Proc. Zool. Soc., London*, 213-234.
- BISWAS, S. 1964a. A new species of the Cladoceran genus *Latona* Straus, 1820 (Crustacea : Cladocera, Sididae) from Rajasthan, India. *Proc. Zool. Soc. Calcutta*, 17 : 149-152.
- BISWAS, S. 1964b. Five species of Daphniidae (Crustacea : Cladocera) from Simla Hills in India, with new record of *Alona costata* Sars, from NEFA. *J. Zool. Soc. India*, 16 : 92-98.

- BISWAS, S. 1966. A new species of the genus *Chydorus* leach, 1843 (Crustacea : Cladocera : Chydoridae) from Rajasthan, India. *Crustaceana.*, **11** : 113-114.
- BISWAS, S. 1971. Fauna of Rajasthan, India. Part II. (Crustacea : Cladocera) *Rec. Zool. Surv. India*, **63** : 95-141.
- BREHM, V. 1936. Yale North India Expedition. Report on Cladocera. Article XVI. *Mem. Conn. Acad. Arts. Sci.*, **10** : 283-297.
- BREHM, V & WOLTERECK, R. 1939. Die Daphniden der Yale-North India Expedition. *Int. Rev. ges. Hydrobiol.*
- BREHM, V. 1952. *Diaphanosoma hydrocephalus* nov. spcc. eine. eigenartige Sididae aus Vorder – Indien. *Zool. Anz.*, **149** : 138-140.
- BREHM, V. 1963. Einige Bemerkungen zu vier Indischen Entomostraken. *Int. Rev. ges. Hydrobiol.*, **48** : 159-172.
- FERNANDO, C.H. & KANDURU, A. 1984. Some remarks on latitudinal distributon of Cladocera on the Indian subcontinent. *Hydrobiologia*, **13** : 69-76.
- GURNEY, R. 1907. On some freshwater Entomostraca in the collection of the Indian Museum, Calcutta. *J. Asiatic. Soc. Bengal*, (N.S), **2** : 273-281.
- GURNEY, R. 1911. On some freshwater Entomostraca. *Rec. Indian. Mus.*, **1** : 21-33.
- IGOR HUDEC, 1987. *Moina oryzae* n. sp. Cladocera : Moinidae from Tamil Nadu (South India). *Hydrobiologia*, **145** : 147-150.
- LOEDOLFF, C.J. 1965. The function of Cladocera in oxidation ponds, South Africa : in proceeding of the second International Water Pollution Research Conference, Tokyo 1964, pp. 307-325, Pergamon Press, New York.
- MICHAEL, R.G. 1973. A guide to the study of freshwater organisms. *Jour. Madurai. Univ.*, suppl. I : Cladocera, Chapter, **6** : 71-85.
- MICHAEL, R.G AND SHARMA, B.K. 1988. Fauna of India and Adjacent countries, Indian Cladocera, (Crustacea : Branchiopoda : Cladocera). Ed. Director, Zoological Survey of India, Calcutta, pp. 262.
- NASAR, S.A.K. 1977. The zooplankton fauna of Bhagalpur. (Bihar) II. Cladocera. Carcinological Society of Japan. Research on Crustacea, No. **8** : 32-36.
- NAYAR, C.K.G. 1971. Cladocera of Rajasthan. *Hydrobiologia.*, **37** : 509-519.
- PATIL, S.G. 1976. Freshwater Cladocera (Arthropoda : Crustacea) from North East India. *Curr. Sci.*, **45** : 312-313.
- PATIL, C.S and GOUDER, B.Y Cladocera of Dharwad (Karnataka state), *J. Bombay. Nat. Hist. Soc.*, **85** : 112-122.
- PETKOVSKI, T.K. 1966. Eine neue Cladoceran.- Gattung aus dem Westen Indiens *Indialona ganapati* n. gen, et.n.sp. *Fragmenta Balcanica musei Macedonici scientiarum naturalium*, V. **2** : 157-165.
- QUADRI, M.Y and YOUSUF, A.R. 1978. Some new records of Crustacea from Kashmir. *Curr. Sci.*, **46** : 859-860.
- RAGHUNATHAN, M.B. 1988. Planktonic Cladocerans From Kerala. *J. Aquar.*, **2**(1) : 11-13.

- RAGHUNATHAN, M.B and RANE, P.D. 2001. Studies on Cladocera : Crustacea of Nilgiri Biosphere Reserve. *Fauna of Conservation Area* : No. 11., pp. 31-37, *Zoological Survey of India* publication.
- RANE, P.D. AND HARSHEY, D.K. 1979. A new record of *Latonopsis fasciculata* Daday (Cladocera : Crustacea) from India. *Sci and Cult.*, **45**(II) : 456.
- RANE, P.D. 1983a. A new species of genus *Latonopsis* Sars, 1888 (Cladocera : Sididae) from M.P, India. *Crustaceana* (Leiden), **45**(1) : 82-84.
- RANE, P.D. 1983b. A new species of genus *Simocephalus* Schoedler, 1858 (Cladocera : Daphniidae) from M.P., India. *Crustaceana* (Leiden), **45**(2) : 154-156.
- RANE, P.D. 1983c. A new species of Cladocera *Indialona Petkovski*, 1966 (Family : Chydoridae) from India. *J. Bombay. Nat. Hist. Soc. Bombay*, **80**(1) : 194-195.
- RANE, P.D. 1984a. A new species of the genus *Oxyurella* Dybowski & Grochowski, 1894 (Cladocera : Chydoridae) from India. *J. Bombay nat. Hist. Soc. Bombay*, **81**(3) : 665-667.
- RANE, P.D. 1984b. A new species of *Bosminopsis* Richard, 1895 (Crustacea : Cladocera : Bosminidae) from India. *J. Bombay nat. Hist. Soc. Bombay*, **81**(3) : 668-669.
- RANE, P.D. 1984c. Occurrence of *Pleuroxus similes* Vavra (Cladocera : Crustacea) in India. *J. Bombay nat. Hist. Soc. Bombay*, **81**(3) : 713.
- RANE, P.D. 1984d. New records of *Grimaldina brazzai* Richard and *Bosminopsis deitersi* Richard (Crustacea : Cladocera) from India. *J. Bombay nat. Hist. Soc. Bombay*, **81**(3) : 713-714.
- RANE, P.D. 1984e. Occurrence of *Kurzia latissima* (Kurz, 1874) in India. *J. Bombay nat. Hist. Soc., Bombay*, **80**(3) : 660-661.
- RANE, P.D. 1985a. Studies on Cladocera of Jabalpur. M.P. Symp. *Nat. Acad. Sci.*, 103 (Abstract).
- RANE, P.D. 1985b. New species of genus *Camptocercus* Baird, 1843 (Cladocera : Chydoridae) from M.P. India. *Crustaceana* (Leiden), **48**(2) : 113-116.
- RANE, P.D. 1985c. A new cladoceran *Simocephalus vamani* sp.nov. from Jabalpur, M.P. India. *Bull. Zool. Surv. India. Calcutta*, **7**(2-3) : 225-229.
- RANE, P.D. 1985d. A new species of genus *Simocephalus* Schoedler 1858 (Cladocera : Daphniidae) from M.P. India. *J. Bombay nat. Hist. Soc. Bombay*, **82**(1) : 159-161.
- RANE, P.D. 1985e. On a new Cladoceran *Latona narendrai* sp. nov. from Madhya Pradesh, India. *J. Bombay nat. Hist. Soc. Bombay*, **82**(2) : 387-389.
- RANE, P.D. 1986a. A new subspecies of *Simocephalus vidyae* Rane, 1983 (Cladocera : Daphniidae) from Jabalpur, M.P. India. *J. Bombay nat. Hist. Soc. Bombay*, **83**(1) : 168-170.
- RANE, P.D. 1986b. Description of two new species of Cladocera of family Daphniidae from M.P. India. *J. Bombay nat. Hist. Soc. Bombay*, **83**(3) : 638-642.
- RANE, P.D. 1987a. A new species of Cladocera *Moina dodhui* sp.nov. from Jabalpur, M.P, India, *Crustaceana* (Leiden), **52**(3) : 245-250.
- RANE, P.D. and JAFRI, S.N. 1990. A new species of Cladocera *Daphnia madhuri* sp. nov. from Madhya Pradesh, India. *Crustaceana* (Leiden), **59**(1) : 62-68.
- RANE, P.D. 1992. New distributional record for *Indialona ganapati* Petkovski (Crustacea : Cladocera) from Ujani wetland, Maharashtra with first description of male and reproductive female. *J. Bombay nat. Hist. Soc. Bombay*, **89**(2) : 263 -265.

- RANE, P.D and JAFRI, S.N. 1993a. Relocation of *Latonopsis fernandoi* Rane, (Cladocera : Sididae) to new genus *Sarsilatona* Korovchinsky. *Biome, Raipur*, 6(1) : 41-44.
- RANE, P.D, JAFRI, S.N and RAFIQ, M.A. 1993b. A new species of Cladocera *Daphnia katrajansis* (family : Daphniidae) from Pune, Maharashtra state, India. *Marathawada University Jour. Sci. Aurangabad*, pp. 73-75.
- RANE, P.D. 2002. Cladocera of Ujani wetland, Pune, Maharashtra.
- RANE, P.D. 2004. Cladocera fauna of Pench National park, Maharashtra in *Conservation Area Series* No. 20 : 159-174, *Zoological Survey of India* publication.
- RANE, P.D. 2005a. Cladocera fauna of Melghat Tiger Reserve, Maharashtra, in *Conservation Area Series*, 24 : 451-500, 29 plates, *Zoological Survey of India* publication.
- RANE, P.D. 2005b. Cladocera fauna of Nathsagar wetland and Jaikwadi Bird Sanctuary, Maharashtra, *Wetland Ecosystem Series*, No. 7 : 77-99. *Zoological Survey of India* publication.
- RANE, P.D. 2006. Cladocera fauna of Tadoba-Andheri Tiger reserve, Maharashtra. *Conservation Area Series* No. 25 : 177-196, *Zoological Survey of India* publication.
- RANE, P.D. 2008a. Cladocera. *Fauna of Goa, State Fauna Series*, No. 16 : 79-101, *Zoological Survey of India* publication.
- RANE, P.D. 2009. Fauna of Bhimashankar wildlife Sanctuary, Cladocera : Crustacea, *Conservation Area Series*, 42 : 2634-272. Maharashtra state, *Zoological Survey of India*.
- SAINI, R.S AND SINGH R.S. 1984. Studies on the aquatic crustacea of Rewa. *Rec. zool. Surv. India*, 81 : 27-34.
- SHARMA. B.K. 1978. A note on freshwater cladocerans from West Bengal. *Bangladesh. J. Zool.*, 6 : 149-151.
- SHARMA B.K and MICHAEL, R.G. 1983. Redescription of *Alona taraporevalae* Shirgur & Naik, 1977 (Cladocera : Chydoridae : Aloninae) *Rec. zool. Surv. India*, 81 : 35-39.
- SHIRGUR, G.A & NAIK, A.A. 1977. Observations on morphology, taxonomy, ephippial hatching and laboratory culture of new species of *Alona* (*Alona taraporevalae* Shirgur and Naik), a Chydorid cladoceran from back bay, Bombay, *Proc. Symp. Warm water Zooplankton*, special publication, pp. 48-59.
- SMIRNOV, N.N. 1971. The World Chydorid fauna (in Russian) *USSR, Acad. Sci. Zool. Institute. Nova. Ser. No. 101. Leningrad.* 539 pp.
- VENKATARAMAN, K. 1983. Taxonomy and Ecology of Cladocera of southern Tamil Nadu, Ph.D thesis. Madurai Kamaraj University, India. pp. 1-190.
- VENKATARAMAN, K. 1991. Freshwater cladocera of Little Andaman. *Andaman. Sci. Assoc.*, 7(2) : 43-49.
- VENKATARAMAN, K. 1992. I. Cladocera of Keoladeo National park, Bharatpur and its environs. *J. Bombay. Nat. Hist. Soc.* 89 : 79-26.
- VENKATARAMAN, K. 1993. Cladocera of Port Blair, Andaman. *J. Andaman. Sci. Assoc.*, 8(2) : 133-137.
- VENKATARAMAN, K. AND DAS, S. R. 2000. Cladocera. *Fauna of Tripura, State Fauna Series*, 7(4) : 277-316, *Zoological Survey of India*.
- YOUSF, A.R and QADRI, M.Y 1977. Cladocera of Malpur Sar, Kashmir. *J. Sci. Univ. Kash.*, 3 : 87-92.

INSECTA : ISOPTERA

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INTRODUCTION

Termites have increased the curiosity of scientist for its vital role of both beneficial as decomposer, particularly in forest ecosystem and harmful as pest of crop plants, trees and any sort of non-living material of cellulosic origin. Moreover, their characteristic feature, such as, social system, architectural ability, symbiotic relationship with flagellates, fungus and bacteria, encouraging guests and inquilines in their nests, attracts the attention of scientists of varied discipline. However, they can act as climatic indicator since some genera restricts their distribution in particular climate zones (Maiti and Saha, 1998) and also as zoogeographical indicators due to their poor dispersal capability. Termites preliminary being a humid loving creature, creates some interest to study the present status and magnitude of termite fauna of Madhya Pradesh, a state which receives less rainfall and enjoys dry weather condition except in some limited areas in the south. All these keeping in mind, the termite fauna of Madhya Pradesh have drawn our attention to record the faunal status and distribution pattern in area under study. Although the fauna dealt here broadly refers to state of Madhya Pradesh, in its earlier geographical boundary, some species with their localities belongs to the state of Chhattisgarh as we conceive today.

Madhya Pradesh is situated in central part of India with extreme climatic condition prevailing in accordance with different season. But the termite fauna is not expected to be very rich due

to its overall semiarid landscape except a few forest stretches in different localities.

Subsequent to the publication of Snyder's catalogue during 1949, Roonwal (1954) studied on ecological adjustment in nature between the species *Coptotermes heimi* (Wasmann) and *Odontotermes redemanni* (Wasmann) in Madhya Pradesh. Sen Sarma *et al.* (1975) while studying the wood destroying termites of India, reported 21 species under 10 genera. Chhotani (1977) collected and studied termite fauna of Kanha National Park in the district Mandla to a total of 16 species under 10 genera. These collections were further augmented by some collections made by Dr. M.L. Roonwal and Dr. K.K. Tiwari of Z.S.I. and G.B. Schaller, U.S.A. Further, Verma and Thakur (1982) studied termite collected by the staff-members of the Central Zone Regional Centre, Z.S.I., Jabalpur during the period of 1968-1975. They recorded 18 species under 6 genera of which 6 species were recorded for the first time. Further, many more species were either described as new species or new records from the state. The credit mostly goes to Chatterjee and Thapa (1964), Roonwal and Chhotani (1965), Thakur (1981), Roonwal and Chhotani (1989) and Chhotani (1997). Recently, Chandra in 2008, while coordinating the fauna of Jabalpur, enlisted seven species of Isoptera which were already known from the area.

Thus to sum up the number of species occurring in the state stands to a total of 35 species under 14 genera and 3 families.

SYSTEMATIC ACCOUNT

GENERAL MORPHOLOGY

Termites have three major castes namely imago, soldier and worker. The general morphology has been dealt recently by Roonwal and Chhotani (1989) in "Fauna of India" including the characters of taxonomic importance. Identification of termite species is mostly based on these characteristic features of soldier caste. In addition, the measurements of the characters of the soldiers used for the preparation of keys are as follows : Length and width of head, length of mandibles (except in nasute forms) and distance of tooth (if present) from the tip of the mandible, length and width of pronotum and postmentum, number of antennal segments, etc.

MATERIAL AND METHODS

The present study is based on some collections made by the staff members of Zoological Survey of India, Kolkata as well as of those from Central Zone Regional Centre, Z.S.I., Jabalpur. This collection was further augmented by authentically identified material, present in National Zoological Collections of Z.S.I., Kolkata in its Isoptera Section. Published informations have also been utilized in the paper.

Best method of collection of soil termites is done with the help of a shovel pushing it into the soil and putting the material on a tray and ultimately picking them up with the help of a forceps. Wood-eating forms are collected by the forceps after cutting the wood with the help of a hand axe. All the collections are preserved in 70% alcohol kept in small vials. Collection of queen from the soil nest needs caution to trace the royal chamber wherein the queen lives. All the measurements are expressed in millimeters.

Abbreviation used

Coll.—Collected by/Collector; det.—determined by; Dist.—District; E—East; ex.—extracted from; Fig.—Figure; Im—Imago; Km.—Kilometer; max. maximum; mm. millimeter; N—North; S.—Soldier; Sev.—Several; W.—workers; Z.S.I.—Zoological Survey of India.

PRESENT STATUS OF THE TERMITE FAUNA

Family KALOTERMITIDAE

Genus *Cryptotermes* Banks

1. *C. bengalensis* Snyder

Family RHINOTERMITIDAE

Subfamily COPTOTERMITINAE

Genus *Coptotermes* Wasmann

2. *C. heimi* (Wasmann)
3. *C. kishori* Roonwal and Chhotani

Family TERMITIDAE

Sub-family AMITERMITINAE

Genus *Eurytermes* Wasmann

4. *E. boveni* Roonwal and Chhotani
5. *S. chadaensis* Chatterjee and Thapa
6. *S. cyclops* Wasmann

7. *S. goesswaldi* Roonwal and Chhotani

8. *S. sinhalensis* Roonwal and Sen-Sharma

Genus *Euhamitermes* Wasmann

9. *E. kanhaensis* Roonwal and Chhotani

10. *E. karnatakensis* Roonwal and Chhotani

Genus *Synhamitermes* Holmgren

11. *Synhamitermes quadriceps* (Wasmann)

Genus *Amitermes* Silvestri

12. *Amitermes belli* (Desneux)

Genus *Eremotermes* Silvestri

13. *E. paradoxalis* Holmgren

Genus *Microcerotermes* Silvestri

14. *M. beelsoni* Snyder

15. *M. cameroni* Snyder

16. *M. sakesarensis* Ahmad

Subfamily TERMITINAE Sjöstedt

Genus *Dicuspiditermes* Krishna

17. *D. obtusus* (Silvestri)

Genus *Pericapritermes* Silvestri

18. *P. tetraphilus* (Silvestri)

Subfamily MACROTERTERMITINAE Kemner

Genus *Odontotermes* Holmgren

19. *O. assmuthi* Holmgren

20. *O. bhagwatii* Chatterjee and Thakur
21. *O. boveni* Thakur
22. *O. feae* (Wasmann)
23. *O. guptai* Roonwal and Bose
24. *O. gurdaspurensis* Holmgren and Holmgren
25. *O. horai* Roonwal and Chhotani
26. *O. horni* (Wasmann)
27. *O. microdentatus* Roonwal and Sen sarma
28. *O. obesus* (Rambur)
29. *O. redemanni* (Wasmann)
30. *O. wallonensis* (Wasmann)

Genus *Microtermes* Wasmann

31. *M. incertoides* Holmgren
32. *M. obesi* Holmgren
33. *M. unicolor* Snyder

Subfamily NASUTITERMITINAE Hare

Genus *Trinervitermes* Holmgren

34. *Trinervitermes biformis* (Wasmann)
35. *Trinervitermes nigrirostris* Mathur & Sen-sarma

Key to families of ISOPTERA (Soldier)

1. Fontenelle absent; antennae with 10-18 segments KALOTERMITIDAE
- Fontenella present; antennae with 12-20 segments 2
2. Pronotum flat, devoid of any anterior lobe RHINOTERMITIDAE
- Pronotum saddle-shaped with distinct anterior lobe TERMITIDAE

Family KALOTERMITIDAE

Genus *Cryptotermes* Banks

1. *Cryptotermes bengalensis* Snyder

1934. *Kalotermes (Cryptotermes) bengalensis* Snyder, *Indian For. Rec.*, **20**(11) : Im, S. Type-locality : Sunderbans (West Bengal, India).
1970. *Cryptotermes havilandi* (Sjostedt) (Part) : Chhotani, *Mem. zool. Surv. India*, **15**(1) : 42-54. (syn.)
1975. *Cryptotermes bengalensis* : Roonwal and Chhotani, *Fauna of India: Isoptera (Termites)*, **1** : 373-377 (detailed synonymy).

2008. *Cryptotermes bengalensis*: Mukherjee, Maiti and Saha *Memoirs zool. Surv. India*, **21**(2) : 33-34.

Distribution : India, Madhya Pradesh, Assam, Andaman and Nicobar Islands, Gujarat, Karnataka, Tripura, West Bengal (Sundarbans), Orissa, Uttarakhand.

Elsewhere : Bangladesh, Sri Lanka, Africa, Madagascar, West Indies and South America (for further details *vide.*, Chhotani, 1970).

Remarks : Although, the species has been reported by Roonwal and Chhotani (1989), but its exact locality is unknown in the state. The species being the only representative of the genus and can easily be identified with truncated head with very short mandibles of the soldier. This is a dry wood termite found both in the forest area as well as around human habitations in India. Swarming is reported during May to June in the Himalaya (Mukherjee *et al.*, 2008).

Family RHINOTERMITIDAE

Subfamily COPTOTERMITINAE

Genus *Coptotermes* Banks

Key to species of Coptotermes (Soldier)

1. Waist of postmentum lying definitely below the middle of line connecting the level of anterior maximum width and the posterior maximum width; head-length 1.13-1.25, head-width 0.95-1.08 (1.01-1.03) *C. kishori* Roonwal and Chhotani
- Waist of postmentum lying in middle of line connecting the level of anterior maximum width and the posterior maximum width; head length 1.20-1.45 (1.27-1.30), head width 1.05-1.35 (1.01-1.03) *C. heimi* (Wasmann)

2. *Coptotermes heimi* (Wasmann)

1902. *Arrhinotermes heimi* Wasmann, *Zool. Jb. (Syst.)*, **17**(1) : 104, pl. 4, Im. Type-locality: Wallon, Maharashtra, India.
1911. *Coptotermes heimi* (Wasmann) : Holmgren, *K. Sv. Vet. Akad. Handl.*, **46**(6) : 73.
1977. *Coptotermes heimi*: Chhotani, *Rec. zool. Surv. India*, **72** : 368.
1989. *Coptotermes heimi*: Roonwal and Chhotani, *Fauna of India : Isoptera (Termites)*, **1** : 449-457.

2008. *Coptotermes heimi* : Mukherjee, Maiti and Saha, *Memoris zool. Surv. India*, 21(2) : 35, 37-39.

Material examined : Identified : one vial with 2s. and 1 W., Kanha National Park, Coll. K.K. Tiwari, 10.i.1966.

Measurements (soldiers) : Head length to base of mandible : 1.27-1.30; Max. head width : 1.01-1.03; Left mandible length : 0.73-0.77; Max diameter of fontanelle : 0.13; Max. pronotum width : 0.67-0.70; Antennal segments : 14.

Distribution : India : Madhya Pradesh, Mandla Dist. : Kanha National Park. Widely distributed in India.

Elsewhere : Bangladesh, Bhutan, Indonesia, Nepal, Pakistan and Oman.

Remarks : *C. heimi* is a common Indian species found in diverse habitats either in wood or in soil and sometimes are associated with other species of termites. It is a very variable species in the Indian mainland and swarms from June to July in Dehra Dun.

3. *Coptotermes kishori* Roonwal and Chhotani

1962. *Coptotermes kishori* Roonwal and Chhotani, *Indian species Termite Genus Coptotermes* (ICAR Ent. Monogr. 2) 9, 57, 61, 77, 108-111 (Pls. 15, 16); S.W, Type-locality : Berhampur (Murshidabad Dist. West Bengal, India)

1982. *Coptotermes kishori* : Verma and Thakur, *Rec. zool. Surv. India*, 79 : 311-312.

1989. *Coptotermes kishori* : Roonwal and Chhotani, *Fauna of India : Isoptera (Termites)*. 1 : 457-461.

Material examined : Identified: 1 vial with 10 s and 2 w., Jabalpur, Devtal on Nagpur road, P. L. Dubey Coll., 7.xii.1973. det. O.B. Chhotani.

Measurements (Soldiers) : Head-length with mandible : 2.02 mm; Head-width : 1.03 mm; Postmentum length : 0.67; Pronotum length : 0.44; Pronotum width : 0.75.

Distribution : India : Madhya Pradesh: Jabalpur (Devtal on Nagpur road); Kerala, Rajasthan, Tripura and West Bengal.

Remarks : The species is hardly similar to any Indian species in its soldier characters, rather

somewhat with some Indo-Malayan species *C. bornensis* Oshima and *C. minutissimus* Kemner (Maiti, 2006). It has been recorded from living *Mangifera indica* and *Ficus religiosa* from the place of its occurrence.

Family TERMITIDAE

Key to subfamilies of TERMITIDAE (Soldiers)

1. Head produced into a rostrum; mandibles generally degenerate with or without spine like apical processes, not functional
.....NASUTITERMITINAE
- Head not produced into rostrum, rather rectangular, squarish or oval; mandibles not degenerate, but well developed with or without teeth in the inner margins2
2. Mandibles rod-like or twisted, as long as or a little longer than head-length or shorter in some genera; fontanelle generally placed below frontal projection TERMITINAE
- Mandibles sabre-shaped or hooked, mostly shorter than head-length; fontanelle distinct or indistinct3
3. Mandible each with a prominent tooth or serration (*Microcerotermes*)
..... AMITERMITINAE
- Mandible either with or without tooth, left mandible with a prominent and right mandible with a minute tooth (*Odontotermes*) or with crenulations (*Hypotermes*)
.....MACROTERTINAE

Subfamily AMITERMITINAE

Key to Genera of Amitermitinae (Soldier)★

1. Mandibles sickle-shaped and serrated (finely or coarsely) throughout the inner margin ...
.....*Microcerotermes*
- Mandibles not serrated on inner margin, with a weak to prominent tooth on each mandible2

★ *Speculitermes* represented by workers only, hence not included in generic key.

2. Head with frontal protuberance; mandibles long, thin, slender and slightly incurved at apices *Eremotermes*
 – Head without frontal protuberance; mandibles short, strong and distinctly incurved at apices 3
3. Clypeus bilobed *Amitermes*
 – Clypeus not bilobed 4
4. Head subsquarish, small; mandibles weak, fairly strongly curved apically
 *Synhamitermes*
 – Head subrectangular; mandibles strongly built and very weakly to fairly curved apically 5
5. Mandibles exceptionally broad at base
 *Euhamitermes*
 – Mandibles comparatively of normal shape, not very broad at base *Eurytermes*

4. *Eurytermes boveni* Roonwal & Chhotani

1. *Eurytermes boveni* Roonwal and Chhotani

1966. *Eurytermes boveni* Roonwal and Chhotani, *Proc. natn. Inst. Sci. India* (B) 31 (3 & 4) : 84, 97, 99-105. Im, S, W. Type-locality : Kanha National Park, Mandla Dist. Madhya Pradesh, India.
1977. *Eurytermes boveni* : Chhotani, *Occ. Pap. Rec. zool. Surv. India*, No. 9 : 30.
1981. *Eurytermes boveni* : Roonwal and Verma, *Proc. Indian natn. Sci. Acad.*, (B) 46(3) : 251.
1997. *Eurytermes boveni*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 26-30.

Material examined : Identified : 1 Im and 2 w, Kanha National Park, 1 Km N. of Forest Rest House, Coll. O.B. Chhotani, 15.vi.1964 (*det.* Roonwal and Chotani)

Measurements (soldiers) : from Chhotani 1997.

Head-length to base of mandibles : 2.00; Max head width : 1.20; Mandible length : 0.83-0.87; Pronotum length : 0.33; Pronotum width : 0.70; Antennal segments : 14.

Distribution : India : Madhya Pradesh: Kanha National Park (Mandla Dist.).

Remarks : The species is the only representative

of the genus from Madhya Pradesh in having a small, obtused angled tooth at anterior one-fourth of left mandible and only known from its type-locality.

In Kanha National Park, the species has been collected from soil, making long and narrow galleries, running horizontally about 2-5 cm below the ground level and the species *O. assmuthi* Holmg. was also collected close to the galleries of the species (Chhotani, 1977).

Genus *Speculitermes* Wasmann

Key to species of *Speculitermes* (Worker)

1. Mid-dorsal spot weakly swollen and raised from head surface (diameter 0.12-0.16) 2
 – Mid-dorsal spot flush with head-surface, not swollen (diameter 0.07-0.13) 3
2. Paler species; head-capsule brown to dark brown; head-length 0.90-1.20, head width 1.20-1.40 *S. cyclops* Wasmann
 – Darker species; head-capsule dark smoky brown; head-length 0.95-1.05 head width 1.20-1.28
 *S. chadaensis* Chatterjee and Thakur
3. Postclypeus-length nearly half its width (length 0.29-0.33, width 0.60-0.66)
 *S. sinhalensis* Roonwal and Sen-Sarma
 – Postclypeus-length a little more than half its width (length 0.35-0.37, width 0.57-0.63) ..
 *S. goesswaldi* Roonwal and Chhotani

5. *Speculitermes chadaensis*

Chatterjee and Thapa

1964. *Speculitermes chadaensis* Chatterjee and Thapa, *Indian Forester*, 90(8) : 514-516. W only. Type-locality: Karnajia forest Range, Madhya Pradesh.
1966. *Speculitermes chadaensis* : Roonwal and Chhotani, *Biol. Zbl.*, 85(2) : 183.
1997. *Speculitermes chadaensis* : Chhotani, *Fauna of India : Isoptera (Termites)* : 2 : 43-44.

Material examined : Identified : Two vials with 20 w; 4 & 8 Km. E from S.S. Club Shivpuri (Shivpuri Dist.) R.K. Singh coll., 13 & 21.ix.1975.

Measurements (workers) : Total body length :

4.57-6.10; Head length to base of mandible : 0.95-1.05; Max. Head width : 1.20-1.28; Diameter of mid-dorsal spot : 0.13-0.17; Antennal segments : 14.

Distribution : India : Madhya Pradesh: Chada [Karanjia forest range], 8 km E. of SSS Club of Shivpuri (Shivpuri Dist.).

Remarks : The species is only known from its type-locality.

6. *Speculitermes cyclops* Wasmann

1902. *Speculitermes cyclops* Wasmann, *Zool. Jb. Syst.*, **17**(1) : 160-162. Im and w. Type-locality : Khandala near Bombay, Maharashtra, India.

1958. *Speculitermes cyclops cyclops* : Roonwal, *Trans. Base res. Inst.*, **22** : Pl. 1.

1982. *Speculitermes cyclops cyclops* : Verma and Thakur, *Rec. zool. Surv. India*, **79** : 312.

1997. *Speculitermes cyclops* Chhotani, *Fauna of India : Isoptera (Termites)*, **2** : 44-48.

2008. *Speculitermes cyclops* Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, **21**(2) : 68.69.

Material examined : (i) 1 vial with 3 w., Jabalpur (Z.S.I. office campus), H. Khajuria coll., 18.viii.70; (ii) 3 vials with 13 w., Shivpuri (Shivpuri Dist.), R.K. Singh coll., 13 & 20.ix.75.

Measurements (workers) : Total body length : 4.30-6.00; Head length to base of mandible : 0.90-1.20; Max. Head width : 1.20-1.40; Diameter of mid-dorsal spot: 0.12-0.16; *Antennal segments*: 14.

Distribution : India : Madhya Pradesh: Jabalpur [Budhaghat tank, Ghat area on Nagpur road, Z.S.I. office campus]; Shivpuri (Shivpuri Dist.); Jammu and Kashmir, Karnataka, Maharashtra, Orissa, Rajasthan, Uttar Pradesh and Uttarkhand.

Elsewhere : Pakistan : Punjab.

Remarks : This was the first described species of the genus from India (Khandala, Maharashtra) based on worker only. However, it is a widely distributed soil termite in India.

7. *Speculitermes goesswaldi* Roonwal and Chhotani

1964. *Speculitermes goesswaldi* Roonwal and Chhotani, *Indian J. agric. Sci.*, **34**(2) : 126-130. Im. (delate) & W. Type-locality : Dharwar, Karnataka, India.

1982. *Speculitermes goesswaldi* : Verma and Thakur, *Rec. zool. Surv. India*, **79** : 312-313.

1997. *Speculitermes goesswaldi* Chhotani, *Fauna of India : Isoptera (Termites)*, **2** : 55-57.

Material examined : *Idebtufued* : (i) 2 vials with 10 w., Jabalpur on Nagpur Road near Bargi, N.K. Sinha coll. 3 and 11.v.73 (ii) 1 vial with 5 w., Budhaghat, Jabalpur, D.K. Ghosal coll., 20.vii.73.

Measurements (workers) : Total body length with mandibles : 6.12-6.31; Head length with mandibles : 1.75-1.83; Max. width of head : 1.36; Pronotum length : 0.42; Pronotum width : 0.86; Max. Diameter of mid-dorsal spot : 0.08; Antennal segments : 14.

Distribution : India : Madhya Pradesh : Jabalpur [Nagpur Road near Bargi, Budhaghat; Karnataka [Dharwar, type-locality].

Remarks : The species has been collected twice from Jabalpur, M.P. However, no biological notes could be furnished except the record of dealate in the nest in November in Dharwar, Karnataka (Bose, 1984).

8. *Speculitermes sinhalensis* Roonwal and Sen-Sarma

1960. *Speculitermes cyclops sinhalensis* Roonwal and Sen-Sarma, *Contrib. Syst. Orient. Termites* (ICAR Ent. Monogr. No. 1) : 15, 23-26w only. Type-locality : Vavuniya, Sri Lanka.

1966. *Speculitermes sinhalensis* : Roonwal and Chhotani, *Biol. Zbl.*, **85** : 183, 186-201.

1997. *Speculitermes sinhalensis* : Chhotani, *Fauna of India : Isoptera (Termites)*, **2** : 61-67.

Material examined : Two vials with w. only, Kanha National Park (i) coll. O.B. Chhotani, 15.vi.1964, under stone and in soil, making narrow galleries, and (ii) coll. K.K. Tiwari, 10.i.1966, 600 m alt. (iii) One vial with W. and Ny., coll. K.K. Tiwari, 13.i.1966.

Measurements (workers) : Head length to lateral base of mandibles : 1.03-1.10; Max. head with : 1.30-1.37; Pronotum width : 0.70-0.77; Diameter of mid-dorsal spot : 0.07-0.08; Antennal segments : 14.

Distribution : India : Madhya Pradesh : Kanha National Park (Mandla Dist.); Andhra Pradesh, Karnataka, Kerala, Maharashtra, Orissa, Tamil Nadu.

Elsewhere : Sri Lanka.

Remarks : This soil inhabiting termite is predominantly found in the Peninsular India, rather not so common in the northern India. However, in Kanha National Park, Chhotani (1977) collected the species under a stone making narrow galleries, running horizontally a little below the ground level for some distance.

Genus *Euhamitermes* Holmgren

Key to species of *Euhamitermes* (Soldier)

1. Mandibles thicker, index: width at base/length 0.67-0.71; tooth larger and lying somewhat posteriorly, index: tooth distance/mandible-length 0.39-0.40
.... *E. karnatakensis* Roonwal and Chhotani
- Mandibles thinner, index: width at base/length 0.64; tooth smaller and lying somewhat anteriorly, index: tooth distance/mandible length 0.32
..... *E. kanhaensis* Roonwal and Chhotani

9. *Euhamitermes kanhaensis* Roonwal and Chhotani

1965. *Euhamitermes kanhaensis* Roonwal and Chhotani, *Proc. Zool. Soc., Calcutta* 18(1) : 11, 16, 19, S and W. Type-locality : Kanha National park, Mandla Dist., Madhya Pradesh, India.
1997. *Euhamitermes kanhaensis* : Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 83-85.
1999. *Euhamitermes kanhaensis* : Bose, *Rec. Zoo. Surv. India, Occ. Paper No. 171* : 83-85.

Material examined : Identified : (1) 1 S (Holotype) Kanha National Park, Mandla Dist., M.P., 14.vi.64, O.B. Chhotani coll., det. Roonwal and Chhotani; Sev. W. (Morphotype and Paramorphotype), det., coll. & date same as above.

Measurements (soldiers) : Head length to base of mandibles : 1.44-1.50; Head width : 1.10-1.18; Length of left mandible : 0.70-0.73; Pronotum length : 0.33-0.35; Max. pronotum width : 0.57-0.62; Antennal segments : 14.

Distribution : India : Madhya Pradesh : Kanha National Park (Mandla Dist.); Arunachal Pradesh.

Elsewhere : Bangladesh (Shishak Forest).

Remarks : Since, its first description in 1965, this species has been collected from Arunachal Pradesh and Bangladesh. However, the species was collected under a stone along with the *Odontotermes obesus* (Ramb.) and observed making narrow, longitudinal galleries in the soil in Kanha National Park (Chhotani, 1977).

10. *Euhamitermes karnatakensis* Roonwal and Chhotani

1935. *Euhamitermes karnatakensis*: Roonwal and Chhotani, *Proc. Zool. Soc., Calcutta*, 18 : 16-19. S and W. Type-locality : Dharwar, Karnataka.
1997. *Euhamitermes karnatakensis*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 86-88.

Measurements (soldiers) : Chhotani, 1997.

Head length to base of mandibles : 1.47-1.60; Max. head : width : 1.07-1.20; Length of left mandible : 0.67-0.70; Pronotum length : 0.33-0.36; Antennal segments : 14.

Distribution : India : Madhya Pradesh and Karnataka.

Remarks : The species had been observed nesting in the walls of a mound of *Odontotermes redemanni* (Wasmann) making extensive galleries (Bose, 1984) in its type locality.

Genus *Synhamitermes* Holmgren

11. *Synhamitermes quadriceps* (wasmann)

1902. *Amitermes quadriceps* Wasmann, *Zool. Jb. Syst.*, 17(1) : 123, Pl.4 fig. 5. S, W and Ny. Type-locality : Khandala near Bombay, Maharashtra, India.
1904. *Termes (Eutermes) quadriceps* : Desneux, *Gen. Insectorum, Fosc.*, 25 : 41.
1949. *Synhamitermes quadriceps*: Snyder, *Smiths. Misc. Colls.*, 112 : 129. See for synonymy.
1997. *Synhamitermes quadriceps*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 100-104.

Material examined : Identified: Two vials, one (No. 010/16.6.64) with K., Q., and W and other (No. 029/15.6.64) with Im., S., and W., both coll.

O.B. Chhotani, June, 1964, nesting in type 'D' mounds of *Odontotermes obesus* (Rambur) [det. Ob. B. Chhotani].

Measurements (soldiers) :

Total body length : 3.10-4.30; Head length to lateral base of mandibles : 0.90-1.00; Max. width of head : 0.80-0.83; Length of left mandibles : 0.60; Length of right mandibles : 0.60-0.63; Width of pronotum : 0.50; Antennal segments : 13.

Distribution : India : Madhya Pradesh: Kanha National Park; Assam, Daman, Goa, Rajasthan, West Bengal, Tripura, Kerala.

Elsewhere : Bangladesh.

Remarks : The species differs from other species of the genus by its mandibles with outer margin incurved near middle and apical half of mandibles weakly incurved. In Kanha National Park, the species has been found in the outer wall of dome-shaped mounds of *Odontotermes obesus* forming some narrow galleries (Chhotani, 1977). It swarms in the months of mid-June to early November (Roonwal and Sen-Sarma, 1960).

Genus *Amitermes* Silvestri

12. *Amitermes belli* (Desneux)

1906. *Termes belli* Desneux, *Ann. Soc. Ent. Belg.*, **49** : 352-354. Im, S and W. Type-locality : Karachi, Sind, Pakistan.

1912. *Hamitermes belli*: K. *Svenska Vetensk. Akad. Handl.*, **48**(4) : 93, fig. 65.

1949. *Amitermes belli*: Snyder, *Smiths. Misc. Colls.*, **112** : 114.

1997. *Amitermes belli*: Chhotani, *Fauna of India: Isoptera (Termites)*, **2** : 108-113.

Material : Not available for study.

Measurements (soldier) : Chhotani, 1997.

Head length to base of mandibles 1.07-1.44 : Max head width : 0.85-1.15; Length of left mandible : 0.58-0.80; Pronotum length : 0.28-0.40; Max. pronotum width : 0.56-0.78; Antennal segments : 14.

Distribution : Madhya Pradesh: Manpur; Delhi, Gujarat, Rajasthan;

Elsewhere : Pakistan [Sind, Punjab, Baluchistan].

Remarks : The species is a minor wood destroying termite and reported feeding on several standing trees in Gujarat (Thakur, 1991).

Genus *Eremotermes* Silvestri

13. *Eremotermes paradoxalis* Holmgren

1912. *Eremotermes paradoxalis* Holmgren, *K. Svenska Vetensk. Akad. Handl.*, **48**(4) : 95, Pl. 4 fig. 22(S).

1913. *Eremotermes paradoxalis*: Holmgren, *J. Bombay nat. Hist. Soc.*, **22**(1) : 115-116, S and W. Type-locality : Bangalore, Karnataka, India.

1997. *Eremotermes paradoxalis* : Chhotani, *Fauna of India : Isoptera (Termites)*, **2** : 135-138.

Material examined : Identified: 1S., Hoshangabad, 17.ix.1911, det. Holmgren.

Measurements (Soldiers) : Chhotani, 1997.

Head length to base of mandibles : 0.80-0.95; Max. Head width : 0.68-0.75; Length of left mandible : 0.70-0.85; Pronotum length : 0.23-0.25; Max pronotum width : 0.40-0.45; Antennal segments : 14.

Distribution : India : Madhya Pradesh, Hoshangabad Dist.: Hoshangabad; Bihar, Delhi, Karnataka, Tamil Nadu.

Elsewhere : Pakistan [Punjab, N.W.F.P. and Sind].

Genus *Microcerotermes* Silvestri

Key to species of *Microcerotermes* (Soldier)

1. Mandibles rounded curved at outer margin *M. cameroni* Snyder
- Mandibles weakly curved and straight at outer margin 2
2. Labrum pentagonal, anteriorly pointed at middle *M. sakesarensis* Ahmed
- Labrum subsquarish or roundly pentagonal *M. beesoni* Snyder

14. *Microcerotermes beesoni* Snyder

1933. *Microcerotermes beesoni* Snyder, *Proc. U. S. natn. Mus.*, **82**(16) : 12-14. Im only. Type-locality : Chakata Range, Haldwani, Uttaranchal, India.

1997. *Microcerotermes beesoni*: Chhotani, *Fauna of India, Isoptera (Termites)*, 2 : 155-159.

2008. *Microcerotermes beesoni*: Mukherjee, Maiti and Saha, *Memoris zool. Surv. India*, 21(2) : 79.

Material examined : Identified: Sev. S., W., 15.vi.1964, O.B. Chhotani coll. ex. piece of wood lying on jungle floor. *det.* O.B. Chhotani.

Measurements (soldiers) :

Head length to base of mandibles : 1.40-1.67; Max. width of head : 0.87-0.93; Length of left mandible 0.87-0.93; Width of pronotum : 0.57-0.63; No. of antennal segments : 13 (rarely 12).

Distribution : India : Madhya Pradesh; Assam, Delhi, Haryana, Orissa, Punjab, West Bengal.

Elsewhere : Bhutan, Pakistan and Bangladesh.

Remarks : The species is found predominantly in the northern India. In Kanha National Park, the species had been observed nesting in dead stumps, under stones, in soil and also collected from a deserted mound of *Odontotermes obesus* (Ramb.), making extensive galleries throughout the nest (Chhotani, 1977). However, *M. beesoni* is a minor pest of sugarcane in Uttar Pradesh and reported from living trees, roots and dead stumps of a number of other plants in India (Sen-Sarma *et al.*, 1975).

15. *Microcerotermes cameroni* Snyder

1934. *Microcerotermes cameroni*: Snyder, *Indian For. Rec.*, 20(11) : 21-22. Im and S. Type-locality : North Vellore Dist., Tamil Nadu.

1984. *Microcerotermes cameroni* : Bose, *Occ. Pap. Rec. zool. Surv. India*, No. 49 : 92, 126-128.

1997. *Microcerotermes cameroni* : Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 162-165.

Material examined : Identified: 1 S., 12W., Pench river bank, west of Ranidoh rest house, N.K. Sinha and party coll., 16.i.73, *det.* G. Chhotani and S. Chakraborty.

Measurements (soldiers) : Chhotani, 1997.

Head length to base of mandible : 1.40-1.67; Max. head width : 0.90-1.00; Length of left mandible : 0.86-0.97; Pronotum length : 0.27-0.35; Max. pronotum width : 0.53-0.66; Antennal segments : 13.

Distribution : India : Madhya Pradesh, Andhra Pradesh, Kerala, Tamil Nadu and West Bengal.

16. *Microcerotermes sakesarensis* Ahmad

1955. *Microcerotermes sakesarensis* Ahmad, *Biologia*, 1 : 238, 247-248. S only. Type-locality : Sakesar (Dist. Sargodha), Punjab, Pakistan.

1982. *Microcerotermes sakesarensis*: Verma and Thakur, *Rec. zool. Surv. India*, 79 : 313.

1997. *Microcerotermes sakesarensis*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 211-212.

Measurements (soldiers) : Chhotani, 1997.

Head length to base of mandibles : 1.48-1.74.; Max. head width : 0.81-0.95; Length of left mandible : 0.89; Pronotum length : 0.28-0.37; Max. pronotum width : 0.55-0.63; Antennal segments : 13.

Distribution : India : Chhattisgarh: Mainpat (Sarguja Dist.); Punjab, Rajasthan.

Elsewhere : Pakistan.

Subfamily TERMITINAE

Key to genus of *Termitinae* (Soldier)

1. Antero-lateral corners of head produced into tuberculelike projections *Dicuspiditermes*
- Antero-lateral corners of head rounded, not produced into tuberculelike projection
..... *Pericapritermes*

Genus *Dicuspiditermes* Krishna

17. *Dicuspiditermes obtusus* (Silvestri)

1923. *Capritermes obtusus* Silvestri, *Rec. Indian Mus.*, 25(2) : 229-231. Im., S. and W. Type-locality : Barkuda Island, Chilka Lake, Orissa, India.

1965. *Dicuspiditermes obtusus* : Krishna, *Am. Mus., Novit.*, No. 2210 : 17, 18, 19.

1997. *Dicuspiditermes obtusus* : Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 308-313.

Material examined : Identified : (i) 4 vials with S. and W., O.B. Chhotani coll. as follows-1 vial (No. 01/9.6.64), 9.vi.64, nesting in *Odontotermes obesus* mound and 3 vials (Nos. 023 and 024/15.vi.64 and 04/16.vi.64), 15-16.vi. 1964, ex. under stones, *det.* O.B. Chhotani.

Measurements (soldiers) :

Length of head to base mandibles : 2.00-2.33; Max. width of head : 1.25-1.40; Median length of labrum : 0.30-0.50; Width of labrum : 0.27-0.33; Length of left mandible : 1.80-2.10; Width of pronotum : 0.73-0.90; No. of antennal segments : 14.

Distribution : India : Madhya Pradesh and Chhattisgarh: Kanha National Park; 3 km from Manipur FRH (Sarguja Dist.); Orissa.

Remarks : D. Obtusus is so far known from its type locality in Orissa and Madhya Pradesh. In Kanha National Park, Chhotani (1977) observed that the species nest in the walls of *O. obesus* mound and also in the soil making narrow longitudinal galleries coated with blackish faecal matter.

18. *Pericapritermes tetraphilus* (Silvestri)

1922. *Capritermes tetraphilus* Silvestri, *Rec. Indian Mus.*, 24(2) : 543-545. S. and W. Type-locality : Rangamati, Chittagong Hill Tracts, Bangladesh.

1965. *Pericapritermes tetraphilus*: Krishna, *Am. Mus. Novit.*, No. 2210 : 15-16.

1997. *Pericapritermes tetraphilus*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 338-341.

2008. *Pericapritermes tetraphilus* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 100.

Material examined : Identified: One vial with several S. and W., O.B. Chhotani coll. (02/14.vi.64), 14.vi.64, ex. *Odontotermes obesus* mound, det. O.B. Chhotani.

Measurements (soldiers) :

Length of head to base of mandible : 2.83-3.05; Max. head width : 1.60-1.70; Length of left mandible : 1.63-1.70; Max. width of labrum : 0.30-0.33; Max. length of labrum : 0.20-0.23; Width of pronotum : 1.03-1.13; No. of antennal segments : 14.

Distribution : India : Madhya Pradesh: Kanha National Park. Assam, Sikkim (Rangpo and Namchi), West Bengal (Darjeeling Dist. : Tashiding Forest).

Elsewhere : Bangladesh, Myanmar and South China.

Remarks : The blunt tip of the right mandible and four bristles on each tergite of soldier caste makes the species different from other Indian representatives. *P. tetraphilus* is only known from Kanha National park, Madhya Pradesh, where the species live in the large dome-shaped mound of *Odontotermes obesus* (Ramb.), making narrow galleries leading into chambers of different shapes and sizes (Chhotani, 1977). However, the species was also reported from stumps and logs in the Eastern Himalaya (Mukherjee, *et al.*, 2008).

Subfamily MACROTERMITINAE**Key to genus of *Macrotermitinae* (Soldier)**

1. Small and delicate species; mandibles sometimes with a minute tooth
..... *Microtermes*
- Larger species; left mandible with a tooth placed at different positions on its inner margin *Odontotermes*

Genus *Odontotermes* Holmgren**Key to species of *Odontotermes* (Soldier)**

1. Larger species, head length to base of mandibles more than 2.00; head-mandibular index 0.1 2
- Smaller species, head length to base of mandibles less than or about 2.00 3
2. Left mandibular tooth placed near middle [mandible-tooth index : 0.50-0.56 (0.50-0.54)]; head capsule widest near posterior third, sides weakly but distinctly converging anteriorly; labrum triangular, with a sharp tip; head length 2.53-3.00, head width 2.12-2.45 *O. feae* (Wasmann)
- Left mandibular tooth placed near proximal end of middle one-third [mandible-tooth index: 0.57-0.64; head capsule widest almost at middle, sides parallel, indistinctly converging anteriorly; head length 2.50-3.00, max. head width 1.85-2.20 *O. horni* (Wasmann)
3. Distal segments of antennae distinctly darker than proximal segments 4

- Distal segments of antennae not darker than the proximal segments, rather uniformly coloured9
 - 4. Left mandibular tooth situated in front of distal third, mandible-tooth index: 0.26-0.33; head and body more hairy; antennae with 15-16 segments; labrum broadly rounded at anterior margin; postmentum not so wide; lateral sides convex
..... *O. guptai* Roonwal and Bose
 - Left mandibular tooth situated at distal third, mandibular-tooth index 0.33-0.465
 - 5. Left mandibular tooth rudimentary; mandibles substraight, long and slender, and with weakly incurved apices; postmentum with sides weakly outcurved [head-length 1.37-1.43, max. head width 1.10-1.17]
O. microdentatus Roonwal and Sen-Sarma
 - Left mandibular tooth large; mandibles strong, saber-shaped, and with weakly to deeply incurved apices; postmentum with sides almost parallel6
 - 6. Head-capsule subrectangular; mandibular tooth prominent, large and placed a little above middle point, mandible tooth index: 0.41-0.46..... *O. wallonensis* (Wasmann)
 - Head-capsule rectangularly oval to suboval; left mandibular tooth of medium size and placed near the apical third.....7
 - 7. Head-capsule oval, distinctly narrowed anteriorly; mandibles of moderate length...8
 - 8. Mandibles long, outer margin strongly incurved near the basal third, labrum longish; mandible-head index: 0.70-(0.69-0.79)
..... *O. redemanni* (Wasmann)
 - Mandibles short, slender and with weakly incurved outer margin near the basal third; labrum short and broadly rounded interiorly; mandible-head index: 0.60-(0.59-0.67)
..... *O. obesus* (Rambur)
 - 9. Tooth on left mandible placed near apical third or little below (tooth index : 0.32-0.40)10
 - Tooth on left mandible placed near the middle or below (tooth index: 0.50-0.5611
 - 10. Postmentum swollen, extraordinarily wide, sides distinctly convex, inner margin of left mandible anterior to tooth not wavy; head length 1.92 *O. bovini* Thakur
 - Postmentum flat, subrectangular, sides almost parallel; inner margin of left mandible anterior to tooth wavy (outcurved), parrot's beak-like
..... *O. assmuthi* Holmgren
 - 11. Head smaller in size, head length to base of mandible 1.50-1.67, max. head width 1.13-1.23, mandibles shorter, length 0.83-0.97; tooth on left mandible very small and rudimentary; antennae longer
..... *O. bhagwatii* Chatterjee and Thakur
 - Head larger in size, head length 1.65-2.00, max. head width 1.28-1.65; mandible longer, length 1.05-1.20; tooth on left mandibles more prominent; antennae shorter
..... *O. horai* Roonwal and Chhotani
- 19. *Odontotermes assmuthi* Holmgren**
1913. *Odontotermes (odontotermes) assmuthi* Holmgren. *J. Bombay nat. Hist. Soc.*, 22(1) : 112-113, S and W. Type-locality : Borivilli Jungles, Bombay, India.
1967. *Odontotermes assmuthi* : Roonwal and Chhotani. *Zool. Anz.*, 178(314) : 252-253, tab.
1997. *Odontotermes assmuthi*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 449-453.
1999. *Odontotermes assmuthi*: Bose, *Occ. Pap. Rec. zool. Surv. India*, No. 171 : 83-84.
2008. *Odontotermes assmuthi*: Mukherjee, Maiti and Saha, *Memoirs Zool. Surv. India*, 21(2) : 115-116.
- Material examined* : Identified: Several S., W., Kisli, Kanha National Park, K.K. Tiwari coll. 10.i.1966, and several S., W., Kanha National Park, O.B. Chhotani coll., 15-16.vi.1964, O.B. Chhotani coll., *det.* O.B. Chhotani.
- Measurements (soldiers)* :
- Head length to lateral base of mandibles : 1.50-1.70; Max. head width : 1.07-1.20; Length of left mandible : 0.77-0.80; Width of pronotum : 0.75-0.86; No. of antennal segments : 16.

Distribution : India : Madhya Pradesh (Jabalpur, Kanha National Park); Bihar, Himachal Pradesh, Jammu and Kashmir, Karnataka, Maharashtra, Punjab, Tamil Nadu, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh and Pakistan.

Remarks : *O. assmuthi* is the serious pest of sugarcane setts. However, Chhotani (1977) collected this subterranean termite under stone along with *Eurytermes boveni* in Kanha National Park, Madhya Pradesh. The species has also been collected from variety of habitat like wooden structure, poles, bamboo species, wood and bark of fallen logs including important timber species (Sen-Sarma *et al.*, 1975).

20. *Odontotermes bhagwatii* Chatterjee and Thakur

1967. *Odontotermes bhagwatii* Chatterjee and Thakur, *Indian for. Rec. (N. S.) Ent.*, 11(1) : 6, 33-35 Pls. 3 and 4. S. and W. type-locality : Pathankot, Punjab, India.

1997. *Odontotermes bhagwatii*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 457-460.

2008. *Odontotermes bhagwatii*: Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) :

Material examined : Identified: (Chhotani, 1977) : (i) Nine vials with S. and W., coll. O.B. Chhotani, June, 1964, from bark of a "Serai" tree and twigs of unknown plants lying on the ground. (ii) 2 vials with S. and W., coll. K.K. Tiwari, Dec. 1965-Jan. 1966. Kanha Rest House (1 vial) and Kisli Rest House (1 vial) (iii) 1 vial with four Im. and one S., coll. George B. Schaller, 27.vi.1964, coming in swarms from holes in ground.

Measurements : Soldieres (Chhotani, 1977) :

Head length to lateral base of mandibles : 1.50-1.67; Max. head : width 1.13-1.23; Length of left mandible : 0.83-0.97; Tooth distance of left mandible : 0.47-0.52; Max. width of pronotum : 0.80-0.87; No. of antennal segments : 15-16.

Distribution : India : Madhya Pradesh (Kanha National Park, Kisli); Punjab (Pathankot : type locality) Jammu and Kashmir, Karnataka and Uttarakhand.

Remarks : *O. bhagawati*, a minor wood destroying species, attacks number of important timber (Mukherjee *et al.*, 2008). In Kanha National Park, Madhya Pradesh, the species was collected under bark of twigs and logs of unknown wood (Chhotani, 1977).

21. *Odontotermes boveni* Thakur

1976. *Odontotermes boveni*, Thakur, *Indian Forester*, 102(8) : 500, 502 (Nom. nud.)

1981. *Odontotermes boveni* : Thakur, *Indian For. Rec. (N. S.) Ent.*, 14(2) : 4, 12, 30-33, Pls. 8, 9, 50, 51. S. and W. Holotype : S., in FRI. Type-locality : Gwaldam, Garhwal, Uttaranchal, India.

1997. *Odontotermes boveni*: Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 460-462.

2008. *Odontotermes boveni* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 118-119.

Material examined : Identified : 1 vial with sev. S. and W. from Konta Motor stand (Bastar Dist.), R.K. Singh coll., 19.i.1974, *det.* Verma and Thakur.

Measurements (soldiers) :

Total body length with mandibles : 4.32; Head length with mandibles : 1.92; Max. head width : 1.16; Max. length of mandibles : 0.72; Tooth distance : 0.22; Pronotum length : 0.53; Pronotum width : 0.83; Posmentum length : 0.75; Posmentum width : 0.53; Antennal segments : 16.

Distribution : India : Chhattisgarh: 4 Km. W. from Konta motor Stand, Bastar (Bastar Dist.); Uttarakhand (Garhwal and Nainital Dist.) and West Bengal (Darjeeling Dist.).

Elsewhere : Nepal.

Remarks : *O. boveni*, a subterranean species, has been recorded for the first time from Bastar of Madhya Pradesh by Verma and dThakur (1982). However, the species is already known from Eastern, Central and Western Himalaya.

22. *Odontotermes feae* (Wasmann)

1896. *Termes feae* Wasmann, *Ann. Mus. Stor. Nat. Genova*, (2) 16(36) : 625, 626. S and W. Type-locality : Carin Cheba, Burma.

1912. *Odontotermes feae* (Wasmann) : Holmgren, *J. Bombay nat. Hist. Soc.*, 21(3) : 786, 787.

1997. *Odontotermes feae*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 471-475.

2008. *Odontotermes feae*: Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 123-124.

Material examined : Identified : (i) 1 vial with 3 S. and 5 W.; Sihora Rd., Garjtal (Jabalpur Dist.); H. Khajuria coll.; 4.v.73. (ii) 2 vials with 4 S. and Sev. W.; Barhai nallah (4 Km. S. from Manipat FRH) and Haratickeri village [8 km. from Ambikapur (Sarguja Dist.)]; H. Khajuria coll.; 3, 4.i.75.

Distribution : India : Madhya Pradesh and Chhattisgarh: Garjtal (Jabalpur Dist.), Mainpat and Ambikapur (Sarguja dist.); Arunachal Pradesh, Assam, Bihar, Gujarat, Karnataka, Manipur, Mizoram, Meghalaya, Nagaland, Orissa, Rajasthan, Takil Nadu, Tripura, Uttarkhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh, Bhutan, Myanmar, Nepal, Thailand, Sri Lanka and Vietnam.

Remarks : *O. feae* is one of the largest species in India and extends to the south eastern Asia. It rarely build very flat type mound (Bose, 1992 and Maiti *et al.* 2004) and can attack any sort of cellulosic material. Field biology of the species has been dealt by Mathur and Sen-Sarma 1962, Maiti 1983, Mukherjee, *et al.* 2008.

23. *Odontotermes guptai* Roonwal & Bose

1961. *Odontotermes bellahunisensis guptai* Roonwal and Bose, *J. Bombay nat. Hist. Soc.*, 58(3) : 588-593. S. and W. type-locality : Near Gudha Village (Nagpur Dist.), Rajasthan, India.

1975. *Odontotermes guptai* Roonwal, In : *Environmental Analysis of Thar Desert* (Eds Gupta and Prakash) : 409.

1989. *Odontotermes guptai* Verma, *Indian J. Forestry*, 7(4) : 307.

1992. *Odontotermes guptai* : Akhtar, *Proc. 19th int. Congr. Ent.*, (Beijing 1992) : 245.

1997. *Odontotermes guptai*: Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 487-490.

2008. *Odontotermes guptai* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 128.

Material examined : (i) 3 vials with 4 S. and W.; Jabalpur (King garden, Paritnala,

Tilwaraghat); V.S. Durve and V.V. Rao coll.; 17.xii.68, 25.vii.69 and 6.viii.69. (ii) A vial with 10 S. and 5 W.; Khudera village (Bastar Dist.); R.K. Singh coll.; 20.i.74. (iii) 2 vials with 7 S. and 10 W.; Ambi Kapur and Bhanghagacha village (Sarguja Dist.). H. Khajuria coll.; 6.vii.75.; det. Verma and Thakur.

Measurements (soldiers) : (Chhotani, 1977).

Head-length to lateral base of mandible : 1.07-1.20; Max. head-width : 1.00-1.07; Length of left mandible : 0.60-0.63; Tooth-distance of left mandible : 0.19-0.20; Max. pronotum width : 0.77-0.83; No. of antennal segments : 16.

Distribution : India : Madhya Pradesh and Chhattisgarh: Jabalpur [King Garden, Paritnala, Tilwaraghat] (Jabalpur Dist.); Khudera village (Bastar Dist.); Ambikapur and Bhanghagacha village (Sarguja Dist.); Assam, Bihar, Himachal Pradesh, Jammu, Kashmir and Uttarakhand.

Elsewhere : Pakistan and Bangladesh.

24. *Odontotermes gurdaspurensis* Holmgren and Holmgren

1917. *Odontotermes (Cyclotermes) obesus f. gurdaspurensis* Holmgren and Holmgren, *Mem. Dept. agric. Sci.*, 5 : 149-150. type-locality : Gurdaspur, Punjab, India.

1997. *Odontotermes gurdaspurensis*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 490-493.

2008. *Odontotermes gurdaspurensis*: Mukherjee, Maiti and Saha, *Memoirs zool. Surv. of India*, 21(2) : 129-130.

Material examined : Identified: (i) 1 vial with 2 S and 10 W; Katangi village, D. K. Ghosal coll.; 8.viii.69. (ii) 2 vials with sev. S. and W.; Konta Motor Stand (Bastar Dist.); R. K. Singh coll.; 20-21.i.1974., det. Verma and Thakur.

Measurements (soldiers) :

Head length to base of mandible : 1.42-1.63; Max. Head-width : 1.20-1.40; Max. length of mandible : 0.95-1.08; Tooth distance : 0.33-0.45; Pronotum length : 0.50-0.70; Pronotum width : 0.85-1.00; Antennal segments : 16.

Distribution : India : Madhya Pradesh and Chhattisgarh: Konta (Bastar Dist.) and Katangi village; Himachal Pradesh, Jammu and Kashmir,

Punjab, Rajasthan, Uttar Pradesh, Uttarakhand and West Bengal.

Elsewhere : Pakistan [Punjab, N.W.F.P., Baluchistan, Lahore, Jhelum, Rawalpindi, Islamabad, Campbellpur, Peshwar, Kohat and Lovali].

Remarks : *O. gurdaspurensis* is very close to *O. obesus*, but much larger. Sometimes builds mound or soil dweller, but known as minor pest of wheat and maize crops in Rajasthan. It also attacks logs and twigs of different plants in Pakistan and in India.

25. *Odontotermes horai* Roonwal & Chhotani

1962. *Odontotermes horai* Roonwal and Chhotani: *Proc. Natn. Inst. Sci. India*, (B) 28(4) : 289, 296, 346-349, PLS. 30, 31, S. W. Type-locality : Bank of Nongpring Stream, Khasi Hills, Meghalaya, India.

1997. *Odontotermes horai*: Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 495-498.

2008. *Odontotermes horai* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 130-131.

Material studied : No material available for study.

Distribution : India : Madhya Pradesh; Meghalaya, Nagaland, Sikkim, West Bengal, Uttarakhand and Uttar Pradesh.

Elsewhere : Nepal and Pakistan.

Remarks : *O. horai*, a subterranean species, is very close to *O. parvidens* Holm. and Holm. due to presence of minute tooth at basal third of soldier's left mandible, it differs from other allied species.

26. *Odontotermes horni* (Wasmann)

1902. *Termes horni* Wasmann, *Zool. Jb. Syst.*, 17(1) : 111. S and W. type-locality : Nalanda, Sri Lanka.

1962. *Odontotermes horni* (Wasmann) Roonwal and Chhotani, *Proc. Nat. Inst. Sci. India* (B) 28(4) : 296, 349-352.

1997. *Odontotermes horni* Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 498-502 (detailed synonymy).

2008. *Odontotermes horni*: Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2).

Material examined : Identified (Chhotani,

1977): (i) 2 vials with sev. S. and W., Kanha National Park, coll. O.B. Chhotani, June, 1964, No. 016/15.6.64 ex. "a twig lying on ground" and No. 03/16.6.64 ex. "Under a stone" (ii) 2 vials with S. and W. Kisli, Kanha National Park coll. K.K. Tiwari, January, 1966.

Measurements (Soldiers) : Chhotani 1997.

Head-length to base of mandibles : 2.50-2.60; Max. head width : 1.97-2.05; Length of left mandible : 1.27-1.33; Tooth-distance of left mandible : 0.70-0.73; Max. pronotum width : 0.77-0.83; No. of antennal segments : 17.

Distribution : India: Madhya Pradesh: Kanha National Park (Kisli); Manipur, Meghalaya, Tripura, South India, Orissa, Uttaranchal (Dehra Dun) and West Bengal (Darjeeling and Jalpaiguri Dist.)

Elsewhere : Nepal, Bhutan, Sri Lanka, Cambodia and Vietnam.

Remarks : *O. horni* is recognized as pest of tea and coconut in Sri Lanka and India, and also attacks fallen logs of different trees (Sen-Sarma *et al.* 1975). The species has been collected from dead twigs lying on the ground and under stones in Kanha National Park (Chhotani, 1977).

27. *Odontotermes microdentatus* Roonwal and Sen-Sarma

1960. *Odontotermes microdentatus* Roonwal and Sen-Sarma, *Contrib. Syst. Orient. Termites* (ICAR Ent. Monogr. 1) : 33-39, 2 pls. Im, S and W. Type-locality : Dehra Dun, U.P., India.

1997. *Odontotermes microdentatus*: Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 514-517.

2008. *Odontotermes microdentatus*: Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 134-136.

Material examined : Identified: 1 vial with 5S. and sev. W.; 1 Km. N. from Mainpat FRH (Sarguja Dist.); R.K. Singh coll.; 30.1.75.; *det.* Verma and Thakur.

Measurements (soldiers) :

Head length to base of mandibles : 1.37-1.43; Max. head width : 1.10-1.17; Length of left mandible : 0.87-0.90; Tooth distance from tip of

left mandible : 0.23-0.27; Max. pronotum width : 0.87-0.93; Antennal segments : 16-17.

Distribution : India : Chhattisgarh: Manipal (Sarguja Dist.), Himachal Pradesh, Jammu and Kashmir, Bihar, Uttarakhand and Uttar Pradesh.

Elsewhere : Nepal.

Remarks : *O. microdentatus* is a mound building species in Kanha National Park and construct dome shaped mound with a few round swelling (Chhotani, 1977). He has also given details of fungus comb and royal chamber. Presence of a very minute tooth on the base of anterior third of left mandible and smaller head length (1.00-1.45 mm) keeps the species separate from all other Indian species.

28. *Odontotermes obesus* (Rambur)

1842. *Termes obesus* Rambur, *Historie nat. Insectes, Neuropteres* : 304. Im only.

1965. *Odontotermes obesus*: Krishna, *Am. Mus. Novit.*, No. 2210 : 24-25.

1997. *Odontotermes obesus*: Chhotani, *Fauna of India Isoptera (Termites)*, 2 : 519-524.

2008. *Odontotermes obesus* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 114, 136-138.

Material examined : Identified : (i) 1 vial with sev. S. and W., Jabalpur (Pali Pather on Gwariaghat Rd.), H. Khajuria coll., 23.iv.66. (ii) 2 vials with 2 S. and 10 W., Jabalpur (Sita Pahad and Rani Durgavati Samadhi); V. S. Durve coll.; 2.xii.68 and 20.i.69. (iii) 1 vial with 3 S and 10 W., Amkhas, V.V. Rao coll., 4.vii.69. (iv) 1 vial with 5 S and 10 W., Jabalpur (Nagpur Road), N.K. Sinha coll., 11.v.73; (v) 1 vial with 2 S. and 5 W., Jabalpur (Madan Mahal), D.K. Harshey coll., 4.ix.74, (all *det.* Verma and Thakur).

Measurements (Soldiers) : Chhotani, 1977.

Head-length to base of mandibles : 1.20-1.67; Max. head-width : 1.00-1.37; Length of left mandible : 0.75-1.00; Tooth-distance in left mandible : 0.27-0.35; Max. pronotum width : 0.80-1.07; No. of antennal segments : 16-17.

Distribution : India : Madhya Pradesh: Jabalpur, Gwariaghat road, Sita Pahad, Rani

Durgawati Samadhi, Amkhas, Nagpur Road, Madan Mahal; All over India including Assam, Jammu and Kashmir, Himachal Pradesh, Meghalaya, Arunachal Pradesh, Nagaland, Manipur and Tripura.

Elsewhere : Bhutan, Bangladesh, Myanmar and Pakistan.

Remarks : Common mound building species in India (Mukherjee, Maiti and Saha, 2008).

29. *Odontotermes redemanni* (Wasmann)

1893. *Termes redemanni* Wasmann, *Wein. Ent. Zeig.*, 12(7) : 239, Im, S and W. type-locality : Sri Lanka.

1967. *Odontotermes redemanni* Roonwal and Chhotani, *Zool. Anz.*, 178(3/4) : 251-252.

1997. *Odontotermes redemanni* Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 539-542.

2008. *Odontotermes redemanni* Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 143-144.

Material examined : Identified : (i) 1 vial with 1 S. and 5 W., Jabalpur (Saopatal), L.P. Dubey coll., 9.x.73. (ii) 1 vial with 1 S. and 5 W., Jabalpur (Madan mahal), H. Khajuria coll., 18.vii.69 (*det.* Verma and Thakur).

Distribution : India : Madhya Pradesh: Jabalpur (Saopatal, Madan Mahal); Andhra Pradesh, Bihar, Himachal Pradesh, Kerala, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Sri Lanka, Bangladesh and Nepal.

Remarks : *O. redemanni* is a very common mound building species in India. It attacks living agricultural and forest plants including tea, rubber, seedlings of coconut plant. The species also reported from different logs, wood and wooden structure in houses.

30. *Odontotermes wallonensis* (Wasmann)

1902. *Termes obesus subsp. wallonensis* Wasmann, *Zool. Jb. Syst.*, 17(1) : 106, Im, S and W. type-locality : Wallon, Sangamner (Dist. Ahmad nagar), Maharashtra.

1914. *Termes wallonensis* Bugnion, *Bull. Mus. Hist. nat. Paris*, 20(4) : 189.

Material examined : Identified: A vial with 5

Im, Jabalpur (Madan Mahal), B.S. Gurn coll.; 31.vi.75, det. Verma and Thakur.

Measurements (Imagoes) :

Total body length without wings : 11.5-12.0; Head length to base of mandibles : 1.80-1.83.

Max. head width with eyes : 2.22-2.24; Labrum length : 0.53; Labrum width : 0.78; Max. diameter of eyes : 0.64; Min. diameter of eyes : 0.53; Max.-diameter of ocellus : 0.28; Min. diameter of ocellus : 0.23; Min. eye-ocellus distance : 0.83; Antennal segments : 19.

Distribution : India : Madhya Pradesh: Jabalpur [Madan Mahal], Andhra Pradesh, Bihar, Delhi, Gujarat, Karnataka, Maharashtra, Orissa, Rajasthan, and Tamil Nadu.

Remarks : The species occurs predominantly in the peninsular India including other states of Western India. Generally reported as pest of sugarcane as well as found damaging maize, groundnut and soyabean crops.

Genus *Microtermes* Wasmann

Key to species of *Microtermes* (Soldier)

1. Labrum comparatively narrow at tip
..... *M. incertoides* Holmgren
- Labrum broad at tip 2
2. Antennae with 2nd segment shorter than 3rd and 4th combined together; head and body comparatively densely hairy
..... *M. unicolor* Snyder
- Antennae with 2nd segment equal to 3rd and 4th combined together; head and body less so hairy *M. obesi* Holmgren

31. *Microtermes incertoides* Holmgren

1913. *Microtermes incertoides*: Holmgren, *J. Bombay nat. Hist. Soc.*, 22(1) : 113-114. S and W. type-locality : Wallon, Ahmednagar Dist., Maharashtra, India.
1997. *Microtermes incertoides*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 579-580.
2004. *Microtermes incertoides*: Rathor and Bhattacharya, *Rec. zool. Surv. India, Occ. Paper No. 223* : i-v+77.

Material : No material is available for study.

Measurements (Soldiers) : Chhotani, 1997.

Head length to base of mandibles : 0.80-0.88; Max. head width : 0.75-0.78; Left mandible length : 0.50-0.53; Pronotum length : 0.35; Pronotum width : 0.48-0.53; Antennal segments : 14.

Distribution : India : Madhya Pradesh, Andhra Pradesh, Daman & Diu, Gujarat, Karnataka, Maharashtra, Tamil Nadu and Uttar Pradesh.

Elsewhere : Pakistan.

Remarks : This subterranean species attacks different logs and decaying wood (Sen-Sarma *et al.*, 1975, Thakur, 1991).

32. *Microtermes obesi* Holmgren

1911. *Microtermes obesi* Holmgren, *J. Bombay nat. Hist. Soc.*, 2(1) : 787-788. Im. type-locality: Khandala, Maharashtra, India.
1964. *Microtermes obesi* : Chatterjee and Thakur, *Indian For. Rec. (N.S.) Ent.*, 10(11) : 222, 223, 234-239, 265, 266 (Synonymy, description, etc.)
1977. *Microtermes obesi* : Chhotani, *Rec. zool. Surv. India*, 72 : 385.
2008. *Microtermes obesi* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 148, 151-153.

Materials examined : Identified: Sev. S. and W., coll. O.B. Chhotani, 15.vi.1964, ex. outer walls of the mound of *Odontotermes obesus* and *Odontotermes microdentatus*, det. O.B. Chhotani.

Measurements (Soldiers) :

Head-length to base of mandibles : 0.83-0.87; Max. head-width : 0.73-0.80; Left mandible length : 0.47-0.50; Max. pronotum width : 0.47-0.53; Antennal segments : 14.

Distribution : India : Madhya Pradesh: Jabalpur, Bheraghat; Common in India.

Elsewhere : Bhutan, Nepal, Bangladesh, Pakistan, Kampuchia, Thailand, Sri Lanka and Vietnam.

Remarks : The species is one of the most common subterranean termites in India and south-east Asia. It causes extensive damage to agricultural plant, vegetables, fruit trees, garden flower, ornamental plants, twigs and logs of

several important plant species. Chhotani (1977) collected the species from the soil as well as from the walls of the mound of *Odontotermes* forming some inter communicating galleries and small chambers in Kanha National Park.

33. *Microtermes unicolor* Snyder

1933. *Microtermes unicolor* Snyder, *Proc. Biol. Soc. Washington*, 46 : 92-93. Im. only. type-locality : Dehra Dun, Uttarakhand, India.

1997. *Microtermes unicolor*: Chhotani, *Fauna of India : Isoptera (Termites)*, 2 : 589-592.

2008. *Microtermes unicolor* : Mukherjee, Maiti and Saha, *Memoirs zool. Surv. India*, 21(2) : 148, 154-155.

Material examined : Identified (Chhotani, 1977) : (i) 3 vials with Im., S. and W., ex. Mound of *Odontotermes obesus* (Ramb.). (ii) 3 vials with S. and W., ex. twigs of woods lying on ground and under stone. (iii) 1 vial with two Im., "at light"

Measurements (Soldiers) : (Chhotani, 1977)

Head-length to base of mandible : 0.87-0.90; Max. head-width : 0.77-0.80; Length of left mandible : 0.43-0.47; Max. Pronotum width : 0.51-0.53; No. of antennal segments : 14.

Distribution : India : Madhya Pradesh, Himachal Pradesh, Jammu and Kashmir, Gujarat, Rajasthan, Uttar Pradesh, Punjab and Uttarakhand.

Elsewhere : Bangladesh and Pakistan.

Remarks : In Kanha National Park, the species was collected from soil as well as in the walls of the mounds of *Odontotermes* spp. (Chhotani, 1977). The species attacks roots and stumps of sugarcane, chillies in Pakistan, and also twigs and logs of several timbers. In morphological character, the species is close to *M. obesi*.

Subfamily NASUTITERMITINAE

Genus *Trinervitermes*

Key to species of *Trinervitermes*

Soldier major

1. Rostrum reddish to dark brown with reddish brown apex and comparatively shorter, posterior bulge of head well marked.....
..... *T. biformis* (Wasmann)

- Rostrum darker, blackish brown with paler apex and comparatively longer; posterior bulge of head less marked
..... *T. nigrirostris* Mathur and Sen-Sarma

Soldier minor

1. Rostrum longer (length 0.70-0.76) in comparison to head without rostrum (index : rostrum-length/head length 0.82-00.86)
..... *T. nigrirostris* Mathur and Sen-Sarma
- Rostrum shorter (length 0.55-0.60) in comparison to head without rostrum (index : rostrum length/head length 0.62-0.76)
..... *T. biformis* (Wasmann)

34. *Trinervitermes biformis* (Wasmann)

1902. *Eutermes biformis* Wasmann, *Zool. Jb. Syst.*, 17(1) : 133-135, Pl. 4 figs. 10, 10a. type-locality : Bandarawella, Sri Lanka.

1963. *Trinervitermes biformis* Mathur and Thapa, *Indian Forester*, 3 (3 & 4) : 110.

1997. *Trinervitermes biformis*: Chhotani, *Fauna of India: Isoptera (Termites)*, 2 : 724, 725, 726-732.

2008. *Trinervitermes biformis*: Mukherjee, Maiti and Saha; *Memoirs Zool. Surv. India*, 21(2) : 177-179.

Material examined : Identified: (i) 6 vials with sev. S. and W., Mainpat and vicinity (Sarguja Dist.) R.K. Singh coll., 13, 26-30.i.75. (ii) 2 vials with sev. S.W., Muraphad village (Sarguja Dist.), S.K. Mishra coll., 16-17.i.75. (iii) 1 vial with 10 S. and 15 S., Shivpuri, 8 Km. N. from S.S.S. Club (Shivpuri Dist.), R.K. Singh coll., 13.ix.75.

Distribution : India : Madhya Pradesh & Chhatisgarh: Mainpat, Murakhad (Sarguja Dist.), Shivpuri (Shivpuri Dist.); Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Orissa, Rajasthan, Tamil Nadu and West Bengal.

Elsewhere : Pakistan and Sri Lanka.

Remarks : The soldiers of the species are quite variable in forms since three species synonymised under it. This foraging species nests in rocky soil of plain land. They cause fairly damage to grasses including many fruit trees in India. Biological information provided by Bose (1984) and Mukherjee *et al.* (2008).

35. *Trinervitermes nigrirostris* Mathur and Sen-Sarma

1959. *Trinervitermes nigrirostris* Mathur and Sen-Sarma, *Z. ang. Ent.*, 45(1) : 71-77. Im., S maj., S min., W. Type-locality : Mandapam, Tamil Nadu, India.
1984. *Trinervitermes nigrirostris*: Bose, *Occ. Pap., Rec. zool. Surv. India*, No. 49 : 99, 240, 246-248.
1997. *Trinervitermes nigrirostris*: Chhotani, *Fauna of India, Isoptera (Termites)*, 2 : 724, 725, 737-740.

Material examined : Identified : 1 vial with 2 S (minor) and 1 W.; Shivpuri, 8 Km. N. from S.S.S. Club (Shivpuri dist.); R.K. Singh coll., 13.ix.75, det. Verma and Thakur.

Measurements (Soldier) :

Total body length with rostrum : 3.27; Head length with rostrum : 1.39; Head length without rostrum : 0.84; Max. head width : 0.61; Length of nasute : 0.55; Pronotum length : 0.22; Pronotum width : 0.44; Antennal segments : 13.

Distribution : India : Madhya Pradesh: Shivpuri 8 Km. N. from S.S.S. Club (Shivpuri Dist.); Tamil Nadu.

Remarks : This is a soil-dwelling species and has been collected from mound in Mandapam of Tamil Nadu. The species is close to *T. biformis*.

FAUNAL ANALYSIS

The termite fauna of Madhya Pradesh (including Chhattisgarh) comprises only 35 species under 14 genera and three families which is far less than the expected fauna in comparison to its vast geographical area. Hence more intensive surveys are needed in future to explore more areas to get a complete picture of fauna. Only two species, namely, *Eurytermes boveni* Roonwal and Chhotani and *Speculitermes chadaensis* Chatterjee and Thapa are restricted in distribution to state, but there is no endemic genus. The primitive or higher families are rather poorly represented. For instance, families Kalotermitidae and Rhinotermitidae are represented by a single species under genus *Cryptotermes* and only two species under genus *Coptotermes* respectively. The rest 32 species under 12 genera belong to lower termite

family Termitidae. Among the families, Termitidae, especially the subfamily Macrotermitinae is by far the largest and most common (15 species under genera *Odontotermes* and *Microtermes*), with decreasing sequence in the subfamily Amitermitinae (13 species under the genus *Eurytermes*, *Speculitermes*, *Euhamitermes*, *Synhamitermes*, *Amitermes*, *Eremotermes*, *Microcerotermes*), subfamily Termitinae (2 species under *Dicuspiditermes* and *Pericapritermes*), subfamily Nasutitermitinae (2 species under genus *Trinervitermes*).

It is no surprise that termite fauna of Madhya Pradesh is a varied assemblage of species from the adjoining areas of the country. Based on this most preliminary faunal report, it can be inferred that the majority species to a total of 20 share their distribution with the termites of the Himalaya, followed by the peninsular (17 species), arid and semi-arid areas including the north-western India (14 species) and lastly in decreasing faunal strength, north-eastern elements (12 species). This is purely a primary estimation for the fulfillment of the requirement of such analysis which needs further detailed survey and study.

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REFERENCES

- BOSE, G. 1984. Termite fauna of Southern India. *Occ. Pap. Rec. Zool. Surv. India*, No. 49 : ix+1-270+1pp.
- BOSE, G. 1992. An unusual case of mound contraction by termite *Odontotermes feae* (Wasmann). *Rec. zool. Surv. India*, 92 : 19-22.
- CHHOTANI, O.B. 1977. Termite of Kanha National Park (Madhya Pradesh), India. *Rec. zool. Surv. India*, 72 : 367-388, 5 pls.
- CHHOTANI, O.B. 1997. Termite of Kanha National Park (Madhya Pradesh), India. *Rec. zool. Surv. India*, 72 : 367-388, 5 pls.
- CHHOTANI, O.B. 1997. *Fauna of India, Isoptera (Termites)*, 2 : XX + 800 pp. (*Publ. Zool. Surv. India*).
- MAITI, P.K. 1983. Termite fauna (Isoptera) of West Bengal, India. Their recognition, biology and ecology. *Rec. zool. Surv. India, Occ. Pap. No. 42* : iv+152, 4 figs, maps.
- MAITI, P.K. 2006. A taxonomic monograph on the world species of termites of the family Rhinotermitidae (Isoptera : Insecta). *Memoirs zool. Surv. India*, 20(4) : i-viii+1-272 (*Publ. Zool. Surv. India*).
- MAITI, P.K. and SAHA, N. 1997. Insecta : Isoptera, *Zool. Surv. India, Fauna of Delhi, State Fauna Series*, 6 : 207-213 pp.
- MAIHI, P.K., SAHA, N. and ROY, P.H. 1999. *Zool. Surv. India, Fauna of Tripura, State Fauna Series*, 7(Part 2) : 295-308.
- MAITI, P.K. SAHA, N. AND ROY, P.H. and SAR, A. 2003. *Zool. Surv. India, Fauna of Sikkim, State Fauna Series*, 9(Part 2) : 251-262.
- MAITI, P.K., SAHA, N. and ROY, P.H. 2004. *Zool. Surv. India, Fauna of Manipur, State Fauna Series*, 10 : 154-164.
- MAITI, P.K., SAHA, N. and ROY, P.H. 2007. *Zool Surv. India, Fauna of Mizoram, State Fauna Series*, 14 : 241-248.
- MAITI, P.K. and SAHA, N. 1998. Faunal Diversity in India, Isoptera. In : *Faunal Diversity in India* (Eds. J.R.B. Alfred *et al.*) : 219-232, *Envis Centre, Z.S.I., Kolkata*.
- MATHUR, R.N. and SEN-SARMA, P.K. 1962. Notes on the habits and biology of Dehra Dun termites (Part 3). *J. Timbers Dryers & Preserv. Assoc. India, Dehra Dun*, 8(1) : 1-18. 2 pls.
- MUKHERJEE, P., MAITI, P.K. and SAHA, N. 2008. Termites (Isoptera) Fauna of the Himalaya including its Zoogeographical Analysis. *Memoirs zool. Surv. India*, 21(2) : 1-207, Fig. 107.
- RATHORE, N.S and BHATTACHARYA, A.K. 2004. Termite (Insecta: Isoptera) Fauna of Gujarat and Rajasthan- Present State of Knowledge. *Rec. zool. Surv. India, Occ. Pap. No. 223* : i-v + 77.
- ROONWAL, M.L. 1954. Biology and ecology of oriental termites (Isoptera). No. 2. On ecological adjustment in nature between two species of termites, namely, *Coptotermes heimi* (Wasmann) and *Odontotermes redemanni* in Madhya Pradesh, India, *J. Bombay nat. Hist. Soc.*, 52 : 463-467, 1 pl.
- ROONWAL, M.L. 1970. Termites of the Oriental Region in Biology of Termites (Ed. By K. Krishna and F.M. Weesner), 2 : 315-391, New York and London (Academic Press).
- ROONWAL, M.L. and CHHOTANI, O.B. 1965. Two new species of *Euhamitermes* Holmgren [Insecta : Isoptera; Termitidae] from India. *Proc. Zool. Soc., Calcutta*, 18(1) : 11-19.

- ROONWAL, M. L. and CHHOTANI, O.B. 1989. *Fauna of India, Isoptera (Termites)*, 1 : viii+672 pp. (Publ. Zool. Surv. India).
- ROONWAL, M.L. and SEN-SARRMA, P.K. 1960. Contributions to the systematic of Oriental Termites, *I.C.A.E. Ent. Monograph* No. 1 : 1-407. New Delhi (Manager of Publication, Govt. of India).
- SEN-SARMA, P.K. and THAKUR, M.L., 1980. On the Collection of termites of Kumaon Hills, Uttar Pradesh, India (Insecta : Isoptera), *Indian Forest Rec. (N.S.) Ent.*, Dehra Dun, **14**(1) : 1-30.
- SEN-SARMA, P.K. and THAKUR, M.L., MISRA, S.C. and GUPTA, B.K. 1975. *Studies on Wood destroying Termites in relation to Natural termite resistance of Timber* (Final Technical Report) : 1-187. Dehra Dun (Forest Research Institute).
- SAHA, N. and ROY, P.H. 2008. Insecta : Isoptera. *Zool. Surv. India, Fauna of Kerala, State Fauna Series* : 1-46 pp. (in press).
- SAHA, N., ROY, P.H. and SAR, A. 2010. Insecta : Isoptera. *Zool. Surv. India, Fauna of Uttarakhand, State Fauna Series*, **18**(Part-2) : 81-104.
- SAHA, N. and BASAK, J. (in press). Insecta : Isoptera. *Zool. Surv. India, Fauna of Uttar Pradesh, State Fauna Series*.
- SNYDER, T.E. 1949. Catalogue of Termites (Isoptera) of the world. *Smiths. Misc. colls.*, **112** : 2+490 pp.
- THAKUR, M.L. 1981. Revision of the termite genus *Odontotermes* Holmgren (Isoptera : Termitidae : Macrotermitinae) from India. *Indian For. Rec. (N.S.) Ent.*, **14**(2) : 1-134, Pls. 1-53.
- THAKUR, R.K. 1991. Field ecology, ecobiography and economic importance of Gujarat termites. *Indian For. Rec. (N.S.) Ent.* **16**(1) : 1-42.
- VERMA, S.C. and THAKUR, R.K. 1982. Termites from Madhya Pradesh, India with new distributional records (Insecta : Isoptera) *Rec. Zool. Surv. India*, **79** : 311-318.

ORTHOPTERA

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INTRODUCTION

Madhya Pradesh state was created in 1956 by merging Mahakoshal and Chhattisgarh parts of the former Central Province (CP), Berar, Madhya Bharat, Bhopal, and Vindhya Pradesh, thereby forming geographically the largest state in India. Later on, in the year 2000, another state Chhattisgarh was carved out by the division of Madhya Pradesh. Today, Madhya Pradesh with its capital in Bhopal and Chhattisgarh with its capital in Raipur occupy the very heartland of India and together they form the unit of Central India. Five major rivers i.e. Narmada, Mahanadi, Tapti, Indravati, and Chambal flow from highlands of the Central India, which feeds the rivers of North, the East, the South, and the West. The total area of these two states is 4,43,446 sq.km. lies between 21 to 25 N and longitudes 74 to 84 E, covering about 13.5% of the total area of India. The two states are land-locked and surrounded by seven states, viz., Andhra Pradesh, Bihar, Gujarat, Maharashtra, Orissa, Rajasthan and Uttar Pradesh. The forest area of Madhya Pradesh is 30.9% of the total geographical area, while it is 43.9% in Chhattisgarh. As pre the classification of Champion and Seth (1968), the forest types found in the area are classified as sub-tropical hill forests, moist deciduous forests, tropical dry deciduous forests and thorn forests.

The present work provides a comprehensive account of Orthopteran fauna from Madhya Pradesh and Chhattisgarh. The major work on Orthopteran fauna of India is published by Kirby (1914) and Chopard (1969), but so far no

comprehensive account on Orthoptera of Madhya Pradesh and Chhattisgarh is available. Only the scattered information on faunal diversity of Orthoptera of these states has been published by the various workers. Uvarov (1925) has recorded nine species from Central Province. Chopard (1970) described one new species of cricket from Kutumswar cave, Bastar. Sinha and Agrawal (1973) also studied one species of cave gryllid from the same locality. Tandon *et al.* (1976) studied the collection of Orthoptera from Kanha National Park. Tandon *et al.* (1995) recorded 23 species belonging to 4 families of Orthoptera from Kanha Tiger Reserve. Dwivedi (1978) reported one species from Bilaspur district of Chhattisgarh. Dwivedi and Chatteraj (1985) studied on energy budget of grasshopper *Acrida exaltata* (Walker) population from Bilaspur. Dwivedi (1990) worked on bio-energetics of the grasshopper *Catantops pinguis innotabilis* (Walker) at Bilaspur (Chhattisgarh). Gunther (1980) revised the Tridactyloidea of the World, where in species from India are also included. Roonwal (1981) studied 10 species of Orthoptera from Central India. Dixit and Sinha (1982) reported one species of Orthoptera from Ambikapur. Agrawal and Sinha (1987) described a new species *Homoeogryllus indicus* from Kacchuwa Pahar cave, Raigarh. Shishodia (1988) reported one species *Capulica alata* Uvarov from Amarkantak, Rewa. Shishodia (1991) recorded 8 species of grouse locusts from Kanha National Park. Shishodia (1995) reported 15 species belonging to 6 families of Orthoptera from Indravati Tiger Reserve. Shishodia (1999) recorded 22 species of Orthopteran insects from

Pataalkot (Chhindwara). Shishodia (2000) reported 77 species of crickets and grasshoppers from Bastar. Shishodia (2006) reported 21 species of Orthopteran insects from Rewa. Shishodia (2008) reported 18 species belonging to 16 genera under 5 families of Orthoptera from Jabalpur district. Singh and Singh (1992) reported *Cyrtacanthacris tatarica* (Linn.) as a pest of Soya bean pods from Madhya Pradesh. Chandra (2003) in his publication 'Insect Biodiversity in Madhya Pradesh and Chhattisgarh' mentioned the existence of 121 species of Orthoptera from these two states. Chandra *et al.* (2007) reported 139 species of Orthoptera from Madhya Pradesh and Chhattisgarh, of which 94 species from Madhya Pradesh and 84 species are from Chhattisgarh. Chandra *et al.* (2009) reported 54 species belonging to 51 genera under 9 families of Orthoptera from Pench Tiger Reserve. Joshi *et al.* (2004) reported 12 species of Orthoptera from Kanha National Park.

Chandra and Gupta (2005) recorded one species of family Schizodactylidae from Chhattisgarh. Gupta (2008) recorded two species of grasshoppers *i.e.* *Choroedocus illustris* (Walker) and *Caloptenopsis glaucopsis* Walker from Madhya Pradesh. Gupta *et al.* (2008) studied 18 species pertaining to 18 genera under 5 families of Orthoptera from Achanakmar Wildlife Sanctuary, Bilaspur. Gupta (2009) recorded four species of Orthoptera from Central India. Gupta (2009) reported 27 species under 27 genera belonging to seven families of Orthoptera from Bandhavgarh Tiger Reserve. Gupta & Chandra (2009) reported 12 species belonging 12 genera under 4 families of Orthoptera from Panna National Park, Panna. Chandra & Gupta (2009) reported 18 species pertaining to 18 genera under 6 families of Orthoptera from Veerangana Durgavati Wildlife Sanctuary, Damoh. Gupta & Chandra (2009) reported 16 species belonging 16 genera under 5 families of Orthoptera from Van Vihar National Park, Bhopal. Gupta & Chandra (2009) reported 23 species belonging 23 genera under 7 families of Orthoptera from Madhav National Park, Shivpuri. Gupta & Shishodia (2009) reported 54

species belonging 48 genera under 9 families of Orthoptera from Pachmarhi Biosphere Reserve.

A number of workers including Hancock (1915), Mason (1973), Bhowmik (1985), Shishodia and Hazra (1986), Shishodia and Tandon (1987), Vasanth (1993), Ingrisich (1998), Dey and Hazra (2003), Shishodia and Barman (2004) have also worked on the fauna of other states and included the distribution of some species in Madhya Pradesh and Chhattisgarh.

A total of 154 species belonging 100 genera under 10 families of Orthopteran insects has been given below the table in which Acrididae 62 species, Pyrgomorphidae 6 species, Tetrigidae 18 species, Tridactylidae 6 species, Gryllidae 37 species, Trigonidiidae 6 species, Gryllotalpidae 1 species, Schizodactylidae 1 species, Gryllacrididae 1 species and Tettigoniidae 16 species are known from Madhya Pradesh and Chhattisgarh. This is the first comprehensive account on Orthoptera fauna of these two states, which is mainly based on identified specimens deposited in the National Zoological Collection, Kolkata & Central Regional Station, Zoological Survey of India and published information on the Orthoptera of Madhya Pradesh and Chhattisgarh.

List of species of Orthoptera

Order ORTHOPTERA

Suborder CAELIFERA

Infraorder ACRIDIDEA

Superfamily ACRIDOIDEA

Family ACRIDIDAE

Subfamily ACRIDINAE

Genus *Acrida* Linnaeus, 1758

1. *Acrida exaltata* (Walker, 1859)

2. *Acrida gigantea* (Herbst, 1794)

Genus *Ceracris* Walker, 1870

3. *Ceracris nigricornis* Walker, 1870

Genus *Orthochtha* Karsch, 1891

4. *Orthochtha indica* Uvarov, 1942

Genus *Phlaeoba* Stål, 1860

5. *Phlaeoba infumata* Brunner, 1893

6. *Phlaeoba panteli* Bolivar, 1902
Genus *Truxalis* Fabricius, 1775
7. *Truxalis indica* (Bolivar, 1902)
Subfamily CALLIPTAMINAE
Genus *Acorypha* Krauss, 1877
8. *Acorypha glaucopsis* (Walker, 1870)
Subfamily CATANTOPINAE
Genus *Diabolocatantops* Jago, 1954
9. *Diabolocatantops innotabilis* (Walker, 1870)
10. *Diabolocatantops pulchellus* (Walker, 1870)
Genus *Oxyrrhepes* Stål, 1873
11. *Oxyrrhepes obtusa* (de Haan, 1842)
Genus *Stenocatantops* Dirsh & Uvarov, 1953
12. *Stenocatantops splendens* (Thunberg, 1815)
Genus *Xenocatantops* Dirsh & Uvarov, 1953
13. *Xenocatantops humilis humilis* (Serville, 1839)
14. *Xenocatantops karnyi* (Kirby, 1910)
Subfamily COPTACRIDINAE
Genus *Coptacra* Stål, 1873
15. *Coptacra punctoria* (Walker, 1870)
Genus *Eucoptacra* Bolivar, 1902
16. *Eucoptacra praemorsa* (Walker, 1870)
Subfamily CYRTACANTHACRIDINAE
Genus *Chondracris* Uvarov, 1923
17. *Chondracris rosea* (De Geer, 1773)
Genus *Cyrtacanthacris* Walker, 1870
18. *Cyrtacanthacris tatarica* (Linnaeus, 1758)
Genus *Pachyacris* Uvarov, 1923
19. *Pachyacris vinosa* (Walker, 1870)
Genus *Patanga* Uvarov, 1923
20. *Patanga succincta* (Johansson, 1763)
Genus *Schistocerca*, Stål, 1873
21. *Schistocerca gregaria* (Forskål, 1775)
Subfamily EYEPREPOCNEMIDINAE
Genus *Cataloipus* Bolivar, 1890
22. *Cataloipus cognatus* (Walker, 1870)
Genus *Choroedocus* Bolivar 1914
23. *Choroedocus illustris* (Walker, 1870)
Genus *Eyprepocnemis* Fieber, 1853
24. *Eyprepocnemis alacris alacris* (Serville, 1839)
25. *Eyprepocnemis roseus* Uvarov, 1942
Genus *Tylotropidius* Stål, 1860
26. *Tylotropidius varicornis* (Walker, 1870)
Subfamily GOMPHOCERINAE
Genus *Aulacobothrus* Bolivar, 1902 : 597
27. *Aulacobothrus decisus* (Walker, 1871)
28. *Aulacobothrus luteipes* (Walker, 1871)
29. *Aulacobothrus strictus* (Bolivar, 1902)
Genus *Capulica* Bolivar, 1918
30. *Capulica alata* Uvarov, 1929
Genus *Gelastorhinus* Brunner, 1903
31. *Gelastorhinus laticornis* (Serville, 1839)
Genus *Leva* Bolivar, 1909
32. *Leva indica* (Bolivar, 1902)
Genus *Mesopsis* Bolivar, 1906
33. *Mesopsis cylindricus* (Kirby, 1914)
Subfamily HEMIACRIDINAE
Genus *Clonacris* Uvarov, 1943
34. *Clonacris kirbyi* (Finot, 1903)
Genus *Gesonula* Uvarov, 1940
35. *Gesonula punctifrons* (Stål, 1861)
Genus *Hieroglyphus* Krauss, 1877
36. *Hieroglyphus annulicornis* (Shiraki, 1910)
37. *Hieroglyphus banian* (Fabricius, 1798)
38. *Hieroglyphus concolor* (Walker, 1870)
39. *Hieroglyphus nigrorepletus* Bolivar, 1912
40. *Hieroglyphus oryzivorus* Carl, 1916
Genus *Parahieroglyphus* Carl, 1916
41. *Parahieroglyphus bilineatus* (Bolivar, 1912)
Subfamily OEDIPODINAE
Genus *Acrotylus* Fieber, 1853
42. *Acrotylus humberianus* Saussure, 1884
Genus *Aiolopus* Fieber, 1853
43. *Aiolopus thalassinus tamulus* (Fabricius, 1798)

- Genus *Chondronotulus* Uvarov, 1956
44. *Chondronotulus bengalensis* (Saussure, 1888)
Genus *Chloebora* Saussure, 1884
45. *Chloebora crassa* (Walker, 1870)
Genus *Dittopternis* Saussure, 1884
46. *Dittopternis venusta* (Walker, 1870)
Genus *Gastrimargus* Saussure, 1884
47. *Gastrimargus africanus africanus* (Saussure, 1888)
48. *Gastrimargus marmoratus* (Thunberg, 1815)
Genus *Heteropternis* Stål, 1873
49. *Heteropternis respondens* (Walker, 1859)
Genus *Morphacris* Walker, 1870
50. *Morphacris fasciata sulcata* (Thunberg, 1815)
Genus *Oedaleus* Fieber, 1853
51. *Oedaleus abruptus* (Thunberg, 1815)
52. *Oedaleus senegalensis* (Krauss, 1877)
Genus *Pternoscirta* Saussure, 1884
53. *Pternoscirta bimaculata* (Thunberg, 1815)
54. *Pternoscirta cinctifemur* (Walker, 1859)
Genus *Trilophidia* Stål, 1873
55. *Trilophidia annulata* (Thunberg, 1815)
Subfamily OXYINAE
Genus *Oxya* Serville, 1831
56. *Oxya fuscovittata* (Marschall, 1836)
57. *Oxya hyla hyla* Serville, 1831
58. *Oxya nitidula* (Walker, 1870)
59. *Oxya velox* (Fabricius, 1787)
Subfamily SPATHOSTERNINAE
Genus *Spathosternum* Krauss, 1877
60. *Spathosternum prasiniferum prasiniferum* (Walker, 1871)
Subfamily TERATODINAE
Genus *Teratodes* Brulle, 1835
61. *Teratodes monticollis* (Gray, 1832)
Subfamily TROPIDOPOLINAE
Genus *Tristria* Stål 1873
62. *Tristria pulvinata* Uvarov, 1921
- Superfamily PYRGOMORPHOIDEA
Family PYRGOMORPHIDAE
Subfamily PYRGOMORPHINAE
Genus *Atractomorpha* Saussure, 1862
63. *Atractomorpha crenulata* (Fabricius, 1793)
Genus *Chrotogonus* Serville, 1838
64. *Chrotogonus (Chrotogonus) oxypterus* (Blanchard, 1836)
65. *Chrotogonus (Chrotogonus) trachypterus trachypterus* (Blanchard, 1836)
Genus *Poeciloceris* Serville, 1831
66. *Poeciloceris pictus* (Fabricius, 1775)
Genus *Pyrgomorpha* Serville, 1831
67. *Pyrgomorpha bispinosa bispinosa* (Walker, 1870)
Genus *Zarytes* Bolivar, 1904
68. *Zarytes squalinus brachycerus* (Kirby, 1914)
Superfamily TETRIGOIDEA
Family TETRIGIDAE
Subfamily METRODORINAE
Genus *Hyboella* Hancock, 1915
69. *Hyboella* sp.
Subfamily SCELIMENINAE
Genus *Criotettix* Bolivar, 1887
70. *Criotettix bispinosus* (Dalman, 1818)
71. *Criotettix latifrons* Hebard, 1929
72. *Criotettix orientalis* Hancock, 1913
Genus *Euscelimena* Gunther, 1938
73. *Euscelimena harpago* (Serville, 1839)
Genus *Thoradonta* Hancock, 1909
74. *Thoradonta nodulosa* (Stål, 1860)
75. *Thoradonta spiculoba* Hancock, 1912 : 138
Subfamily TETRIGINAE
Genus *Coptotettix* Bolivar, 1887
76. *Coptotettix annandalei* Hancock, 1915
77. *Coptotettix conspersus* Hancock, 1915
Genus *Ergatettix* Kirby, 1914
78. *Ergatettix dorsiferus* (Walker, 1871)
79. *Ergatettix guentheri* Steinmann, 1970

- Genus *Euparatettix* Hancock, 1904
80. *Euparatettix histricus* (Stål, 1861)
81. *Euparatettix variabilis* (Bolivar, 1887)
- Genus *Hedotettix* Bolivar, 1887
82. *Hedotettix attenuatus* Hancock, 1904
83. *Hedotettix cristitergus* Hancock, 1915
84. *Hedotettix gracilis* (de Haan, 1842)
85. *Hedotettix punctatus* Hancock, 1909
- Genus *Paratettix* Bolivar, 1887
86. *Paratettix cingalensis* (Walker, 1871)
- Superfamily TRIDACTYLOIDEA
- Infraorder TRIDACTYLIDEA
- Family TRIDACTYLIDAE Brunner, 1882
- Subfamily TRIDACTYLINAE
- Genus *Tridactylus* Olivier, 1789
87. *Tridactylus fasciatus* Guerin, 1844
88. *Tridactylus thoracicus* Guerin, 1844
- Genus *Xya* Latreille, 1809
89. *Xya frontomaculata* (Gunther, 1974)
90. *Xya japonica* Haan, 1842
91. *Xya opaca* (Walker, 1871)
92. *Xya variegata* Latreille, 1809
- Suborder ENSIFERA
- Infraorder OEDISCHIOIDEA
- Superfamily GRYLLOIDEA
- Family GRYLLIDAE
- Subfamily ENEOPTERINAE
- Genus *Xenogryllus* Bolivar, 1890
93. *Xenogryllus* sp.
- Subfamily GRYLLINAE
- Genus *Acheta* Fabricius, 1775
94. *Acheta domesticus* Linnaeus, 1758
- Genus *Gryllus* Linnaeus, 1758
95. *Gryllus bimaculatus* De Geer, 1773
- Genus *Gryllodes* Saussure, 1874
96. *Gryllodes sigillatus* (Walker, 1869)
97. *Gryllodes supplicans* (Walker, 1859)
- Genus *Gryllopsis* Chopard, 1928
98. *Gryllopsis falconneti* (Saussure, 1877)
99. *Gryllopsis furcata* (Saussure, 1877)
- Genus *Gymnogryllus* Saussure, 1877
100. *Gymnogryllus fascipes* Copard, 1969
101. *Gymnogryllus kashmirensis* Bhowmik, 1967
- Genus *Loxoblemmus* Saussure, 1877
102. *Loxoblemmus detectus* (Serville, 1838)
103. *Loxoblemmus equestris* Saussure, 1877
- Genus *Modicogryllus* Chopard, 1961
104. *Modicogryllus confirmatus* (Walker, 1859)
105. *Modicogryllus consobrinus* (Saussure, 1877)
- Genus *Phonarellus* (Gorochov, 1983)
106. *Phonarellus (Phonarellus) minor* Chopard, 1959
- Genus *Platygryllus* Chopard, 1961
107. *Platygryllus brunneri* (Saussure, 1877)
108. *Platygryllus melanocephalus* (Serville, 1839)
- Genus *Plebeiogryllus* Randell, 1964
109. *Plebeiogryllus guttiventris* (Walker, 1871)
- Genus *Tarbinskiellus* Gorochov, 1983 : 320
110. *Tarbinskiellus orientalis* (Burmeister, 1832)
111. *Tarbinskiellus portentosus* (Lichtenstein, 1796)
- Genus *Teleogryllus* Chopard, 1961
112. *Teleogryllus gracilipes* (Saussure, 1877)
113. *Teleogryllus mitratus* (Burmeister, 1838)
114. *Teleogryllus occipitalis* (Serville, 1838)
- Subfamily CACHOPLISTINAE
- Genus *Arachnomimus* Saussure, 1878
115. *Arachnomimus subalatus* Chopard, 1970
- Genus *Homoeogryllus* Guerin, 1847
116. *Homoeogryllus indicus* Agarwal & Sinha, 1987
- Genus *Kempiola* Uvarov, 1940
117. *Kempiola shankari* Sinha & Agarwal, 1973
- Genus *Meloimorpha* Walker, 1870
118. *Meloimorpha cincticornis* Walker, 1870
119. *Meloimorpha japonica* (Haan, 1842)
- Subfamily PODOSCIRTINAE Saussure, 1878
- Genus *Madasumma* Walker, 1869
120. *Madasumma* sp.

- Subfamily NEMOBIINAE
 Genus *Paranemobius* Saussure, 1877
 121. *Paranemobius pictus* (Saussure, 1877)
 Genus *Pteronemobius* Jacobson and Bianchi, 1905
 122. *Pteronemobius bicolor* (Saussure, 1877)
 123. *Pteronemobius concolor* (Walker, 1871)
 124. *Pteronemobius novarae* (Saussure, 1877)
 125. *Pteronemobius csikii* (Bolivar, 1901)
 126. *Pteronemobius taprobanensis* (Walker, 1869)
 127. *Pteronemobius fascipes* (Walker, 1869)
 128. *Pteronemobius rufipes* Chopard, 1969
 Subfamily OECANTHINAE
 Genus *Oecanthus* Serville, 1831
 129. *Oecanthus indicus* Saussure, 1878
 Family TRIGONIDIIDAE
 Genus *Anaxipha* Saussure, 1874
 130. *Anaxipha* sp.
 Genus *Amusurgus* Brunner, 1893
 131. *Amusurgus* sp.
 Genus *Homoeoxipha* Saussure, 1874
 132. *Homoeoxipha lycoides* (Walker, 1869)
 Genus *Metioche* Stål, 1877
 133. *Metioche* sp.
 Genus *Trigonidium* Rambur, 1839
 134. *Trigonidium cicindeloides* Rambur, 1839
 135. *Trigonidium humbertianum* (Saussure, 1878)
 Family GRYLLOTALPIDAE
 Subfamily GRYLLOTALPINAE
 Genus *Gryllotalpa* Latreille, 1802
 136. *Gryllotalpa africana* Beauvois, 1805
 Superfamily SCHIZODACTYLOIDEA
 Family SCHIZODACTYLIDAE
 Subfamily SCHIZODACTYLINAE
 Genus *Schizodactylus* Brulle, 1835
 137. *Schizodactylus monstrosus* (Drury, 1773)
 Superfamily STENOPELMATOIDEA
 Family GRYLLACRIDIDAE
 Subfamily GRYLLACRIDINAE
 Genus *Gryllacris* Serville, 1831
 138. *Gryllacris* sp.
 Superfamily TETTIGONIOIDEA
 Family TETTIGONIIDAE
 Subfamily CONOCEPHALIDAE
 Genus *Conocephalus* Thunberg, 1815
 139. *Conocephalus maculatus* (Le Guillou, 1841)
 Genus *Euconocephalus* Karny, 1907
 140. *Euconocephalus incertus* (Walker, 1869)
 141. *Euconocephalus pallidus* (Redtenbacher, 1891)
 Genus *Xiphidiopsis* Redtenbacher, 1891
 142. *Xiphidiopsis citrina* Redtenbacher, 1891
 Subfamily MECOPODINAE
 Genus *Mecopoda* Serville, 1831
 143. *Mecopoda elongata* (Linnaeus, 1758)
 Subfamily PHANEROPTERINAE
 Genus *Ducetia* Stål, 1874
 144. *Ducetia japonica* (Thunberg, 1815)
 Genus *Elimaea* Stål, 1874
 Subgenus *Orthelimaea* Karny, 1926
 145. *Elimaea (Orthelimaea) securigera* Brunner, 1878
 Genus *Himertula* Uvarov, 1940
 146. *Himertula kinneari* (Uvarov, 1923)
 Genus *Holochlora* Stål, 1873
 147. *Holochlora albida* Brunner von Wattenwyl, 1878
 Genus *Letana* Walker, 1869
 148. *Letana intermedia* Ingrisch, 1990
 149. *Letana infurcata* Ingrisch, 1990
 150. *Letana megastridula* Ingrisch, 1990
 151. *Letana pyrifera* Bey-Beinko, 1956
 Genus *Phaneroptera* Serville, 1831
 152. *Phaneroptera gracilis* Burmeister, 1838
 Subfamily PSEUDOPHYLLINAE
 Genus *Onomarchus* Stål, 1874
 153. *Onomarchus* sp.
 Genus *Sathrophyllia* Stål, 1874
 154. *Sathrophyllia rugosa* (Linnaeus, 1758)

Table : Name of families, No. of genera and No. of species of Orthoptera from Madhya Pradesh and Chhattisgarh

| S. No. | Name of families | No. of genera | No. of species |
|--------|------------------|---------------|----------------|
| 1. | Acrididae | 45 | 62 |
| 2. | Pyrgomorphidae | 5 | 6 |
| 3. | Terigidae | 9 | 18 |
| 4. | Tridactylidae | 2 | 6 |
| 5. | Gryllidae | 19 | 37 |
| 6. | Trigonidiidae | 5 | 6 |
| 7. | Gryllotalpidae | 1 | 1 |
| 8. | Schizodactylidae | 1 | 1 |
| 9. | Gryllacrididae | 1 | 1 |
| 10. | Tettigoniidae | 12 | 16 |
| | Total | 100 | 154 |

Order ORTHOPTERA

Suborder CAELIFERA

Superfamily ACRIDOIDEA

Family ACRIDIDAE

Subfamily ACRIDINAE

Genus *Acrida* Linnaeus, 17581. *Acrida exaltata* (Walker, 1859)

1859. *Truxalis exaltata* Walker, *Ann. Mag. nat. Hist.*, 4(3) : 222.
1914. *Acrida exaltata*, Kirby, *Fauna Brit. India, Orth.* : 99.
2000. *Acrida exaltata*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 46.
2003. *Acrida exaltata*, Dey & Hazra, *Memoirs, zool. Surv. India*, 19(3) : 24.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 18.vi.2001 (1 ♀), 20.vi.2001 (1 ♀) coll. K. Chandra & party; Boda nala, 23.vii.2001 (1 ♀,NC) coll. M.L. Koshta & party, 23.xii.2001 (1 ♀) coll. K. Chandra; Awandhani, 23.viii.2001 (1 ♂) coll. Y.N. Gupta & party; Alikata, 17.xii.2001 (1 ♂,DC); Chhindimatta, 18.xii.2001 (2 ♂,2 ♀); Chhindwara : Totladoh, 30.viii.2001 (1 ♀) coll. Y.N. Gupta & party; Ghatpendrai, 19.xi.2001 (1 ♀); Shirepani, 24.ix.2001 (1 ♀) coll. S.K. Mishra & party;

Chhindwani, 26.xi.2001 (1 ♂,2 ♀); Thota, 28.xi.2001 (1 ♂); Banskheda, 28.xi.2001 (1 ♂,NC) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Bhopal, Damoh, Chhindwara, Hoshangabad, Jabalpur, Mandla, Panna, Rewa, Shahdol, Seoni, Shivpuri, Sidhi and Umaria), Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Iran; Pakistan; Saudi Arabia; South East Tibet; Sri Lanka; Yemen and West Aden.

2. *Acrida gigantea* (Herbst, 1794)

1794. *Truxalis gigantea* Herbst, *Fuessly archive. Ins.* : 191.
1914. *Acrida gigantea*, Kirby, *Fauna Brit. India, Orth.* : 98.
2004. *Acrida gigantea*, Joshi *et. al.*, 2004 : *Journal of Tropiocal Forestry*, 20(3&4) : 71.

Material examined : Recorded from literature (Joshi *et al.*, 2004, Shishodia, 2006, 2008).

Distribution : India : Himachal Pradesh, Madhya Pradesh (Jabalpur, Mandla and Rewa), Tamil Nadu and Uttarakhand.

Elsewhere : Africa and Nepal.

Genus *Ceracris* Walker, 18703. *Ceracris nigricornis* Walker, 1870

1870. *Ceracris nigricornis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 791.
1914. *Ceracris nigricornis* : Kirby, *Fauna Brit. India, Orth.* : 110.

Material examined : Chhattisgarh, Bilaspur, AWLS : Kevachi, 22.vi.2004 (1 ♂,DC); Matinala, 26.vi.2004 (1 ♀,DC); Lamni, 28.vi.2004 (1 ♂,NC); Rakshasakh, 30.vi.2004 (1 ♀,DC); Tilai dabra, 19.vii.2004 (1 ♀,DC), 25.vii.2004 (1 ♀,DC) Jalda, 20.vii.2004 (2 ♀,DC), 21.vii.2004 (1 ♀,DC), 15.vii.2005 (1 ♂,DC); Chhapparwa, 20.vii.2004

(1 ♀, NC), 29.vii.2004 (2 ♀, NC), 14.vii.2005 (1 ♀, DC); Katami, 17.vii.2005 (1 ♂, 1 ♀, DC); Sarasdol, 18.vii.2005 (1 ♂, 3 ♀, DC); Maikumath, 20.vii.2005 (1 ♀, DC); Achanakmar, 22.vii.2005 (3 ♀, DC), 23.vii.2005 (1 ♀, NC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Karmajhiri, 16.vii.2001 (1 ♀) coll. R. K. Singh & party; Chhindwara : Totladoh, 20.viii.2001 (1 ♀); Gumtara, 23.ix.2001 (1 ♀) coll. S.K. Mishra & party.

Distribution : India : Arunachal Pradesh, Chhattisgarh (Bilaspur), Himachal Pradesh, Madhya Pradesh (Bhopal, Chhindwara and Seoni), Sikkim and West Bengal.

Elsewhere : Taiwan; Tonkin and West & South China.

Genus *Orthochtha* Karsch, 1891

4. *Orthochtha indica* Uvarov, 1942

1942. *Orthochtha indica* Uvarov, *Ann. Mag. nat. Hist.*, 9(11) : 587.
 1983. *Orthochtha indica*, Bhowmik & Halder, *Rec. zool. Surv. India, Occ. Pap. No. 81* : 171.
 1985. *Orthochtha indica*, Bhowmik, *Rec. zool. Surv. India, Occ. Pap. No. 78* : 12.

Material examined : Recorded from literature (Bhowmik, 1985).

Distribution : India : Delhi, Himachal Pradesh, Madhya Pradesh, Maharashtra and Meghalaya.

Genus *Phlaeoba* Stål, 1860

5. *Phlaeoba infumata* Brunner, 1893

1893. *Phlaeoba infumata* Brunner, *Ann. Mus. Genove*, 33 : 124.
 1914. *Phlaeoba infumata*, Kirby, *Fauna Brit. India, Orth.* : 103.
 2003. *Phlaeoba infumata*, Dey & Hazra, *Memoirs, zool. Surv. India*, 19(3) : 25.

Material examined : Recorded from literature (Dey & Hazra, 2003).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Haryana, Himachal Pradesh, Madhya Pradesh (Mandla), Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim,

Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; East Nepal; Hainan Islands; Kuangtung; Kwangsi; Myanmar; South & North Malacca; South China; Tennasserim and Yunnan.

6. *Phlaeoba panteli* Bolivar, 1902

1902. *Phlaeoba panteli* Bolivar, *Annls. Soc. ent. Fr.*, 70 : 589.
 1910. *Phlaeoba walthousei*, Kirby, *Syn. Cat. Orth.*, 3 : 138.
 1914. *Phlaeoba panteli*, Kirby, *Fauna Brit. India, Orth.*, : 104.
 2003. *Phleoba panteli*, Dey & Hazra, *Memoirs, zool. Surv. India*, 19(3) : 27.

Material examined : Chhattisgarh, Bilaspur, AWLS : Kevachi, 22.vi.2004 (2 ♀, DC); Diyavan, 25.vi.2004 (1 ♀, DC), 09.v.2005 (2 ♀, DC); Atariya, 11.v.2005 (1 ♀, DC), 18.v.2005 (1 ♀, DC); Katami, 17.vii.2005 (2 ♀, DC); Achanakmar, 22.vii.2005 (1 ♀, DC); Bindaval, 24.vii.2005 (1 ♀, DC) coll. A. Singh & party.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh (Bilaspur), Himachal Pradesh, Madhya Pradesh (Hoshangabad and Shivpuri), Manipur, Meghalaya, Tripura, Tamil Nadu, Uttarakhand and West Bengal.

Elsewhere : Afghanistan.

Genus *Truxalis* Fabricius, 1775

7. *Truxalis indica* (Bolivar, 1902)

1902. *Acrida (Acridella) unguate* Rambur, var. *indica* Bolivar, *Annls. Soc. ent. France*, 70 : 589.
 1914. *Acridella nasuta*, Kirby, *Fauna Brit. India, Orth.*, : 100.
 1951. *Truxalis indica*, Dirsh, *Eos. Madr.*, : 178.
 2000. *Truxalis indica*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 44.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Bihar, Chhattisgarh (Bastar and Bilaspur), Gujarat, Madhya Pradesh (Seoni), Maharashtra, Orissa, Karnataka and Tamil Nadu.

Elsewhere : Myanmar and Sri Lanka.

Subfamily CALLIPTAMINAE

Genus *Acorypha* Krauss, 1877

Calaptenopsis Bolivar, 1889

8. *Acorypha glaucopsis* (Walker, 1870)

1870. *Caloptenus glaucopsis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 702.

1914. *Caloptenus glaucopsis*, Kirby, *Fauna Brit. India, Orth.*, : 208.

1967. *Acorypha glaucopsis*, Jago : 426-427.

Material examined : Recorded from literature (Shishodia, 2006, Gupta, 2008).

Distribution : India : Andhra Pradesh, Bihar, Delhi, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Hoshangabad, Shahdol and Shivpuri) Maharashtra, Rajasthan, Tamil Nadu and Uttarakhand.

Elsewhere : Iran and Saudi Arabia.

Subfamily CATANTOPINAE

Genus *Diabolocatantops* Jago, 1954

9. *Diabolocatantops innotabilis* (Walker, 1870)

1870. *Acridium innotabile* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 629.

1902. *Catantops indicus* I. Bolivar, *Ann. Soc. ent. France*, 70 : 626.

1925. *Catantops innotabilis* Uvarov, *Orth. Acrid.*, : 30.

1956. *Catantops pinguis innotabilis* : Dirsh, *Comp. Diam. Angola. Publ. Cult.*, 28 : 105.

1976. *Catantops pinguis innotabilis*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 15.

1984. *Diabolocatantops innotabilis*, Jago, *Trans. Amer. Entomol. Soc.*, 110(3) : 371.

1990. *Diabolocatantops innotabilis*, Ingrisch, *Spixiana*, 13 : 174.

Material examined : Madhya Pradesh, Seoni, PTR : Turia, 07.vi.2001 (1 ♀); Kohka, 10.vi.2001 (1 ♀); Muner pench, 11.vi.2001 (4 ♀); Pyarthodi, 13.vi.2001 (2 ♀); Barelipar, 11.vii.2001 (1 ♀) coll. R.K. Singh & party; Chandrapur, 07.xi.2001 (1 ♂); Khapa, 11.xi.2001 (1 ♂, 1 ♀) coll. M.L. Koshta & party; Chhindwara : Totladoh, 14.vi.2001 (1 ♀)

coll. K. Chandra, 11.viii.2001 (1 ♀) coll. Y.N. Gupta & party; 30.viii.2001 (1 ♀) coll. Y.N. Gupta & party; Gumtara, 23.ix.2001 (2 ♀); Shirepani, 24.ix.2001 (1 ♀); Antara, 26.ix.2001 (1 ♂, 4 ♀); Shankar van, 27.ix.2001 (4 ♀) coll. S.K. Mishra & party.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Lakshadweep Island, Madhya Pradesh (Bhopal, Chhindwara, Damoh, Hoshangabad, Seoni, Shivpuri, Sidhi and Umaria), Maharashtra, Meghalaya, Manipur, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh, Uttarakhand, West Bengal.

Elsewhere : Afghanistan; Bangladesh; Borneo; Cambodia; China; Hong Kong; Indo-China; Japan; Java; Korea; Maldive Island; Malaysia; Myanmar; Nepal; New Guinea; Pakistan; Philippines; Sri Lanka; Sumatra; Tibet; Thailand and Yunnan.

10. *Diabolocatantops pulchellus* (Walker, 1870)

1870. *Cyrtacanthacris pulchella* Walker, *Cat. Derm. Salt. Brit. Mus.*, 3 : 574.

1943. *Catantops pulchellus*, Uvarov, *Ann. Mag. Nat. Hist.*, 10(11) : 127.

1984. *Diabolocatantops pulchellus*, Jago, *Trans. Amer. ent. Soc.*, 110 : 295-387.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Chhattisgarh (Bastar), Karnataka, Madhya Pradesh (Seoni), Manipur and Sikkim.

Elsewhere : Bangladesh and Pakistan.

Genus *Oxyrrhepes* Stål, 1873

11. *Oxyrrhepes obtusa* (de Haan, 1842)

1842. *Acridium (Oxya) obtusum* de Haan, *Verh. Ned. Overz. Bezitt. Orth.*, : 155.

1914. *Oxyrrhepes extensa*, Kirby, *Fauna Brit. India, Orth.*, : 208.

1955. *Oxyrrhepes obtuse*, Willemsse, *Publities naturrh Gennot Limburg, Reeks*, 8 : 32.

Material examined : Recorded from literature (Tandon & Shishodia, 1989).

Distribution : India : Arunachal Pradesh, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand and West Bengal.

Elsewhere : Celebes; China; Indo-China; Indonesia; Java; Lombok; Myanmar; Sri Lanka and Sulawesi.

Genus *Stenocatantops* Dirsh & Uvarov, 1953

12. *Stenocatantops splendens* (Thunberg, 1815)

1815. *Gryllus splendens* Thunberg, *Mem. Acad. Sci. St.-Petersb.*, 5 : 236.

1953. *Stenocatantops splendens* : Dirsh & Uvarov, *Tijdschr. Ent.*, 96(3) : 237.

1976. *Stenocatantops splendens*, Tandon, *Rec. zool., Surv. India, Occ. Pap. No. 3* : 19.

2000. *Stenocatantops splendens*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 63.

Material examined : Chhattisgarh, Bilaspur, AWLS : Sambhar dhasan, 08.vi.2004 (1♂,DC); Sattapani, 08.vi.2004 (1♀,NC), Diyavan, 11.vi.2004 (2♂,1♀DC), 09.v.2005 (1♀,DC); Atariya, 17.vi.2004 (1♀,DC); Jhandi dongri, 19.vi.2004 (1♀,DC); Marvahi, 20.vi.2004 (1♂,2♀,DC); Lamni, 21.vi.2004 (2♂,1♀,DC); Mendri sarai, 23.vi.2004 (4♂,2♀,DC); Gandelwa pani, 27.vi.2004 (2♀,DC); Baharijhar nala, 28.vi.2004 (1♀,NC); Chhirahata, 29.vi.2004 (1♀,DC); Rakshasakh, 10.v.2005 (1♂,4♀,DC); Bindaval, 16.vii.2005 (1♀,DC), 24.vii.2005 (1♀,DC); Katami, 17.vii.2005 (1♀,DC); Sarasdol, 18.vii.2005 (1♀,DC); Maikumath road, 20.vii.2005 (1♀,DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Karmajhiri, 10.vi.2001(1♀) coll. K. Chandra; Chandrapur, 07.xi.2001 (1♂) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Karnataka, Kerala, Madhya Pradesh (Hoshangabad, Seoni and Umaria), Maharashtra,

Manipur, Meghalaya, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Borneo; China; Celebes; Hainan; Java; Korea; Malaysia; Moluccas Island, Myanmar; Nepal; New Guinea; Philippines; Sri Lanka; Sumatra; Taiwan; Thailand and Vietnam.

Genus *Xenocatantops* Dirsh & Uvarov, 1953

13. *Xenocatantops humilis humilis* (Serville, 1839)

1839. *Acridium humile* Serville *Ins, Orth.*, : 662.

1953. *Xenocatantops humilis humilis* : Dirsh and Uvarov, *Tijdschr. Ent.*, 96 : 237.

2000. *Xenocatantops humilis humilis*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 62.

Material examined : Chhattisgarh, Bilaspur, AWLS : Achanakmar, 19.vii.2004 (5♂,3♀,DC); Jalda, 20.vii.2004 (1♀, DC), 21.vii.2004 (1♂,DC); Katami, 22.vii.2004 (3♀,DC); Surahi, 24.vii.2004 (1♀,DC); Tilai dabra, 25.vii.2004 (2♂,2♀,DC); Sambhar dhasan, 26.vii.2004 (1♂,DC); Diyavan, 28.vii.2004 (1♂,2♀,DC), 09.v.2005 (1♀,DC); Lamni, 29.vii.2004 (1♂,DC), 07.v.2005 (3♀,DC); Jhandi dongri, 08.v.2005 (1♀,DC); Rakshasakh, 10.v.2005 (1♂,1♀,DC); Chhapparwa, 14.vii.2005 (3♂, DC); Maikumath, 20.vii.2005 (1♀,DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Turia, 07.vi.2001 (1♀); Pyarthodi, 13.vi.2001 (1♀); Chewar ghat, 19.vi.2001 (1♀) coll. K. Chandra; Dudhgaon, 16.viii.2001 (1♀) coll. Y.N. Gupta & party; Gahra nala, 08.xi.2001 (1♀) coll. M.L. Koshta & party; Mahadev ghat, 29.xi.2001 (1♂) coll. K. Chandra.

Distribution : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Chhindwara, Damoh, Hoshangabad, Seoni and Umaria), Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; Borneo; Indo-China; Java; Lombok; Malaysia; Myanmar; Nepal; New Guinea; Philippines; Sumatra; Sri Lanka; Thailand; Tibet; Vietnam and Yunnan.

14. *Xenocatantops karnyi* (Kirby, 1910)

1910. *Catantops karnyi*, Kirby, *Syn. Cat. Orth.*, 3 : 483.
 1982. *Xenocatantops karnyi*, Jago, *Trans. Am. ent. Soc.*, 108(3) : 454.
 2000. *Xenocatantops karnyi*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 62.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh (Bastar), Delhi, Himachal Pradesh, Maharashtra, Orissa, Tamil Nadu, Tripura, Uttarakhand and Uttar Pradesh.

Elsewhere : Nepal.

Subfamily COPTACRIDINAE

Genus *Coptacra* Stål, 187315. *Coptacra punctoria* (Walker, 1870)

1870. *Acridium punctarium* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 639.
 1929. *Coptacra punctaria* : Uvarov, *Revue suisse Zool.*, 36 : 561.
 1976. *Coptacra punctaria*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 9.
 2000. *Coptacra punctaria*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 56.

Material examined : Chhattisgarh, Bilaspur, AWLS : Atariya, 17.vi.2004 (1 ♀,DC), 27.vi.2004 (1 ♀,DC); Gandelwa pani, 27.vi.2004 (1 ♀,NC); Sarasdol, 23.vii.2004 (1 ♀,DC); Mendi sarai, 14.v.2005 (2 ♀,DC); Jhandi dongri, 17.v.2005 (1 ♀,DC); Jalda, 15.vii.2005 (1 ♀,DC); Maikumath, 20.vii.2005 (1 ♀,DC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Dongragaon, 27.xi.2001 (1 ♀); Mahadev ghat, 29.xi.2001 (1 ♀) coll. K. Chandra.

Distribution : India : Andhra Pradesh, Chhattisgarh (Bastar, Bilaspur), Kerala, Madhya Pradesh (Chhindwara and Hoshangabad) and Tamil Nadu.

Genus *Eucoptacra* Bolivar, 190216. *Eucoptacra praemorsa* (Walker, 1870)

1870. *Acridium saturatum* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 628.

1921b. *Eucoptacra saturata* : Uvarov, *Ann. Mag. nat. Hist.*, 7(9) : 503.

1976. *Eucoptacra saturata*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 10.

1990. *Eucoptacra saturata*, Shishodia & Mandal, *Rec. zool. Surv. India*, 87(1) : 72.

2000. *Eucoptacra saturata*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 57.

Material examined : Chhattisgarh, Bilaspur, AWLS : Atariya, 17.vi.2004 (2 ♀,DC); Chhirahata, 29.vi.2004 (1 ♀,DC); Katami, 22.vii.2004 (1 ♀,DC), 17.vii.2005 (2 ♀,DC); Chhaparwa, 15.vii.2005 (1 ♀,NC); Sarasdol, 18.vii.2005 (1 ♀,DC); Maikumath, 20.vii.2005 (3 ♀,DC); Bindaval, 24.vii.2005 (2 ♀,DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Chandrapur, 07.xi.2001 (1 ♀) coll. M.L. Koshta & party; Chhindimatta, 24.xii.2001 (1 ♀) coll. K. Chandra; Chhindwara : Mahadev ghat, 29.xi.2001 (1 ♀) coll. K. Chandra.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Chhattisgarh (Bastar, Bilaspur), Himachal Pradesh, Madhya Pradesh (Chhindwara, Damoh, Hoshangabad, Shivpuri and Umaria), Maharashtra, Manipur, Meghalaya, Orissa, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : China; Myanmar and Taiwan.

Subfamily CYRTACANTHACRIDINAE

Genus *Chondracris* Uvarov, 192317. *Chondracris rosea* (De Geer, 1773)

1773. *Acrydium roseum* De Geer, *Mem. Ins.*, 3 : 488.
 1923. *Chondracris rosea*, Uvarov, *Bull. Ent. Res.*, 14 : 39.
 1986. *Chondracris rosea*, Shishodia & Hazra, *Rec. zool. Surv. India*, 84(1-4) : 220.

Material examined : Recorded from literature (Shishodia & Hazra, 1986).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Goa, Himachal Pradesh, Kerala, Madhya Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; Bhutan; China; Hainan; Indonesia; Japan; Java; Korea; Manchuria; Myanmar; Philippines; Taiwan; Thailand and Vietnam.

Genus *Cyrtacanthacris* Walker, 1870

18. *Cyrtacanthacris tatarica* (Linnaeus, 1758)

1758. *Gryllus locusta tataricus* Linnaeus, *Syst. Nat.* (10th ed.). : 432.
1923. *Cyrtacanthacris tatarica* : Uvarov, *Bull. Ent. Res.*, **14** : 39.
1976. *Cyrtacanthacris tatarica*, Tandon, *Rec. zool. Surv. India*, Occ. Pap. No. **3** : 21.
2000. *Cyrtacanthacris tatarica*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 58.

Material examined : Madhya Pradesh, Seoni, PTR : Barelipar, 11.vii.2001 (2♂); Chhindimatta, 21.vii.2001 (1♂, 1♀) coll. R.K. Singh & party.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Chhindwara, Damoh and Seoni), Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Africa; Bangladesh; Central America; Hainan; Indonesia; Madagascar; Mediterranean Region; Myanmar; Nepal; Pakistan; Philippines; Red-Sea; Sahara; Saudi Arabia; Seychelles; Sri Lanka; South West Asia; Sumatra and Thailand.

Genus *Pachyacris* Uvarov, 1923

19. *Pachyacris vinosa* (Walker, 1870)

1870. *Acridium vinosum* Walker, *Cat. Derm. Salt. Brit. Mus.*, **3** : 588.
1914. *Orthacanthacris vinosa*, Kirby, *Fauna Brit. India, Orth.*, : 228.
1923. *Pachyacris vinosa* : Uvarov, *Ann. Mag. nat. Hist.*, **11**(9) : 478.
1976. *Pachyacris vinosa*, Tandon, *Rec. zool. Surv. India*, Occ. Pap. No. **3** : 22.
2000. *Pachyacris vinosa*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 57.

Material examined : Chhattisgarh, Bilaspur, AWLS : Katami, 17.vii.2005 (1♂, DC) coll. A. Singh & party.

Distribution : India : Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Goa, Himachal Pradesh, Karnataka, Madhya Pradesh (Damoh, Hoshangabad and Panna), Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Tripura, Uttarakhand and West Bengal.

Elsewhere : China; Myanmar; Nepal; Thailand and Tongking.

Genus *Patanga* Uvarov, 1923

20. *Patanga succincta* (Johansson, 1763)

1763. *Gryllus Locusta succinctus* Johansson, *Amoen. Acad.*, **4** : 398.
1923. *Patanga succincta*, Uvarov, *Ann. Mag. nat. Hist.*, **12**(9) : 364.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Kerala, Lakshadweep Island, Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Australia; Borneo; China; Hainan Island; Japan; Java; Malaysia; Myanmar; Pakistan; Philippines; South Arabia; Sri Lanka; South East Asia; Sumatra and Taiwan.

Genus *Schistocerca*, Stål, 1873

21. *Schistocerca gregaria* (Forskål, 1775)

1775. *Gryllus gregarius* Forskål, *Descript. Anim. Ins.*, : 81.
1907. *Schistocerca gregaria*, Krauss, *Akad. Wiss. Wien. Vienna*, **71**(2) : 12.

Material examined : Recorded from literature (Joshi *et al.*, 2004).

Distribution : India : Assam, Bihar, Delhi, Gujarat, Haryana, Jammu & Kashmir, Madhya Pradesh (Mandla), Maharashtra, Punjab, Rajasthan, Sikkim and Uttar Pradesh.

Elsewhere : Africa; Mediterranean Region; Nepal; Pakistan; Sri Lanka; South Europe; South & Central America and Western Asia.

Subfamily EYEPREPOCNEMIDINAE

Genus *Cataloipus* Bolivar, 1890

22. *Cataloipus cognatus* (Walker, 1870)

1870. *Heteracris elegans*, Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 662-663.
 1914. *Heteracris elegans* : Kirby, *Fauna Brit. India, Orth.*, : 264.
 1921. *Cataloipus cognatus* : Uvarov, *Trans. Ent. Soc. Lond.*, : 144.
 1976. *Cataloipus cognatus* : Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 12.

Material examined : Chhattisgarh, Bilaspur, AWLS : Kevachi, 22.vi.2004 (1♂,NC); Jalda, 21.vii.2004 (1♀, DC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Khamarpani, 28.viii.2001 (2♀); Totladoh, 05.xi.2001 (3♀); River side, 07.xi.2001 (1♀) coll. Y.N. Gupta & party; Puntara, 16.xi.2001 (2♀); Ghatpendrai, 19.xi.2001 (1♀) coll. S.K. Mishra & party.

Distribution : India : Chhattisgarh (Bilaspur), Madhya Pradesh (Chhindwara and Seoni) and North India.

Genus *Choroedocus* Bolivar 1914

23. *Choroedocus illustris* (Walker, 1870)

1870. *Heteracris illustris* Walker, *Cat. Derm. Salt. Br. Mus.*, 4 : 662, 663.
 1921. *Choroedocus illustris* : Uvarov, *Trans. ent. Soc. Lond.*, 69 : 109.

Material examined : Madhya Pradesh, Shahdol, AABR : Yamuna dadar, 07.xi.07(1♂,DC).

Distribution : India : Andhra Pradesh, Himachal Pradesh, Madhya Pradesh (Hoshangabad and Shahdol), Maharashtra, Tamil Nadu and Uttarakhand.

Genus *Eyrepocnemis* Fieber, 1853

24. *Eyrepocnemis alacris alacris* (Serville, 1839)

1839. *Acridium alacre* Serville, *Hist. nat. Ins. Orth.*, : 682.
 1958. *Eyrepocnemis alacris alacris*, Dirsh, *Proc. R. Ent. Soc. Lond.*, (B) 27(3-4) : 40.

2000. *Eyrepocnemis alacris alacris*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 60.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh, Manipur, Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal. *Elsewhere* : Afghanistan; Bangladesh; Iran; Iraq; Pakistan and Sri Lanka.

25. *Eyrepocnemis rosea* Uvarov, 1942

1942. *Eyrepocnemis rosea* Uvarov, *Ann. Mag. nat. Hist.*, 9(11) : 597.
 1958. *Eyrepocnemis rosea*, Uvarov, *Proc. R. ent. Soc. Lond.*, (B)27 : 34.
 1983. *Eyrepocnemis rosea*, Bhowmik & Halder, *Rec. zool. Surv. India*, 81 : 185.
 1999. *Eyrepocnemis rosea*, Shishodia, *Rec. zool. Surv. India*, 97(4) : 40-42.

Material examined : Chhattisgarh, Bilaspur, AWLS : Atariya, 17.vi.2004 (2♂,DC), 18.vi.2004 (1♂,DC); Marvahi forest, 20.vi.2004 (1♂,2♀,DC); Chhaparwa, 16.v.2005 (1♀,DC) coll. A. Singh & party.

Distribution : India : Andhra Pradesh, Chhattisgarh (Bilaspur), Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh (Chhindwara, Mandla and Seoni), Meghalaya, Uttarakhand and Uttar Pradesh. *Elsewhere* : Bangladesh; Myanmar; Pakistan and Thailand.

Genus *Tylotropidius* Stål, 1860

26. *Tylotropidius varicornis* (Walker, 1870)

1870. *Heteracris varicornis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 667.
 1914. *Tylotropidius varicornis* : Kirby, *Fauna Brit. India, Orth.*, : 265.
 1976. *Tylotropidius varicornis*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 14.
 2000. *Tylotropidius varicornis*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 60.

Material examined : Chhattisgarh, Bilaspur, AWLS : Lamni, 07.v.2005 (1♂, 1♀, DC) coll. A. Singh & party.

Distribution : India : Andhra Pradesh, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Damoh, Hoshangabad, Panna, Rajpur and Shivpuri), Maharashtra, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand and West Bengal.

Elsewhere : Myanmar and Sri Lanka.

Subfamily GOMPHOCERINAE

Genus *Aulacobothrus* Bolivar, 1902 : 597

27. *Aulacobothrus decisus* (Walker, 1871)

1871. *Stenobothrus decisus* Walker, *Cat. Derm. Salt. Br. Mus.*, 5 : 80.
 1921. *Aulacobothrus decisus* : Uvarov, *Ann. Mag. Nat. Hist.*, 7(9): 482.
 1985. *Dnopherula (Aulacobothrus) decisus* : Bhowmik, *Rec. zool., Surv., India, Occ. Paper*, No. 78 : 21.

Material examined : Hoshangabad : Pachmarhi Nermuda survey, 15.xii.1927 (1ex.) coll. B. Uvarov.

Distribution : India : Arunachal Pradesh, Madhya Pradesh (Hoshangabad), Maharashtra, Tamil Nadu and West Bengal.

28. *Aulacobothrus luteipes* (Walker, 1871)

1871. *Stenobothrus luteipes* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 : 82.
 1971. *Dnopherula (Aulacobothrus) luteipes*, Jago, *Proc. Acad. Sci. nat. Philad.*, 123(8) : 243.
 2000. *Dnopherula (Aulacobothrus) luteipes*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 45.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh (Hoshangabad), Maharashtra, Orissa, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand, West Bengal.

Elsewhere : Baltistan; Bangladesh; China;

Europe; Japan; Myanmar; North America; Pakistan; Sri Lanka; Taiwan and Thailand.

29. *Aulacobothrus strictus* (Bolivar, 1902)

1902. *Aulacobothrus strictus* Bolivar, *Annl. Soc. ent. Fr.*, 70 : 598.
 1914. *Aulacobothrus strictus*, Kirby, *Fauna Brit. India, Orth.*, : 124.
 1971. *Dnopherula (Aulacobothrus) strictus*, Jago, *Proc. Acad. Sci. nat. Philad.*, 123(8) : 247.
 1976. *Dnopherula (Aulacobothrus) strictus*, Tandon *et. al.*, *Newsl. zool. Surv. India*, 2(4) : 169.
 1995. *Dnopherula (Aulacobothrus) strictus*, Tandon *et. al.*, *Fauna of Kanha Tiger Reserve, Fauna of Conservation Areas*, 7 : 23. *Zool. Surv. India*.

Material examined : Recorded from literature (Tandon *et al.* 1976, 1995).

Distribution : India : Madhya Pradesh (Mandla, Pharissamer Hills) and Tamil Nadu.

Elsewhere : Nepal.

Genus *Capulica* Bolivar, 1918

30. *Capulica alata* Uvarov, 1929

1929. *Capulica alata* Uvarov, *Revue Suisse Zool.*, 36 : 540.
 1988. *Capulica alata*, Shishodia, *Rec. zool. Surv. India*, 85(3) : 465.

Material examined : Recorded from literature (Shishodia, 1988).

Distribution : India : Karnataka and Madhya Pradesh (Amarkantak).

Genus *Gelastorhinus* Brunner, 1903

Gelastorhinus Burr, 1902 : 154, 180.

Subsequent misspelling (Correct spelling is *Gelastorhinus*)

31. *Gelastorhinus laticornis* (Serville, 1839)

1839. *Opomala laticornis* Serville, *Ins. Orth.*, : 590.
 1910. *Gelastorhinus laticornis*, Kirby, A Synonymic Catalogue of Orthoptera (Orthoptera Saltatoria, Locustidae vel Acridiidae) 3(2) : 409.

Material examined : Chhattisgarh, Bilaspur, AWLS : Jhandi dongri, 23.vii.2005 (1♂, DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Khapa, 11.xi.2001 (1♂) coll. M.L. Koshta & party;

Toyayar, 13.xii.2001 (1 ♀); Dudhiya, 14.xii.2001 (1 ♀); Chhindimatta, 24.xii.2001 (1 ♀) coll. K. Chandra.

Distribution : India : Chhattisgarh (Bilaspur), Madhya Pradesh (Chhindwara, Hoshangabad, Seoni and Shivpuri), Maharashtra and West Bengal.

Elsewhere : Africa.

Genus *Leva* Bolivar, 1909

32. *Leva indica* (Bolivar, 1902)

1902. *Gymnbothrus indicus* Bolivar, *Annl. Soc. Ent. Fr.*, **70** : 596.
 1914. *Leva cruciata* Bolivar, *Trab. Mus. Cienc. nat. Madr.*, **20** : 65.
 1918. *Leva indica* Bolivar, *Revista R. Acad. Cienc. exact.* **16** : 379.
 1996. *Leva indica* Jago, *Jour. Orth. Res.* **5** : 94.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 04.vi.2004 (1 ♂,DC); Matinala, 10.v.2005 (1 ♀,NC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Totladoh, 20.viii.2001 (4 ♂); 30.viii.2001 (1 ♂); Thota, 28.xi.2001 (1 ♂) coll. Y.N. Gupta & party.

Distribution : India : Andhra Pradesh, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Madhya Pradesh (Chhindwara, Hoshangabad and Seoni), Orissa, Rajasthan, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Sri Lanka.

Genus *Mesopsis* Bolivar, 1906

33. *Mesopsis cylindricus* (Kirby, 1914)

1914. *Aswathamanus cylindricus*, Kirby, *Fauna Brit. India, Orth.*, : 124.
 1921. *Mesopsis cylindricus*, Uvarov, *Ann. Mag. Nat. Hist.*, **7(9)** : 482.
 1976. *Mesopsis cylindricus*, Tandon *et al.*, *Newsl. zool. Surv. India*, **2(4)** : 169.
 1995. *Mesopsis cylindricus*, Tandon *et al.*, *Fauna of Kanha Tiger Reserve, Fauna of Conservation Areas*, **7** : 23. *Zool. Surv. India*.

Material examined : Recorded from literature (Tandon *et al.*, 1976, 1995).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Himachal Pradesh, Madhya Pradesh (Mandla), Orissa, Punjab, Sikkim and West Bengal.

Subfamily HEMIACRIDINAE

Genus *Clonacris* Uvarov, 1943

Euthymia Stål, 1875

34. *Clonacris kirbyi* (Finot, 1903)

1903. *Euthymia kirbyi* Finot, *Annl. Soc. ent. Fr.*, **71** : 622-629.
 1914. *Euthymia kirbyi*, Kirby, *Fauna Brit. India, Orth.*, : 196.
 1976. *Clonacris kirbyi*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 3.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 04.vi.2004 (1 ♂,DC); 06.vi.2004 (1 ♂,NC); 07.vi.2004 (1 ♂,DC); 10.vi.2004 (1 ♂,NC); 11.vi.2004 (2 ♂,NC); Bindaval, 19.vii.2004 (1 ♂,NC) coll. A. Singh & party.

Distribution : India : Chhattisgarh (Bilaspur), Karnataka, Madhya Pradesh (Seoni and Shivpuri), Tamil Nadu and Uttar Pradesh.

Genus *Gesonula* Uvarov, 1940

Gesononia Stål, 1878

35. *Gesonula punctifrons* (Stål, 1861)

1861. *Acridium (Oxya) punctifrons* Stål, *Zool. Ins.*, **10** : 336.
 1952. *Gesonula punctifrons* Mishchenko, *Fauna USSR.*, **4(2)** : 172.
 2000. *Gesonula punctifrons*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 53.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; Borneo; China; Hainan; Japan; Java; Kalimantan; Malacca; Myanmar; North Vietnam; Philippines; Sri Lanka; Taiwan; Thailand and Tongking.

Genus *Hieroglyphus* Krauss, 187736. *Hieroglyphus annulicornis* (Shiraki, 1910)

1910. *Oxya annulicornis* Shiraki, *Acriden, Japans Tokyo*, 4 : 53,57.

1976. *Hieroglyphus annulicornis*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 4.

Material examined : Recorded from literature (Mason, 1973).

Distribution : India : Bihar, Chhattisgarh (Raipur).

Elsewhere : China; Hainan; Hong-Kong; Japan; Taiwan and Thailand.

37. *Hieroglyphus banian* (Fabricius, 1798)

1798. *Gryllus banian* Fabricius, *Ent. Syst., Suppl.* : 194.

1914. *Hieroglyphus banian*, Kirby, *Fauna Brit. India, Orth.*, : 204.

1973. *Hieroglyphus banian*, Mason, *Bull. Brit. Mus. nat. Hist. (Ent.)*, 28(7) : 541.

Material examined : Madhya Pradesh, Chhindwara, PTR : Pindari, 29.viii.2001 (1 ♀) coll. Y.N. Gupta & party; Totladoh, 16.ix.2001 (3 ♂) coll. S.K. Mishra & party.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bilaspur), Himachal Pradesh, Karnataka, Madhya Pradesh (Chhindwara, Jabalpur and Seoni), Maharashtra, Manipur, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Bhutan; China; Myanmar; Nepal; Thailand and Vietnam.

38. *Hieroglyphus concolor* (Walker, 1870)

1870. *Oxya concolor* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 646.

1973. *Hieroglyphus concolor*, Mason, *Bull. Brit. Mus. Nat. Hist. (Ent.)*, 28(7) : 521.

Material examined : Recorded from literature (Chandra *et al.*, 2007, Shishodia, 2008).

Distribution : India : Assam, Delhi, Himachal Pradesh, Karnataka, Madhya Pradesh (Jabalpur), Maharashtra and Sikkim.

Elsewhere : Bangladesh and China.

39. *Hieroglyphus nigrorepletus* Bolivar, 1912

1912. *Hieroglyphus nigrorepletus*, Bolivar, *Trab. Mus. Nac. Cienc. Nat. Madr.*, 6 : 56.

1973. *Hieroglyphus nigrorepletus*, Mason, *Bull. Brit. Mus. nat. Hist. (Ent.)*, 28(7) : 521.

Material examined : Recorded from literature (Joshi *et al.*, 2004).

Distribution : India : Andhra Pradesh, Assam, Bihar, Delhi, Jammu & Kashmir, Karnataka, Madhya Pradesh (Mandla), Maharashtra, Orissa, Punjab, Rajasthan, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh and Pakistan.

40. *Hieroglyphus oryzivorus* Carl, 1916

1916. *Hieroglyphus oryzivorus*, *Revue suisse Zool.*, 24 : 480.

1973. *Hieroglyphus oryzivorus*, Mason, *Bull. Brit. Mus. Nat. Hist. (Ent.)*, 28(7) : 534.

Material examined : Recorded from literature (Mason, 1973).

Distribution : India : Andhra Pradesh, Chhattisgarh (Bilaspur and Raipur), Gujarat, Himachal Pradesh, Maharashtra, Orissa, Rajasthan and West Bengal.

Elsewhere : Pakistan.

Genus *Parahieroglyphus* Carl, 191641. *Parahieroglyphus bilineatus* (Bolivar, 1912)

1912. *Hieroceryx bilineatus* Bolivar, *Trab. Mus. nac. Cienc. Nat. Madr. (Ser. Zool.)* : 60.

1916. *Parahieroglyphus bilineatus*, Carl, *Revue suisse Zool.*, 24 : 483.

Material examined : Recorded from literature (Shishodia, 1999).

Distribution : India : Himachal Pradesh, Madhya Pradesh (Chhindwara), Maharashtra, Uttarakhand and West Bengal.

Elsewhere : Bangladesh.

Subfamily OEDIPODINAE

Genus *Acrotylus* Fieber, 185342. *Acrotylus humberianus* Saussure, 1884

1884. *Acrotylus humberianus* Saussure, *Mem. Soc. Phys. Hist. nat. Geneva*, 28(9) : 189.

1914. *Acrotylus humberianus* : Kirby, *Fauna Brit. India, Orth.*, : 153.
 1927. *Acrotylus humberianus*, Uvarov, *Rec. Indian Mus.*, 29(4) : 235.
 2000. *Acrotylus humberianus*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 49.

Material examined : Chhattisgarh, Bilaspur, AWLS : Atariya, 18.v.2005 (1 ♂, 1 ♀, DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Alikata, 07.vii.2001 (1 ♀) coll. R.K. Singh & party.

Distribution : India : Andhra Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Haryana, Himachal Pradesh, Lakshadweep Islands, Madhya Pradesh (Katni, Shahdol, Seoni and Umariya), Maharashtra, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Nepal; Pakistan and Sri Lanka.

Genus *Aiolopus* Fieber, 1853

43. *Aiolopus thalassinus tamulus* (Fabricius, 1798)

1798. *Gryllus tamulus* Fabricius, *Ent. Sys. Suppl.*, : 195.
 1838. *Gomphocerus tricoloripes* Burmeister, *Handb. Ent.*, 2 : 649.
 1888. *Epacromia rufostriatus* Kirby, *Proc. zool. Soc. Lond.*, : 550.
 1914. *Aiolopus tamulus*, Kirby, *Fauna Brit. India, Orth.*, : 121.
 1968. *Aiolopus thalassinus tamulus* : Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, 22(7) : 347-350.
 2000. *Aiolopus thalassinus tamulus*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 49.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 04.vi.2004 (2 ♀, DC), 05.vi.2004 (1 ♀, NC), 10.vi.2004 (1 ♂, 1 ♀, NC), 11.vi.2004 (1 ♀, DC); Atariya, 17.vi.2004 (1 ♀, DC), 18.v.2005 (1 ♂, 1 ♀, DC); Lamni, 01.vii.2004 (1 ♀, DC), 09.v.2005 (1 ♂, NC), 13.v.2005 (1 ♀, DC); Jhandi dongri, 08.v.2005 (1 ♂, DC); Rakshasakh, 10.v.2005 (1 ♂, DC); Matinala, 10.v.2005 (2 ♂, 1 ♀, NC); Jalda, 12.v.2005 (2 ♀, DC), 15.vii.2005 (1 ♀, DC); Tilai dabra, 15.v.2005 (1 ♂, DC); Bindaval, 16.vii.2005 (1 ♀, DC); Katami,

17.vii.2005 (2 ♂, 4 ♀, DC); Sarasdol, 18.vii.2005 (2 ♂, DC); Achanakmar, 22.vii.2005 (1 ♂, 2 ♀, DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Karmajhiri, 12.vi.2001 (1 ♀), 27.vi.2001 (1 ♀, NC), 04.vii.2001 (2 ♀) coll. K. Chandra; 09.vii.2001 (1 ♀) coll. R.K. Singh & party; Chandrapur road, 10.xi.2001 (2 ♂, 4 ♀) coll. M. L. Koshta & party; Chhindimatta, 18.xii.2001 (1 ♀) coll. K. Chandra & party; Chhindwara: Totladoh, 28.viii.2001 (1 ♀), 07.ix.2001 (1 ♀); Gumtara, 27.viii.2001 (2 ♀) coll. Y.N. Gupta & party; Sitaghat, 25.xi.2001 (1 ♂, 1 ♀); Chhindwani, 26.ii.2001 (1 ♂); Dongragaon, 27.xi.2001 (1 ♂, DC); Thota, 28.ii.2001 (1 ♂, 1 ♀, DC); Banskhedra, 28.xi.2001 (1 ♂, NC) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Haryana, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Damoh, Hoshangabad, Mandla, Panna, Rewa, Seoni, Shivpuri and Umariya), Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Australia; Bangladesh; Borneo; Brunei; Celebes; China; Hainan; Hong Kong; Indonesia; Japan; Java; Lombok; Malaysia; Myanmar; New Guinea; Pakistan; Papua; Philippines; Singapore; Sri Lanka; Sumatra; Taiwan; Thailand and Timor.

Genus *Chondronotulus* Uvarov, 1956

44. *Chondronotulus bengalensis* (Saussure, 1888)

1888. *Sphingonotus bengalensis* Saussure, *Mem. Soc. Phys. Hist. nat. Geneve*, 30(1) : 77, 88.
 1914. *Sphingonotus bengalensis*, Kirby, *Fauna Brit. India, Orth.*, : 154.
 1956. *Chondronotulus bengalensis*, Uvarov, *Ent. Mag.*, 92 : 218.

Material examined : Recorded from literature (Bhowmik, 1985).

Distribution : India : Madhya Pradesh (Jabalpur), Maharashtra and West Bengal.

Genus *Chloebora* Saussure, 188445. *Chloebora crassa* (Walker, 1870)

1888. *Chloebora crassa*, Saussure, *Mem. Soc. Geneve*, **40**(1) : 33.
1914. *Chloebora crassa* : Kirby, *Fauna Brit. India, Orth.*, : 131.

Material examined : Chhattisgarh, Bilaspur, AWLS : Tilai dabra, 25.vii.04 (1 ♀, DC).

Distribution: India : Chhattisgarh (Bilaspur), Madhya Pradesh (Hoshangabad) Maharashtra and Tamil Nadu.

Genus *Dittopternis* Saussure, 188446. *Dittopternis venusta* (Walker, 1870)

1870. *Oedipoda venusta* Walker, *Cat. Derm. Salt. Brit. Mus.*, **4** : 740.
1888. *Dittopternis venusta*, Saussure, *Mem. Soc. Phys. nat. Hist. Geneva*, **30**(1) : 40.
1914. *Dittopternis venusta* : Kirby, *Fauna Brit. India, Orth.*, : 140.
2000. *Dittopternis venusta*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 50.

Material examined : Madhya Pradesh, Seoni, PTR : Chhindimatta, 09.vi.2001 (1 ♀); Muner pench, 11.vi.2001 (1 ♀) coll. K. Chandra.

Distribution : India : Andhra Pradesh, Chhattisgarh (Bastar and Bilaspur), Karnataka, Madhya Pradesh (Hoshangabad, Mandla, Rewa, Shahdol and Seoni), Manipur, Meghalaya, Orissa, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Sri Lanka.

Genus *Gastrimargus* Saussure, 188447. *Gastrimargus africanus africanus* (Saussure, 1888)

1888. *Oedaleus (Gastrimargus) marmoratus* var. *africanus* Saussure, *Mem. Soc. Phys. nat. Hist. Geneva*, **30**(1) : 39.
1910. *Gastrimargus africanus* : Kirby, *Syn. Cat. Orth.*, **3** : 227.
1928. *Gastrimargus africanus* var. *zebrata* Sjostedt, *Svenska Akad. Handl.*, **6** (3) No. 1 : 41.
1982. *Gastrimargus africanus africanus*, Ritchie, *Bull. Br. Mus. nat. Hist. (Ent.)*, **44**(4) : 248.

1999. *Gastrimargus africanus africanus*, Shishodia, *Rec. zool. Surv. India*, **97**(4) : 38.

2000. *Gastrimargus africanus africanus*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 51.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 10.vi.2001 (1 ♂, 1 ♀), 12.vi.2001 (1 ♂), 16.vi.2001 (4 ♂, 3 ♀), 17.vi.2001 (1 ♀, NC); 18.vi.2001 (1 ♀), 20.vi.2001 (4 ♀), 04.vii.2001 (1 ♀) coll. K. Chandra; 30.vii.2001 (1 ♀) coll. M. L. Koshta & party; Ghatkohka, 22.vi.2001 (1 ♂); Turia, 23.vi.2001 (1 ♀); Alikata, 07.vii.2001 (2 ♂, 1 ♀), 20.vii.2001 (1 ♀, DC); Baghdev, 15.vii.2001 (1 ♂) coll. R.K. Singh & party; Chhindimatta, 25.vii.2001 (1 ♀, DC) coll. M.L. Koshta & party, 18.xii.2001 (1 ♂); Dudhiya, 08.ii.2001 (2 ♂), coll. M.L. Koshta & party, 14.xii.2001 (3 ♂) coll. K. Chandra & party; Toyayar, 13.xii.2001 (3 ♂, 1 ♀); coll. K. Chandra; Chhindwara : Ghatpendrai, 12.viii.2001 (1 ♀); Totladoh, 19.viii.2001 (2 ♀), 25.viii.2001 (1 ♀), 16.ix.2001 (1 ♀); Gumtara, 20.viii.2001 (1 ♀) coll. Y.N. Gupta & party; Samarbah bichhuva, 11.ix.2001 (1 ♂); Dudhgaon, 19.ix.2001 (2 ♀, DC); Shankar van, 27.ix.2001 (1 ♂) coll. S.K. Mishra & party; Dongragaon, 27.ii.2001 (1 ♂, 1 ♀, DC); Mahadev ghat, 29.xi.2001 (2 ♂, 1 ♀) coll. K. Chandra & party.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh (Chhindwara, Damoh, Hoshangabad, Mandla, Panna, Shahdol, Seoni, Shivpuri, Sidhi and Umaria), Maharashtra, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Africa; Myanmar; Nepal; Pakistan; Saudi Arabia; Sri Lanka; Thailand; Tibet and Yemen.

48. *Gastrimargus marmoratus* (Thunberg, 1815)

1815. *Gryllus marmoratus* Thunberg, *Mem. Acad. Sci. St. Petersb.*, **5** : 232.
1982. *Gastrimargus marmoratus*, Ritchie, *Bull. Br. Mus. nat. Hist. (Ent.)*, **44**(4) : 262.

Material examined : Recorded from literature (Joshi *et al.*, 2004, Shishodia, 2006).

Distribution : India : Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Karnataka, Madhya Pradesh (Mandla, Shahdol and Sidhi), Maharashtra, Meghalaya, Nagaland, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh; Borneo; Celebes; China; Hong Kong, Japan; Java; Korea; Lombok; Malayasia; Myanmar; Nepal; New Guinea; Philippines; Sulawesi; Sumatra; Taiwan; Thailand and Vietnam.

Genus *Heteropternis* Stål 1873

49. *Heteropternis respondens* (Walker, 1859)

1859. *Acridium respondens* Walker, *Ann. Mag. Nat. Hist.*, 4(3) : 223.

1968. *Heteropternis respondens* Bei-Bienko, *Rev. Ent. Ussr.*, 47 : 125.

Material examined : Chhattisgarh, Bilaspur, AWLS : Jalda, 12.v.05 (1♀,DC); Achanakmar, 22.vii.05 (1♀,DC); Madhya Pradesh, Shahdol, AABR : Yamuna dadar, 07.xi.07 (1♀,DC).

Distribution : India : Arunachal Pradesh, Bihar, Chhattisgarh (Bilaspur), Madhya Pradesh (Shahdol), Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : China, Dubong, Indonesia, Java, Kameng, Malacca, Malayasia, Myanmar, Nepal, Niligiri, Philippines, Sri Lanka, Sumatra and Thailand.

Genus *Morphacris* Walker, 1870

50. *Morphacris fasciata sulcata* (Thunberg, 1815)

1815. *Gryllus fasciatus* Thunberg, *Mem. Acad. Sci. St. Petersb.*, 5 : 230.

1839. *Oedipoda strigata* Serville, *Ins. Orth.*, 7 : 726.

1863. *Oedipoda venusta* Fieber, *Lotos*, 3 : 123.

1870. *Morphacris adusta* Walker, *Cat. Derm. Salt. Brit. Mus.*, 4 : 790

1910. *Morphacris citrina* Kirby, *Syst. Cat. Orth.*, 3(4) : 219.

1914. *Morphacris citrina* Kirby, *Fauna Brit. India, Orth.*, : 137.

1921. *Morphacris fasciata sulcata* Uvarov, *Ann. Mag. nat. Hist.*, 7(9) : 488-489.

2000. *Morphacris fasciata sulcata*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 50.

Material examined : Madhya Pradesh, Seoni, PTR : Tikari, 24.iii.2001 (1♀) coll. M.L. Koshta & party; Kohka, 10.vi.2001 (1♀) Turia; 23.vi.2001 (1♀); Awandhani, 23.viii.2001 (1♂); Chhindimatta, 18.xii.2001 (1♀) coll. K. Chandra; Chhindwara : Totladoh, 30.viii.2001 (1♂) coll. Y.N. Gupta & party; Chhindwani, 26.xi.2001 (1♂); Ambamai nala, 27.xi.2001 (1♂,2♀) coll. K. Chandra.

Distribution : India : Andhra Pradesh, Bihar, Chhattisgarh (Bastar and Bilaspur), Goa, Gujarat, Kerala, Lakshadweep Island, Madhya Pradesh (Hoshangabad, Jabalpur, Mandla and Seoni), Maharashtra, Orissa, Tamil Nadu and West Bengal.

Elsewhere : Africa; Madagascar, South & West Asia and Sri Lanka.

Genus *Oedaleus* Fieber, 1853

51. *Oedaleus abruptus* (Thunberg, 1815)

1815. *Gryllus abruptus* Thunberg, *Mem. Acad. Sci. St. Peterb.*, 5 : 233.

1884. *Oedaleus abruptus*, Saussure, *Mem. Soc. Phys. Hist. nat. Geneve*, 28(1) : 110, 117.

1981. *Oedaleus abruptus*, Ritchie, *Bull. Br. Mus. nat. Hist. (Ent.)*, 42(3) : 104.

Material examined : Recorded from literature (Tandon *et al.*, 1976, 1995, Roonwal, 1981, Shishodia, 1999, 2000, 2006).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Chhindwara, Hoshangabad, Mandla, Shahdol, Seoni and Sidhi), Maharashtra, Manipur, Meghalaya, Orissa, Pondicherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; China; Indo-China; Myanmar; Nepal; Pakistan; Sri Lanka; Taiwan; Thailand and Vietnam.

52. *Oedaleus senegalensis* (Krauss, 1877)

1877. *Pachytylus senegalensis* Krauss, *Sber. Akad. Wiss. Wien.*, 76(1) : 56.

1914. *Oedaleus senegalensis*, Kirby, *Fauna Brit. India. Orth.*, : 143.

1981. *Oedaleus senegalensis*, Ritchie, *Bull. Br. Mus. nat. Hist. (Ent.)* 42(3) : 94.

Material examined : Recorded from literature (Shishodia, 2006).

Distribution : India : Andhra Pradesh, Bihar, Delhi, Jammu & Kashmir, Madhya Pradesh (Sidhi), Punjab, Rajasthan, Tamil Nadu, Uttarakhand and West Bengal.

Elsewhere : Afghanistan; North Africa; Pakistan and Western U.S.S.R.

Genus *Pternoscirta* Saussure, 1884

53. *Pternoscirta bimaculata* (Thunberg, 1815)

1815. *Gryllus bimaculatus* Thunberg, *Mem. Acad. Petersb.* 5 : 239.

1914. *Pternoscirta bimaculata*, Kirby, *Fauna Brit. India. Orth.*, : 136.

Material examined : Recorded from literature (Shishodia, 2006).

Distribution : India : Andhra Pradesh, Bihar, Madhya Pradesh (Shahdol), Nagaland and West Bengal.

Elsewhere : Sri Lanka.

54. *Pternoscirta cinctifemur* (Walker, 1859)

1859. *Acridium cinctifemur* Walker, *Ann. Mag. Nat. Hist.*, 4(3) : 223.

1914. *Pternoscirta cinctifemur*, Kirby, *Fauna Brit. India. Orth.*, : 134.

Material examined : Recorded from literature (Chandra *et al.*, 2007).

Distribution : India : Arunachal Pradesh, Assam, Goa, Kerala, Madhya Pradesh (Hoshangabad and Seoni), Manipur, Meghalaya, Orissa, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Eastern Nepal and Sri Lanka.

Genus *Trilophidia* Stål, 1873

55. *Trilophidia annulata* (Thunberg, 1815)

1815. *Gryllus annulatus* Thunberg, *Mem. Acad. Sci. St. Petersb.*, 5 : 234.

1914. *Trilophidia annulata*, Kirby, *Fauna Brit. India. Orth.*, : 149.

1965. *Trilophidia annulata*, Hollis, *Trans. R. ent. Soc. Lond.*, 117(8) : 251.

1999. *Trilophidia annulata*, Shishodia, *Rec. zool. Surv. India*, 97(4) : 39.

2000. *Trilophidia annulata*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 52.

Material examined : Madhya Pradesh, Seoni, PTR : Pyarthodi, 13.vi.2001 (1 ♀); Karmajhiri, 20.vi.2001 (1 ♂), 24.vi.2001 (2 ♀) coll. K. Chandra; 31.vii.2001 (1 ♀) coll. M.L. Koshta & party; Alikata, 07.vii.2001 (1 ♂, NC) coll. R.K. Singh & party; Awandhani, 23.viii.2001 (1 ♀) coll. Y.N. Gupta & party; Chhindwara: Sawara village, 17.viii.2001 (1 ♂); Gumtara, 20.viii.2001 (1 ♀), 27.viii.2001 (1 ♂); Khamarpani, 28.viii.2001 (1 ♀); Totladoh, 02.ix.2001 (1 ♂) coll. Y.N. Gupta & party; Puntara, 16.ix.2001 (1 ♀); Ghatpendrai, 19.ix.2001 (1 ♂); Shankar van, 27.ix.2001 (1 ♀) coll. S.K. Mishra & party; Kumbh pani, 24.xi.2001 (1 ♀); Chhindwani, 26.xi.2001 (1 ♀); Mahadev ghat, 29.xi.2001 (1 ♂) coll. K. Chandra & party.

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Bhopal, Chhindwara, Mandla, Seoni, Shivpuri and Umaria), Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Borneo; China; Hong Kong; Japan; Java; Korea; Malaysia; Mongolia; Myanmar; Nepal; Pakistan; Philippines; Sarawak; Singapore; Sri Lanka; Sumatra; Taiwan; Thailand and Vietnam.

Subfamily OXYINAE

Genus *Oxya* Serville, 1831

56. *Oxya fuscovittata* (Marschall, 1836)

1836. *Gryllus fuscovittatus* Marschall, *Ann. Wien. Mus. Vienna*, 1(2) : 211.

1971. *Oxya fuscovittata*, Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, 26(7) : 289.

2000. *Oxya fuscovittata*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 55.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Nepal; Pakistan and USSR.

57. *Oxya hyla hyla* Serville, 1831

1831. *Oxya hyla* Serville, *Anns. Sci. nat.*, **22** : 287.

1871. *Oxya serrulata* Krauss, *Zool. jb. Syst.*, **5** : 662.

1925. *Oxya acuminata* Willemsse, *Tidjschr. Ent.*, **68** : 42.

1958. *Oxya viridivitta* (Walker) : Chopard, *Mem. Inst. Fr. Afr. noire.*, **53** : 128.

1971. *Oxya hyla hyla* : Hollis, *Bull. Brit. Mus. nat. Hist. (Ent.)*, **26**(7) : 282.

2000. *Oxya hyla hyla*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 55.

Material examined : Madhya Pradesh, Chhindwara, PTR : Chhindwani, 26.xi.2001(1 ♀) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Goa, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Chhinwara, Panna, Rewa, Seoni, Shivpuri and Umariya), Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Africa; Angola; Bangladesh; Cameroun; Chad; Congo; Central African Republic; Dahomey; Iran; Fernandopo; Gabon; Gambia; Ghana; Guinea; Ivory Coast; Kenya; Liberia; Madagascar; Maldive Island; Mali; Malawi; Nepal; Niger; Nigeria; Pakistan;

Rhodesia; Sao Thome; Senegal; Sierra Leone; Sudan; Sri Lanka; Tanzania; Uganda and Zambia.

58. *Oxya nitidula* (Walker, 1870)

1870. *Acridium nitidula* Walker, *Cat. Derm. Salt. Brit. Mus.*, **4** : 631.

1971. *Oxya nitidula*, Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, **26**(7) : 315.

2000. *Oxya nitidula*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 55.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution: India : Andhra Pradesh, Bihar, Chhattisgarh (Bastar), Goa, Karnataka, Kerala, Madhya Pradesh, Manipur, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Sri Lanka.

59. *Oxya velox* (Fabricius, 1787)

1787. *Gryllus velox* Fabricius, *Mantissa Insectorum*, **1** : 239.

1971. *Oxya velox*, Hollis, *Bull. Br. Mus. nat. Hist. (Ent.)*, **26**(7) : 297.

1988. *Oxya velox*, Tandon, *Rec. zool. Surv. India*, **85**(1) : 108.

Material examined : Recorded from literature (Shishodia, 2006).

Distribution : India : Andhra Pradesh, Arunachal Pradesh, Bihar, Assam, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh (Rewa), Manipur, Maharashtra, Meghalaya, Nagaland, Orissa, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Balistan; Bangladesh; China; Myanmar; Pakistan; Singapore; Sri Lanka and Thailand.

Subfamily SPATHOSTERNINAE

Genus *Spathosternum* Krauss, 1877

60. *Spathosternum prasiniferum prasiniferum* (Walker, 1871)

1871. *Heteracris prasinifera* Walker, *Cat. Derm. Salt. Brit. Mus.*, **5** : 65.

1914. *Spathosternum prasiniferum* : Kirby, *Fauna Brit. India, Orth.*, : 208.

1936. *Spathosternum prasiniferum prasiniferum* : Tinkham, *Lingn. Sci. J.*, **15** : 51.
1999. *Spathosternum prasiniferum prasiniferum*, Shishodia, *Rec. zool. Surv. India*, **97**(4) : 40.
2000. *Spathosternum prasiniferum prasiniferum*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 53.

Material examined : Madhya Pradesh, Seoni, PTR : Turia, 12.vii.2001 (1♂) coll. R.K. Singh; Karmajhiri, 30.vii.2001 (1♂) coll. M.L. Koshta; Gahra nala, 08.xi.2001 (2♂,DC); Dudhiya, 08.xi.2001 (1♂,NC) coll. M.L. Koshta & party; Boda nala, 15.xii.2001 (1♂), 21.xii.2001 (1♀), 23.xii.2001 (2♂); Alikata, 17.xii.2001 (1♀,DC); Sita ghat, 19.xii.2001 (1♂), 25.xi.2001 (1♂); Chhindimatta, 20.xii.2001 (1♂,2♀), 26.xi.2001 (1♂); coll. K. Chandra; Chhindwara: Totladoh, 11.viii.2001 (1♀), 20.viii.2001 (1♂,2♀), 14.ix.2001 (1♀) coll. S.K. Mishra & party; Gumtara, 27.viii.2001 (1♂), 23.ix.2001 (1♂,2♀); Khamarpani, 28.viii.2001 (1♂); Pindari, 29.viii.2001 (1♂); Lohangia, 05.ix.2001 (1♀) coll. Y. N. Gupta & party; Dudhgaon, 19.ix.2001 (2♀); Ambamai nala, 22.xi.2001 (1♂,1♀); Kumbha pani, 24.xi.2001 (2♂,2♀); Dongra gaon, 27.xi.2001 (1♂); Mahadev ghat, 29.xi.2001 (3♂,1♀) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Bhopal, Chhindwara, Damoh, Hoshangabad, Mandla, Panna, Shahdol, Seoni, Shivpuri, Sidhi and Umariya), Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; Hainan; Myanmar; Nepal; Pakistan; South & East China; Sri Lanka; Thailand; Vietnam and West Malaysia.

Subfamily TERATODINAE

Genus *Teratodes* Brulle' 1835

61. *Teratodes monticollis* (Gray, 1832)

1832. *Gryllus monticollis* Gray, *Griffith's Anim. Kingd.*, **15** : 215.

1914. *Teratodes monticollis* : Kirby, *Fauna Brit. India, Orth.*, : 235.

1976. *Teratodes monticollis*, Tandon, *Rec. zool. Surv. India, Occ. Pap. No. 3* : 3.

1991. *Teratodes monticollis*, Kumar & Viraktmath, *J. Bombay nat. Hist. Soc.*, **88** : 206.

2000. *Teratodes monticollis*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 52.

Material examined : Madhya Pradesh, Chhindwara, PTR : Chhindwani, 26.xi.2001 (1♀) coll. K. Chandra.

Distribution : India ; Andhra Pradesh, Bihar, Chhattisgarh (Bastar and Bilaspur), Madhya Pradesh (Chhindwara, Jabalpur, Seoni and Sidhi) and Maharashtra. **Elsewhere** : Sri Lanka.

Subfamily TROPIDOPOLINAE

Genus *Tristria* Stål 1873

62. *Tristria pulvinata* Uvarov, 1921

1921. *Tapinophyma pulvinata* Uvarov, *Ann. Mug. Nat. Hist.*, **7**(9) : 497.

1929. *Tristria pulvinata* : Uvarov, *Revue suisse Zool.*, **29** : 559.

Material examined : Chhattisgarh, Bilaspur, AWLS : Rakshasakh, 30.vi.04 (1♀,DC); Jhandi dongri, 08.v.05 (1♀, DC); Diyavan, 09.v.05 (1♂,1♀,DC).

Distribution : India : Assam, Bihar, Chhattisgarh (Bilaspur), Karnataka, Maharashtra, Madhya Pradesh (Chhindwara), Meghalaya, Tamil Nadu, Uttar Pradesh and West Bengal. **Elsewhere** : Sri Lanka.

Superfamily PYRGOMORPHOIDEA

Family PYRGOMORPHIDAE

Genus *Atractomorpha* Saussure, 1862

63. *Atractomorpha crenulata* (Fabricius, 1793)

1793. *Truxalis crenulata* Fabricius, *Ent. Syst.*, **2** : 28.

1861. *Atractomorpha crenulata* : Saussure, *Annl. Soc. ent. Fr.*, **4** : 475.

1914. *Atractomorpha crenulata*, Kirby, *Fauna Brit. India, Orth.*, : 181.

1999. *Atractomorpha crenulata*, Shishodia, *Rec. zool. Surv. India*, **97**(4) : 37.

2000. *Atractomorpha crenulata*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 42.

Material examined : Madhya Pradesh, Seoni, PTR : Kohka, 10.vi.2001 (1 ♀); Karmajhiri, 12.vi.2001(1♂), 16.vi.2001 (3♂,1♀), 24.vi.2001 (1♂); Pyarhodi, 13.vi.2001 (1♀) coll. K. Chandra & party; Dudhiya, 14.xii.2001 (2♀); Alikata, 17.xii.2001 (1♀,DC); Chhindimatta, 18.xii.2001 (1♂,1♀), 20.xii.2001 (1♂,1♀); Sita ghat, 19.xii.2001 (1♂), 25.xi.2001 (2♂,2♀); Boda nala, 23.xii.2001 (5♂) coll. K. Chandra & party; Chhindwara: Mahgaon, 15.viii.2001 (1♀); Totladoh, 17.viii.2001 (1♂), 19.viii.2001 (1♀), 26.viii.2001 (1♂) coll. Y.N. Gupta & party; Puntara, 16.ix.2001 (1♀); Ghatpendrai 19.xi.2001 (1♀) coll. S.K. Mishra & party; Ambamai nala, 22.xi.2001(2♂); Thota, 23.xi.2001 (1♂), 28.xi.2001 (1♂); Chhindwani, 26.xi.2001(1♂) coll. K. Chandra & party.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Lakshadweep Island, Madhya Pradesh (Bhopal, Chhindwara, Damoh, Hoshangabad, Jabalpur, Panna, Seoni, Shivpuri and Umaria), Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh; Cambodia; Laos; Maldives Island; Malaya; Myanmar; Nepal; Pakistan; Sri Lanka; Sumatra; South Vietnam and Thailand.

Genus *Chrotogonus* Serville, 1838

64. *Chrotogonus (Chrotogonus) oxypterus* (Blanchard, 1836)

1836. *Ommexecha oxypterus* Blanchard, *Annl. Soc. Ent. France*, **5** : 622.

1959. *Chrotogonus (Chrotogonus) oxypterus*, Kevan, *Publcoes cult. Co. Diam. Angola*, No. **43** : 48.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Bihar,

Chhattisgarh (Bastar), Goa, Karnataka, Kerala, Madhya Pradesh (Hoshangabad), Maharashtra, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh and Sri Lanka.

65. *Chrotogonus (Chrotogonus) trachypterus trachypterus* (Blanchard, 1836)

1836. *Ommexycha trachypterus* Blanchard, *Annl. Soc. ent. Fr.*, **5** : 618.

1914. *Chrotogonus trachypterus*, Kirby, *Faun. Brit. India, Orth.*, : 165.

1959. *Chrotogonus (Chrotogonus) trachypterus trachypterus* : Kevan, *Publsoes cult. Co. Diam. Angola*, No. **43** : 147.

2000. *Chrotogonus (Chrotogonus) trachypterus trachypterus*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 40.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 04.vi.2001 (1♂,1♀) coll. K. Chandra & party; Chewarghat, 06.vi.2004 (1♀); Turia, 07.vi.2001 (1♀); Chhindimatta, 09.vi.2001 (1♀); Kohka, 10.vi.2004 (2♀); Salai, 29.vi.2001 (1♀) coll. K. Chandra; Dudhiya, 08.xi.2001 (3♂,1♀,) coll. M.L. Koshta & party; Chhindwara: Deory, 25.viii.2001 (2♀); Totladoh, 30.viii.2001 (1♀), 05.ix.2001 (1♂), 08.ix.2001 (1♀) coll. Y. N. Gupta & party; Antara, 26.ix.2001 (1♀) coll. S.K. Mishra & party; Jamtara, 02.xi.2001 (1♀); Dongragaon, 27.xi.2001 (1♀) coll. K. Chandra & party.

Distribution : India : Andhra Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Madhya Pradesh (Bhopal, Chhindwara, Hoshangabad, Jabalpur, Mandla, Panna, Seoni, Shivpuri and Umaria), Maharashtra, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh; Iran; Nepal and Pakistan.

Genus *Poekilocerus* Serville, 1831

66. *Poekilocerus pictus* (Fabricius, 1775)

1775. *Gryllus pictus* Fabricius, *Sys. Ent.*, : 289.

1914. *Poecilocerus pictus*, Kirby, *Fauna Brit. India, Orth.*, : 172.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh, West Bengal.

Elsewhere : Afghanistan; Bangladesh; Nepal and Pakistan.

Genus *Pyrgomorpha* Serville, 1831

67. *Pyrgomorpha bispinosa bispinosa* (Walker, 1870)

1870. *Pyrgomorpha bispinosa* Walker, *Cat. Derm. Salt. Brit. Mus.*, 3 : 499.

1975. *Pyrgomorpha bispinosa bispinosa*, Kevan, *Acrida*, 4 : 58, 65.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Chhattisgarh (Bastar), Madhya Pradesh (Seoni), Orissa and Tamil Nadu.

Genus *Zarytes* Bolivar, 1904

68. *Zarytes squalinus brachycerus* (Kirby, 1914)

1914. *Pyrgomorpha brachycera* Kirby, *Fauna Brit. India, Orth.*, : 175.

1970. *Zarytes squalinus brachycerus*, Kevan, *Rev. suisse Zool.*, 77 : 854.

Material examined: Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Bihar, Madhya Pradesh (Mandla, Rewa estate-Amarkantak), Tamil Nadu and West Bengal.

Superfamily TETRIGOIDEA

Family TETRIGIDAE

Subfamily METRODORINAE

Genus *Hyboella* Hancock, 1915

69. *Hyboella* sp.

1915. *Hyboella* Hancock, *Rec. Indian Mus.*, 11 : 104.

1991. *Hyboella*, Shishodia, *Rec. zool. Surv. India, Occ. Pap.* No. 140 : 105.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Chhattisgarh (Bastar), Sikkim and West Bengal.

Elsewhere : Java; Key Islands, Malaya; Myanmar; Sumatra; Thailand and Tibet.

Subfamily SCALIMENINAE

Genus *Criotettix* Bolivar, 1887

70. *Criotettix bispinosus* (Dalman, 1818)

1818. *Acrydium bispinosum* Dalman, *Kongl. Vet. Akad. Handl.*, : 77.

1887. *Criotettix bispinosus*, Bolivar, *Annl. Soc. ent. Belg.*, 31 : 185, 223, 226.

1938. *Criotettix bispinosus*, Gunther, *Stettin. Ent. Ztg.*, 99 : 134.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Madhya Pradesh (Mandla), Manipur, Meghalaya, Tripura and West Bengal.

Elsewhere : Borneo; Celebes; China; Hainan; Hong kong; Java; Luzon; Malaysia; Myanmar; Sulawesi; Sumatra; Taiwan; Thailand and Vietnam.

71. *Criotettix latifrons* Hebard, 1929

1929. *Criotettix latifrons* Hebard, *Revue suisse Zool.*, 36 : 578.

2000. *Criotettix latifrons*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 32.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andhra Pradesh, Chhattisgarh (Bastar), Maharashtra, Madhya Pradesh (Jabalpur) and Tamil Nadu.

72. *Criotettix orientalis* Hancock, 1913

1913. *Criotettix orientalis*, Hancock, *Rec. Indian Mus.*, 8 : 312.

1915. *Criotettix orientalis*, Hancock, *Rec. Indian Mus.*, **11** : 85.

1921. *Criotettix orientalis*, Fletcher, *Cat. Ins.* : 12.

Distribution : India : Andhra Pradesh, Assam, Chhattisgarh (Bastar), Maharashtra and Tamil Nadu.

Genus *Euscelimena* Gunther, 1938

Abbasia Kirby, 1914

73. *Euscelimena harpago* (Serville, 1839)

1839. *Tetrix harpago* Serville, *Ins. Orth.*, : 763.

1929. *Euscelimena harpago*, Hebard, *Revue suisse Zool.*, **36** : 572.

Material examined : Recorded from literature (Roonwal, 1981).

Distribution: India : Andhra Pradesh, Bihar, Karnataka, Gujarat, Madhya Pradesh (Hoshangabad and Shivpuri), Maharashtra, Orissa, Tamil Nadu and Uttar Pradesh.

Elsewhere : Sri Lanka.

Genus *Thoradonta* Hancock, 1909

74. *Thoradonta nodulosa* (Stål, 1860)

1860. *Tetrix nodulos* Stål, *Eugenies resa Orth.*, : 346.

1915. *Thoradonta nodulosa*, Hancock, *Mem. Dep. Agric. India ent. Ser.*, **4** : 138.

1970. *Thoradonta nodulosa*, Steinmann, *Acta zool. Hung.*, **16** : 225.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Sikkim, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Borneo; China; Hainan; Java; Malaysia; Myanmar; Perak; Pinang; Singapore; Sri Lanka; Sumba and Sumatra.

75. *Thoradonta spiculoba* Hancock, 1912 : 138

Thoradonta pruthii Gunther, 1938

1938. *Thoradonta pruthii*, Gunther, *Stettin, ent. Ztg.*, **99** : 129.

2000. *Thoradonta pruthii*, Shishodia, *Rec. zool. Surv. India*, **98**(1): 32.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Chhattisgarh (Bastar), Karnataka, Madhya Pradesh (Mandla), Maharashtra, Orissa and West Bengal.

Subfamily TETRIGINAE

Genus *Coptotettix* Bolivar, 1887

76. *Coptotettix annandalei* Hancock, 1915

1915. *Coptotettix annandalei* Hancock, *Rec. Indian Mus.*, **11** : 119.

2000. *Coptotettix annandalei* Shishodia, *Rec. zool. Surv. India*, **98**(1) : 37.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Chhattisgarh (Bastar), Karnataka, Manipur, Meghalaya, Orissa, Sikkim, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Myanmar; Nepal and Sri Lanka.

77. *Coptotettix conspersus* Hancock, 1915

1915. *Coptotettix conspersus*, Hancock, *Rec. Indian Mus.*, **11** : 119.

2000. *Coptotettix conspersus*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 38.

Material examined : Recorded from literature (Shishodia, 1991, 2000).

Distribution : India : Arunachal Pradesh, Assam, Chhattisgarh (Bastar), Himachal Pradesh, Madhya Pradesh (Mandla), Maharashtra, Manipur, Meghalaya, Orissa, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Sri Lanka.

Genus *Ergatettix* Kirby, 1914

78. *Ergatettix dorsiferus* (Walker, 1871)

1871. *Tettix dorsifera* Walker, *Cat. Derm. Salt. Brit. Mus.*, **5** : 825.

1929. *Ergatettix dorsifera* : Hebard, *Revue suisse Zool.*, **36** : 588.

1991. *Ergatettix dorsifera*, Shishodia, *Rec. zool. Surv. India, Occ. Pap. No.* **140** : 178.

1999. *Ergatettix dorsifera*, Shishodia, *Rec. zool. Surv. India*, **97**(4) : 42.

Material examined : Chhattisgarh, Bilaspur, AWLS : Achanakmar, 25.vii.2004 (1♂,NC), 22.vii.2005 (1♂,DC); Jhandi dongri, 17.v.2005 (1♂,DC); Jalda, 15.vii.2005 (1♂,2♀,DC); Bindaval, 16.vii.2005 (1♀,DC); Katami, 17.vii.2005 (2♀,DC); Sarasdol, 18.vii.2005 (2♀,DC); Chhaparwa, 24.vii.2005 (2♀,NC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Karmajhiri, 01.vii.2001 (2♂,1♀), 04.vii.2001 (2♂) coll. K. Chandra & party, 09.vii.2001 (1♀), 17.vii.2001 (2♂); Alikata, 07.vii.2001 (1♀); Kalapahar, 11.vii.2001 (2♂,3♀); Baghdev, 15.vii.2001 (1♀); Khawasa, 17.vii.2001 (1♂); Coll. Y.N. Gupta & party; Nayegaon, 05.xi.2001 (1♂) coll. M.L. Koshta & party; Dudhiya, 08.xi.2001 (4♂,6♀) coll. M.L. Koshta & party, 14.xii.2001 (1♀) coll. K. Chandra & party; Bawanthadi river, 09.xi.2001 (4♂); Chandrapur, 10.xi.2001 (2♂,1♀); Chhindwara: Chhindwara : Totladoh, 30.viii.2001 (1♂), 02.ix.2001 (2♀), 05.ix.2001 (1♂) coll. Y.N. Gupta & party; Kakiwara, 25.xi.2001 (1♂) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Delhi, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Bhopal, Chhindwara, Hoshangabad, Mandla, Seoni and Umaria), Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Sikkim, Tripura, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Bangladesh, China, Central Asia; Java; Greater Sunda Islands; Iran; Indonesia (Sumba); Myanmar; Nepal; Sri Lanka; South China; Sumatra; Taiwan and Turkmenia.

79. *Ergatettix guentheri* Steinmann, 1970

1970. *Ergatettix guentheri* Steinmann, *Acta zool. Hung.*, **16** : 234.
2000. *Ergatettix guentheri*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 39.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution: India : Arunachal Pradesh,

Assam, Bihar, Chhattisgarh (Bastar), Himachal Pradesh, Madhya Pradesh, Maharashtra, Meghalaya, Mizoram, Orissa, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh; Nepal and Sri Lanka.

Genus *Euparatettix* Hancock, 1904

80. *Euparatettix histricus* (Stål, 1861)

1861. *Tetrix histricus* Stål, *Freg. Eugenias Resa. Orth.*, : 347.
1924. *Euparatettix histricus*, Hebard, *Trans. Amer. Entomol. Soc.*, **50** : 210.

Material examined : Recorded from literature (Shishodia, 1991, 2000).

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Himachal Pradesh, Madhya Pradesh (Mandla), Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Australia; Borneo; Caledonia; Celebes; East Africa; East Afghanistan; Holland; Indonesia; Iran; Java; Malaysia; Myanmar; Nepal; New Ireland; Pakistan; Philippines; Queensland; Saudi Arabia; Solomon Islands; South China; Sumatra; Sri Lanka and Taiwan.

81. *Euparatettix variabilis* (Bolivar, 1887)

1887. *Paratettix personatus* Bolivar, *Annl. Soc. ent. Belg.*, **31** : 276.
1992. *Euparatettix variabilis*, Blackith, *Cat. S. E. Tetrigidae*, : 36.

Material examined : Recorded from literature (Shishodia, 1991, 1995, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Himachal Pradesh, Madhya Pradesh (Mandla), Maharashtra, Manipur, Meghalaya, Sikkim, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh; Britain; Borneo; Java; Myanmar; New Guinea; Pakistan; Papua; Philippines; Sri Lanka; Sumatra; Solomon Islands and Taiwan.

Genus *Hedotettix* Bolivar, 188782. *Hedotettix attenuatus* Hancock, 1904

1904. *Hedotettix attenuatus* Hancock, *Spolia zeylan*, 2 : 108.
 1991. *Hedotettix attenuatus*, Shishodia, *Rec. zool. Surv. India, Occ. Pap. No. 140* : 162.
 2000. *Hedotettix attenuatus*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 37.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Chhattisgarh (Bastar), Himachal Pradesh, Manipur, Meghalaya, Orissa, Sikkim, Tripura and West Bengal.

Elsewhere : Sri Lanka.

83. *Hedotettix cristitergus* Hancock, 1915

1915. *Hedotettix cristitergus* Hancock, *Rec. Indian Mus.*, 11 : 122.
 1992. *Hedotettix cristitergus*, Blackith, *Cat. S.E. Tetrigidae*, : 85.

Material examined : Recorded from literature (Hancock, 1915).

Distribution : India : Madhya Pradesh (Hoshangabad) and Maharashtra.

84. *Hedotettix gracilis* (de Haan, 1842)

1842. *Acridium (Tetrix) gracile* de Haan, *Temminck. Verhand. Orth.*, : 167-169.
 1887. *Hedotettix gracilis*, Bolivar, *Annls. Soc. ent. Belg.*, 31 : 284.
 1914. *Hedotettix gracilis*, Kirby, *Fauna Brit. India, Orth.*, : 72.
 1991. *Hedotettix gracilis*, Shishodia, *Rec. zool. Surv. India*, 88(1) : 33.
 2000. *Hedotettix gracilis*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 36.

Material examined : Chhattisgarh, Bilaspur, AWLS : Sarasdol, 23.vii.2004 (1 ♀,DC); Achanakmar, 25.vii.2004 (1 ♂,NC), 22.vii.2005 (3 ♀,DC); Lamni, 13.v.2005 (1 ♂,NC); Tilai dabra, 15.v.2005 (1 ♂,DC); Jhandi dongri, 17.v.2005 (3 ♂,DC); Atariya, 17.v.2005 (1 ♀,NC); Chhapparwa, 14.vii.2005 (1 ♂,2 ♀, DC), 16.vii.2005 (1 ♀,NC), 24.vii.2005 (3 ♀,NC); Jalda, 15.vii.2005

(1 ♂,2 ♀,DC); Katami, 17.vii.2005 (1 ♀,DC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Karmajhiri, 01.vii.2001 (1 ♀) coll. K. Chandra, 09.vii.2001 (1 ♂,1 ♀) coll. R.K. Singh & party; 12.vii.2001 (4 ♂,1 ♀), 14.vii.2001 (1 ♂,1 ♀) coll. R.K. Singh & party, 30.vii.2001 (1 ♂), 31.vii.2001 (2 ♂) col M.L. Koshta & party; Kalapahar, 11.vii.2001 (1 ♂, 2 ♀); Baghdev, 15.vii.2001 (1 ♂) coll. R.K. Singh & party; Nayegaon, 05.xi.2001 (1 ♂); Rukhar, 06.xi.2001 (1 ♂,1 ♀); Rajola, 07.xi.2001 (1 ♂); Dudhiya, 08.xi.2001 (5 ♂,4 ♀); Bawanthadi river, 09.xi.2001 (2 ♂,2 ♀); Chandrapur, 10.xi.2001 (1 ♂,2 ♀) coll. M.L. Koshta & party; Ghatkohka, 16.xii.2001 (1 ♂); Chhindimatta, 20.xii.2001 (1 ♀); Boda nala, 21.xii.2001 (1 ♂) coll. K. Chandra; Chhindwara: Totladoh, 15.viii.2001 (1 ♀), 20.viii.2001 (1 ♀), 26.viii.2001 (1 ♂), 30.viii.2001 (1 ♀), 08.ix.2001 (1 ♂) coll. Y.N. Gupta & party; Pindari, 29.viii.2001 (1 ♀); Mahadev ghat, 23.xi.2001 (3 ♂,3 ♀) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Chhattisgarh (Bastar and Bilaspur), Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Bhopal, Chhindwara, Hoshangabad, Mandla, Seoni and Umariya), Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Sikkim, Tripura, Uttarakhand, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh; Celebes; China; Java; Myanmar; Pakistan; Sri Lanka; Sulawesi; Sumatra; Taiwan; Thailand and Vietnam.

85. *Hedotettix punctatus* Hancock, 1909

1909. *Hedotettix punctatus* Hancock, *Trans. R. ent. Soc. Lond.*, : 422.
 1970. *Hedotettix punctatus*, Steinmann, *Acta zool. Hung.*, 16 : 234.

Material examined : Recorded from literature (Shishodia, 1991,1995,2000).

Distribution : India : Chhattisgarh (Bastar), Karnataka, Madhya Pradesh (Mandla), Maharashtra and Rajasthan.

Elsewhere : Borneo and Himalayan region.

Genus *Paratettix* Bolivar, 1887

86. *Paratettix cingalensis* (Walker, 1871)

1871. *Tettix cingalensis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 : 827.
 1914. *Paratettix cingalensis*, Kirby, *Fauna Brit. India, Orth.*, : 63.
 2000. *Paratettix cingalensis*, Shishodia, *Rec. zool. Surv. India*, 98(1): 36.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Arunachal Pradesh, Assam, Chhattisgarh (Bastar), Goa, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Manipur, Orissa, Sikkim, Tamil Nadu, Tripura.

Elsewhere : Borneo; Hainan; Malaysia; Java; Mindanao; Sri Lanka; Sumatra and Taiwan.

Infraorder TRIDACTYLIDEA

Superfamily TRIDACTYLOIDEA

Family TRIDACTYLIDAE Brunner, 1882

Subfamily TRIDACTYLINAE

Genus *Tridactylus* Olivier, 1789

87. *Tridactylus fasciatus* Guerin 1844

1844. *Tridactylus fasciatus* Guerin, *Icon. R. An.*, 3 : 335.
 1980. *Tridactylus fasciatus*, Gunther, *Dtsch. ent. Z.,N.,F.*, 27 (1-3) : 166.

Material examined : Recorded from literature (Chandra *et al.*, 2007).

Distribution : India : Bihar, Madhya Pradesh (Mandla) Orissa and West Bengal.

Elsewhere : Afghanistan; Iraq; Myanmar; North Central Africa to North Asian; South Soviet Union and Turkistan.

88. *Tridactylus thoracicus* Guerin, 1844

1844. *Tridactylus thoracicus* Guerin, *Icon. R. An.*, 3 : 336.
 1925. *Tridactylus thoracicus* : Chopard, *Ann. Mag. nat. Hist.*, 15(9) : 506.
 1987. *Tridactylus thoracicus*, Shishodia & Tandon, *Fauna of Orissa, State Fauna Series*, 1(1) : 128. *Zool. Surv. India*,

Material examined : Chhattisgarh, Bilaspur, AWLS : Jalda, 15.vii.2005 (2♂, DC); Achanakmar, 22.vii.2005 (1♀, DC) coll. A. Singh & party.

Distribution : India : Bihar, Chhattisgarh (Bilaspur), Goa, Himachal Pradesh, Madhya Pradesh (Damoh, Hoshangabad and Seoni), Orissa, Uttarakhand and West Bengal.

Elsewhere : Myanmar; Malaysia; Sumatra; Sri Lanka and Thailand.

Genus *Xya* Latreille, 1809

89. *Xya frontomaculata* (Gunther, 1974)

1974. *Tridactylus frontomaculata* Gunther, *Revue suisse Zool.*, 81 : 1041.
 1979. *Tridactylus frontomaculata*, Blackith & Blackith, *Acrida*, : 196.
 1980. *Xya frontomaculata*, Gunther, *Dtsch. ent. Z.,N.,F.*, 27(1-3) : 169.

Distribution : India : Madhya Pradesh (Narbada River, at Khar Ghat), Maharashtra, Rajasthan and West Bengal.

Elsewhere : Sri Lanka.

90. *Xya japonica* Haan, 1842

1842. *Gryllus, Xya japonicus* Haan, *Overszee. Bezitt*, 2 : 238.
 1980. *Xya japonicus*, Gunther, *Dtsch. ent. Z.,N.,F.*, 27(1-3) : 169.

Distribution : India : Bihar, Madhya Pradesh (Pharisamar Hills), Maharashtra, Orissa and West Bengal.

Elsewhere : Japan; East Siberia; Sri Lanka and Taiwan.

91. *Xya opaca* (Walker, 1871)

1871. *Tridactylus opacus* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 : 1.
 1979. *Tridactylus opacus*, Blackith & Blackith, *Acrida*, : 199.
 1980. *Xya opaca*, Gunther, *Dtsch. ent. Z.,N.,F.*, 27(1-3) : 170.
 2007. *Xya opaca*, Chandra *et al.*, *Zoos' Print Journal*, 22 (5) : 2687.

Material examined : Recorded from literature (Chandra *et al.*, 2007).

Distribution : India : Assam, Madhya Pradesh (Rewa) and West Bengal.

Elsewhere: Sri Lanka; South & East Asia and Taiwan.

92. *Xya variegata* Latreille, 1809

1809. *Xya variegata* Latreille, *Gen. Crust. Ins.*, 4 : 383.
 1980. *Xya variegata*, Gunther, *Dtsch. ent. Z., N., F.*, 27(1-3) : 171.
 2000. *Xya variegata*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 30.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Bihar, Chhattisgarh (Bastar), Kerala, Madhya Pradesh (Mandla and Rewa), Maharashtra, West Bengal.

Elsewhere: China; Middle Europe to Middle Africa and South East Asia.

Suborder ENSIFERA

Infraorder OEDISCHIOIDEA

Superfamily GRYLLOIDEA

Family GRYLLIDAE

Subfamily ENEOPTERINAE

Genus *Xenogryllus* Bolivar, 1890

93. *Xenogryllus* sp.

1890. *Xenogryllus* Bolivar, *Jorn. Sci. Lisboa*, 1(2) : 232.
 1969. *Xenogryllus* Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 307.
 2007. *Xenogryllus*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2684.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India: Chhattisgarh (Bastar), Himachal Pradesh, Jammu & Kashmir and Madhya Pradesh (Seoni).

Subfamily GRYLLINAE

Genus *Acheta* Fabricius, 1775

94. *Acheta domesticus* Linnaeus, 1758

1758. *Gryllus (Acheta) domesticus* Linnaeus *Syst. Nat.*, 1 : 428.
 1871. *Gryllus transversalis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 5 : 6.
 1877. *Gryllus domesticus* Saussure, *Mem. Soc. Geneva*, : 25,173.

1961. *Acheta domesticus* : Chopard, *Eos.*, 37 : 271.

1969. *Gryllus domesticus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea*, : 37.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 05.vi.2004 (1♂, DC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Kumbh pani, 27.xi.2001(1♀), coll. K. Chandra.

Distribution : India : Chhattisgarh (Bilaspur), Chandigarh, Delhi, Himachal Pradesh, Jammu & Kashmir, Kerala, Maharashtra, Madhya Pradesh (Jabalpur, Mandla and Umaria), Punjab, Rajasthan, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Pakistan.

Genus *Gryllus* Linnaeus, 1758.

95. *Gryllus bimaculatus* De Geer, 1773

1773. *Gryllus bimaculatus* De Geer, *Mem. Ins.*, 3 : 521.
 1877. *Liogryllus bimaculatus*, Saussure, *Mem. Soc. Geneva*, 25 : 139.
 1936. *Gryllus bimaculatus*, Chopard, *Ceylon J. Sci.*, 20(B) : 22.
 1969. *Gryllus bimaculatus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea*, : 35.
 1976. *Gryllus bimaculatus*, Tandon *et. al.*, *Newsl. zool. Surv. India*, 2(4) : 169.
 2000. *Gryllus bimaculatus*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 65.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 12.vi.2001 (1♀); Boda nala, 21.xii.2001 (1♂) coll. K. Chandra; Chhindwara : Totladoh, 15.viii.2001 (1♀) coll. Y.N. Gupta & party.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar and Bilaspur), Chandigarh, Delhi, Gujarat, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Jabalpur, Hoshangabad, Mandla, Seoni and Umaria), Maharashtra, Manipur, Meghalaya, Orissa, Pondicherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh, West Bengal.

Elsewhere : Africa; Malaysia; Mediterranean Region; Myanmar; Nepal; Pakistan; Singapore and Sri Lanka.

Genus *Grylloides* Saussure, 1874

96. *Grylloides sigillatus* (Walker, 1869)

1869. *Gryllus sigillatus* Walker, *Cat. Derm. Salt, Brit. Mus.*, **1** : 46.
1877. *Grylloides sigillatus*, Saussure, *Mem. Soc. Geneva*, **25** : 210.
1969. *Grylloides sigillatus* : Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 85.
1976. *Grylloides sigillatus*, Tandon *et. al.*, *Newsl. zool. Surv. India*, **2(4)** : 170.
1995. *Grylloides sigillatus*, Shishodia, *Fauna of Indravati Tiger Reserve, Fauna of Conservation Area 6* : 14. *Zool. Surv. India*.
1999. *Grylloides sigillatus*, Shishodia, *Rec. zool. Surv. India*, **97(4)** : 34.
2000. *Grylloides sigillatus*, Shishodia, *Rec. zool. Surv. India*, **98 (1)** : 67.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 02.vii.2001 (1 ♀) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh (Bastar), Delhi, Haryana, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh (Chhindwara, Mandla and Shivpuri), Maharashtra, Manipur, Meghalaya, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal. *Elsewhere* : Malacca; Malaysia; Pakistan and Sri Lanka.

97. *Grylloides supplicans* (Walker, 1859)

1859. *Acheta supplicans* Walker, *Ann. Mag. nat. Hist.*, **4(3)** : 221.
1925. *Grylloides greeni* Chopard, *Ann. Mag. nat. Hist.*, **15(9)** : 511.
1928. *Grylloides supplicans* Chopard, *Spol. Zeyl.*, **14** : 149.
1969. *Grylloides supplicans* : Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 88.

Material examined : Recorded from literature (Chopard, 1969, Chandra *et al.*, 2007, Shishodia, 2008).

Distribution : India : Karnataka and Madhya Pradesh (Jabalpur, Mandla).

Elsewhere : Sri Lanka.

Genus *Gryllopsis* Chopard, 1928

98. *Gryllopsis falconneti* (Saussure, 1877)

1877. *Gryllopsis falconneti* Saussure, *Mem. Soc. Geneve*, **25** : 230.
1935. *Gryllopsis falconneti* Chopard, *Ann. Mag. nat. Hist.*, **16(10)** : 288.
1969. *Gryllopsis falconneti*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 70.

Material examined : Recorded from literature (Chopard, 1969).

Distribution: India: Jammu & Kashmir, Madhya Pradesh, Maharashtra, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere: Pakistan and Sri Lanka.

99. *Gryllopsis furcata* (Saussure, 1877)

1877. *Grylloides furcatus* Saussure, *Mem. Soc. Geneve*, **25** : 231.
1969. *Gryllopsis furcata* Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 79.
1993. *Gryllopsis furcata*, Vasanth, *Rec. zool. Surv. India*, *Occ. Pap. No. 132* : 56.
1987. *Gryllopsis furcata*, Shishodia & Tandon, *State Fauna Series 1 : Fauna of Orissa*, *Zool. Surv. India*, (1) : 122.

Material examined : Recorded from literature (Shishodia & Tandon, 1987, Vasanth, 1993).

Distribution : India : Andhra Pradesh, Karnataka, Madhya Pradesh, Orissa, Tamil Nadu and Uttarakhand.

Elsewhere : Myanmar.

Genus *Gymnogryllus* Saussure, 1877

100. *Gymnogryllus fascipes* Copard, 1969

1969. *Gymnogryllus fascipes* Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 30.
1987. *Gymnogryllus fascipes*, Shishodia & Tandon, *Fauna of Orissa, State Fauna Series 1(1)* : 117. *Zool. Surv. India*.
2007. *Gymnogryllus fascipes*, Chandra *et al.*, *Zoos' Print Journal*, **22(5)** : 2684.

Material examined : Recorded from literature (Chopard, 1969, Shishodia & Tandon, 1987, Chandra *et al.*, 2007).

Distribution : India : Madhya Pradesh (Chhindwara : Mohgaon) and Orissa.

101. *Gymnogryllus kashmirensis* Bhowmik, 1967

1967. *Gymnogryllus kashmirensis* Bhowmik, *Sci. & Cult.*, **33** : 244-246.

1993. *Gymnogryllus kashmirensis*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No.*, **132** : 32.

2007. *Gymnogryllus kashmirensis*, Chandra *et al.*, *Zoos' Print Journal*, **22**(5) : 2684.

Material examined : Recorded from literature (Vasanth, 1993, Chandra *et al.*, 2007).

Distribution : India : Assam, Bihar, Goa, Gujarat, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Meghalaya, Pondicherry, Rajasthan, Tamil Nadu, Uttarakhand and West Bengal.

Elsewhere : Indonesia; Myanmar and South Vietnam.

Genus *Loxoblemmus* Saussure, 1877

102. *Loxoblemmus detectus* (Serville, 1838)

1838. *Platyblemmus detectus* (Serville), *Ins. Orth.*, 356.

1877. *Loxoblemmus detectus*, Saussure, *Mem. Soc. Geneve*, **25** : 255.

1967. *Loxoblemmus detectus*, Chopard, *Orth. Car.*, **10** : 126.

1969. *Loxoblemmus detectus*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 123.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 03.vi.04 (2 ♀, NC), 05.vi.04 (3 ♀, NC), 06.vi.04 (1 ♀, NC), 08.vi.04 (4 ♀, NC), 10.vi.04 (4 ♂, NC); Atariya, 07.v.05 (1 ♀, NC).

Distribution : Andhra Pradesh, Andaman Islands, Arunachal Pradesh, Bihar, Chhattisgarh (Bilaspur), Himachal Pradesh, Mizoram, Orissa, Sikkim, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : China, Java, Johore, Malaysia, Pahang, Singapore, Sri Lanka, Sumatra and Taiwan.

103. *Loxoblemmus equestris* Saussure, 1877

1877. *Loxoblemmus equestris* Saussure, *Mem. Soc. Geneve*, **25** : 252.

1969. *Loxoblemmus equestris* Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 122.

Material examined : Recorded from literature (Vasanth, 1993).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Karnataka, Madhya Pradesh, Manipur, Meghalaya, Orissa, Punjab, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : China; Celebes; Indonesia; Japan; Malayasia; Myanmar and Sri Lanka.

Genus *Modicogryllus* Chopard, 1961

104. *Modicogryllus confirmatus* (Walker, 1859)

1859. *Acheta confirmata* Walker, *Ann. Mag. nat. Hist.*, **4**(3) : 221.

1869. *Gryllus confirmatus* Walker, *Cat. Derm. Salt. Brit. Mus.*, **1** : 37.

1877. *Gryllus confirmatus*, Saussure, *Mem. Soc. Geneve*, **25** : 188.

1961. *Modicogryllus confirmatus*, Chopard, *Eos.*, **37** : 272.

1976. *Modicogryllus confirmatus*, Tandon *et al.*, *Newsl. zool. Surv. India*, **2**(4) : 170.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 05.vi.2001 (1 ♀, NC), 10.vi.2001 (1 ♂, 1 ♀), 12.vi.2001 (1 ♂), 24.vi.2001 (1 ♂), 25.vi.2001 (1 ♀), 2001.vii.2001 (1 ♀) coll. K. Chandra; 14.vii.2001 (1 ♀) coll. R.K. Singh & party; 28.viii.2001 (1 ♀) coll. Y.N. Gupta & party; Ghatkohka, 22.vi.2001 (1 ♀), 16.xii.2001 (1 ♂, 3 ♀); Turia, 23.vi.2001 (1 ♀) coll. K. Chandra; Alikata, 07.vii.2001 (1 ♂, 2 ♀); Simaria, 08.vii.2001 (1 ♀); Kalapahar, 11.vii.2001 (1 ♂, 1 ♀); Rukhar, 12.vii.2001 (1 ♀); Baghdev, 15.vii.2001 (2 ♀); coll. R.K. Singh & party; Dudhiya, 08.xi.2001 (1 ♀); Chhindwara: Totladoh, 15.viii.2001 (1 ♀), 18.viii.2001 (1 ♀), 20.viii.2001 (1 ♂), 23.viii.2001 (1 ♀, NC), 08.ix.2001 (1 ♀); Ghatpendrai, 19.ix.2001 (1 ♂); Thota, 28.xi.2001 (2 ♀) coll. Y.N. Gupta & party.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh (Bastar and Bilaspur), Delhi, Gujarat, Haryana, Himachal

Pradesh, Karnataka, Kerala, Madhya Pradesh (Bhopal, Hoshangabad, Mandla, Panna, Seoni, Shivpuri and Umariya), Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; China; Indo-China; Iran; Israel; Malaysia; Myanmar; Nepal; Pakistan; Philippines; Sri Lanka and Thailand.

105. *Modicogryllus consobrinus* (Saussure, 1877)

1877. *Gryllus consobrinus*, Saussure, *Mem. Soc. Geneve*, **25** : 188.
 1969. *Gryllus confirmatus*, Chopard, *Fauna of India, Orth.*, **2** *Grylloidea*, : 58.
 1998. *Modicogryllus consobrinus*, Ingrisch, *Ent. Scand.*, **29**(3) : 336.
 2007. *Modicogryllus consobrinus*, Chandra *et al.*, *Zoos' Print Journal*, **22**(5) : 2684.

Material examined : Recorded from Literature (Chopard, 1969, Ingrisch 1998).

Distribution : India : Madhya Pradesh (Rewa), Maharashtra and Uttarakhand.

Genus *Phonarellus* (Gorochov, 1983)

106. *Phonarellus (Phonarellus) minor* Chopard, 1959

1959. *Gymnogryllus minor* Chopard, *Stuttg. Beitr. z. Naturk.*, : 1
 1967. *Gymnogryllus minor* : Chopard, *Orth. Cat.*, **10** : 19.
 1969. *Gymnogryllus minor*, Chopard, *Fauna of India, Orth.*, **2** *Grylloidea*, : 29.
 1983. *Phonarellus (Phonarellus) minor*, Gorochov, *Entomologicheskoe Obozrenie*, **62**(2) : 323.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 28.viii.2001 (1♂) coll. K. Chandra; Chhindwara : Ghatpendrai, 19.ix.2001 (1♂) coll. S.K. Mishra & party; Rukhar, 11.xi.2001 (2♂) coll. M.L. Koshta & party.

Distribution : India : Assam, Bihar, Chhattisgarh (Bilaspur), Goa, Delhi, Karnataka, Kerala, Madhya Pradesh (Bhopal, Mandla and Seoni), Maharashtra, Pondicherry, Tamil Nadu, Orissa, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Afghanistan; Iran ; Java; Myanmar; Pakistan and South Vietnam.

Genus *Platygyryllus* Chopard, 1961

107. *Platygyryllus brunneri* (Saussure, 1877)

1877. *Gryllus brunneri* Saussure, *Mem. Soc. Geneve*, **25** : 170.
 1969. *Gryllus brunneri*, Chopard, *Fauna of India, Orth.*, **2** *Grylloidea*, : 53.
 2001. *Platygyryllus brunneri*, Shishodia & Vasanth, *Fauna of Nilgiri Biosphere Reserve, Fauna of Conservation Area*, **11** : 66. *Zool. Surv. India*.

Material examined : Recorded from literature (Chopard, 1969, Bhowmik, 1977, Vasanth, 1993).

Distribution: India : Bihar, Chandigarh, Gujarat, Himachal Pradesh, Madhya Pradesh (Balaghat), Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Africa and Bangladesh.

108. *Platygyryllus melanocephalus* (Serville, 1839)

1839. *Gryllus melanocephalus* Serville, *Ins. Orth.*, : 342.
 1969. *Gryllus melanocephalus*, Chopard, *Fauna of India, Orth.*, **2** *Grylloidea*, : 53.
 1977. *Platygyryllus melanocephalus*, Bhowmik, *Rec. zool. Surv. India*, **73** : 232.
 1985. *Platygyryllus melanocephalus*, Bhowmik, *Rec. zool. Surv. India, Occ. Pap. No.* **73** : 29.

Material examined : Recorded from literature (Bhowmik, 1985).

Distribution : India : Bihar, Chandigarh, Gujarat, Himachal Pradesh, Jammu & Kashmir, Jharkhand, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere: Bangladesh; Myanmar and Nepal.

Genus *Plebeigyryllus* Randell, 1964

109. *Plebeigyryllus guttiventris* (Walker, 1871)

1871. *Gryllus guttiventris* Walker, *Cat. Derm. Salt. Brit. Mus.*, **5** (Suppl.): 6.
 1964. *Plebeigyryllus guttiventris*: Randell, *Can. Ent.*, **96**(12) : 1598.
 1993. *Plebeigyryllus guttiventris*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No.* **132** : 72.

1999. *Plebeiogryllus guttiventris*, Shishodia, *Rec. zool. Surv. India*, **97**(4) : 34.

2000. *Plebeiogryllus guttiventris*, *Rec. zool. Surv. India*, **98**(1) : 66.

Material examined : Chhattisgarh, Bilaspur, AWLS : Atariya, 18.vi.2004 (1, ♂ NC) coll. A. Singh & party.

Distribution : India : Andhra Pradesh, Bihar, Chandigarh, Chhattisgarh (Bastar and Bilaspur), Delhi, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Chhindwara and Hoshangabad), Maharashtra, Manipur, Orissa, Pondicherry, Rajasthan, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar and Sri Lanka.

Genus *Tarbinskiellus* Gorochoy, 1983 : 320.

Brachytrypes Serville, 1839

110. *Tarbinskiellus orientalis* (Burmeister, 1832)

Brachytrypes orientalis (Burmeister, 1832)

1832. *Gryllus orientalis* Burmeister, *Handb. Ent.*, **12** : 735.

1893. *Brachytrypes orientalis*, Brunner, *Ann. Mus. Geneva*, **13** : 197.

1931. *Brachytrypes portentosus* var. *orientalis*, Chopard, *Bull. Raffles Mus.*, **6** : 128.

1969. *Brachytrypes orientalis* : Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 17.

1993. *Brachytrypes orientalis*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 31.

1995. *Tarbinskiellus orientalis*, Yin, Haisheng & Xiangwei Liu, Synopsis on the classification of Grylloidea and Gryllotalpoidea from China : 52.

1996. *Tarbinskiellus orientalis*, Gorochoy, *Zoosystematica Rossica*, **4**(1) : 87.

Material examined : Chhattisgarh, Bilaspur, AWLS : Lamni, 20.vi.2004 (1 ♂, 1 ♀, NC).

Distribution : India : Andaman Islands, Assam, Chhattisgarh (Bilaspur), Karnataka, Maharashtra, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Java, Malacca, Malaya, Myanmar, Philippines, Sri Lanka and Sumatra.

111. *Tarbinskiellus portentosus* (Lichtenstein, 1796)

Brachytrypes portentosus (Lichtenstein, 1796)

1796. *Acheta portentosa* Lichtenstein, *Cat. Mus. zool. Hamburg*, **3** : 86.

1813. *Gryllus (Acheta) achatina* Stoll, *Spectres* : 4.

1877. *Brachytrypes achatinus* Saussure, *Mem. Soc. Geneve*, **25** : 121.

1931. *Brachytrypes portentosus* Chopard, *Bull. Raffles Mus.*, No., **6** : 128.

1969. *Brachytrypes portentosus*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 16.

2000. *Tarbinskiellus portentosus*, Saeed, Azhar, M. Saeed & Yousuf, *Int. J. Agr. Biol.*, **2**(3) : 176.

2008. *Tarbinskiellus portentosus*, Buzzetti & Devriese, *Boll. Mus. civ. St. nat. Verona*, **32** : 162.

Material examined : Recorded from literature (Joshi *et al.*, 2004).

Distribution : India : Arunachal Pradesh, Assam, Bihar, Delhi, Himachal Pradesh, Karnataka, Madhya Pradesh (Mandla), Maharashtra, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; China; Indonesia; Java; Malaysia; Myanmar; Philippines; Singapore and Taiwan.

Genus *Teleogryllus* Chopard, 1961

112. *Teleogryllus gracilipes* (Saussure, 1877)

1877. *Gryllus gracilipes* Saussure, *Mem. Soc. Geneve*, **25** : 160.

1967. *Teleogryllus gracilipes*, *Orth. Cat.*, **10** : 100.

1969. *Gryllus gracilipes*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 47.

1993. *Teleogryllus gracilipes* Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 76.

Material examined : Recorded from literature (Chopard, 1969).

Distribution : India : Assam, Madhya Pradesh and Orissa.

Elsewhere : East Africa.

113. *Teleogryllus mitratus* (Burmeister, 1838)
1838. *Gryllus mitratus* Burmeister, *Handb. Ent.*, 2 : 734.
1964. *Teleogryllus mitratus* : Randell, *Can. Ent.*, 96(12) : 1596.
1969. *Gryllus testaceus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea*, : 40.
1993. *Teleogryllus mitratus*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 77.
1995. *Teleogryllus mitratus*, Tandon *et al.*, *Fauna of Conservation Area 7 : Fauna of Kanha Tiger Reserve, Zool. Surv. India*, : 24.
2008. *Teleogryllus mitratus*, Gupta *et. al.*, *Natl. J. Life Sci.*, 5(1) : 120.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 06.vi.2001 (1 ♀); 08.vi.2001 (1 ♀, NC); 09.vi.2001 (1 ♀); 10.vi.2001 (1 ♀), 16.vi.2001 (1 ♀); Muner pench, 11.vi.2001 (1 ♀); Ghatkohka, 16.xii.2001 (1 ♀) coll. K. Chandra; Chhindwara : Totladoh, 19.viii.2001 (1 ♂) coll. Y. N. Gupta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chandigarh, Himachal Pradesh, Delhi, Karnataka, Kerala, Madhya Pradesh (Chhindwara Damoh, Hoshangabad, Jabalpur, Mandla and Seoni), Manipur, Meghalaya, Orissa, Pondicherry, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Annam; Bangkok; Borneo; Bhutan; China; Indo-China; Indonesia; Japan; Java; Johore; Kuala Lumpur; Malaysia; Myanmar; Nepal; Philippines; Pinanag; Sarawak; Singapore; Sri Lanka; Sumatra; Taiwan; Tenasserin; Thailand and Vietnam.

114. *Teleogryllus occipitalis* (Serville, 1838)
1838. *Gryllus occipitalis* Serville, *Handb. Ent.*, : 339.
1969. *Gryllus mitratus*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea*, : 41.
1980. *Teleogryllus occipitalis* Townsend, *J. nat. Hist.*, 14 : 154.
1993. *Teleogryllus occipitalis*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 74.
2000. *Teleogryllus occipitalis*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 66.

Material examined : Recorded from literature (Vasanth, 1993, Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Gujarat, Himachal Pradesh, Karnataka, Kerala, Lakshadweep, Madhya Pradesh (Jabalpur), Maharashtra, Manipur, Meghalaya, Orissa, Sikkim, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Annam; Bangladesh; Bangkok; Bhutan; Borneo; Celebes; China; Indonesia; Indoa-China; Japan; Java; Kuala Lumpur; Laos; Malaysia; Myanmar; Nepal; Philippines; Sarawak; Sri Lanka; Sumatra; Sulawasi ; Taiwan; Thailand; Tibet and Vietnam.

Subfamily CACHOPLISTINAE

Genus *Arachnomimus* Saussure, 1878

115. *Arachnomimus subalatus* Chopard, 1970
1970. *Arachnomimus subalatus*, *Bull. Soc. ent. Fr.*, 75 : 122.
2000. *Arachnomimus subalatus*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 70.
2007. *Arachnomimus subalatus*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2685.

Material examined : Recorded from literature (Shishodia 2000).

Distribution : India : Chhattisgarh (Bastar).

Genus *Homoeogryllus* Guerin, 1847

116. *Homoeogryllus indicus* Agarwal & Sinha, 1987

1987. *Homoeogryllus indicus* Agarwal & Sinha, *J. Bombay nat. Hist. Soc.*, 84(2) : 398.
2007. *Homoeogryllus indicus*, Chandra *et. al.*, *Zoos' Print Journal*, 22(5) : 2685.

Material examined : Recorded from literature (Agarwal & Sinha, 1987).

Distribution : India : Chhattisgarh (Raigarh).

Genus *Kempiola* Uvarov, 1940

117. *Kempiola shankari* Sinha & Agarwal, 1973

1973. *Kempiola shankari* Sinha & Agarwal, *Bull. Ent.*, 14 : 97-100.

1977. *Kempiola shankari* Sinha & Agarwal, *Indian Forester*, **103** : 150-152.

Material examined : Recorded from literature (Sinha & Agarwal, 1973).

Distribution : India : Chhattisgarh (Bastar).

Genus *Meloimorpha* Walker, 1870

118. *Meloimorpha cincticornis* Walker, 1870

1870. *Meloimorpha cincticornis* Walker, *Cat. Derm. Salt. Brit. Mus.*, **3** : 469.

1935. *Homoeogryllus cincticornis*, Chopard, *Ann. Mag. nat. Hist.*, **16**(10) : 293.

1968. *Homoeogryllus cincticornis*, Chopard, *Orth. Cat.*, **12** : 287.

1969. *Homoeogryllus cincticornis*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 242.

1986. *Meloimorpha cincticornis*, Gorochov, *Zoologicheskii Zhurnal*, **65**(6) : 854.

Material examined : Chhattisgarh, Bilaspur, AWLS : Katami, 17.vii.2005 (1♂,DC) coll. A. Singh & party.

Distribution : India : Chhattisgarh (Bilaspur), Chandigarh, Himachal Pradesh, Madhya Pradesh, Maharashtra, Meghalaya, Tamil Nadu and Uttarakhand.

Elsewhere: Pakistan.

119. *Meloimorpha japonica* (Haan, 1842)

1842. *Gryllus (Phalangopsis) japonicus* Haan, *Temminck, Verhandl., Orth.*, : 236.

1869. *Phalangopsis albicornis* Walker, *Cat. Derm. Salt Br. M.*, **1** : 106.

1878. *Homoeogryllus japonicus*, Saussure, *Mem. Soc. Geneve*, **25** : 428.

1982. *Homoeogryllus japonicus*, Dixit & Sinha, *Uttar Pradesh J. Zool.*, **2**(2) : 104.

2003. *Meloimorpha japonica* Gorochov, *Zoosystematica Rossica* **12**(1) : 83.

Material examined : Recorded from literature (Dixit & Sinha, 1982).

Distribution : India : Chhattisgarh (Ambikapur) and Uttarakhand.

Elsewhere : Japan.

Subfamily PODOSCIRTINAE Saussure, 1878

Genus *Madasumma* Walker, 1869

120. *Madasumma* sp.

1869. *Madasumma* Walker, *Cat. Derm. Salt. Brit. Mus.*, **1** : 64.

1969. *Madasumma* : Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 341.

1990. *Madasumma*, Shishodia & Tandon, *Rec. zool. Surv. India*, **87**(2) : 106.

1993. *Madasumma*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No.* 132 : 117.

Material examined : Chhattisgarh, Bilaspur, AWLS : Gandelwa pani, 27.vi.2004 (1♂,DC); Atariya, 29.vi.2004 (1♀,DC); Sambhar dhasan, 26.vii.2004 (1♀,DC); Katami, 17.vii.2005 (1♂,DC); Bindaval, 24.vii.2005 (1♀,DC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Totladoh, 30.viii.2001 (1♂) coll. Y.N. Gupta & party; Seoni : Nayegaon, 05.xi.2001 (1♂) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Assam, Chhattisgarh (Bilaspur), Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Chhindwara and Seoni), Maharashtra, Meghalaya, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Australia, Bhutan, Java, Madagaskar, Malaya, Myanmar, Philippines and Sri Lanka.

Subfamily NEMOBIINAE

Genus *Paranemobius* Saussure, 1877

121. *Paranemobius pictus* (Saussure, 1877)

1877. *Pseudonemobius pictus* Saussure, *Mem. Soc. Geneve*, **25** : 67.

1925. *Paranemobius pictus*, Chopard, *Ann. Mag. nat. Hist.*, **15**(9) : 506.

1969. *Paranemobius pictus*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 174.

2000. *Paranemobius pictus*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 70.

Material examined : Madhya Pradesh, Seoni, PTR : Nayegaon, 05.xi.2001 (1♂, 3♀); Bawanthadi river, 09.xi.2001 (1♀); Chhindwara : Jamtara, 21.xi.2001 (1♀) coll. M.L. Koshta & party; Thota, 28.xi.2001 (1♂) coll. K. Chandra.

Distribution : India : Andhra Pradesh, Bihar, Chhattisgarh (Bastar), Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Chhindwara, Hoshangabad and Seoni), Maharashtra, Orissa, Rajasthan, Tamil Nadu and West Bengal.

Elsewhere: Sri Lanka.

Genus *Pteronemobius* Jacobson and Bianchi, 1905

122. *Pteronemobius bicolor* (Saussure, 1877)

1877. *Nemobius bicolor* Saussure, *Mem. Soc. Geneve*, **25** : 98.

1935. *Pteronemobius bicolor* Chopard, *Ann. Mag. nat. Hist.*, **16**(10) : 285.

1969. *Pteronemobius bicolor*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 166.

Material examined : Recorded from literature (Chopard, 1969).

Distribution : India : Bihar, Karnataka, Madhya Pradesh, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar; Sri Lanka and Thailand.

123. *Pteronemobius concolor* (Walker, 1871)

1871. *Eneoptera concolor* Walker, *Cat. Derm. Salt. Brit. Mus.*, **5** suppl. : 10

1931. *Pteronemobius concolor* Chopard, *Bull. raffles Mus.*, **6** : 134.

1969. *Pteronemobius concolor*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 160.

1993. *Pteronemobius concolor*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 92.

2000. *Pteronemobius concolor*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 69.

Material examined : Recorded from literature (Vasanth, 1993, Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Karnataka, Kerala, Madhya Pradesh (Mandla), Maharashtra, Manipur, Meghalaya, Mizoram, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere: Afghanistan; Malaysia; Myanmar; Perak; Sri Lanka and Turkistan.

124. *Pteronemobius csikii* (Bolivar, 1901)

1901. *Nemobius csikii* Bolivar, *Zichy zool. Ergebn.*, **2** : 243.

1925. *Pteronemobius csikii* Chopard, *Ann. mag. nat. Hist.*, **15**(9) : 507.

2000. *Pteronemobius csikii*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 69.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh (Bastar), Haryana, Himachal Pradesh, Karnataka, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh.

Elsewhere: Bhutan; China; Myanmar; Siberia and Sri Lanka.

125. *Pteronemobius fascipes* (Walker, 1869)

1869. *Eneoptera fascipes* Walker, *Cat. Derm. Salt. Brit. Mus.*, **1** : 67.

1931. *Pteronemobius fascipes* Chopard, *Bull. Raffles Mus.*, **6** : 134.

1969. *Pteronemobius fascipes*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea** : 164.

1976. *Pteronemobius fascipes*, Tandon *et. al.*, *Newsl. zool. Surv. India*, **2**(4) : 170.

1993. *Pteronemobius fascipes*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 84.

1995. *Pteronemobius fascipes*, Tandon *et. al.*, *Fauna of Conservation Area 7 : Fauna of Kanha Tiger Reserve*, *Zool. Surv. India* : 24.

1995. *Pteronemobius fascipes*, Shishodia, *Fauna of Conservation 6 : Fauna of Indravati Tiger Reserve*, *Zool. Surv. India*, : 14-15.

1999. *Pteronemobius fascipes*, Shishodia, *Rec. zool. Surv. India*, **97**(4) : 34.

2000. *Pteronemobius fascipes*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 68-69.

Material examined : Madhya Pradesh, Chhindwara, PTR : Totladoh, 30.viii.2001 (1♀); coll. Y.N. Gupta & party; Thota, 28.xi.2001 (2♂); Seoni : Nayegaon, 05.xi.2001 (2♀); Rukhar, 06.xi.2001 (1♀); Rajola, 07.xi.2001 (1♂, 1♀); Dudhiya, 08.xi.2001 (5♂, 7♀); Bawanthadi river, 09.xi.2001 (1♂) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Goa, Haryana, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Bhopal, Chhindwara, Hoshangabad, Mandla, Seoni and Umaria), Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : China; Indonesia; Malaysia; Myanmar; Philippines; Singapore; Sri Lanka and Taiwan.

126. *Pteronemobius novarae* (Saussure, 1877)

1877. *Nemobius novarae* Saussure, *Mem. Soc. Geneve*, 25 : 83.

1969. *Pteronemobius novarae*, Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 162.

Material examined : Recorded from literature (Chopard, 1969).

Distribution : India : Madhya Pradesh and Tripura.

Elsewhere : Java; Malaysia and Thailand.

127. *Pteronemobius rufipes* Chopard, 1969

1969. *Pteronemobius rufipes* Chopard, *Fauna of India, Orth.*, 2 *Grylloidea* : 163.

2000. *Pteronemobius rufipes*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 68-69.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Assam, Chhattisgarh (Bastar) and West Bengal.

128. *Pteronemobius taprobanensis* (Walker, 1869)

1869. *Trigonidium taprobanensis* Walker, *Cat. Derm. Salt. Brit. Mus.*, 1 : 102.

1925. *Pteronemobius taprobanensis* Chopard, *Ann. Mag. nat. Hist.*, 15(9) : 507.

1995. *Pteronemobius taprobanensis*, Shishodia, *Fauna of Conservation 6 : Fauna of Indravati Tiger Reserve*, *Zool. Surv. India*, : 14.

2000. *Pteronemobius taprobanensis*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 68.

Material examined : Recorded from literature (Shishodia, 1995, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh (Bastar), Delhi, Himachal Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; China; Indonesia; Malaysia; Malacca; Myanmar; Perak; Sri Lanka, Sumatra and Vietnam.

Subfamily OECANTHINAE

Genus *Oecanthus* Serville, 1831

129. *Oecanthus indicus* Saussure, 1878

1878. *Oecanthus indicus* Saussure, *Mem. Soc. Phys. Geneva*, 25 : 454.

1969. *Oecanthus indicus* Chopard, *Fauna of India, Orth.*, 2 *Grylloidea*, : 267.

1976. *Oecanthus indicus*, Tandon *et. al.*, *Newsl. zool. Surv. India*, 2(4) : 170.

1995. *Oecanthus indicus*, Tandon *et al.*, *Fauna of Conservation Areas 7 : Fauna of Kanha Tiger Reserve*, *Zool. Surv. India*, : 24.

1999. *Oecanthus indicus*, Shishodia, *Rec. zool. Surv. India*, 97(4) : 35.

2000. *Oecanthus indicus*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 71.

Material examined : Chhattisgarh, Bilaspur, AWLS : Sarasdol, 23.vii.2004 (1♂, NC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Karmajhiri, 19.vii.2001 (1♂) coll. R. K. Singh & party; Rukhar, 06.xi.2001 (1♀); Rajola, 07.xi.2001 (1♂); Dudhiya, 08.xi.2001 (3♀) coll. M.L. Koshta & party, 14.xii.2001 (1♂, DC); Ghatkohka, 16.xii.2001 (3♀) coll. K. Chandra & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Karnataka, Madhya Pradesh (Chhindwara, Hoshangabad, Mandla and Seoni), Maharashtra, Meghalaya, Orissa, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Amboine; China; Japan; Malaysia;

Malaya Archipelago; Nepal; Pakistan; Philippines; Pinang; Sri Lanka; Sumba and Vietnam.

Family TRIGONIDIIDAE

Genus *Anaxipha* Saussure, 1874

130. *Anaxipha* sp.

1874. *Anaxipha* Saussure, *Miss. Mexique, Orth.*, : 370.
 1878. *Anaxiphus*, Saussure, *Mem. Soc. Geneve*, **25** : 475.
 1969. *Anaxipha*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 277.
 1993. *Anaxipha*, Vasanth, *Rec. zool. Surv. India, Occ. Pap. No. 132* : 108.

Material examined : Madhya Pradesh, Seoni, PTR : Rukhar, 06.xi.2001 (1♂); Chandrapur, 10.xi.2001 (1♀) coll. M.L. Koshta & party; AABR; Shahdol; Kapila river, 06.xi.07 (1♂,NC); Yamuna dadar, 07.xi.07 (1♀,DC).

Distribution : India : Andaman & Nicobar Islands, Assam, Chandigarh, Himachal Pradesh, Karnataka, Madhya Pradesh (Shahdol and Seoni), Manipur, Meghalaya, Orissa, Punjab, Tamil Nadu and West Bengal.

Elsewhere : East Africa, Java, Myanmar, Malayasia, Philippines and Sri Lanka.

Genus *Amusurgus* Brunner, 1893

131. *Amusurgus* sp.

1893. *Amusurgus* Brunner, *Ann. Mus. nat. Genova*, **33** : 212.
 1969. *Amusurgus*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 289.
 2000. *Amusurgus*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 73.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : This genus is distributed in India.

Elsewhere : North Australia, Malaya, Myanmar, New Guinea and Sri Lanka.

Genus *Homoeoxipha* Saussure, 1874

132. *Homoeoxipha lycoides* (Walker, 1869)

1869. *Phyllopopus lycoides* Walker, *Cat. Derm. Salt. Brit. Mus.*, **1** : 71.
 1925. *Homoeoxipha lycoides*, Chopard, *Ann. Mag. nat. Hist.*, **15(9)** : 532.

2000. *Homoeoxipha lycoides*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 73.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Jammu & Kashmir, Karnataka, Lakshadweep Islands, Meghalaya, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Australia; Bangladesh; China; Malaysia; Maldives Islands, Myanmar; Nepal; Queensland; Perak; Singapore; Sri Lanka and Taiwan.

Genus *Metioche* Stål, 1877

133. *Metioche* sp.

1877. *Metioche* Stål, *Oefv. Vet. Akad. Forh.*, **34** : 46.
 1969. *Metioche*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 295.
 2000. *Metioche*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 74.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : This genus is distributed in Indo-Australian region and Philippines Islands.

Genus *Trigonidium* Rambur, 1839

134. *Trigonidium cicindeloides* Rambur, 1839

1839. *Trigonidium cicindeloides* Rambur, *Faune Andal.*, **2** : 39.
 1969. *Trigonidium cicindeloides*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 304.
 2000. *Trigonidium cicindeloides*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 74.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Chandigarh, Delhi, Goa, Himachal Pradesh, Jammu & Kashmir, Karnataka, Lakshadweep Island, Madhya Pradesh (Chhindwara), Maharashtra, Manipur, Meghalaya, Mizoram, Orissa, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Africa; Bhutan; China; Japan; Korea; Madagascar; Malaysia; Maldives; Mauritius; Mediterranean Regions; Myanmar; Nepal; South Europe, Sri Lanka and Vietnam.

135. *Trigonidium humberianum* (Saussure, 1878)

1878. *Homoeoxiphus humberianus* Saussure, *Mem. Soc. Phys. Geneve*, **25** : 468.
 1925. *Trigonidium humberianum*, Chopard, *Ann. Mag. nat. Hist.*, **15**(9) : 525.
 1969. *Trigonidium humberianum*, Chopard, *Fauna of India, Orth.*, **2 Grylloidea**, : 305.
 2000. *Trigonidium humberianum*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 74.

Material examined : Recorded from literature (Chopard, 1969, Shishodia, 2000).

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Chhattisgarh (Bastar), Delhi, Gujarat, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Amarkantak, Chhindwara), Maharashtra, Manipur, Meghalaya, Orissa, Tamil Nadu, Tripura, Uttar Pradesh and West Bengal. *Elsewhere* : Iran; Malaysia and Sri Lanka.

Family GRYLLOTALPIDAE

Genus *Gryllotalpa* Latreille, 1802

136. *Gryllotalpa africana* Beauvois, 1805

1805. *Gryllotalpa africana* Beauvois, *Ins. Afr. Amer.*, : 229.
 1924. *Gryllotalpa africana* Chopard, *Rec. Ind. Mus.*, **26** : 181.
 1933. *Gryllotalpa africana*, Chopard, *Revue suisse Zool.*, **40** : 161.
 2000. *Gryllotalpa africana*, Shishodia, *Rec. zool. Surv. India*, **98**(1) : 64.

Material examined : Madhya Pradesh, Seoni, PTR : Karmajhiri, 17.vi.2001 (1♂), 30.vi.2001 (1♂,NC), 28.viii.2001(1♂); Alikata, 07.vii.2001 (2♂,NC); Rukhar, 12.vii.2001 (1♂) coll. K. Chandra; Nayegaon, 09.xi.2001 (1♀) coll. M.L. Koshta & party; Chhindwara: Ghatpendrai, 19.ix.2001 (1♀) coll. S.K. Mishra & party; Jamtara, 22.xi.2001 (1♀) coll. K. Chandra.

Distribution : India : Andaman & Nicobar

Islands, Arunachal Pradesh, Assam, Bihar, Chandigarh, Chhattisgarh (Bastar and Bilaspur), Delhi, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh (Seoni, Hoshangabad, Shivpuri and Umaria), Meghalaya, Orissa, Pondicherry, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Africa; Bhutan; Iran; Madagascar; Malaysia; Myanmar; Nepal; Pakistan; Singapore; Sri Lanka and South Spain.

Superfamily SCHIZODACTYLOIDEA

Family SCHIZODACTYLIDAE

Subfamily SCHIZODACTYLINAE

Genus *Schizodactylus* Brulle, 1835

137. *Schizodactylus monstrosus* (Drury, 1773)

1773. *Gryllus (Acheta) monstrosus* Drury, *Illustrations of Natural History. Exotic Insects, according to their different genera*, **2** : 81.
 1912. *Schizodactylus monstrosus*, Tension, *J. Bombay nat. Hist. Soc.*, **31**(3) : 1091.
 1988. *Schizodactylus monstrosus*, Mukherjee, *J. Bombay nat. Hist. Soc.*, **85**(2) : 443-444.
 2005. *Schizodactylus monstrosus*, Chandra and Gupta, *Insect Environment*, **11**(2) : 56.

Material examined : Recorded from literature (Chandra & Gupta, 2005, Chandra *et al.*, 2007, Gupta *et al.*, 2008).

Distribution : India : Assam, Bihar, Chhattisgarh (Bilaspur), Jammu & Kashmir, Rajasthan and West Bengal.

Superfamily STENOPELMATOIDEA

Family GRYLLACRIDIDAE

Subfamily GRYLLACRIDINAE

Genus *Gryllacris* Serville, 1831

138. *Gryllacris* sp.

1831. *Gryllacris* Serville, *Ann. Sci. nat. (Zool.)*, **Paris**, **22** : 134-162.
 1997. *Gryllacris*, Forrest *et al.*, *J. Nat. Hist.*, **31** : 1127-1141.
 2007. *Gryllacris*, Gorochov, *Entomologicheskoe Obozrenie* **86**(4) : 845.

Material examined : Chhattisgarh, Bilaspur, AWLS : Khudia dam, 04.vi.2004 (1♂,DC); Atariya, 17.vi.2004 (1♀, NC) coll. A. Singh & party.

Distribution : India : Andaman Islands, Chhattisgarh (Bilaspur), East India and North India.

Superfamily TETTIGONIOIDEA

Family TETTIGONIIDAE

Subfamily CONOCEPHALINAE

Genus *Conocephalus* Thunberg, 1815

139. *Conocephalus maculatus* (Le Guillou, 1841)

1841. *Xiphidion maculatum* Le Guillou, *Revue. suisse Zool.*, **4** : 294.

1922. *Conocephalus (Xiphidion) maculatus* (Le guillou), *Proc. Acad. Nat. Sci. Philad.*, **74** : 243.

1980. *Conocephalus maculatus*, Pitkin, *Bull. Br. Mus. nat. Hist. (Ent.)*, **41(5)** : 344.

1999. *Conocephalus maculatus*, Shishodia, *Rec. zool. Surv. India*, **97(4)** : 36.

2000. *Conocephalus maculatus*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 75.

Material examined : Chhattisgarh, Bilaspur, AWLS : Rakshasakh, 10.v.2005 (1♀,DC); Atariya, 12.v.2005 (1♂,NC); Lamni, 13.v.2005 (1♂,2♀,NC); Matinala, 14.v.2005 (2♂,6♀,NC); Bharosong, 15.v.2005 (1♀,NC); Katami, 17.vii.2005 (1♀,DC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Totladoh, 24.viii.2001 (1♀); Pindari, 29.viii.2001 (1♀) coll. Y.N. Gupta & party; Gumtara, 23.xi.2001 (1♂) coll. S.K. Mishra & party; Mahadev ghat, 29.xi.2001 (1♀); Seoni : Dudhiya, 08.xi.2001 (1♂) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Chhattisgarh (Bastar), Himachal Pradesh, Jammu & Kashmir, Kerala, Madhya Pradesh (Chhindwara, Damoh, Hoshangabad and Panna), Maharashtra, Manipur, Mizoram, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura, Uttarakhand and West Bengal.

Elsewhere : Africa; Australia; Hong Kong; Indonesia; Java; Malaysia; Nepal; New Guinea; Philippines and Sierra Leone.

Genus *Euconocephalus* Karny, 1907

140. *Euconocephalus incertus* (Walker, 1869)

1869. *Conocephalus incertus* Walker, *Cat. Derm. Salt. Brit. Mus.*, **2** : 320.

1906. *Conocephalus incertus* : Kirby, *Syn. Cat. Orthopt.*, **2** : 251.

1912. *Euconocephalus incertus* Karny, *Gen. Insect.*, **2(139)** : 35.

2000. *Euconocephalus incertus*, Shishodia, *Rec. zool. Surv. India*, **98(1)** : 76.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 29.vii.2004 (1♂,NC) coll. A. Singh & party; Madhya Pradesh, Chhindwara, PTR : Totladoh, 16.vi.2001 (1♂) coll. Y.N. Gupta & party; Chheddia ghat, 24.xi.2001 (2♀); Dongargaon, 27.xi.2001 (1♀); coll. K. Chandra; Seoni : Nayegaon, 05.xi.2001 (1♀); Rukhar, 11.xi.2001 (1♀) coll. M.L. Koshta & party; Boda nala, 21.xii.2001 (1♀) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Chhattisgarh (Bastar), Madhya Pradesh (Bhopal, Hoshangabad, Jabalpur, Panna and Umaria), Meghalaya, Nagaland, Orissa, Pondicherry, Rajasthan, Sikkim, West Bengal.

Elsewhere: Australia; Borneo; China; Java; Myanmar; Pinang; Sri Lanka and Sumatra.

141. *Euconocephalus pallidus*

(Redtenbacher, 1891)

1891. *Conocephalus pallidus* Redtenbacher, *Verh. zool. bot. Ges. Vien.*, **41** : 414.

1922. *Euconocephalus pallidus* Hebard, *Proc. Acad. Nat. Sci. Phil.*, **74** : 239-240.

Material examined : Recorded from literature (Dwivedi 1978).

Distribution : India : Andaman & Nicobar Islands, Assam, Chhattisgarh (Bilaspur), Himachal Pradesh, Gujarat, Kerala, Meghalaya, Mizoram, Tamil Nadu, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh; Borneo; East Indies; Java; Myanmar; Philippines; Pinang; Singapore; Sri Lanka and Tonkin.

Genus *Xiphidiopsis* Redtenbacher, 1891142. *Xiphidiopsis citrina* Redtenbacher, 1891

1891. *Xiphidiopsis citrina* Redtenbacher, *Verhandl. zool. Bot. Ges.*, 41 : 531, 532.

1993. *Xiphidiopsis citrina*, Kevan & Jin, *Trop. Zool.*, 6 : 259.

Material examined : Recorded from literature (Chandra *et al.*, 2007).

Distribution : India : Madhya Pradesh (Jabalpur) and Tripura.

Elsewhere : Sri Lanka.

Subfamily MECOPODINAE

Genus *Mecopoda* Serville, 1831143. *Mecopoda elongata* (Linnaeus, 1758)

1758. *Gryllus (Tettigonia) elongatus* Linnaeus, *Syst. Nat.* (10th ed.), 1 : 429.

1906. *Mecopoda elongata* : Kirby, *Syn. Cat. Orthopt.*, 2 : 364.

2003. *Mecopoda elongata*, Barman, *Fauna of Sikkim, State Fauna Series*, 9(2) : 195. *Zool. Surv. India*.

2007. *Mecopoda elongata*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2684.

Material examined : Madhya Pradesh, Chhindwara, PTR: Dautfaria, 22.viii.2001 (1♂) coll. K. Chandra.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Himachal Pradesh, Karnataka, Madhya Pradesh (Chhindwara, Hoshangabad and Seoni), Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura, Uttar Pradesh, West Bengal.

Elsewhere : Australia; Aru Islands; Borneo; Celebes; China; Indonesia; Japan; Malacca; Malaysia; Moluccas; New Guinea; Philippines; Singapore; Sunda Islands; Taiwan; Thailand and Tonkin.

Subfamily PHANEROPTERINAE

Genus *Ducetia* Stål, 1874144. *Ducetia japonica* (Thunberg, 1815)

1815. *Locusta japonica* Thunberg, *Mem. Acad. Sci. St. Petersb. (Sci. Phys.)*, 5 : 282.

1842. *Locusta (Phaneroptera) quinquenervis* Haan, *Verh. Nat. ges. Ned. Overz. Bezitt., Zool. (Ins.)* : 193.

1859. *Steirodon lanceolatum* Walker, *Ann. Mag. nat. Hist.*, 4(3) : 222.

1869. *Phaneroptera neochlora* Walker, *Orth. Cat.*, : 342.

1869. *Phaneroptera privata* Walker, *Orth. Cat.*, : 344.

1869. *Phaneroptera aliena* Walker, *Orth. Cat.*, : 347.

1878. *Ducetia adspersa* Brunner, *Monographie der Phaneropteriden*, : 110.

1961. *Ducetia japonica*, Ragge, *Bull. Brit. Mus. nat. Hist. (Ent.)*, 10(5) : 182.

2007. *Ducetia japonica*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2684.

Material examined : Madhya Pradesh, Seoni, PTR : Baghdev, 15.vii.2001 (1♂); Karmajhiri, 21.vii.2001 (1♂) coll. R.K. Singh & party; Bison camp, 25.vii.2001 (1♂); Rajola, 07.xi.2001 (1♂); Chandrapur road, 10.xi.2001 (1♂); Rukhar, 11.xi.2001 (1♂) coll. M.L. Koshta & party; Dudhiya, 14.xii.2001 (1♂); Aalesur, 16.xii.2001 (1♂) coll. K. Chandra; Chhindwara : Panjara, 21.xi.2001 (1♂) coll. M.L. Koshta & party.

Distribution : India : Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Manipur, Meghalaya, Nagaland, Sikkim, Tamil Nadu and West Bengal.

Elsewhere : Australia; Bangladesh; Borneo; China; Formosa; Hainan; Indo-China; Japan; Java; Kuala Lumpur; Myanmar; Nepal; New Guinea; Pakistan; Philippines; Selangor; Singapore; Solomon Island; Sri Lanka, South & East Asia; Thailand; Tibet and Tonkin.

Genus *Elimaea* Stål, 1874Subgenus *Orthelimaea* Karny, 1926145. *Elimaea (Orthelimaea) securigera* Brunner, 1878

1878. *Elimaea securigera* Brunner, *Monogr. Phaneropt.*, 93.

1891. *Elimaea securigera* Brunner, *Verh. Zool. bot. Ges. Win. Viena*, 40 : 47.

1999. *Elimaea (Orthelimaea) securigera*, Shishodia, *Rec. zool. Surv. India*, 97(4) : 37.

2000. *Elimaea (Orthelimaea) securigera*, Barman, *Fauna of Tripura, State Fauna Series*, 7(2) : 264. Zool. Surv. India.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 18.vii.2004 (1♂,NC), 22.vii.2004 (1♂,NC), 23.vii.2004 (1♂,NC), 29.vii.2004 (1♂,NC); Achanakmar, 19.vii.2004 (1♂,NC) coll. A. Singh & party; Madhya Pradesh, Seoni, PTR : Boda nala, 23.vii.2001 (1♂) coll. M.L. Koshta & party; Chhindwara : Totladoh, 13.viii.2001 (1♂); Pulpudoh, 14.viii.2001 (1♂) coll. Y.N. Gupta & party.

Distribution : India : Andaman & Nicobar Islands, Andhra Pradesh, Assam, Himachal Pradesh, Karnataka, Kerala, Madhya Pradesh (Chhindwara), Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Rajasthan, Sikkim, Tripura and West Bengal.

Elsewhere : Australia; Indonesia; Java; Nepal; Philippines and Sri Lanka.

Genus *Himertula* Uvarov, 1940

146. *Himertula kinneari* (Uvarov, 1923)

1923. *Himerta kinneari* Uvarov, *J. Bombay nat. Hist. Soc.*, 29 : 651.

1990. *Himertula kinneari*, Ingrisch, *Spixiana*, 13(2) : 157.

2000. *Himertula kinneari*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 76.

Material examined : Recorded from literature (Shishodia 2000).

Distribution: India: Bihar, Chhattisgarh (Bastar), Gujarat, Himachal Pradesh, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan, Uttar Pradesh and West Bengal.

Elsewhere : Bhutan and Nepal.

Genus *Holochlora* Stål, 1873

147. *Holochlora albida* Brunner von Wattenwyl, 1878

1878. *Holochlora albida* Brunner von Wattenwyl, *Verh. der. Zoologisch-Botanischen Gesellsch. Wien*, 28 : 175-176.

1906. *Holochlora albida*, Kirby, *A Synonymic Catalogue of Orthoptera*, 2 : 430.

2004. *Holochlora albida*, Joshi *et al.*, 2004: *Journal of Tropical Forestry*, 20(III & IV) : 71.

Material examined : Recorded from literature (Joshi *et al.*, 2004).

Distribution : widely distributed species India; Madhya Pradesh (Mandla). **Elsewhere**: Malaysia and Singapore

Genus *Letana* Walker, 1869

148. *Letana intermedia* Ingrisch, 1990

1990. *Letana intermedia* Ingrisch, *Ent. Scand.*, 21(3) : 260.

2005. *Letana intermedia*, Kulkarni and Shishodia, *Fauna of Melghat Tiger Reserve, Conservation area series*, 24 : 321.

Material examined : Chhattisgarh, Bilaspur, AWLS : Chhapparwa, 06.vi.04 (1♀,NC), 11.vi.04 (3♀,NC), 18.vii.04 (2♀,NC); Bindaval, 13.vi.04 (1♂,DC); Atariya, 18.vi.04 (1♂,DC), 11.v.05 (2♂,1♀,NC), 17.v.05 (1♀,NC); Achanakmar, 19.vii.04 (2♂,NC); Lamni, 09.v.05 (1♂,3♀, NC); Matinala, 14.v.05 (1♀,NC).

Distribution : India : Chhattisgarh (Bilaspur), Delhi, Madhya Pradesh (Damoh) and Maharashtra.

149. *Letana infurcata* Ingrisch, 1990

1990. *Letana infurcata* Ingrisch, *Ent. Scand.*, 21(3) : 249.

1999. *Letana infurcata*, Shishodia, *Rec. zool. Surv. India*, 97(4) : 36.

2007. *Letana infurcata*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2684.

Material examined : Recorded from literature (Shishodia, 1999, Chandra *et al.*, 2007)

Diagnostic characters : Tegmina surpassing hind knees, radial sector unforked.

Distribution : India : Madhya Pradesh (Chhindwara), Pondicherry and Tamil Nadu.

150. *Letana megastridula* Ingrisch, 1990

1990. *Letana megastridula* Ingrisch, *Ent. Scand.*, 21(3) : 258.

2000a. *Letana megastridula*, Shishodia, *Rec. zool. Surv. India*, 98(1) : 77.

2007. *Letana infurcata*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2684.

Material examined : Recorded from literature (Shishodia, 2000, Chandra *et al.*, 2007).

Distribution : India : Bihar, Chhattisgarh (Bastar), Himachal Pradesh, Maharashtra and Tamil Nadu.

151. *Letana pyrifera* Bey-Beinko, 1956

1956. *Letana pyrifera* Bey-Bienko, *Entomol. Obozr.*, 35 : 650.

1990. *Letana pyrifera* Ingrisch, *Ent. Scand.*, 21(3) : 263.

2007. *Letana infurcata*, Chandra *et al.*, *Zoos' Print Journal*, 22(5) : 2684.

Material examined : Recorded from literature (Shishodia, 1999, Chandra *et al.*, 2007).

Distribution : India : Madhya Pradesh (Chhindwara), North West to South West India and Rajasthan.

Genus *Phaneroptera* Serville, 1831

152. *Phaneroptera gracilis* Burmeister, 1838

1838. *Phaneroptera gracilis* Burmeister, *Handb. Ent.*, : 690.

1955. *Phaneroptera gracilis* Ragge, *Proc. zool. Soc. Lond.*, 127 : 250.

1999. *Phaneroptera gracilis*, Shishodia, *Rec. zool. Surv. India*, 97(4) : 36.

Material examined : Recorded from literature (Shishodia, 1999, Chandra *et al.*, 2007).

Distribution : India : Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Karnataka, Madhya Pradesh (Chhindwara and Hoshangabad), Manipur, Orissa, Sikkim, Tamil Nadu and Uttarakhand.

Elsewhere : Africa; Annam; Australia; Celebes; China; Indo-China; Java; Malaysia; Maldive Islands, Myanmar; Solomon; Sri Lanka; Sumatra and Sumba.

Subfamily PSEUDOPHYLLINAE

Genus *Onomarchus* Stål, 1874

153. *Onomarchus* sp.

1874. *Onomarchus* Stål, *Recensio Orthopterorum. Revue critique des Orthoptères décrits par Linné, De Geer et Thunberg 2 Locustina* : 51, 68.

1893. *Onomarchus*, Brunner von Wattenwyl, *Ann. Mus. Civ. Stor. Nat. Genova Ser. 2*(13)33 : 173.

1963. *Onomarchus*, Beier, *Orthopterorum Catalogus*, 5 : 17.

Material examined : Recorded from literature (Shishodia, 2000).

Distribution : Tropical east Asia.

Genus *Sathrophyllia* Stål, 1874

154. *Sathrophyllia rugosa* (Linnaeus, 1758)

1758. *Gryllus (Tettignonia) rugosa* Linnaeus, *Syst. Nat.* (10th ed.) 1 : 430.

1962. *Sathrophyllia rugosa*, Beier, *Das Tierreich*, 73 : 199-200.

2004. *Sathrophyllia rugosa*, Joshi *et al.*, 2004 : *Journal of Tropical Forestry*, 20(III & IV) : 71.

Material examined : Recorded from literature (Joshi *et al.*, 2004).

Distribution : India : Karnataka, Madhya Pradesh (Mandla), Manipur, Meghalaya, Sikkim, Tamil Nadu and West Bengal.

Elsewhere : Java; Sri Lanka and Sumatra.

Abbreviation : M.P. : Madhya Pradesh, C.G. : Chhattisgarh, P.T.R : Pench Tiger Reserve, AWLS : Achanakmar Wildlife Sanctuary, AABR : Achanakmar Amarkantak Biosphere Reserve, DC : Day collection, NC : Night collection, coll. : collector

SUMMARY

A comprehensive account of Orthoptera of Madhya Pradesh and Chhattisgarh has been provided. Presently 154 species of Orthoptera belonging to 100 genera under 10 families are reported from these two states. Of these, 131 species are reported from Madhya Pradesh and 101 species are from Chhattisgarh.

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REFERENCES

- AGRAWAL, S.M. and SINHA, K.M. 1987. *Homoeogryllus indicus* sp. nov. (Orthoptera : Phalangopsidae) from Chhattisgarh, India. *J. Bombay nat. Hist. Soc.*, **84**(2) : 398-399.
- BHOWMIK, H.K. 1985 a. Contribution to the gryllid fauna of the Western Himalayas (Orthoptera : Gryllidae). *Rec. zool. Surv. India, Occ. Pap. No. 73* : 1-85.
- BHOWMIK, H.K. 1985b. Out line of distribution with an index-catalogue of Indian grasshoppers (Orthoptera : Acrididae). *Rec. zool. Surv. India, Occ. Pap. No. 78* : 1-51.
- BLACKITH, R.E. and BLACKITH, R.M. 1979. Tridactyloids of the Western old world. *Acrida*, : 189-217.
- CHANDRA, K. 2003. Insect biodiversity in Madhya Pradesh and Chhattisgarh. Advancement in Insect Biodiversity. Pub : *Agrobios* (India), Jodhpur : 37-52.
- CHANDRA, K. and GUPTA, S.K. 2005. Record of Monster Cricket, *Schizodactylus monstrosus* (Drury) (Schizodactylidae : Orthoptera) from Chhattisgarh, *Insect Environment*, **11**(2) : 56.
- CHANDRA, K., GUPTA, S. K. and SHISHODIA, M. S. 2007. A Check-list of Orthoptera of Madhya Pradesh and Chhattisgarh. *Zoos' Print Journal*, **22**(5) : 2683-2687.
- CHANDRA, K. and GUPTA, S.K. 2009. On a collection of Orthoptera fauna of Veerangana Durgavati Wildlife Sanctuary, Damoh (Madhya Pradesh). *Biological Forum- An International Journal*, **1**(1) : 77-82.
- CHANDRA, K., GUPTA, S.K. and DUBE, K.K. 2009. Study on the species composition and diversity of Orthoptera in Pench Tiger Reserve, Madhya Pradesh. *Natl. J. Life Sci.*, **6**(1) : 81-86.
- CHOPARD, L. 1969. The fauna of India and adjacent countries. Orthoptera, 2, Grylloidea. *The Manager of publication Delhi*, : xviii+ 421.
- CHOPARD, L. 1970. Description de Gryllides cavernicoles nouveaux (Orthoptera : Phalangopsidae). *Bull. Soc. ent. fr.*, **75** : 117-123.
- DEY, A. and HAZRA, A.K. 2003. Diversity and distribution of grasshopper fauna of greater Kolkata with notes on their ecology. *Memoirs, Pub. : Zool. Surv. India*, **19**(3) : 1-118.
- DIXIT, A. and SINHA, K.M. 1982. *Homoeogryllus japonicus* (Orthoptera : Gryllidae) from Hanthigumpha cave (Udaipur, Ambikapur) of M. P. *Uttar Pradesh J. Zool.*, **2**(2) : 104-105.
- DWIVEDI, K.P. 1978. Energy flow of the grasshopper *Conocephalus pallidus* Redt. (Tettigoniidae : Orthoptera) population in Mohan-Bhata grassland, M. P. *Indian J. Eco.*, **5**(2) : 222-228.
- DWIVEDI, K.P. 1990. Bioenergetics of the grasshopper *Catantops pinguis innotabilis* (Walker) (Acrididae : Orthoptera) population in Mohanbhata grassland. *Environment and Ecology*, **8**(4) : 1095-1100.
- DWIVEDI, K.P. and CHATTORAJ, A.N. 1985. Energy budget of grasshopper *Acrida exaltata* (Walker) population in Mohanbhata grassland. *Environment and Ecology*, **3**(1) : 1-5.
- EADES, D.C. and OTTE, D. 2010. Orthoptera Species File Online. Version 2.0/3.5. <<http://Orthoptera.SpeciesFile.org>>. [retrieval date, 15th January, 2010].
- FLETCHER, T.B. 1921. Catalogue of Indian Insects. pt. I Acrydidae (Tetrigidae) pp. iv+40.
- GUPTA, S.K. 2008. New records of two short-horned grasshoppers from Central India. *Bionotes*, **10**(3) : 89.
- GUPTA, S.K. 2009a. New records of Some Orthoptera from Central India. *Bionotes*, **11**(1) : 28.
- GUPTA, S.K. 2009b. New Records of some grasshoppers and crickets from Central India. *Bionotes*, **11**(3) : 97-98.

- GUPTA, S.K. 2009c. Insecta : Orthoptera. *Fauna of Bandhavgarh Tiger Reserve, Conservation Area Series*, **40** : 39-57(Zool. Surv. India).
- GUPTA, S.K. and CHANDRA, K. 2008. On a collection of Orthoptera from Panna National Park, Madhya Pardesh, India. *Indian J. Trop. Biodiv.* **16**(1) : 173-177.
- GUPTA, S.K. and CHANDRA, K. 2009. Orthoptera of Van Vihar National Park, Bhopal, Madhya Pardesh. *Rec. zool. Surv. India.* (Communicated)
- GUPTA, S.K. and CHANDRA, K. 2009. Orthoptera of Madhav National Park, Shivpuri Madhya Pardesh. *Uttar Pradesh J. Zool.* **29**(1) : 79-89.
- GUPTA, S.K. and SHISHODIA, M.S. 2009. Insecta : Orthoptera. *Fauna of Pachmarhi Biosphere Reserve, Fauna of Conservation Areas*, **39** : 213-246. Zool. Surv. India.
- GUPTA, S.K., DUBE, K.K. and CHANDRA, K. 2008. On a collection of Orthoptera from Achanakmar Wildlife Sanctuary, Chhattisgarh. *Natl. J. Life Sci.*, **5**(1) : 117-126.
- GUNTHER, K.K. 1974. Uber die Tridactyloidea (Saltatoria, Insecta) in den Sammlungen des Museums fur Naturgeschichte der Stadt Genf. *Revue suisse Zool.*, **81** : 1027-1074.
- GUNTHER, K.K. 1980. Katalog der Caelifera-unter orderung Tridactyloidea. *Dtsch. ent. Z.N.E.*, **27**(1-3) : 149-178.
- HANCOCK, J.L. 1913. Zoological results of the Abor Expedition, 1911-1912. XXI. Orthoptera, I : Tetriginae (Acridiinae). *Rec. Indian Mus.*, **8** : 311-315.
- HANCOCK, J.L. 1915. Indian Tetriginae. *Rec. Indian Mus.*, **11** : 55-132.
- HAAN, W. De. 1842. Bijdragen tot de Kennis der Orthoptera, In Temminck C. J. Verh. Natuurl. *Gesch. Ned. Overszee. Bezitt*, **2** : 45-248.
- INGRISCH, S. 1998. The genera *Velarifictous*, *Modicogryllus* and *Mitius* in Thailand (Ensifera : Grylloidea : Gryllinae). *Ent. Scand.*, **29**(3) : 315-359.
- JAGO, N.D. 1984. The alate genera of East African Catantopinae (Orthoptera : Acridoidea) including revision of the genus *Catantops* Schaum. *Trans. Amer. ent. Soc.*, **110**: 295-387.
- JOSHI, K.C., KULKARNI, N., ROYCHOUDHURY, N., CHANDRA, S., and BARVE, S. 2004. A study of insects from Kanha National Park. *Journal of Tropical Forestry*, **20**(3&4) : 58-74.
- KEVAN, D.K. McE. 1970. Indian Pyrgomorphini Other than *Pyrgomorpha* (Orthoptera : Acridoidea : Pyrgomorphidae). *Rev. suisse Zool.*, **77** : 851-866., pls 1-IV.
- KEVAN, D.K. McE. and Jin, X-B. 1993. New species of the *Xiphidiopsis* group from the Indian region (Grylloptera : Tettigonioidea : Meconematidae). *Trop. Zool.*, **6** : 253-274.
- KIRBY, W.F. 1914. The fauna of British India, including Ceylon and Burma Orthoptera (Acridiidae) : IX + 276pp. London.
- REDTENBACHER, J. 1891. Monographie der Conocephaliden. *Verhandl. zool. bot. Ges.*, **41** : 315-362.
- ROONWAL, M.L. 1981. Field bioecology and morphometry of some Central Indian grasshoppers (Acridoidea), with notes on a swimming species (Tetrigoidea). *Proc. zool. Soc. Calcutta*, **32** : 97-106.
- MASON, J.B. 1973. A revision of the genera *Hieroglyphus* Krausa, *Parahieroglyphus* Carl and *Hieroglyphodes* Uvarov (Orthoptera : Acridoidea). *Bull. Br. Mus. nat. Hist. (Ent.)*, **28**(7) : 507-560.

- SAUSSURE, H. De. 1877. Melanges Orthopterologiques. Ve. fasc. Gryllides. *Mem. Soc. Geneve*, **25** : 1-352.
- SHISHODIA, M.S. 1988. Additional type material of *Capulica alata* Uvarov, *Rec. zool. Surv. India*, **85**(3) : 465.
- SHISHODIA, M.S. 1991a. Grouse locusts (Insecta : Orthoptera : Tetrigidae) of Kanha National Park, Mandla, Madhya Pradesh, India. *Rec. zool. Surv. India*, **89**(1-4) : 101-104.
- SHISHODIA, M.S. 1991b. Taxonomic and Zoogeography of the Tetrigidae (Orthoptera : Tetrigoidea) of North Eastern India. *Rec. zool. Surv. India, Occ. Pap. No. 140* : 1-198.
- SHISHODIA, M.S. 1995. Insecta : Orthoptera. *Fauna of conservation Areas, 6 : Indravati Tiger Reserve, Zool. Surv. India* : 11-17.
- SHISHODIA, M.S. 1999. Orthoptera fauna of Patalkot, Chhindwara, Madhya Pradesh, India. *Rec. zool. Surv. India* : **97**(4) : 33-43.
- SHISHODIA, M.S. 2000. Short and long horned grasshoppers and crickets of Bastar district, M.P., India. *Rec. zool. Surv. India*. **98**(1) : 27-80.
- SHISHODIA, M.S. 2006. On a collection of grasshoppers by Dr. M. L. Roonwal from the erstwhile Rewa estate, Madhya Pradesh. *Bionotes*, **8**(1) : 11-12.
- SHISHODIA, M.S. 2008. Insecta : Orthoptera. In Faunal Diversity of Jabalpur district, Madhya Pradesh, *Zool. Surv. India* : 93-103.
- SHISHODIA, M.S. and BARMAN, R.S. 2004. Insecta : Orthoptera : Tettigoniidae. *Fauna of Manipur, State fauna series, 10, Zool. Surv. India* : 139-145.
- SHISHODIA, M.S. and HAZRA, A.K. 1986. Orthopteran fauna of Silent valley, Kerala. *Rec. zool. Surv. India*, **84**(1-4) : 191-228.
- SHISHODIA, M.S. and TANDON, S.K. 1987. Insecta : Orthoptera : Grylloidea and Tridactyloidea. *Fauna of Orissa, State Fauna Series, 1. Zool. Surv. India* : 113-128.
- SINGH, K.J. and SINGH, O.P. 1992. *Cyrtacanthacris tatarica* Linn. (Orthoptera : Acrididae) as a pest of Soyabean pods. *Indian J. Plant Protection*, **20**(1) : 116-117.
- SINHA, K.M. and AGRAWAL, S.M. 1973. Diagnosis of a cave-gryllid *Kempiella shankari* n. sp. (Orthoptera : Phalangopsidae). *Bull. Ent.*, **14** : 97-100.
- TANDON, S.K., SHISHODIA, M.S. and DEY, A. 1976. On a collection of Orthoptera (Insecta) from Kanha National Park, Mandla, Madhya Pradesh, India. *Newsl. Zool. Surv. India*, **2**(4) : 167-170.
- TANDON, S.K., SHISHODIA, M.S. and DEY, A. 1995. Insecta: Orthoptera. *Fauna of Kanha Tiger Reserve, Fauna of Conservation Areas, 7* : 19-25. *Zool. Surv. India*.
- UVAROV, B.P. 1925. Insects, Orthopteres, Acrididae. In Misson Guy Babault dans les Provinces Centrales de l' Inde et drans la Region Occidentale de l' Himalaya, 1914. pp. 40, 1pl. Paris.
- VASANTH, M. 1993. Studies on crickets (Insecta : Orthoptera : Grylloidae) of Northeast India. *Rec. zool. Surv. India, Occ. Pap. No. 132* : 1-178.
- WALKER, F. 1870. Catalogue of the specimens of Dermaptera Saltoria in the collections of British Museum. **4** : 605-809. London.
- WALKER, F. 1871. Catalogue of the specimens of Dermaptera saltatoria in the collection of the British Museum. Part V. Tettigidae, and Supplements to earlier parts. pp., 4+ 811-850+43+116. London (*Br. Mus. nat. Hist.*).

NEUROPTERA

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INTRODUCTION

Neuroptera are soft-bodied insects and include a variety of small to large insects. They are commonly known as dobson-flies, alder-flies, fish-flies, snake-flies, lace-wings, ant-lions and owl-flies. They are recognized by the fine network of veins of generally transparent wings and well developed antennae. The wings are held roof-wise over the back at rest and are generally similar in size, shape and venation. The mouth parts are adapted for chewing. Abdomen is ten segmented with eight abdominal spiracles. The larvae are predacious, aquatic, semi-aquatic, arboreal or terrestrial.

The order Neuroptera created by Linnaeus (1758) are valuable allies of man. A large number of species belonging to families of Hemerobiidae, Chrysopidae and Coniopterygiidae are known to be predacious on the Agri-horticultural pests like aphids, coccids, thrips, mites, and small moths etc. Therefore, these insects take active part in biological control measures. They are generally found in herbages, bushes, trees, different types of vegetations including crops in the Himalayan, Desert, terrestrial and insular ecosystems of India (Ghosh, 1990).

Numerically, about 5000 species are known throughout the world (Tjeder, 1966). Of which, about 335 species under 125 genera under 13 families are known from India (Ghosh, 1998). The

present paper deals with 33 species of Neuroptera belonging to 23 genera and 6 families from Madhya Pradesh and Chhattisgarh. Of these, 23 and 13 species are recorded from Madhya Pradesh and Chhattisgarh respectively and only three species are reported from both the states and 22 species are new record to the fauna of these states.

SYSTEMATIC LIST

Suborder PLANIPENNIA

Infraorder HEMEROBIIFORMIA

Superfamily MANTISPOIDEA

Family MANTISPIDAE

Subfamily MANTISPINAE

Genus *Climaciella* Enderlein

1. *Climaciella quadrituberculata* (Westwood)

Genus *Mantispa* Illiger

2. *Mantispa femoralis* Banks
3. *Mantispa nodosa* Westwood
4. *Mantispa* sp

Superfamily OSMYLOIDEA

Family OSMYLIDAE

Subfamily SPILOSMYLINAE

Genus *Spilosmylus* Kolbe

5. *Spilosmylus tuberculatus* (Walker)

Superfamily HEMEROBIOIDEA

Family CHRYSOPIDAE

Subfamily CHRYSOPINAE

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Genus *Chrysopa* Leach

6. *Chrysopa orestes* Banks
 7. *Chrysopa septumpunctata* Wesmael
 8. *Chrysopa (Chrysoperla) sanandensis* Ghosh

Genus *Chrysopidia* Navas

9. *Chrysopidia nigrata* Navas

Genus *Italochrysa* Principi

10. *Italochrysa flavobrunnea* Ghosh
 Family NEMOPTERIDAE

Genus *Croce* MacLachlan

11. *Croce filipennis* Westwood

Family MYRMELEONTIDAE

Subfamily PALPARINAE

Genus *Palpares* Rambur.

12. *Palpares pardus* Rambur
 13. *Palpares contrarius* (Walker)

Genus *Tomatares* Hagen

14. *Tomatares pardalis* Fabricius

Genus *Indoclystus* Banks

15. *Indoclystus singularis* (Westwood)

Genus *Acanthaclisis* Rambur

16. *Acanthaclisis edax* (Walker)

Genus *Stiphronera* Gerstaecker

17. *Stiphronera inclusa* (Walker)

Infraorder MYRMELEONTIFORMIA

Superfamily MYRMELEONTOIDEA

Subfamily MYRMELEONTINAE

Genus *Myrmeleon* Linnaeus

18. *Myrmeleon angusticollis* Rambur
 19. *Myrmeleon tenuipennis* Rambur
 20. *Myrmeleon assamensis* Ghosh

Genus *Hagenomyia*

21. *Hagenomyia sagax* (Walker)
 22. *Hagenomyia marginicollis* (Gerstaecker)

Genus *Nesoleon* Banks

23. *Nesoleon perpunctatus* Banks

Genus *Distoleon* Banks

24. *Distoleon verendus* (Walker)
 25. *Distoleon* sp.

Genus *Creoleon* Tillyard

26. *Creoleon griseus* (Klug)

Genus *Neuroleon* Navas

27. *Neuroleon apicalis* Navas

Genus *Indophanes* Banks

28. *Indophanes barbarus* (Walker)

Family Ascalaphidae

Subfamily Ascalaphinae

Genus *Ogcogaster* Westwood

29. *Ogcogaster tessellata* Westwood

Genus *Ascalaphus* Fabricius

30. *Ascalaphus sinister* (Walker)

Subfamily SCHIZOPHTHALMINAE

Genus *Pseudoptynx* Weele

31. *Pseudoptynx furcifer* Weele

Genus *Glyptobasis* MacLachlan

32. *Glyptobasis dentifera* (Westwood)
 33. *Glyptobasis cornuta* Kimmins

SYSTEMATIC ACCOUNT

Family MANTISPIDAE

1. *Climaciella quadrituberculata* (Westwood)

1892. *Mantispa quadrituberculata* Westwood, *Trans R ent. Soc. Lond.*, (N.S.Z) 1 : 264.
 1909. *Ditaxis 4-tuberculata* Navas, *Mem. R. Acad. Cienc. Art. Barcel.*, 7: 474.
 1910. *Climaciella 4 tuberculata* Enderlein, *Stettin. Ent. Ztg.*, 71: 361.
 1910. *Climaciella miyakei* Okamoto, *Zool. Mag.*, 22 : 541.
 1910. *Climaciella habutsuella* Okamoto, *Ibid.*, : 542.
 1927. *Climaciella satsumensis* Yazaki, *Tohoku Imp. Univ. Sci. Rep.*, (4)2 : 361.
 1927. *Climaciella tanegashimensis* Yazaki, *Ibid*: 363.
 1962. *Climaciella quadrituberculata* Kuwayama, *Pacific Insects*. 4. No. 2 : 379.
 2000. *Climaciella quadrituberculata*. Ghosh. *Rec. zool. Surv. India. Occ. Paper No. 184* : 17.

Material examined: Chhattisgarh : 1ex., 18-7-01; Chhaprawa forest, Bilaspur, coll. A.Singh.

Diagnostic characters : Head is orange yellow. Antenna is black with yellow base at apex.

Pronotum is yellow anteriorly with black margin and a brown transverse fascia posteriorly. Meso and metanotum are yellow. Legs are reddish brown; femur of foreleg with a large black spot at inner side. Wings: suffused with pale brownish on costal, subcostal and radial areas of both wings and at the base of forewing. A conspicuous fulvous band on apical areas of both wings. Abdomen with yellow tergites, but hind borders of both third and fourth tergites black.

Distribution : India : Assam, Chhattisgarh (Bilaspur), Himachal Pradesh and W. Bengal.

Elsewhere : Japan, Taiwan, Philippines, Vietnam and Java.

2. *Mantispa femoralis* Banks

1933. *Mantispa femoralis* Banks, *Indian Forest Re.*, **18**(6) : 2.

1977. *Mantispa femoralis*. Ghosh and Sen, *Rec. zool. Surv. India*, **73** : 283.

Material examined : Madhya Pradesh : 1 ex., 21.6.01; P.T.R, Karmalhiri, Seoni, coll. K. Chandra. Chhattisgarh; 2 exs., 21-7-04; Chhaprawa Rest House, ABR, Bilaspur, coll. A. Singh.

Diagnostic characters : Antenna is very short. Prothorax is slender. Radial cells of both wings wide and angulated and with two cross veins which forms 3 radial cells. Cubitus in hind wing bending towards anal. Pterostigma of wings dark brown. Dark streak on under side of mid and hind femora; base of mid and hind tibiae dark.

Distribution : India : Chhattisgarh (Bilaspur), Karnataka and Madhya Pradesh (Seoni).

3. *Mantispa nodosa* Westwood

1848. *Mantispa nodosa* Westwood, *Cabinet Orient. Ent.*, **70**.

1852. *Mantispa nodosa* Westwood, *Trans. R. ent. Soc. Lond.*, (N.S)**1** : 256.

1977. *Mantispa nodosa* Ghosh and Sen, *Rec. zool. Surv. India*, **72** : 283.

2000. *Mantispa nodosa* Ghosh. *Rec. zool. Surv. India. Occ. Paper No. 184* : 19.

Material examined : Madhya Pradesh : 1 ex., 21.6.01; P.T.R, Karmalhiri, Seoni, coll. K.Chandra.

Diagnostic characters : Antenna is brown. Prothorax is short and nodose. Wings are subhyaline, costal half of forewing yellow and its base brown with an oblique brown band before middle. Legs are brown. Abdomen is dorso-medially yellowish.

Distribution: India : Assam, Madhya Pradesh (Seoni) and Meghalaya.

4. *Mantispa* sp. Illiger

1798. *Mantispa*. Illiger, Kugelann, *Verzeichniss der Kafer preussens* Gebauer, Halle : 499.

1839. *Mantispa*, Burmeister, *Handbuch der Entomologie*, **2**(2) : 965.

1866. *Mantispa*, Hagen. *Stettin ent. Ztg.*, **27** : 375.

1888. *Mantispa*, Rostock, *Ver. Naturk. Zwicku, Jahresh.*, **1887** : 115.

1909. *Mantispa*, Van der Weele, *Notes. Leyden. Mus.*, **31** : 87.

1910. *Mantispa*, Enderlein, *Stettin. Ent. Ztg.*, **71** : 344.

1910. *Mantispa*, Okamoto, *Zool. Mag.*, **22** : 534.

1912. *Mantispa*, Nakahara, *Zool. Mag.*, **24** : 559.

1913. *Mantispa*, Nakahara, *Annotnes Zool. Jap.*, **8** : 230.

1925. *Mantispa*, Kuwayama, *J. Coll. Agr. Hokkaido Imp. Univ.*, **15** : 252.

1959. *Mantispa*, Handschin, *Rev. Zool. Bot. Afr.*, **59** : 198.

1977. *Mantispa*, Ghosh & Sen, *Rec. zool. Surv. India*, **73** : 282.

Material examined: Chhattisgarh ; 1 ex., 1.7.04; Lamni forest, ABR, Bilaspur, coll. A. Singh.

Diagnostic characters : Radial cells of both wings wide and somewhat angulated; prothorax slender; cubitus in hindwing bending down towards first anal, touching first anal or connected with it by a short cross vein. Fore legs are raptorial. coxae long, femur much enlarged with long spines on ventrolateral margin. Tibia and tarsus thin.

Distribution : India : Chhattisgarh (Bilaspur).

Elsewhere : Africa, America, Australlia, China, Indonesia, New Guinea, Philippines, Russia, Sri Lanka and Taiwan.

Family OSMYLIDAE

5. *Spilosmylus tuberculatus* (Walker)

1853. *Osmylus tuberculatus* Walker, *Cat. Brit. Mus. Neur.*, **2** : 255.
1893. *Osmylus modestus* Gerstaecker, *Mitt. nature. Ver. Neu. Vorpom. u. Rugen*, **25** : 77.
1914. *Osmylus (lysmus) japonicus* Okamoto. *Ent. Mitt.* **3** : 23.
1914. *Spilosmylus conformis* Navas, *Mem. Acad. Cienc. Art. Barcel.*, (3)**10**(9) : 53.
1914. *Spilosmylus tuberculatus* Nakahara, *Annot. Zool. Jap.*, **8** : 502.
1925. *Spilosmylus modestus* Kruger, *Stettin. Ent. ztg.*, **76** : 78.
1937. *Spilosmylus japonicus* Banks, *Philip. J. Sci.*, **62** : 278.
1980. *Spilosmylus tuberculatus* Ghosh, *Rec. zool. Surv. India*, **77** : 248
1983. *Spilosmylus tuberculatus*, Ghosh, *Rec. zool. Surv. India*, **80** : 292.

Material examined : Recorded from literature (Ghosh, 1983).

Diagnostic characters : Antenna is yellow. Wings are hyaline. Forewing with whitish veins, interrupted by brown bands. Pterostigma yellowish; a small dot present in the crossvein between first branch of radial sector and media and one on the cells between second and third branches of radial sector ; three crossveins in outer gradate series and two in inner gradates distinctly clouded with brown ; a brown tubercle with yellow stripes on hind border at one third of length from base. Hindwings are without tubercle and dots.

Distribution : India : Assam, Andaman Islands, Maharashtra and Madhya Pradesh (Balaghat).

Family CHRYSOPIDAE

6. *Chrysopa orestes* Banks

1911. *Chrysopa orestes* Banks, *Proc. ent. Soc. Wash.*, **13**, p.102.
1933. *Chrysopa orestes* Banks, *Indian Forest Rec.*, **18**(6) : 4.
1977. *Chrysopa orestes*. Ghosh & Sen, *Rec. zool. Surv. India*, **73** : 293.
1992. *Chrysopa orestes*. Anonymous, *Technical Bulletin No.*, **5** : 16

Material examined : Recorded from literature (Anon., 1992).

Diagnostic characters : Antenna : yellow to fuscous; with black on outer side of basal joints. pronotum : broad but narrowed in front; with transverse groove and ridge; meso and metanotum: greenish yellow. Forewing: short and broad with tip subacute; venation pale; gradate veinlets, the ends of costal veinlets and few other crossveins brown; divisory veinlet ending beyond first radio-medial cross vein; gradate veinlets 3/6; inner gradates plainly nearer to outer than to radial sector; pterostigma yellowish; hindwing: slender, gradate veinlets 3/2; legs : pale yellow; tarsi brown; abdomen : brownish.

Distribution: India : Karnataka, Bihar and Madhya Pradesh.

7. *Chrysopa septempunctata* Wesmael

1841. *Chrysopa septempunctata* Wesmael, *Bul L'Acad Brux.*, **8**, P. 210.
1842. *Hemerobius pallens* Rambur, *Hist. nat. ins. Neur.*, P. 425.
1842. *Hemerobius mauricianus* Rambur, *ibid.*, P. 425.
1851. *Chrysopa nobilis*, Brauer (*Nec Heyden*) *Haid nat. Abh.*, **4**(4) : P. 7.
1851. *Chrysopa pallens* Schneider, *Sym. Mon. Gen. Chrysop.*, P. 101.
1851. *Chrysopa septempunctata* Schneider, *Sym. Mon. Gen. Chrysop.*, P. 101.
1858. *Chrysopa septempunctata* Hagen, *Ent. Ann.*, P. 23.
1868. *Chrysopa septempunctata* MacLachlan, *Trans. R. ent. Soc. Lond.*, P.201.
1923. *Cintameva septempunctata* Navas, *Entom. Catalunya Neuropt.*, P.164
1927. *Chrysopa septempunctata* Lucas, *Entomologist*, **60** P. 7
1929. *Chrysopa septempunctata* Killington, *Trans. ent. Soc. Hamps. and, S. Eng.*, : 32.
1966. *Chrysopa (Chrysopa) septempunctata* Tjeder, *South African animal Life*. **12**, P. 352.
1977. *Chrysopa (Chrysopa) septempunctata* Ghosh & Sen, *Rec. zool. Surv. India*, **73** : 294.

Material examined : Chhattisgarh : 1 ex., 11.6.04; AMS, Diyavan forest, Bilaspur, coll. A. Singh.

Diagnostic characters : Head with a black spot between antennae. Vertex slightly raised. Face normally with seven black spots. Forewing oval, elongate, apex subacute, pterostigma long and narrow intramedian cell ovate and ending after first crossvein between radius and anterior & posterior media. Several costal veinlets, centre of gradate crossveins, apical portion of cubitus posterior and anal veins black. Costal veinlets, crossvein between radius and radial sector and centre of gradates of hind wings black.

Distribution: Earlier record from India and presently collected from Chhattisgarh (Bilaspur).

Elsewhere : Europe, Iran, Mauritius and Turkestan.

8. *Chrysopa (Chrysoperla) sanandensis* Ghosh

1977. *Chrysopa (Chrysoperla) sanandensis* Ghosh, *Entomon.*, 2 (no. 1) : 103, 7 figs.

1983. *Chrysopa (Chrysoperla) sanandensis*, Ghosh, *Rec. zool. Surv. India*, 81 : 78.

Material examined : Chhattisgarh; 2 exs., 4-1-1979 ; Kanker Rest House, Bastar ; 1 ex, 13-12-78; Bodhghat, Bastar, all coll. M.S. Shishodia; 3 exs, 12-12-1978; Dongaghat, Bastar, coll. M.S Shishodia & I.J. Gupta. (Recorded from literature. Material available at Z.S.I, HQS, Kolkata).

Diagnostic characters : Forewing with costal area of moderate width. Wing margin with small hairy thickening; crossvein between radius and media in hind wing short and placed obliquely and transversely.

Distribution : India : Chhattisgarh (Bastar) and Gujarat.

9. *Chrysopidia nigrata* Navas

1910. *Chrysopidia nigrata* Navas, *Broteria*, 9 : 55.

1971. *Chrysopidia nigrata* Holzel, *Wien. Z. Arbei. Ost. Ent.*, 23(2) : 57

1990. *Chrysopidia nigrata* Ghosh, *Rec. zool. Surv. India*, 86(2) : 345.

Material examined : Madhya Pradesh : 1 ex., 16-6-01; PTR, Karmalhiri, Seoni; 1 ex., 18-6-01; PTR, Karmalhiri, Seoni; 1 ex., 19-6-01; PTR, Karmalhiri, Seoni, all coll. K.Chandra.

Diagnostic characters : Mandible asymmetrical; forewing without jugal lobe; costal field broad; only a single basal crossvein between subcosta and radius ; apex of intra median cell ending beyond the 1st radio medial crossvein ; three rows of gradate crossveins. Hindwing : with feebly developed frenulum; anterior media and radius occasionally fused; three rows of gradates.

Distribution : India : Manipur, Madhya Pradesh (Seoni), Sikkim and West Bengal.

10. *Italochrysa flavobrunnea* Ghosh

1981. *Italochrysa flavobrunnea* Ghosh, *Bull. zool. Surv. India*, 3(3) : 145.

2000. *Italochrysa flavobrunnea* Ghosh. *Rec. zool. Surv. India. Occ. Paper no 184* : 58.

Material examined : Chhattisgarh : 1ex., 4-1-1979; Kanker Rest House, Bastar, coll. M.S. Shishodia & party. (Recorded from literature. Material available at Z.S.I, HQS, Kolkata)

Diagnostic characters : Scape and pedicel of antenna yellow but flagellum black. Pro- meso and metanotum yellow. Mesonotum with blackish markings on anterior part of prescutum. Wings elongate with subacute apex. Longitudinal veins of forewings pale, yellowish white but portion of radial sector beyond middle black. Pterostigma elongate and brownish. Hind wing with pale venation. Legs : femur yellow with a blackish spot just before apex, tibia yellow but foreleg with a longitudinal brown line on the inner side. Abdomen : black but apex of each segment yellow.

Distribution : India : Chhattisgarh (Bastar), Madhya Pradesh, Meghalaya and Tamilnadu.

Family NEMOPTERIDAE

11. *Croce filipennis* Westwood.

1841. *Nemoptera filipennis* Westwood, *Proc. Zool. Soc. Lond.*, p. 13.

1842. *Nemoptera filipennis* Westwood, *Cabinet Oriental Ent.*, pl. 34.

1853. *Nemoptera filipennis* : Walker, *Cat. Brit. Mus. Neur.*, p. 476.

1909. *Croce filipennis*, Needham, *Rec. Indian. Mus.*, 3 : 196.

1911. *Croce filipennis* : Imms, *Trans. Linn. Soc.*, **11**, pp. 151-156.

1921. *Croce filipennis* : Dover, *Rec. Indian Mus.*, **22**, p. 398.

Material examined : Madhya Pradesh : 1 ex., 10.5.2007; Wright Town, Jabalpur; 2 exs, 15.5.2008; C.R.S, Z.S.I, Office campus, Vijay Nagar, district., all coll. K. Chandra.

Diagnostic characters : Hind wings very narrow, thread-like and longer than body. The head is prolonged into a rostrum. Antennae are moderately long, not clubbed or thickened at the end.

Distribution : India : Uttar Pradesh, Gujarat, Maharashtra, Madhya Pradesh (Jabalpur). Bihar, Orissa and West Bengal.

Family MYRMELEONTIDAE

12. *Palpares pardus* Rambur

1862. *Myrmeleon pardus* Rambur *Hist. Nat. Ins. Neur* : 375.

1868. *Palpares pardus* MacLachlan *J. Linn. Soc.* **9** : 275.

1984. *Palpares pardus* Ghosh. *Rec. zool. Surv. India. Occ. Paper No. 52* : 2.

Material examined : Madhya Pradesh : 1 ex., 6-9-00; P.W.D Rest House, Hoshangabad coll. Y.N. Gupta; 1 ex., 14-1-01; Totladoh Rest House, P.T.R, Chhindwara, coll. S.K. Mishra; 1 ex., 19-1-01; Lohanala, P.T.R, Chhindwara, coll. Y.N. Gupta; 1 ex., 30-7-01; Darsaela, P.T.R, Chhindwara, coll. M.L. Koshta; 1 ex., 18-8-01; Totladoh, P.T.R, Chhindwara; 1 ex., 22-8-01; Dammot, P.T.R, Chhindwara; 1 ex., 5-9-01; Kumbhpani, Totladoh, P.T.R, Chhindwara all coll. Y.N. Gupta; 3 ex., 21-9-01; P.T.R, Chhindwara; 1 ex., 21-9-01; P.T.R, Totaladoh Rest House, Chhindwara; 1 ex., 22-9-01; Totladoh, P.T.R, Chhindwara; 1 ex., 22-9-01; Totladoh, P.T.R, Chhindwara; 1 ex., 24-9-01; Shircloani, P.T.R, Chhindwara all coll. S.K. Mishra; 1 ex., 18-10-02; Delkhani, Pachmari, Chhindwara; 1 ex., 19-10-02; Delkhani, Pachmari, Chhindwara; 2 exs., 19-10-02; Bamahni, Delkhani, Pachmari, Chhindwara; 2 exs., 19-10-02; Delkhani, Pachmari, Chhindwara; 4 exs., 22-10-02; Tamia

Pataalkot, Pachmari, Chhindwara; 1 ex., 23-10-02; Pataalkot, Pachmarhi, Chhindwara ; 1 ex., 23-10-02; Pataalkot, Pachmarhi, Chhindwara; 6 exs., 25-10-02; Parasia, Pachmarhi, Chhindwara all coll. Y.N. Gupta; 1 ex., 14-10-03; V.V.N.P, Gate 2&1, Bhopal, Coll. D.N & S.A; 1 ex., 14-8-05; Tala, B.N.P, Umaria ,coll. K.Chandra; 1 ex., 29-9-07; Rest House Narmada Nagar, Khandawa; 2 exs., 3-10-07; Narmada Nagar, Indore road, Khargon; 1 ex., 7-10-07; F.R.H Badwah, Khargon; 1 ex., 9-10-07; P.W.D Rest House, Satwas, district Dewas, all coll. D. K. Harshey; 1 ex., 25-10-07; Bamera Dam, Umaria, coll. R.M. Sharma.

Diagnostic characters : Antenna is black. Pronotum with a median stripe and also a stripe on either side. Meso and metanotum with three interrupted black stripes. Forewing with several quadrate brown spots from base of costa towards apex; brown dots at base and along hind margin besides a few large brown spots on disc and small dots on hind margin; single pterostigmal band either extending outward or curved inward or broken into a series of spots; a large spot on cubitus.

Distribution : India : Bihar, Maharashtra, Madhya Pradesh (Bhopal, Chhindwara, Hoshangabad, Khandawa, Khargon, Umaria), Orissa, Sikkim, West Bengal & South India.

13. *Palpares contrarius* (Walker)

1853. *Myrmeleon contrarius* Walker, *Cat. Brit. Mus. Neur.* **2** : 101.

1868. *Palpares contrarius* MacLachlan, *J. Linn. Soc.* **9** : 274.

1984. *Palpares contrarius* Ghosh, *Rec. zool. Surv. India. Occ. paper no. 52* : 11

Material examined : Madhya Pradesh : 1 ex., 12.4.01; Bori Rest House, Pachmarhi, Hoshangabad, coll. Y.N. Gupta.

Diagnostic characters : Antenna is black, vertex with two black bands and a black spot behind hind band. Thorax with three black stripes. Pterostigma indistinct. Forewing is dotted with brown; tinged with pale brown specially at tip, 4 oblique dark brown bands on disc. Hind wing

with three dark brown bands—median band reaching fore and hind border, stigmal band extending to hind border with a projection towards tip of median band, apical band broader at hind border. Abdomen darker towards apex.

Distribution : India : Karnataka, Maharashtra, Madhya Pradesh (Hoshangabad), Orissa and Uttar Pradesh.

Elsewhere : Sri Lanka

14. *Tomatares pardalis* Fabricius

1853. *Myrmeleon compositus* Walker *Cat. Brit. Mus. Neur.*, P. 397.
 1868. *Tomatares pardalis* MacLachlan *J. Linn. Soc.*, 11, P. 281.
 1909. *Tomatares compositus* Needham *Rec. Indian. Mus.*, 3 : P.200.
 1977. *Tomatares pardalis*, Ghosh and Sen, *Rec. zool. Surv. India*, 73 : 318.

Material examined : Madhya Pradesh : 1 ex., 24-11-01; MNP (D.C), Tiger Safari, Shivpuri, coll. D. Nema; 1ex., 18-10-02; Sitadongni, Chhindwara; 4 exs., 18-10-02; Delkhani, Pachmarhi, Chhindwara; 4 exs., 19-10-02; Delkhani, Pachmarhi, Chhindwara; 5 exs., 19-10-02; Bamakni, Delkhani, Pachmarhi, Chhindwara; 1 ex., 21-10-02; PWD Rest House, Tamia, Pachmarhi, Chhindwara; 7 exs., 22-10-02; Tamia, Patalkot, Pachmarhi, Chhindwara; 4exs., 23-10-02; Patalkot, Pachmarhi, Chhindwara; 3 exs., 28-10-02; P.W.D Rest.House, Singnama Pachmarhi, Hoshangabad; 2exs., 29-10-02; Singnama P.W.D Rest House, Pachmarhi, Hoshangabad; 1 ex., 31-10-02; Pitoamia, Pachmarhi, Hoshangabad; 1ex., 1-11-02; Tekapan, Pachmarhi, Hoshangabad, all coll. Y.N. Gupta; 1 ex., 29-9-07; Narmada Nagar, Shuttle Dam, Khandawa; 1 ex., 3-10-07; Narmada nagar, Indore road, Khargon; 1 ex., 3-10-07; NHDC Rest House, Khandawa; 1 ex., 7-10-07; Siddwab koot, Badwah, Khargon; 1 ex., 7-10-07; F.R.H Badwah, Khargon, all coll. D.K. Harshey; 1 ex., 25-10-07, Bamera Dam, Umaria, coll. R.M. Sharma.

Diagnostic characters : Head small with prominent lateral eyes but without ocelli. Antenna

multi segmented, weakly clubbed. Distance between bases of antennae more than their basal diameter. Wings usually subequal; cross veins numerous; with pterostigma; hypostigmatic cell long and subapical; costa with simple or forked veinlets.

Distribution : India : Madhya Pradesh (Chhindwara, Hoshangabad, Khandawa, Khargon, Shivpuri, Umaria), N. India, W. India and W. Bengal.

15. *Indoclystus singularis* (Westwood)

1848. *Myrmeleon singularis* Westwood, *Cabinet. Oriental. ent.*, P 70, Pl 34.
 1853. *Myrmeleon singularis* Walker, *Cat. Brit. Mus. Neur.*, P.399.
 1868. *Glenurus singularis* MacLachlan, *J. Linn. Soc. Zool.*, 9, P 281.
 1941. *Indoclystus singularis* Banks, *Am. Mus. Novit.*, New York No-1143, P3.
 1977. *Indoclystus singularis*. Ghosh and Sen, *Rec. zool. Surv. India*, 73 : 303.

Material examined : Madhya Pradesh : 1 ex., 7-4-01; Brijala River, Pachmarhi, Hoshangabad, coll. Y.N. Gupta.

Diagnostic characters : Head yellow with black markings. Frons : black, Clypeus : brownish with a dark brown spot on either side. Scape and pedicel of antenna blackish brown Pronotum yellow with a narrow black stripe at middle; black hairs well-marked at lateral margins. Meso and metanotum are yellow with a black patch on prescutum of mesothorax. Wings with spots & dark brown bands. Legs are yellow, femora and tibiae dark brown at middle and tips black. Spurs of hind tibiae red; claws red; hairs black. Abdomen yellow with some brown patches either at apex or base of each segment.

Distribution : India : North India and Madhya Pradesh (Hoshangabad).

16. *Acanthaclisis edax* (Walker)

1853. *Myrmeleon edax* Walker, *Cat. Brit. Mus. Neur.*, P. 317.
 1909. *Myrmeleon edax*. Needham, *Rec. Indian. Mus.*, 3, P. 200.

1921. *Acanthaclisis edax*. Dover, *Rec. Indian. Mus.*, 22 P. 397-398.

1977. *Acanthaclisis edax* Ghosh and Sen, *Rec. zool. Surv. India*, 73 : 300.

Material examined : Madhya Pradesh : 1 ex., 7-9-01; P.T.R Totladoh Rest House, Chhindwara, coll. Y.N. Gupta; 1 ex., 17-9-01; P.T.R, Totladoh Rest House, Chhindwara ; 1 ex., 19-9-01; P.T.R, Ghatpindrai, Chhindwara; 1 ex., 21-9-01; P.T.R, Totladoh Rest House, Chhindwara, all coll. S.K. Mishra; 1 ex., 20-10-02; Lalgoan, Delkhani, Chhindwara, coll. Y.N. Gupta.

Diagnostic characters : Antenna, head and thorax are black. Wings are broader. Pterostigma is brown. A few cross veins between radius & radial sector. Some brown shade near tip of wings. Hind wings are shorter and narrower than forewing, 1st anal is fused with the lower branch of cubitus. Spur of hindtibia bent at right angle and never shorter than 3 tarsal segments taken together. Body is stout and hairy. Abdomen is black.

Distribution : India : Madhya Pradesh (Chhindwara), Orissa and Tamilnadu.

17. *Stiphroneura inclusa* (Walker)

1853. *Myrmeleon inclusus* Walker, *Cat. Brit. Mus. Neur.*, 2 : 327.

1886. *Stiphroneura inclusus* Gerstaecker, *Mitt. naturw. Var. neu. Vorpom. u. Rugen.*, 16 : 91.

1909. *Stiphroneura inclusa* Needham, *Rec. Indian. Mus.*, 3 : 200.

1983. *Stiphroneura inclusa* Ghosh, *Rec. zool. Surv. India*, 80 : 294.

1984. *Stiphroneura inclusa* Ghosh, *Rec. zool. Surv. India. Occ. Paper*, no. 52 : 26.

2000. *Stiphroneura inclusa* Ghosh. *Rec. zool. Surv. India. Occ. Paper no 184* : 80.

Material examined : (Recorded from literature-Ghosh, 1983)

Diagnostic characters : Body is stout & dark. Antenna is black. Head is pitchy. Pronotum with grayish marks. Legs are black and stout; spurs curved. Wings are grayish, pterostigma whitish. Forewing with numerous limpid spots along

borders and also at apex; alternately arranged with some pale brown spots; a few dark brown spots at base, at apex, one between the apical portion of first sector of radius and cubitus. Hindwing with some alternate pale brown and limpid spots along borders towards tip; two large brown rounded spots one near fore border and other near hind border. Abdomen is less than half the length of wings : slightly paler than thorax.

Distribution : India : Himachal Pradesh, Madhya Pradesh (Balaghat), Meghalaya, Orissa and Sikkim.

Elsewhere : East Indies.

18. *Myrmeleon angusticollis* Rambur

1842. *Myrmeleon angusticollis* Rambur, *Hist. nat. ins. Neur.*, 399, 23.

1853. *Myrmeleon angusticollis* Walker, *Cat. Brit. Mus. Neur.*, P. 363.

1977. *Myrmeleon angusticollis* Ghosh and Sen, *Rec. zool. Surv. India*, 73 : 311.

Material examined : Madhya Pradesh : 1 ex., 28-3-01; Ghatpindra, P.T.R, Chhindwara, coll. Y.N. Gupta; 1 ex., 5-6-01; Karmalhiri, P.T.R., Seoni, coll. K. Chandra.

Diagnostic characters : Antenna short, weakly clubbed or flattened towards apex ; hypostigmatic cell of wings elongated , pterostigma not very distinct First anal in hindwing running directly to hind margin. Three or more cross veins before radial sector in hindwing.

Distribution : India : Maharashtra and Madhya Pradesh (Chhindwara, Seoni).

19. *Myrmeleon tenuipennis* Rambur

1842. *Myrmeleon tenuipennis* Rambur, *Hist. nat. Ins. Neur.*, P. 405.

1916. *Myrmeleon tenuipennis* Banks, *Phil. J. Sci.*, 11, P. 209.

1977. *Myrmeleon tenuipennis*. Ghosh, *Rec. zool. Surv. India*, 73 : 313.

Material examined : Madhya Pradesh : 1 ex., 14-7-01; Pyorthadi, P.T.R, Seoni, coll. R.K. Singh. Chhattisgarh : 4 exs., 21-12-1978; P.W.D Rest House, Gidam, Bastar, coll. M.S. Shishodia. (Material available at Z.S.I, HQS, Kolkata).

Diagnostic characters : Antenna is short, clubbed, widely separated from its counterpart at base and generally shorter than the head and thorax taken together. Wings with a single series of costal cells, costal veins simple; radial sector originating beyond cubital fork. Forewing with basal fork of cubitus running parallel to 1st anal for a short distance and connected with cubitus by a cross vein; 2nd anal running close to 1st anal. Legs are short, spur of hind tibia nearly equal to first tarsal joint.

Distribution : India : North India, Chhattisgarh (Bastar), Madhya Pradesh (Seoni) and Maharashtra.

20. *Myrmeleon assamensis* Ghosh

1984. *Myrmeleon assamensis* Ghosh *Rec. zool. Surv. India. Occ. Paper. no. 52* : 23.

2000. *Myrmeleon assamensis* Ghosh. *Rec. zool. Surv. India. Occ. Paper no 184* : 82.

Material examined : Madhya Pradesh : 1 ex., 31-10-02; Piparria, Pachmarihi, Hoshangabad, coll. Y.N. Gupta.

Diagnostic characters : Antenna is black, vertex with two black bands and a black spot behind hind band. Thorax with three black stripes. Wings are slightly undulating along hind border; pterostigma is indistinct. Forewing is dotted with brown and tinged with pale brown specially at tip, 4 oblique dark brown bands on disc. Hind wing is with three dark brown bands—median band reaching fore and hind border, stigmal band extending to hind border with a projection towards tip of median band, apical band broader at hind border; an oblique blackish streak on hind border along post costa and branch of cubitus. Legs are pitchy. Abdomen darker towards apex.

Distribution : India : Assam, Madhya Pradesh (Hoshangabad) and Mizoram.

21. *Hagenomyia sagax* (Walker)

1853. *Myrmeleon sagax* Walker, *Cat. Brit. Mus. Neur.*, 2 : 382.

1912. *Balaga nitens* Navas *Rev. Russe. Ent.*, 12 : 111.

1913. *Hagenomyia sagax* Esben-Petersen, *Ent. Mit.*, 2 : 223.

1971. *Hagenomyia sagax* Nakahara, *Kontyu*, 39(1) : 61.

2000. *Hagenomyia sagax*. Ghosh. *Rec. zool. Surv. India. Occ. Paper no 184* : 84.

Material examined : Chhattisgarh : 5 exs., 30.6.04; ABR. Rakshasakh, Bilaspur, coll. A. Singh.

Diagnostic characters : Frons : yellow. Vertex : with two yellow spots. Pronotum : with three yellow stripes. Meso and metanotum with yellow borders. Wings are long and narrow. Subacute at apex; pterostigma is white; veins black. Subcosta and radius yellow. Costa of forewing with forked veins which are divided by transverse veinlets for some distance from pterostigma towards base. Hindwing narrower than forewing and pterostigma smaller than forewing. Legs testaceous. Abdomen ventrally yellow.

Distribution : India : Assam, Chhattisgarh (Bilaspur), Sikkim, West Bengal and Western Himalayas.

Elsewhere : Taiwan and Bangladesh.

22. *Hagenomyia marginicollis* (Gerstaecker)

1893. *Myrmeleon marginicollis* Gerstaecker, *Mitt Naturw. Ver Neu-Vorpomm u Rugen*, 5 : 143.

1909. *Myrmeleon marginicollis*. Needham, *Rec. Indian Mus.*, 3 : 200.

2000. *Hagenomyia marginicollis*. Ghosh. *Rec. zool. Surv. India. Occ. Paper No. 184* : 84.

Material examined : Chhattisgarh : 1 ex., 30-6-04; Rakshasaika, ABR, Bilaspur, coll. A. Singh.

Diagnostic characters : Vertex with two rows of black spots. Space between antennae black which is continued laterally below antennae upto inner edges of eyes. Frons yellow but dark brown on either side and at apex. Clypeus and labrum brownish yellow. Pronotum is yellow with three black stripes. Forewing : costals crossed before yellow pterostigma; radial sector arising at the level of cubital fork; 9-10 crossveins before radial sector; venation brownish. Hindwing narrower than forewing and apex more acute. Legs are brown. Abdomen dark brown.

Distribution : India : Assam, Chhattisgarh

(Bilaspur); Western Himalaya including Himachal Pradesh.

23. *Nesoleon perpunctatus* Banks

1931. *Nesoleon perpunctatus* Banks *psyche*, **38** : 60.
 1977. *Nesoleon perpunctatus* Ghosh, *Rec. zool. Surv. India*, **73** : 315.
 1983. *Nesoleon perpunctatus*. Ghosh, *Rec. zool. Surv. India*, **81** : 79.
 1984. *Nesoleon perpunctatus* Ghosh, *Rec. zool. Surv. India. Occ. Paper*, no. **52** : 32.

Material examined : Madhya Pradesh : 2 ex., 18-10-02; Sinadogni, Chhindwara; 1 ex., 18-10-02; Delkhani, Pachmarhi, Chhindwara; 1 ex., 19-10-02; Bamahni, Delkhani, Chhindwara; 1 ex., 19-10-02; Delkhani, Pachmarhi, Chhindwara; 1 ex., 18-10-02; Delkhani, Chhindwara; 1 ex., 20-10-02; Lalgoan, Delkhani, Chhindwara; 1 ex., 21-10-02; Delkhani, Chhindwara; 1 ex., 21-10-02; Tamia, P.W.D Rest House, Chhindwara; 1 ex., 22-10-02; Patalkot, Pachmarhi, Chhindwara; 1 ex., 23-10-02; Patalkot, Chhindwara; 1 ex., 1-11-02; Tekapan, Pachmarhi, Hoshangabad, all coll. Y.N. Gupta.

Diagnostic characters : Antenna short, weakly clubbed or flattened toward apex; hypostigmatic cell of wings elongated. Wings are short and broad; forewing rounded at apex; wing membrane heavily marked and banded with dark brown colour.

Distribution : India : Andhra Pradesh, Bihar, Maharashtra, Madhya Pradesh (Chhindwara, Hoshangabad), Orissa and West Bengal.

24. *Distoleon verendus* (Walker)

1853. *Myrmeleon verendus* Walker, *Cat. Brit. Mus. Neur.* **2** : 342.
 1853. *Myrmeleon minax*, Walker, *Ibid.* 343.
 1868. *Formicaleon verendus*, MacLachlan, *J. Linn. Soc.*, **9** : 277.
 1984. *Distoleon verendus*, Ghosh, *Rec. zool. Surv. India. Occ. Paper no.* **52** : 49.
 2000. *Distoleon verendus*. Ghosh. *Rec. zool. Surv. India. Occ. Paper No.* **184** : 92.

Material examined : Madhya Pradesh : 1 ex.,

4-7-01; Ghat Pindra, P.T.R, Chhindwara, coll. Y.N. Gupta; 1 ex., 22-7-01; P.T.R, Karmalhiri, Seoni, coll. R.K. Singh; 2ex., 25-7-01; P.T.R, Bison Camp, Seoni; 1 ex., 26-7-01; P.T.R, Karmalhiri, Seoni; 1 ex., 28-7-01; P.T.R, Karmajhiri, Seoni; all coll. M.L. Koshta; 1 ex., 6-9-01; P.T.R., Totladoh Rest House, Chhindwara, coll. Y.N. Gupta; 1 ex., 14-9-01; P.T.R, Jamunnala, Chhindwara; 1 ex., 15-9-01; PTR, Bisonpur, Chhindwara; 1 ex., 19-9-01; P.T.R, Ghatpindra, Chhindwara.; 1 ex., 19-9-01; P.T.R, Dudhgaov, Chhindwara; 1 ex., 22-9-01; P.T.R, Tumdagati, Chhindwara, all coll. S.K. Mishra; 2 exs., 21-10-02; PWD Rest House, Tamia, Pachmarhi, Chhindwara; 2 ex., 23-10-02; Patalkot, Pachmarhi, Chhindwara, all coll. Y.N. Gupta; 1 ex., 2-10-07; NHDC Rest House, Narmada Nagar, Khandawa; 1 ex., 5-10-07; Khutou Nala, Near Narmada Nagar, Khandawa; 2 exs., 7-10-07; Siddwah Koot Badwah, Khargon; all coll. D.K. Harshey.

Diagnostic characters : Head is blackish. vertex with several blackish spots. Antenna with a band on fore border of each segment. Pro-meso and metanotum with four irregular black stripes. Wings : costals mostly simple. Pterostigma is rosy and indistinct in hind wing; forks of marginal veinlets clouded with pale brown at base along hind border to apex. Forewings with a dark brown dot in male at tip of cubitus. Legs are with brown dots. Abdomen is shorter than wings.

Distribution : India : Arunachal Pradesh, Himachal Pradesh, Madhya Pradesh (Chhindwara, Khandawa, Khargon, Seoni.), North India and Orissa.

25. *Distoleon* sp Banks.

1815. *Formicaleo* Leach, *Edinburgh Encyl.* **9** : 138.
 1865. *Formicaleo*, Brauer, *Verh. Zool. bot. Ges. Wien.*, **15** : 904.
 1910. *Distoleon* Banks, *Ann. ent. Soc. Am.* **3** : 42.
 1911. *Formicaleon* Banks, *Ann. ent. Soc. Am.*, **4** : 16.
 1918. *Eidoleon* Esben-Petersen, *Ark. Zool.*, **11** (no.26) : 15.
 1972. *Distoleon*, Holzel, *Beitr. Natur. Forsch. Sudwrtl.*, **1** : 55.

Material examined : Madhya Pradesh : 1 ex., 25-8-00; Jhinpa Rest House, Pachmarhi, Chhindwara, coll. Y.N. Gupta; 1 ex., 26-7-01; PTR, Karmalhiri, Seoni, coll. M.L. Koshta; 1 ex., 19-8-01; P.T.R, Totladoh, Chhindwara, 1 ex., 28-8-01; P.T.R, Totladoh, Chhindwara; 1 ex., 30-8-01; P.T.R, Totladoh, Chhindwara; 1 ex., 31-8-01; P.T.R, Totladoh Rest House, Chhindwara; 2 exs., 5-9-01; P.T.R, Totladoh, Chhindwara; 1 ex., 8-9-01; P.T.R, Totladoh, Chhindwara; 9 exs., 9-9-01; P.T.R, Totladoh Rest House, Chhindwara, all coll. Y.N. Gupta; 4 exs., 20-9-01; P.T.R, Totladoh, Chhindwara, coll. S.K. Mishra; 1 ex., 3-9-05; P.T.R, Totladoh Rest House, Chhindwara, coll. Y.N. Gupta.

Diagnostic characters : Antenna is shorter than head and thorax taken together. Wings are generally densely spotted. Forewing with radial sector arising beyond the level of fork of cubitus, basal portion of which is bent at right angle so as to meet radius; cubitus posterior not parallel, neither to cubitus not to hind margin. Legs are densely hairy; hind tibia and femur generally with long and dark hairs; tarsus much shorter than tibia; tibial spur longer than basal tarsal segment; spur of hind tibia as long as 4 tarsal segments taken together.

Distribution : Widely distributed genus; India : Madhya Pradesh (Chhindwara).

26. *Creoleon griseus* (Klug)

1834. *Myrmeleon griseus* Klug, *Symb. Phys.*, 4, tafel 36, fig. 8.
 1984. *Creoleon griseus*, Ghosh, *Rec. zool. Surv. India, Occ. Paper*, No. 52 : 40.
 2000. *Creoleon griseus*, Ghosh, *Rec. zool. Surv. India, Occ. Paper* No. 184 : 89.

Material examined : Chhattishgarh : 1 ex., 20-12-78; East Garden, Bastar; ex., 21-12-78; P.W.D Rest House, Gidam, Bastar; 1 ex., 2-1-79; Kanker Rest House, Bastar; all coll. M.S. Shishodia. (Recorded from literature. Material available at Z.S.I, HQS, Kolkata).

Diagnostic characters : Body is dark brown. Vertex with a broad median stripe. Antenna is ferruginous. Pronotum is broader than long with

four narrow stripes. Meso and metanotum black. Legs are dark brown. Wings are narrow; pterostigma yellowish and indistinct; veins yellow and membrane without shade or spot. Forewing : without crossvein between 2nd and 3rd anals. Hind wing is shorter and narrower than forewing.

Distribution : India : Assam, Bihar, Chhattisgarh (Bastar), Maharashtra, Orissa, Tamil Nadu West Bengal.

Elsewhere : Egypt, Sudan, Isreal, Iran.

27. *Neuroleon apicalis* Navas

1915. *Neuroleon apicalis* Navas, *Mem. R. Acad. Ci.*, 11(23) : 11.
 1977. *Neuroleon apicalis*, Ghosh and Sen, *Rec. zool. Surv. India*, 73 : 307.

Material examined : Madhya Pradesh : 1 ex., 22-10-2000; Katanga, Jabalpur, coll. K.Chandra.

Diagnostic characters : Body is small, with less spotted wing. Forewing : with costal field having one row of cells ; Pterostigma without any mark at base and also cubital field without brown streak. Hindwings with inner radial field having only one crossvein. Legs are short & stout. Spurs in hind tibia hardly longer than two basal tarsal joints taken together.

Distribution : India : Madhya Pradesh (Jabalpur) and Tamil Nadu.

28. *Indophanes barbarus* (Walker)

1853. *Indophanes barbarus* Walker (genotype :Banks,1940)
 1853. *Macroneumurus barbarus* Walker (Comb. Hagen, 1866)

Material examined : Madhya Pradesh : 1 ex., 23-10-02; Chota Mahadev, Chhindwara, coll. Y. N. Gupta.

Diagnostic characters : Body long and slender. Antenna short, weakly clubbed or flattened towards apex. Wings usually subequal; cross veins numerous ; hypostigmatic cells of wings elongate. Meso and metanota without any prominent black stripes. Legs are slender and tibiae with spurs.

Distribution : India : Maharashtra and Madhya Pradesh (Chhindwara).

Family ASCALAPHIDAE

29. *Ogcogaster tessellata* (Westwood)

1848. *Ascalaphus (Ogcogaster) tessellatus* Westwood, *Cabinet Orient, ent.*, P. 69.
1908. *Ogcogaster tessellata*, Weele, *Cat. Coll. Selys*, 8 : 253.
1929. *Helicomitus zacherii* Navas, *Rev. Acad. Cienc. Zaragoza*, 13 : 34.
1988. *Ogcogaster tessellata* Ghosh, *Rec. zool. Surv. India*, 85(2) : 188.
2000. *Ogcogaster tessellata* . Ghosh. *Rec. zool. Surv. India. Occ. Paper No 184* : 107.

Material examined : Madhya Pradesh : 1 ex., 22-6-01; P.T.R, Turia, Seoni; 1ex., 23-6-01; P.T.R, Bashdeo, Seoni, all coll. K. Chandra; 1 ex., 6-7-01; P.T.R, Karmalhiri, Seoni; 1 ex., 15-7-01; Bagdeo, Seoni; 1 ex., 16-7-01; P.T.R, Karmajhiri, Seoni; 1 ex., 20-7-01; P.T.R, Alokatta, Seoni, all coll. R.K. Singh; 1 ex., 23-7-01; P.T.R, Khamrit, Seoni; 1ex., 23-7-01; P.T.R, Badanala, Seoni; 1 ex., 28-7-01; P.T.R, Karmajhiri, Chhindwara, all coll. M.L. Koshta; 1 ex., 13-8-01; P.T.R, Totladoh, Chhindwara, coll. Y.N Gupta; 1 ex., 29-9-07; Narmada nagar Rest House, Khandawa; 1 ex., 3-10-07; NHDC Rest House, Khandawa; 1 ex., 7-10-07; Siddwah Koot Badwah, Khargon, all coll. D.K. Harshey; 1ex., 24-10-07, Forest Rest House, Panpatha, Umaria, coll. R.M. Sharma. Chattisgarh : 1 ex., 11-6-04; Diyavan pahai, Bilaspur; 1 ex., 29-6-04; ABR, Chhirhata forest, Bilaspur, all coll. A. Singh.

Diagnostic characters : Antenna : yellow or red brown. Vertex with dark hairs. Thorax dark brown with one yellow longitudinal mark at middle and scutellum light yellow. Wings are short and broad with obtuse apex ; pterostigma black, longer than high with 5 crossveins; apical field with two rows of cells; dark brown mark below pterostigma; both wings with dark spot over apical portion of upper cubitus. Hindwings with a round spot at disc between branches of radial sector.

Distribution : India : Bihar, Chattisgarh (Bilaspur), Gujarat, Madhya Pradesh (Chhindwara, Khandawa, Khargon, Seoni, Umaria), North-East; Western Himalayas including Himachal Pradesh.

Elsewhere : Pakistan.

30. *Ascalaphus sinister* Walker

1853. *Ascalaphus sinister* Walker, *Cat. Brit. Mus. Neur.*, P. 424.
1949. *Helicomitus sinister* Kimmins, *Ann. Mag. nat. Hist.*, (12)2 : 3.
1983. *Ascalaphus sinister*, Ghosh, *Rec. zool. Surv. India*, 80 : 298.
2000. *Ascalaphus sinister*. Ghosh. *Rec. zool. Surv. India. Occ. Paper no. 184* : 111.

Material examined : Chhattisgarh ; 1 ex., 18-12-1978; Kaler, Bastar. (Recorded from literature. Material available at Z.S.I, HQS, Kolkata).

Diagnostic characters : Antenna long, neither ciliate, nor serrate. Posterior margin of pronotum simple. Supraepisternum with a dense tuft of brown setae along its upper edge. Wings not appendiculate, angles of anal lobe less obtuse. Pterostigma of forewing brown with 6 crossveins and two rows of apical cells beyond it. Hindwing : pterostigma with 5 crossveins. Abdomen is brown; 4th tergite slightly swollen ; 4-5 tergites with long, scattered black setae.

Distribution : India : Arunachal Pradesh, Chattisgarh (Bastar), Orissa, West Bengal, Maharashtra, and other areas of North India.

Elsewhere : Sri Lanka.

31. *Pseudoptynx furcifer* Weele

1908. *Pseudoptynx furcifer* Weele, *Cat. Coll. Selys*, 8 : 209-210.
1983. *Pseudoptynx furcifer*. Ghosh, *Rec. zool. Surv. India*, 81 : 81.

Material examined : Madhya Pradesh : 1 ex., 7-6-99; Mahadev Forest Rest House, Pachmarhi, Hoshangabad, coll. K. Chandra.

Diagnostic characters : Antenna long and slender, strongly clavate apically; hypostigmatic cell not elongated and differentiated. Pterostigma black, small and 2-4 rows of apical cells beyond it; cubitus posterior strong and free but running parallel and very close to 1st anal. Abdomen laterally compressed.

Distribution : India : Maharashtra and Madhya Pradesh (Hoshangabad).

32. *Glyptobasis dentifera* (Westwood)

1848. *Ascalaphus (Ogcogaster) dentifer*. Westwood, *Cabinet. Oriental ent*; Pl. 34.
1852. *Ascalaphus dentifer* Walker, *Cat. Brit. Mus. Neur.*, P. 421
1871. *Glyptobasis dentifera* MacLachlan, *J. Linn. Soc.*, 11 : P. 278.
1908. *Glyptobasis dentifera* Weele, *Cat. Coll. Selys*, 8, P.241.
1909. *Glyptobasis dentifer* Needham, *Rec. Indian Mus.*, 3, P. 198.
1922. *Glyptobasis dentifera* Fraser, *Rec. Indian, Mus.*, 24, P. 516.
1949. *Glyptobasis dentifera* : Kimmins. *Ann. Mag. nat. Hist.*, 12(2), P. 19
1983. *Glyptobasis dentifera*. Ghosh, *Rec. zool. Surv. India*. 81 : 81.

Material examined : Madhya Pradesh : 1ex., 14-1-01; P.T.R, Totladoh Rest House, Chhindwara, coll. S.K. Mishra; 1 ex., 16-6-01; P.T.R, Karmalhiri, Seoni, coll. K.Chandra ; 1 ex., 23-9-01; P.T.R, Gumtara, Chhindwara, coll. S.K. Mishra; 1 ex., 19-8-01; P.T.R, Totladoh, Chhindwara; 2 ex., 23-8-01; P.T.R, Totladoh Rest House, Chhindwara; 1ex., 2-9-01; P.T.R, Totladoh Rest House, Chhindwara; 1 ex., 9-9-01; P.T.R, Riverside, Totladoh, Chhindwara, all coll. Y.N. Gupta; 1 ex., 13-9-01; P.T.R, Totladoh Rest House, Chhindwara; 1 ex., 16-9-01; P.T.R, Totladoh Rest House, Chhindwara; 1 ex., 19-9-01 ; P.T.R, Dudhgaon, Chhindwara; 1 ex., 24-9-01; P.T.R, Totladoh Rest House, Chhindwara; 1 ex., 26-9-01; P.T.R, Antaria, Chhindwara, all coll. S.K. Mishra ; 1ex., 22-10-02; Tamia, Patalkot, Pachmarhi, Chhindwara, coll. Y.N. Gupta; 2 exs., 5-10-07; Khutou Nala, Near Narmada Nagar, Khandawa; 1 ex., 7-10-03; Siddwah Koot Badwah, Khargon; 1 ex., 9-1-07; PWD Rest House, Satwas, Dewas; 1 ex., 11-10-07; Near Kusmania vill, Dewas, all coll D.K. Harshey; 2 ex., 23-10-07, F.R.H, Umaria, 1 ex., 25-10-07, Bamera Dam, Umaria, 1 ex., 25-10-07, Panpatha, Umaria, 1ex., 31-10-07, F.R.H, Bandhavgarh. Umaria, all. coll. R.M. Sharma.

Diagnostic characters : Frons : yellow. Vertex : with two yellow spots. Pronotum : with three yellow stripes. Meso and metanotum with yellow borders. Wings long and narrow. Subacute at apex; pterostigma white; veins black. Subcosta and radius yellow. Forewing : costa with forked veins which are divided by transverse veinlets for some distance from pterostigma towards base. Hindwing narrower than forewing and pterostigma smaller than forewing. Legs testaceous. Abdomen ventrally yellow.

Distribution : India : Goa, Maharashtra, Madhya Pradesh (Balaghat, Chhindwara, Dewas, Khargon, Umaria), Orissa, Punjab, Utter Pradesh, West.Bengal and S.India.

33. *Glyptobasis cornuta* Kimmins

1849. *Glyptobasis cornuta* Kimmins, *Ann. Mag. nat. Hist.*, 12(2) : 25.
1977. *Glyptobasis cornuta* Ghosh and Sen, *Rec. zool. Surv. India*, 73 : 321.

Material examined : Chhattisgarh : 1 ex., 18-8-04; Chaparwa forest, ABR, Bilaspur, coll. A. Singh.

Diagnostic characters : Wings appendiculate. Spur of hind tibia is as long as first two tarsal segments taken together. Antenna shorter than wings, angled near base; 10th sternite with a pair of curved horns, each with a small and strong branch at the inner margin towards the base. Abdomen rather shorter than wings.

Distribution : India : Chhattisgarh (Bilaspur) and Orissa.

SUMMARY

The paper includes the information on 33 species of Neuroptera belonging to 23 genera under six families from Madhya Pradesh and Chhattisgarh. Of these, 22 species are added to the fauna of these states.

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REFERENCES

- ANONYMOUS, 1992. Indian Chrysopidae : Technical Bulletin No. 5. Biological Control Centre, National Centre for Integrated Pest Management, Bellary Road, H.A. Farm Post, Bangalore : 1-34.
- BANKS. N. 1914 Zoological results of the Abor Expedition. 1911-1912 Xxvi Neuropteroid insects. *Rec. Indian. Mus.*, **8**; 351-356.
- BANKS. N. 1911 Notes on Indian Neuropteroid insects. *Proc. ent. Soc. Wash.*, **13** : 99-106.
- BANKS. N. 1941. Some new interesting neuropteran in the American Museum of Natural History. *Am. Mus. Novit.*, no. **1143**, 5pp.
- BANKS. N. 1933. Entomological investigations on the spike disease of Sandal (9) Neuroptera. *Indian Forest Rec.*, **18(6)** : 4.
- CHANDRA, K. and THILAK J. 2007 First record of *Croce filipennis* (Neuroptera : Nemopteridae) from Madhya Pradesh. *Bionotes*. Vol. **9(3)** : P.96.
- DOVER, C. 1921 Neuropteroid insects of Barkuda Islands. *Rec. Indian. Mus.*, **22** : 397.
- FRASER, F.C 1922 Some Oriental Ascalaphidae in the Indian Mus., *Rec. Indian. Mus.*, **24** ; 511-520.
- GHOSH, S.K. 1977. A new species of *Chrysopa* (Neuroptera : Chrysopidae) from India. *Entomon*, **2** (No. 1) : 103-104.
- GHOSH, S.K and SEN, S. 1977. Check-list of Indian Planipennia (Order Neuroptera) *Rec. zool. Surv. India*, **73** : 277-326.
- GHOSH, S.K. 1980. New record of the species *Indophanes barbarus* (Walker) {Myrmeleontidae: Neuroptera} from India. *Bull zool Surv. India*. **3(1&2)** : 119.
- GHOSH, S.K. 1981. A new species of the genus *Italochrysa* Principi (Neuroptera : Chrysopidae) from India. *Bull. zool. Surv. India*, **3(3)** : 145-146, Fig.1(a-c), pl. 3.
- GHOSH, S.K. 1984. Contribution to the taxonomical studies of Neuroptera (Suborder : Planipennia) from Eastern India. One family Myrmeleontidae. *Rec. zool. Surv. India. Occ. paper*, No. **52**. pp 1-63.
- GHOSH, S.K. 1983. Notes on the biogeography of Neuroptera : Planipennia from certain areas of the North – West Himalayan and northern peninsular sectors of India. *Rec. zool Surv India*, **80** : 291-300.
- GHOSH, S.K. 1984. Neuroptera from Western peninsular India with new records. *Rec. zool. Surv. India*, **81(1&2)** : 77-87.
- GHOSH, S.K. 1984. Contribution to the taxonomical studies of Neuroptera (Suborder Planipennia) from Eastern India. 1. Family Myrmeleontidae. *Rec. zool. Surv. India, Occ. Paper*, **52** : 1-63, 66 figs., 2 pls.
- GHOSH, S.K. 1985. Insecta Neuroptera. *Rec. zool. Surv. India*. **82** : 69-71.
- GHOSH, S.K. 1988. Contribution to the taxonomical studies of Neuroptera (Suborder Planipennia) from Eastern India. *Rec. zool. Surv. India*. **85(2)** : 163-192.
- GHOSH, S.K. 1990. Collection and preservation of animals : Neuroptera : 127-128 Pub: *Zoological Survey of India*, Calcutta.

- GHOSH, S.K. 1990. Contribution to the taxonomical studies of Neuroptera (Suborder Planipennia) from Eastern India III Family Chrysopidae *Rec. zool. Surv. India*. **86** : 329-354.
- GHOSH, S.K. 1997. Fauna of Nandadevi Biosphere Reserve: Insecta: Neuroptera 65-66. *Fauna of Conservation area* : **9** Pub: Zoological Survey of India, Calcutta
- GHOSH, S.K. 1998. Faunal diversity in India : Neuroptera : 252-257 *ENVIS Centre. Zoological Survey of India*, Calcutta.
- GHOSH, S.K. 2000. Neuroptera fauna of North-East India *Records of the Zoological Survey of India. Occasional Paper No 184* P.1-179.
- HAGEN, H.A. 1866. Hemerobidarum Synopsis Synonymica. *Stettin. Ent. Ztg.*, **27** : 369-464.
- HOLZEL, H. 1971. Zur Kenetnis der Genus *Chrysopidia* (Planipennia, Chrysopidae) *Wien. Z. Arbgem.Ost. Ent.*, **23** : 57-60
- IMMS, A.D. 1925. A general text book of Entomology. *Methuen & Co.*, London, 698 pp.
- KUWAYAMA, S. 1962. A revisional synopsis of Neuroptera of Japan. *Pacif. Insects*, **4**(2) : 325-412.
- LINNAEUS, C.V. 1758. *Systema Naturae* 1. Ed. **10**, 824 pp. *Laur. Salvii*.
- MACLACHLAN, R. 1868. New genera and species of Neuropterous insects; and a revision of Mr. F. Walker's British Museum catalogue of Neuroptera, Part 2 (1853) as far as the end of the genus *Myrmeleon*. *J. Linn. Soc.*, **9** : 230-281.
- NAVAS, L. 1910. Crisopidos nuevos – Broteria, **9**, pp.
- NAVAS, L. 1909. Mantespidos nuevos. *Mem. R. Accad. Cienc.*, Barcelona, **7** (10), pp.1-15.
- NEEDHAM, J.G. 1909. Notes on the Neuroptera in the collection of the Indian Museum. *Rec. Indian. Mus.*, **3** : 185-210.
- RAMBUR, M.P. 1842. *Histoire naturelle des Insects*. Neuropteres. Roret, Paris : 534 pp
- TJEDER, B. 1961. Neuroptera – Planipennia. The lacewings of South Africa. 4. Family Hemerobidae. *South African Animal life*, **8** : 296-408.
- VAN DER WEELE, H.W. 1909 Mecoptera and Planipennia of Insulinde. *Notes Leyden Mus.*, **31** : 1-100.
- WALKER, F. 1853. Sialides. Nemopterides. Catalogue of the specimens of Neuropterous insects in the collection of the British Museum. **2** : 193-476. By order of the Trustees, London.
- WESTWOOD, J.O. 1848. *The cabinet of Oriental Entomology*. 88 pp. Smith, London

INSECTA : DIPTERA

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INTRODUCTION

The Diptera are commonly known as (true) flies and include many familiar insects such as mosquitoes, black flies, midges, fruit flies, blow flies and house flies. Flies are found throughout the world and exist in areas from the arctic to the rain forests on the equator. The earliest fossil flies are known from the Upper Triassic of the Mesozoic geological period, some 225 million years ago and since that time they have diversified to become one of the largest groups of insects.

The flies are small to moderate-sized insects and the major morphological feature which distinguishes flies from other insects is their reduced hind wings, termed halteres or balancing organs. A few species are completely wingless, usually in association with parasitic habits. Eyes are usually large, occupying much of the head. Antennae variable, sometimes long and thread-like or plumose, but more often fairly short and bulbous, with the terminal segments more or less fused to form a spur or bristle. The mouthparts of flies are also characteristically suctorial and many have large fleshy pads with drainage canals termed pseudotracheae for efficient liquid uptake. Some predatory flies have mouthparts modified for stabbing and piercing other insects (Family Asilidae and Empididae). Blood-sucking flies are found in many families (Culicidae, Tabanidae, Ceratopogonidae, and Simuliidae) and they carry several dangerous diseases, including malaria, sleeping sickness, yellow fever and elephantiasis.

Veterinary pests include a number of species whose maggots eat away or burrow into the flesh of domestic sheep and cattle, causing the condition known as myiasis. Many flies cause economic damage to plants (Cecidomyiidae, Tephritidae, and Agromyzidae) or animals (Calliphoridae, Oestridae) through direct feeding by their larvae. However, the most unappreciated role of flies may be as pollinators of flowering plants (Syrphidae, Bombyliidae, Nemestrinidae, Acroceridae, Conopidae, and Stratiomyidae). The active immature stages of flies are called maggots. They are typically small, pale and soft-bodied. Dipteran pupae have non-functional mandibles (adecticous), and may have the appendages free from the body (exarate), or glued to the body (obtect), if exarate, the pupa is concealed inside the hardened skin (puparium) of the last larval instar.

The present account of 257 species belonging to 124 genera spread over 29 families of Diptera so far known from Madhya Pradesh and Chhattisgarh states is provided based on the past published records and actual material examined housed at Zoological Survey of India, Kolkata and Central Zone Regional Centre, Zoological Survey of India, Jabalpur.

Suborder NEMATOCERA

Infraorder TIPULOMORPHA

Family TIPULIDAE

Genus *Holorusia* Loew, 1863

1. *Holorusia ornatithorax* (Brunetti)

1911. *Tipula ornatithorax* Brunetti, *Rec. Indian Mus.*, 6 : 258. Type-locality : Darjeeling (West Bengal), India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Uttar Pradesh and West Bengal.

Elsewhere : None

Genus *Nephrotoma* Meigen, 1803

2. *Nephrotoma delta* (Walker)

1856. *Tipula delta* Walker, *Insecta Saundersiana*, 1 : 445. Type-locality : "East Indies"

Material examined : 10♂♂, Chhindwara dist., Anthoni Thimpa, 28.viii.2000, coll. Y.N. Gupta; 3♂♂, 7♀♀ Hoshangabad dist., Forest rest house, 2.ix .2000, coll. Y.N. Gupta.

Distribution : Madhya Pradesh (Hoshangabad & Chhindwara), Assam, Bihar, Kerala and Uttarakhand.

Elsewhere : Indio-China, Taiwan.

Family LIMONIIDAE

Genus *Trentepohlia* Bigot, 1854

3. *Trentepohlia (Trentepohlia) trentepohlii* (Wiedemann)

1828. *Limnobia trentepohlii* Wiedemann, *Aussereurop. zweifl. Insekt.*, 1 : 551. Type-locality : Sumatra

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Seoni) Assam, Bihar, Kerala, Orissa and West Bengal.

Elsewhere : Bangladesh, Borneo, Java, Malaya, Myanmar, Philipines, Sri Lanka, Sumatra, Taiwan and Thailand.

Infraorder PSYCHOMORPHA

Family PSYCHODIDAE

Genus *Sergentomyia* Franca & Parrot, 1920

4. *Sergentomyia (Sintonius) eadithae* (Sinton)

1932. *Phlebotomus eadithae* Sinton, *Indian J. med. Res.*, 20 : 577. Type-locality : Saugor (M.P.) India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Saugor).

Elsewhere : None.

Family CULICIDAE

Genus *Anopheles* Meigen, 1818

5. *Anopheles (Anopheles) nigerrimus* Giles

1900. *Anopheles nigerrimus* Giles, *Handbook* : 162. Type-locality : Calcutta (West Bengal), India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur, Mandla) Assam, Andaman Islands and West Bengal.

Elsewhere : China, Java, Malaya, Myanmar, Pakistan and Thailand.

6. *Anopheles (Cellia) aconitus* Donitz

1902. *Anopheles aconitus* Donitz, *Z. Hyg. Infektkrankh.*, 41 : 70. Type-locality : Kajoe Tanem, Sumatra; Willem Island and Sockaboemi, Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andamans, Andhra Pradesh, Assam, Bihar, Karnataka, Orissa, Tamil Nadu and West Bengal.

Elsewhere : Widely distributed in Oriental region including Celebes, Lesser Sunda Islands.

7. *Anopheles (Cellia) annularis* van der Wulp

1884. *Anopheles annularis* van der wulp, *Notes Leyden Mus.*, 6 : 249. Type-locality : Mount Ardjoeno, Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Kashmir, Maharashtra, Punjab and West Bengal.

Elsewhere : Widely distribution in the Oriental region including Lesser Sunda Islands

8. *Anopheles (Cellia) culicifacies* Giles

1902. *Anopheles culicifacies* Giles, *Entomologist's Mon Mag*, 37 : 197. Type-locality : Hoshangabad (M.P.)

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Hoshangabad), Andamans, Assam, Delhi, Maharashtra, Punjab.

Elsewhere : Nepal, Pakistan, Thailand; Afghanistan, Bahrein, Indochina, Iran, Trucial Oman.

9. *Anopheles (Cellia) fluviatilis* James

1902. *Anopheles fluviatilis* James, *Scient. Mem. Offrs med saint. Deps India*, n.s., 2 : 31. Type-locality : West Bengal, Maharashtra and Jeypore Hills Tracts (Rajasthan), India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, New Delhi, Jammu & Kashmir, Punjab.

Elsewhere : Bangladesh, Formosa, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand; Afghanistan, Bahrein, Indo-China, Iran, Iraq, Kazakhstan, USSR, Oman, Trucial, Oman.

10. *Anopheles (Cellia) jamesii* Theobald

1901. *Anopheles jamesii* Theobald, *Monogr. Cul.*, 1 : 134. Type-locality : Quilon, Travancore (Kerala), India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Mandla), Assam, Bihar, Kerala, Orissa.

Elsewhere : China, Indonesia, Malaya, Maylayasia, Myanmar, Sri Lanka.

11. *Anopheles (Cellia) jeyporiensis* James

1902. *Anopheles jeyporiensis* James, *Scient. Mem. Offrs. Med. Sanit. Deps India*, 2 : 32. Type-locality : Nagpur, Maharashtra, Jeypore State, India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur, Mandla), Chhatisgarh Karnataka, Maharashtra, Orissa, Rajasthan and Tamil Nadu.

Elsewhere : Indonesia, Myanmar.

12. *Anopheles (Cellia) karwari* James

1903. *Anopheles Karwari* James, in *Theobald, Monogr. Cul.* 3 : 102. Type-locality : Karwar, Bombay, (Mysore), India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Karnataka, Kerala and Uttar Pradesh.

Elsewhere : Wide spread in the Oriental region; New Guinea.

13. *Anopheles (Cellia) maculatus* Theobald

1901. *Anopheles maculates* Theobald, *Monogr. Cul.*, 1 : 171. Type-locality : Hong kong (Kwantung), China

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Mandala), Chhatisgarh Assam, Kerala, Tamil Nadu and West Bengal.

Elsewhere : Wide spread in Oriental Region including Lesser Sunda Islands.

14. *Anopheles (Cellia) pallidus* Theobald

1901. *Anopheles pallidus* Theobald, *Monogr. Cul.*, 1 : 134. Type-locality : Madras and Bihar, India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur, Mandla), Chhatisgarh (Bastar), Andamans, New Delhi, Lakshadweep and Rajasthan.

Elsewhere : Bangladesh, Indonesia, Malaysia, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand.

15. *Anopheles (Cellia) philippinensis* Ludlow

1902. *Anopheles philippinensis* Ludlow, *J. Am. Med. Ass.* 39 : 426. Type-locality : San Jose, Abra, Philippines

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Mandla), Andamans, Assam, Bihar, Kerala and Karnataka.

Elsewhere : China, Jawa, Malay, Philippines, Sumatra, Thailand.

16. *Anopheles (Cellia) splendidus* Koidzumi

1920. *Anopheles splendidus* Koidzumi, *Daiwan Kenkyujo Hokoku*, 8 : 23. Type-locality : Formosa

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Mandla & Jabalpur), Chhatisgarh Assam, Andhra Pradesh, Goa, Gujarat, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Rajasthan, Punjab, Sikkim, Tamil Nadu and West Bengal.

Elsewhere : Afghanistan, Bangladesh, China, Indo-China, Myanmar, Nepal, Pakistan, Thailand.

- 17. *Anopheles (Cellia) stephensi* Liston**
 1901. *Anopheles stephensi* Liston, *Ind. med. Gaz.*, **36** : 441.
 Type-locality : Ellichpur, Maharashtra, India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh & Chhatisgarh, Widely distributed in India.
Elsewhere : China, Myanmar, Pakistan, Thailand, Afghanistan, Baharin, Iran, Iraq, Oman, Saudi Arabia, Trucial Oman
- 18. *Anopheles (Cellia) subpictus* Grassi**
 1899. *Anopheles subpictus* Grassi, *Re R. Accad. Lincei*, **8** : 101. Type-locality : India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Jabalpur, Mandla), Andaman Islands, Bihar, Delhi, Gujarat, Maharashtra, Orissa, Tamil Nadu and West Bengal.
Elsewhere : Indonesia, Malay, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand; Afghanistan, China, Bismarok Islands, Iran, New Guinea.
- 19. *Anopheles (Cellia) tessellatus* Theobald**
 1901. *Anopheles tessellatus* Theobald, *Monogr. Cul.* **1** : 175.
 Type-locality : Taipang, Perak, Malaya.
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Indore), Delhi, Gujarat and Uttar Pradesh.
Elsewhere : wide spread in the Oriental Region including Ryukyu Islands, Lesser Sunda; Moluccus, New Guinea.
- 20. *Anopheles (Cellia) theobaldi* Giles**
 1901. *Anopheles (Cellia) theobaldi* Giles, *Entomologists mon. Mag.*, **37** : 198. Type-locality : Ellichpur (Maharashtra), India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Jabalpur), Chhatisgarh (Bastar), Maharashtra.
Elsewhere : Myanmar, Pakistan, Philippines.
- 21. *Anopheles (Cellia) turkhudi* Liston**
 1901. *Anopheles turkhudi* Liston, *Indian med. Gaz.*, **36** : 441. Type-locality : Ellichpur (Maharashtra), India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Mandla), Bihar, Gujarat, Karnataka, Maharashtra, and Uttar Pradesh.
Elsewhere : Pakistan, Aden, Afghanistan, Egypt, Ethiopia, French Morocco, Iran, Israel, Somaliland, Sudan, West Saudi Arabia, Yemen.
- 22. *Anopheles (Cellia) vagus* Donitz**
 1902. *Anopheles vagus* Donitz, *Z. Hyg. Infekt Krankh.*, **41** : 80. Type-locality : Fort de Kock, Sumatra; Java and numerous other Indonesian localities
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Jabalpur, Mandla), Andamans, Assam, Goa and Maharashtra.
Elsewhere : Bangladesh and widely distributed in other Oriental Region; New Guinea.
- 23. *Anopheles (Cellia) varuna* Iyenger**
 1924. *Anopheles varuna* Iyenger, *Ind. Jour. Mat. Res.*, **12** : 24. Type-locality : Calcutta (West Bengal)
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Mandla), Chhatisgarh (Bastar), Bihar, Gujarat, Karnataka, Maharashtra, Meghalaya, Orissa, Uttar Pradesh, Tamil Nadu and West Bengal.
Elsewhere : Myanmar, Nepal, Sri Lanka.
- 24. *Anopheles (Cellia) moghulensis* Christopher**
 1924. *Anopheles moghulensis* Christopher, *Indian J. med. Res.*, **2** : 296. Type-locality : Quetta, Pakistan, Kasauli (Punjab), Bombay and Satpura hills (M.P.), India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh (Satpura), Andhra Pradesh, Karnataka, Maharashtra, Punjab and Tamil Nadu.
Elsewhere : Pakistan.
- Genus *Aedeomyia* Theobald, 1901**
- 25. *Aedeomyia (Aedeomyia) catasticta* Knab**
 1909. *Aedeomyia catasticta* Knab, *Ent. News*, **20** : 387, Type-locality : Samal, Bataan, (Luzon) Philippines

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar), West Bengal.

Elsewhere : Wide spread in Oriental region; throughout Australia, Caroline Islands, Fiji Islands, Mariana Islands.

Genus *Aedes* Meigen, 1818

26. *Aedes (Aedimorphus) alboscuteclatus*
(Theobald)

1905. *Lepidotomyia alboscuteclatus* Theobald, *Anns hist.-nat. Mus. natn. hung.* 3 : 80, Type-locality : Simbang, Huon Gulf, New Guinea

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar)

Elsewhere : Oriental region; Australia; Japan.

27. *Aedes (Aedimorphus) caecus* (Theobald)

1901. *Culex caecus* Theobald, *Monogr. Cul.*, 1 : 413, Type-locality : Klang Mangrove swamps, Selanagar, Malaya.

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar), Orissa, West Bengal.

Elsewhere : Oriental region; Mariana Islands, New Guinea.

28. *Aedes (Aedimorphus) jamesi* (Edwards)

1914. *Ochlerotatus jamesi* Edwards, *Bull. ent. Res.*, 5 : 77. Type-locality : Colombo, Ceylon.

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar).

Elsewhere : Sri Lanka

29. *Aedes (Aedimorphus) pallidostriatus*
(Theobald)

1907. *Culex pallidostriatus* Theobald, *Monogr. Cul.*, 4 : 414, Type-locality : India, Ceylon.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Tamil Nadu.

Elsewhere : Sri Lanka, Thailand.

30. *Aedes (Aedimorphus) pipersalatus* (Giles)

1902. *Stegomyia pipersalatus* Giles, *Handbook*, ed : 2; 372. Type-locality : Jhansi, Gonda, (U.P), India

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar), Uttar Pradesh.

Elsewhere : Sri Lanka.

31. *Aedes (Aedimorphus) taeniorhynchoides*
(Christopher)

1911. *Leslieomyia taeniorhynchoides* Christopher, *Paludism* 2 : 68, 130. Type-locality : Amritsar (Punjab), India.

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar), Punjab.

Elsewhere : Sri Lanka, Hainan Islands, Thailand.

32. *Aedes (Aedimorphus) trimaculatus*
(Theobald)

1905. *Culex trimaculatus* Theobald, *Anns hist.-nat. Mus. natn. hung.* 3 : 86, Type-locality : Bombay, Maharashtra

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar), Maharashtra.

Elsewhere : None.

33. *Aedes (Aedimorphus) vexans* (Meigen)

1830. *Culex vexans* Meigen, *Syst. Besch. Europ. zweifl. Insekt.* 6 : 241. Type-locality : Berlin, Germany

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar).

Elsewhere : Throughout Oriental region; Holarctic region; Pacific Islands.

34. *Aedes (Christophersiomyia) thomsoni*
(Theobald)

1905. *Stegomyia thomsoni* Theobald, *Genera Insecta*, 26 : 19, Type-locality : NW Provinces, India

Material examined : Reported from Literature.

Distribution : India : Chhatisgarh (Bastar)

Elsewhere : Sri Lanka.

35. *Aedes (Diceromyia) micropterus* (Giles)
1901. *Culex micropterus* Giles, *J. Bombay nat. Hist. Soc.*,
13 : 609, Type-locality : Allahabad, Lucknow.
Material examined : Reported from Literature.
Distribution : India : Chhatisgarh (Bastar),
Uttar Pradesh.
Elsewhere : None.
36. *Aedes (Finlaya) albolateralis* (Theobald)
1908. *Stegomyia albolateralis* Theobald, *Rec. Indian Mus.*
2 : 289. Type-locality : Sylhet, Assam, India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar), Assam, Meghalaya,
Mizoram.
Elsewhere : Sri Lanka, China, Bangladesh,
Formosa, Malaya, Nepal, Sumatra; Japan, Korea.
37. *Aedes (Finlaya) assamensis* (Theobald)
1908. *Stegomyia assamensis* Theobald, *Rec. Indian Mus.*,
2 : 290. Type-locality : Sylhet, Assam, (E. Pakistan)
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar), Assam.
Elsewhere : Bangladesh, China, Indo china,
Java, Thailand.
38. *Aedes (Finlaya) gubernatoris* (Giles)
1901. *Culex gubernatoris* Giles, *J. Bombay nat. Hist. Soc.*,
13 : 607, Type-locality : Allahabad, Lucknow.
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar), Maharashtra and Uttar
Pradesh.
Elsewhere : None.
39. *Aedes (Finlaya) pseudotaeniatus* (Giles)
1901. *Culex pseudotaeniatus* Giles, *J. Bombay nat. Hist.*
Soc. 13 : 607, Type-locality : Bakloh (Punjab),
Nainital (Uttar Pradesh)
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh, Punjab, Uttrakhand.
- Elsewhere* : Myanmar, Sri Lanka.
40. *Aedes (Neomelaniconion) lineatipennis*
(Ludlow)
1905. *Taeniorhynchus lineatipennis* Ludlow, *Can. Ent.* 37
: 133. Type-locality : Luzon, Philippines
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar).
Elsewhere : Throughout Oriental region;
Africa; Australia.
41. *Aedes (Stegomyia) aegypti* (Linnaeus)
1762. *Culex aegypti* Linnaeus, in *Hasselquist's Reise noch.*
Palastina : 470. Type-locality : Egypt
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar), West Bengal.
Elsewhere : Pan tropical.
42. *Aedes (Stegomyia) albopictus* (Skuse)
1895. *Culex albopictus* Skuse, *Indian Mus. Notes* (1894) 3
: 20. Type-locality : Botanical garden, Calcutta (West
Bengal)
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar), West Bengal.
Elsewhere : Widespread Oriental region
through Australia, Japan
43. *Aedes (Stegomyia) novaalbopictus* Barraud
1931. *Aedes novaalbopictus* Barraud, *Indian. J. med. Res.*
19 : 224. Type-locality : Pusa, Bihar, India
Material examined : Reported from Literature.
Distribution : India : Madhya Pradesh &
Chhatisgarh (Bastar), Bihar.
Elsewhere : None.
44. *Aedes (Stegomyia) pseudoalbopictus* Borel
1938. *Stegomyia pseudoalbopictus* Borel, *Archs, Insts*
Pasteur Indochine., 7 : 85. Type-locality : Cochinchina,
China, Indo China
Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : South Viet Nam

45. *Aedes (Stegomyia) subalbopictus* Barraud

1931. *Aedes subalbopictus* Barraud, *India. J. med. Res.*, 19 : 225. Type-locality : Belgaun, Bombay Deccan (Mysore), India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Karnataka.

Elsewhere : Hainan Islands

46. *Aedes (Stegomyia) vittatus* (Bigot)

1861. *Culex vittatus* Bigot, *Annls Soc. ent. Fr.* (4)1 : 227, Type-locality : Corsica

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Myanmar, Sri Lanka, Hainan Islands, Indo china, Malaya, Pakistan, Thailand; Ethiopia.

47. *Aedes (Stegomyia) w-albus* (Theobald)

1905. *Stegomyia w-albus* Theobald, *Annls hist.-nat.Mus.natn.hung.* 3 : 74, Type-locality : "India Orientalis"

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Andaman & Nicobar Islands and West Bengal.

Elsewhere : Sri Lanka, China, Malaya, Nepal, Sumatra, Thailand.

-Genus *Armigeres* Theobald, 1901

48. *Armigeres (Armigeres) kuchingensis* Edwards

1915. *Armigeres Kuchingensis* Edwards, *Bull. Ent. Res.*, 5 : 283. Type-locality : Kuching Reservoir, Sarawak, Borneo

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Mandla), Andhra Pradesh, Assam, Meghalaya, Maharashtra and West Bengal.

Elsewhere : Indonesia, Malaya, Sumatra, Taiwan, Thailand.

49. *Armigeres (Armigeres) theobaldi* Barraud

1934. *Armigeres apicalis* Theobald, *Fauna. Brit. India, Dipt.* 5 : 319, Type-locality : Puri (Orissa)

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Orissa.

Elsewhere : Myanmar, Thailand.

50. *Armigeres (Armigeres) subalbatus* (Coquillett)

1898. *Culex subalbatus* Coquillett, *Proc. U.S. nam. Mus.* 21 : 302, Type-locality : Japan

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Orissa and West Bengal.

Elsewhere : Throughout Orienta region; Japan, Korea.

Genus *Coquillettidia* Dyar, 1905

51. *Coquillettidia (Coquillettidia) crassipes* (van der Wulp)

1881. *Culex crassipes* Vander Wulp, *Midden-Sumatra, Dipt.*, 4 : 9, Type-locality : Soeroelangoen, Sumatra

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Assam and Orissa.

Elsewhere : Throughout Orienta region; Australia; Mariana Islands, New Caledonia.

Genus *Culex* Linnaens, 1758

52. *Culex (Culex) barraudi* Edwards

1922. *Culex barraudi* Edwards, *Indian. J. med. Res.*, 10 : 284. Type-locality : Madohpur (Punjab)

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Meghalaya and Punjab.

Elsewhere : Sri Lanka, Bangladesh, Nepal, Thailand; New Guinea.

53. *Culex (Culex) bitaenirohynchus* Giles

1901. *Culex bitaenirohynchus* Giles, *J. Bombay nat. Hist. soc.*, 13 : 607, Type-locality : Travancore, Kerala.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur), Chhattisgarh (Bastar), Kerala, Orissa, Tamil Nadu.

Elsewhere : Malaya, Sarawak and Sri Lanka and many other parts of Oriental region; Africa; Japan; Australia.

54. *Culex (Culex) epidesmus* (Theobald)

1910. *Taeniorhynchus epidesmus* Theobald, *Rec. Indian Mus.*, 4 : 22, Type-locality : Bihar

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar) and Bihar.

Elsewhere : Sri Lanka.

55. *Culex (Culex) fuscocephalus* Theobald

1906. *Culex fuscocephalus* Theobald, *Monogr. Cul.*, 4 : 420. Type-locality : Pedradeniya, Ceylone

Material examined : Reported from Literature

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar), Andaman Islands and Orissa.

Elsewhere : Throughout Oriental region

56. *Culex (Culex) gelidus* Theobald

1901. *Culex gelidus* Theobald, *Monogr. Cul.*, 2 : 20, Type-locality : Selangor, Malaya.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar) and Orissa.

Elsewhere : Throughout Oriental region; Japan; New Guinea.

57. *Culex (Culex) mimulus* Edwards

1915. *Culex mimulus* Edwards, *Bull. Ent. Res.* 5 : 284. Type-locality : Kuching, Sarawak.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur), Chhattisgarh (Bastar), Assam and Uttar Pradesh.

Elsewhere : China, Myanmar, Nepal, Philippines, Taiwan, Thailand, Sri Lanka; Australia; New Guinea.

58. *Culex (Culex) perplexus quinquefasciatus* Say

1823. *Culex quinquefasciatus* Say, *J. Acad. nat. Sci. Philad.*, 3 : 10. Type-locality : Mississippi River, USA.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Bhopal, Mandla), Chhattisgarh (Bastar) Assam, Delhi, Orissa, Uttar Pradesh and West Bengal.

Elsewhere : Cosmopolitan.

59. *Culex (Culex) pseudovishnui* Colless

1957. *Culex pseudovishnui* Colless, *Ann. trop. Med. Parasit.* 51 : 88, Type-locality : Singapore

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar), Orissa and West Bengal.

Elsewhere : Throughout Oriental region.

60. *Culex (Culex) sinensis* Theobald

1903. *Culex gelidus* var. *sinensis* Theobald, *Monogr. Cul.*, 3 : 80. Type-locality : China

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar).

Elsewhere : Throughout Oriental region; Japan; Korea; USSR

61. *Culex (Culex) tritaeniorhynchus* Giles

1901. *Culex tritaeniorhynchus* Giles, *J. Bombay. nat. Hist. Soc.*, 13 : 606. Type-locality : Travancore, Kerala

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur), Chhattisgarh (Bastar), Kerala, Orissa, West Bengal.

Elsewhere : Throughout Oriental region; Ethiopian region; Japan; Korea.

62. *Culex (Culex) vishnui* Theobald

1901. *Culex vishnui* Theobald, *Monogr. Cul.*, 1 : 355, Type-locality : Madras, India.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh

(Jabalpur), Chhatisgarh (Bastar), Assam, Orissa, Tamil Nadu and West Bengal.

Elsewhere : Throughout Oriental Region and Japan; New Guinea.

63. *Culex (Culex) whitmorei* (Giles)

1904. *Taeniorhynchus whitmorei* Giles, *J. trop. Med.*, 7 : 367, Type-locality : Philippines

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Throughout Oriental region; Japan; Korea; New Guinea; USSR.

64. *Culex (Culiciomyia) nigropunctatus* Edwards

1926. *Culex annulata* Edwards, *Bull. ent. Res.*, 17 : 121, Type-locality : Kuching, Sarawak

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Throughout Oriental region; Carolin Islands; Palau Islands.

65. *Culex (Culiciomyia) pallidithorax* Theobald

1905. *Culex pallidithorax* Theobald, *J. econ. Biol.*, 1 : 32, Type-locality : India.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Throughout Oriental region; Japan, Moluccas, New Guinea.

66. *Culex (Eumelanomyia) brevipalpis* (Giles)

1901. *Culex longipes* Theobald, *Monogr. Cul.*, 2 : 68, Type-locality : Singapore

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar), Orissa and Tamil Nadu.

Elsewhere : Throughout Oriental region; Bismark Islands, New Guinea.

67. *Culex (Eumelanomyia) malayi* (Leicester)

1908. *Aedes malayi* Leicester, *Cul. Malaya* : 184, Type-locality : Kuala Lumpur, Malaya

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar) and West Bengal.

Elsewhere :

68. *Culex (Lophoceromyia) minor* (Leicester)

1908. *Lophoceromyia minor* Leicester, *Cul. Malaya* : 126, Type-locality : Klong jungle, Malaya

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Myanmar, Sri Lanka, Indochina, Malaya, Philippines, Ryukyu Islands, Thailand.

Genus *Lutzia* Theobald, 1903

69. *Lutzia (Metalutzia) fuscana* (Wiedemann)

2005. *Lutzia (Metalutzia) fuscana* : Rajavel, Natarajan, Vaidyanathan, *J. Am. Mosquito. Control Assoc.*, 21(2) : 131-135

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Throughout Oriental region; Australia; Japan; Korea; USSR

70. *Lutzia hallifaxi* Theobald

1903. *Culex (Lutzia) hallifaxi* Theobald, *Monogr. Cul.*, 3 : 231, Type-locality : Malaya

Material examined : Reported from Literature

..... *Distribution* : India : Madhya Pradesh & Chhatisgarh (Bastar) and Punjab.

Elsewhere : Throughout Oriental region; Australia; Japan; Korea; USSR

Genus *Heizmannia* Ludlow, 1905

71. *Heizmannia complex* (Theobald)

1910. *Bolbodeomyia complex* Theobald, *Rec. India Mus.*, 4 : 31, Type-locality : Lower Burma

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar).

Elsewhere : Myanmar, Cambodia, Indochina, Thailand, Viet Nam

Genus *Mansonia* Blanchard, 1900

72. *Mansonia (Mansonoides) annulifera*

Theobald

1901. *Panoplites annulifera* Theobald, *Monogr. Cul.*, 2 : 183, Type-locality : Madras, Quilon, Travancore, Kerala, India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Mandla), Chhattisgarh (Bastar), Assam, Bihar, Kerala, Maharashtra, Orissa, Uttar Pradesh and Tamil Nadu.

Elsewhere : Throughout Oriental region, New Guinea.

73. *Mansonia (Mansonoides) dives* (Schiner)

1868. *Culex dives* schiner (n. name for *annulipes* walker) in *Raise der oesterreichischen Fregalte Novara, Dipt.*, 2 : 31. Type-locality : Sigapore

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Mandla), Chhattisgarh, Assam and Meghalaya.

Elsewhere : Bangladesh, Hainan Island, Indonesia, Malaya, Philippines, Singapore, Sumatra, Thailand; Australia.

74. *Mansonia (Mansonoides) indiana* Edwards

1930. *Mansonia indiana* Edwards, *Bull. ent. Res.*, 21 : 541. Type-locality : Bandjaran, S. Preanger, Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar), West Bengal.

Elsewhere : Sri Lanka, Indochina, Java, Malaya, Sumatra, Thailand; New Guinea

75. *Mansonia (Mansonoides) uniformis*

(Theobald)

1901. *Panoplites uniformis* Theobald, *Monogr. Cul.*, 2 : 180, Type-locality : Quilon, Travancore, Kerala, India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar), Kerala.

Elsewhere : Throughout Oriental region;

Australia to Solomon Islands; Ethiopian region; Japan.

Genus *Ficalbia* Theobald, 1903

76. *Ficalbia (Mimomyia) chamberlaini*

(Ludlow)

1904. *Mimomyia chamberlaini* Ludlow, *Can. Ent.*, 36 : 297, Type-locality : Bayambang, Philippines

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar).

Elsewhere : Myanmar, Celebes, Hainan Islands, Java, Philippines, Malaya, Thailand

77. *Ficalbia (Etorleptomyia) luzonensis*

(Ludlow)

1905. *Oreillia luzonensis* Ludlow, *Can. Ent.*, 37 : 101. Type-locality : Bayambang, Philippines

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bastar).

Elsewhere : Borneo, Celebes, Sri Lanka, China, Indochina, Java, Malaya, Philippines, Thailand.

Family CHIRONOMIDAE

Genus *Chironomus* Meigen, 1803

78. *Chironomus circumdatus* (Kieffer)

1916. *Tendipes circumdatus* kieffer, *Annls hist.-nat. Mus. nan. hung.*, 14 : 110. Type-locality : Formosa

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh and West Bengal.

Elsewhere : Korea, Taiwan, Thailand, Japan.

79. *Chironomus javanus* Kieffer

1924. *Chironomus javanus* kieffer, *Annals soc. Scient. Brux.*, 43 : 263. Type-locality : Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh, Chhattisgarh and West Bengal.

Elsewhere : Java, Sumatra, Caroline Islands, Marshal Iscandy.

Genus *Polypedilum* Kieffer, 1912

Subgenus *Pentapedilum* Kieffer, 1913

80. *Polypedilum (Pentapedilum) robusticeps*
Guha and Chaudhuri

1990. *Pentapedilum robusticeps* Guha and Chaudhuri, *Bull. Zool. Surv. India*, 7 : 195. Type-locality : West Bengal

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh and West Bengal.

Elsewhere : None.

Infraorder BIBINOMORPHA

Family BIBIONIDAE

Genus *Plecia* Wiedemann, 1828

81. *Plecia dispersa* Hardy

1958. *Plecia dispersa* Hardy, *Pacif Ins.*, 12 : 196 (n. name for *Confusca Malloch*) Type-locality : Coromandal, Andhra Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Chandigarh, Tamil Nadu and Nicobar Islands.

Elsewhere : Nepal, Pakistan and Sri Lanka.

Family SCIARIDAE

Genus *Trichosia* Winnertz, 1867

82. *Trichosia rufithorax* (van der Wulp)

1881. *Sciara rufithorax* Wulp, Midden Sumatra, *Dipt.*, 4 : 6. Type-locality : Sumatra

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Arunachal Pradesh, South India and West Bengal.

Elsewhere : China, Java, Malayasia, Mentawai Island, Myanmar, Sri Lanka, Sumatra, Thailand.

Family CECIDOMYIIDAE

Subfamily LESTREMIINAE

Genus *Conarete* Pritchard, 1951

83. *Conarete indorensis* Grover

1970. *Conarete indorensis* Grover, *Cecidologia indica*, 5 : 141. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None

Genus *Peromyia* Kieffer, 1894

84. *Peromyia indica* Grover

1970. *Peromyia indica* Grover, *Cecidologia indica*, 5 : 158. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None.

Subfamily PORRICONDYLINAE

Genus *Bryocrypta* Kieffer, 1896

85. *Bryocrypta triangulobata* Grover

1973. *Bryocrypta triangulobata* Grover, *Cecidologia indica*, 8 : 70. Type-locality : Allahabad, Uttar Pradesh

Material examined : Reported from Literature.

Distribution : Madhya Pradesh (Indore), Maharashtra, Uttar Pradesh.

Elsewhere : None.

Genus *Dicerura* Kieffer, 1898

86. *Dicerura indica* Grover

1971. *Dicerura indica* Grover, *Cecidologia indica*, 6 : 22. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None.

Genus *Winnertzia* Rondani, 1860

87. *Winnertzia orientalis* Grover

1971. *Winnertzia orientalis* Grover, *Cecidologia indica*, 6 : 9. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None.

Subfamily CECIDOMYIINAE

Genus *Asphondylia* Loew, 1850

88. *Asphondylia tectonae* Mani

1974. *Asphondylia tectonae* Mani, *Oriental Insects*, 8 : 61. Type-locality : Top Slip, Madras, Tamil Nadu

Material examined : Collected galls in Madhya Pradesh.

Distribution : Madhya Pradesh (Jabalpur, Shahdol), wide spread in India.

Elsewhere : None

Genus *Contarinia* Rondani, 1860

89. *Contarinia sesami* Grover and Bakshi

1978. *Contarinia sesami* Grover and Bakshi, *Cecidologia indica*, 12-13 : 94. Type-locality : Raipur, Chhattisgarh.

Material examined : Reported from Literature.

Distribution : Madhya Pradesh & Chhattisgarh (Raipur), Maharashtra.

Elsewhere : None.

Genus *Dasineura* Rondani, 1840

90. *Dasineura lini* Barnes

1936. *Dasineura lini* Barnes, *Annals & Mag. Nat. Hist.*, (10) 17 : 273. Type-locality : Pusa (Bihar)

Material examined : Reported from Literature.

Distribution : Madhya Pradesh & Chhattisgarh, Bihar and Maharashtra.

Elsewhere : None.

Genus *Lasioptera* Meign, 1818

91. *Lasioptera achyranthesae* Sharma

1988. *Lasioptera achyranthesae* Sharma, *J. Bombay Nat. Hist. Soc.*, 85 : 376. Type-locality : Aurangabad, Maharashtra

Material examined : Collected galls in Madhya Pradesh.

Distribution : Madhya Pradesh & Chhattisgarh (Jabalpur, Shahdol), Maharashtra, Karnataka, Punjab.

Elsewhere : None.

92. *Lasioptera bryoniae* Schiner

1868. *Lasioptera bryoniae* Schiner, *Diptera. In Reise der osterreichischen Fregatte Novara*, : 5. Type-locality : Madras, India

Material examined : Collected galls in Madhya Pradesh.

Distribution : Madhya Pradesh (Jabalpur, Shahdol), Maharashtra, Himachal Pradesh and Tamil Nadu.

Elsewhere : None

Genus *Clinodiplosis* Kieffer, 1894

93. *Clinodiplosis indorensis* Grover

1979. *Clinodiplosis indorensis* Grover, *Cecidologia indica*, 14 : 32. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None

Genus *Coquilletomyia* Felt, 1908

94. *Coquilletomyia quadrispina* Grover

1979. *Coquilletomyia quadrispina* Grover, *Cecidologia indica*, 14 : 99. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : Madhya Pradesh (Indore) Uttar Pradesh and West Bengal.

Elsewhere : None

Genus *Feltiella* Rübsaamen, 1910

95. *Feltiella minuta* Grover

1979. *Feltiella minuta* Grover, *Cecidologia indica*, 14 : 46. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None.

Genus *Horidiplosis* Felt, 1920

96. *Horidiplosis mathuri* Mani

1935. *Horidiplosis mathuri* Mani, *Rec. Indian Mus.*, 37 : 440. Type-locality : Dehradun, Uttarakhand.

Material examined : Reported from Literature.

Distribution : Madhya Pradesh (Shahdol), Maharashtra, Andaman Islands and Uttarakhand.

Elsewhere : None

Genus *Odinadiplosis* Mani, 1935

97. *Odinadiplosis odinae* Mani

1935. *Odinadiplosis odinae* Mani, *Rec. Indian Mus.*, 37 : 436. Type-locality : Thanjavur (Tamilnadu), Calcutta

Material examined : Collected galls in Madhya Pradesh.

Distribution : Madhya Pradesh (Jabalpur, Shahdol), Maharashtra, Tamil Nadu and West Bengal.

Elsewhere : None.

Genus *Orseolia* Kieffer & Massalongo, 1902

98. *Orseolia monticola* (Felt)

1921. *Dyodiplosis monticola* Felt, *Memoirs Dept. Agri. India, ent. Series*, 7 : 20. Type-locality : Muruvani (Mysore)

Material examined : Reported from Literature.

Distribution : Madhya Pradesh & Chhatisgarh (Jabalpur), Karnataka.

Elsewhere : None.

99. *Orseolia oryzae* (Wood-Mason)

1889. *Cecidomyia oryzae* Wood-Mason, *Entomology Notes, Indian Mus., Notes*, 1 : 103. Type-locality : Kurruckpore, India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Indore).

Elsewhere : Myanmar, Srilanka, China, Indonesia, Thailand, Viet Nam

100. *Orseolia paspali* (Felt)

1921. *Parallelodiplosis paspali* Felt, *Treubia*, 2 : 92. Type-locality : Bogor, Java.

Material examined : Reported from Literature.

Distribution : Madhya Pradesh (Jabalpur), Chhatisgarh (Raipur), Kerala, Orissa and Uttar Pradesh.

Elsewhere : Indonesia, Java

Genus *Parallelodiplosis* Rübsaamen, 1910

101. *Parallelodiplosis indorensis* Grover

1979. *Parallelodiplosis indorensis* Grover, *Cecidologia indica*, 14 : 37. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None

Genus *Procontarinia* Kieffer & Cecconi, 1906

102. *Procontarinia matteina* Kieffer & Cecconi

1906. *Procontarinia matteina* Kieffer & Cecconi, *Marcellia*, 5 : 135. Type-locality : India

Material examined : Collected galls from both the states.

Distribution : India : Madhya Pradesh (Jabalpur, Shadol), Chhatisgarh (Jagdalpur), widely distributed in India.

Elsewhere : Italy, Kenya, Java, Mauritius

Genus *Trisopsis* Kieffer, 1912

103. *Trisopsis narendrii* Grover

1979. *Trisopsis narendrii* Grover, *Cecidologia indica*, 14 : 41. Type-locality : Indore, Madhya Pradesh

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore).

Elsewhere : None

Suborder BRACHYCERA

Infraorder STRATIOMYOMORPHA

Family STRATIOMYIDAE

Genus *Ptecticus* Loew, 1855

104. *Ptecticus australis* Schiner

1868. *Ptecticus australis* Schiner, *Reise der österreichischen Fregatte Novara*. *Dipt.*, 2 : 65. Type-locality : Nicobar Islands

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Karnataka, Meghalaya, Nicobar, Punjab, Sikkim, Tamil Nadu and, West Bengal.

Elsewhere : Sri Lanka, Taiwan, Thailand.

Genus *Microchrysa* Loew, 1855

105. *Microchrysa flaviventris* (Wiedemann)

1824. *Sargus affinis* Wiedemann, *Analecta Ent* : 31. Type-locality : "Ind. Orient"

Material examined : 1 ♂, Tilai dobra, Bilaspur dist, 24.vi. 2004, coll. A.K.Singh & Pty.

Distribution : India : Chhatisgarh (Bilaspur), Arunachal Pradesh, Uttar Pradesh and West Bengal.

Elsewhere : Borneo, Hainan Islands, Jawa, Pakistan, Philippines, Sarawak, Sri Lanka, Sumatra, Thailand; Papua.

Infraorder TABANOMORPHA

Family TABANIDAE

Genus *Philoliche* Wiedemann, 1828

106. *Philoliche taprobanes* (Walker)

1854. *Pangonia taprobanes* Walker, *List. Dipt. Colln. Br. Mus.*, 5 : 324, Type-locality : Ceylon.

Material examined : 1 ♀ Lumni forest, Bilaspur, 25.vi.2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh, Chhatisgarh, Karnataka.

Elsewhere : Sri Lanka.

Genus *Chrysops* Meigen, 1803

107. *Chrysops dispar* (Fabricius)

1798. *Tabanus dispar* Fabricius, *Ent. Syst. Suppl.*, 1 : 567. Type locality : India.

Material examined : 2♂♂, 1 ♀, Tilai dobra, Bilaspur, 24. vi. 2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh, Chhatisgarh (Bilaspur), Arunachal Pradesh, Assam, Karnataka, Kerala, Manipur, Meghalaya, Nagaland, Sikkim, Tripura and West Bengal.

Elsewhere : Borneo, Chinā, Hainan, Laos, Malaya, Myanmar, Nepal, Philippines, Srilanka, Sumatra, Taiwan, Thailand, Vietnam.

Genus *Tabanus* Linnaeus, 1758.

108. *Tabanus abscondens* Walker

1860. *Tabanus abscondens* Walker, *Trans. Ent. Soc. Lond.*, 5 : 275, Type-locality : Burma

Material examined : 2♂♂, Chhaprawa R.H. Bilaspur dist, 29.vii.2004, coll .A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur).

Elsewhere : Myanmar.

109. *Tabanus (Tabanus) orientis* Walker

1848. *Tabanus orientis* Walker, *List. Dipt. Coun. Br. Mus.*, 1 : 152. Type-locality : Nepal.

Material examined : 1♂, Sambhor D.R., Bilaspur dist., 8.vi. 2004, coll. A.K. Singh & party; 1♂, Mendri Sarai, Bilaspur dist., 23.vi, 2004, coll. A.K. Singh & party; 1♂, Chhaprawa, Bilaspur dist. 17.vii.2004, coll. A. K. Singh & party; 1♀, Bilaspur, 19.vii.2004, coll. A.K. Singh & party; 1♂, Chhaprawa F., Bilaspur dist., 20.vii. 2004, coll. A.K. Singh & party; Mendri Sarai, Bilaspur dist, 23.vi. 2004, coll. A.K.Singh & Pty. Tilai dobra, Bilaspur dist, 24.vi. 2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Assam, Himachal Pradesh, Manipur, Sikkim, Uttarakhand, Uttar Pradesh and West Bengal.

Elsewhere : Bhutan, Nepal and Pakistan.

110. *Tabanus (Tabanus) rubicundus* Macquart

1846. *Tabanus rubicundus* Macquart, *Dipt. Exot. Suppl.*, 1 : 53. Type-locality : East India.

Material examined : 1 ♀ Bilaspur dist., Lumni forest, 25.vi.2004; 2 ♀♀, Bilaspur dist. Kavachi forest, 27.vi.2004, all coll. A. Singh & party; Motimala forest, Bilaspur, 26.iv.2004. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Arunachal Pradesh, Assam, Meghalaya and West Bengal.

Elsewhere : Bangladesh, Laos, Myanmar.

111. *Tabanus (Tabanus) striatus* Fabricius

1787. *Tabanus striatus* Fabricius, *Montissa Insect.*, 2 : 356. Type-locality : China

Material examined : 1 ♀, Bilaspur, Chhanur forest, 20.vii.2004, coll. A.K. Singh.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur).

Elsewhere : Bangladesh, Bhutan, Combodia, China, Laos, Myanmar, Nepal, Pakistan, Sri Lanka, Thailand and Vietnam.

112. *Tabanus (Tabanus) indianus* Ricardo

1911. *Tabanus indianus* Ricardo, *Rec. Indian Mus.*, 4 : 175, Type-locality : SW India and Formosa

Material examined : 2 ♀ ♀, 3 ♂ ♂, Lumni, R.H., Bilaspur dist, 25.vi.04, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Assam and Karnataka.

Elsewhere : Celebes, China, Formosa, Viet Nam.

113. *Tabanus (Tabanus) fulvemedius* Walker

1848. *Tabanus fulvemedius* Walker. *List. Dipt. British Mus. Part 1* : 152. Type locality : Nepal

Material examined : 2 ♀ ♀ Chhabrawa R.H., Bilaspur dist, 23.vii.2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur) and Assam.

Elsewhere : China, Nepal, Myanmar.

114. *Tabanus (Tabanus) jucundus* Walker

1848. *Tabanus jucundus* Walker, *List Dipt. Colln. Br. Mus., 1* : 187. Type-locality : Hongkong, China

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Arunachal Pradesh, Maharshtar, Punjab and Uttar Pradesh.

Elsewhere : China, Hongkong, Philippines, Sri Lanka.

115. *Tabanus (Tabanus) monotaeniatus* (Bigot)

1892. *Arylotus monotaeniatus* Bigot. *Mem. Soc. Zool. France, 5* : 655. Type locality : India

Material examined : 2 ♂ ♂, Rakshasakh, 10.v.2005, Bilaspur dist, A.K. Singh & Pty; 1 ♂, Lumni, R.H., Bilaspur dist, 23.v.2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Arunachal Pradesh, Assam, Meghalaya, Sikkim and West Bengal.

Elsewhere : China, Java, Myanmar.

Genus *Haematopota* Meigen, 1803

116. *Haematopota assamensis* Ricardo

1911. *Haematopota assamensis* Ricardo. *Rec. Indian Mus., 4* : 343. Type-locality : Khasi hill, Meghalaya

Material examined : 1 ♀ 1 ♂ Bilaspur dist., Achanakmar, 25.vii.2004, coll. A. Singh & Party.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Arunachal Pradesh, Meghalaya and West Bengal.

Elsewhere : China, Nepal, Thailand and Vietnam.

117. *Haematopota javana* Wiedemann

1821. *Haematopota javana* Wiedemann. *Dipt. Exat., 1* : 100. Type-locality : Java

Material examined : 1 ♀, Bilaspur dist., Lumni forest, 25.vi.2004, coll. A. Singh and Party; 1 ♂, Amadob forest, Bilaspur district, 29.vi.04, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Bihar, Kerala, Meghalaya, Mizoram, Tamil Nadu and West Bengal.

Elsewhere : Bangladesh, China (W. Yunan), Java, Laos, Malaysia, Myanmar, Pakistan, Thailand.

118. *Haematopota marginata* Ricardo

1911. *Haematopota marginata* Ricardo. *Rec. Indian Mus., 4* : 347. Type-locality : Pusa, Bengal.

Material examined : 2 ♀ ♀ Bilaspur dist. Amadob forest, 29.vi.2004, coll. A. Singh & party. 1 ♂, Lumni, R.H., Bilaspur dist, 6.vi.2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Assam, Bihar, Meghalaya and West Bengal.

Elsewhere : Bangladesh.

119. *Haematopota roralis* Fabricius

1805. *Haematopota roralis* Fabricius, *Syst. Antliat.* : 107. Type-locality : Tranquebar, India

Material examined : 1 ♀ 1 ♂, Kavachi, Bilaspur district, 22.vj.2000, coll. A.K. Singh & pty.

Distribution : India : Madhya Pradesh (Seoni), Chhatisgarh and Tamil Nadu.

Elsewhere : Sri Lanka.

Superfamily ASILOIDEA

Family BOMBYLIIDAE

Genus *Bombomyia* Greathead, 1995120. *Bombomyia maculata* Fabricius1775. *Bombylius maculatus* Fabricius, *Syst. ent. insectorum class.* : 803. Type-locality : Karnataka.

Material examined; 1 ♀ Bilaspur dist., Rakshakh forest, 30.vi.2004, coll. A.K. Singh & Party.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andhra Pradesh, Gujarat, Karnataka, Orissa, Tamil Nadu and Uttarakhand.

Elsewhere : None

Genus *Heteralonia* Rondani, 1863121. *Heteralonia (Homolonia) lateralis* (Brunetti)1909. *Exoprosopa lateralis* Brunetti, *Rec. Indian Mus.*, 2 : 467. Type-locality : West Bengal.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Andhra Pradesh, Karnataka, Orissa, West Bengal.

Elsewhere : None.

122. *Heteralonia (Isotamia) insulata* (Walker)1852. *Anthrax insulata* Walker, *Insecta Saundersiana*, Diptera (Part 3)1 : 172. Type-locality :

Material examined : 1 ♀ Bilaspur dist., Achanakmar forest, 25. iv. 2004, coll. A. Singh & Party.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Gujarat, Himachal Pradesh, Karnataka, Maharashtra, Meghalaya, Tamil Nadu, Tripura, Uttaranchal and West Bengal.

Elsewhere : Myanmar, Nepal and Sri Lanka.

Genus *Ligyra* Newman, 1841123. *Ligyra aurantiaca* Guérin-Ménéville1835. *Anthrax aurantiaca* Guérin-Ménéville, *Icon, du regne anim, Dipt.*, 3 : 539. Type-locality : Not given ["Bengale" = India (Bihar or West Bengal)]

Material examined : 3 ♂♂, Dalakharvi, Chhindwara, 21.x.2002, coll. Y.N.Gupta; 1 ♂ Sitridogri, Chhindwara, 18.x.2002, coll. Y.N. Gupta ; 1 ♀, Jhandi dongri, Bilaspur, coll A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Chhindwara), Chhatisgarh (Bilaspur), Andhra Pradesh, Arunachal Pradesh, Bihar, Gujarat, Tamil Nadu and West Bengal.

Elsewhere : None

124. *Ligyra semifuscata* (Brunetti)1912. *Hyperalonia semifuscata* Brunetti, *Rec. Indian Mus.*, 7 : 466. Type-locality : "Bombay Presidency" [= India (Maharashtra)]

Material examined : 3 ♀♀ Rakshasakh, 10.v.05, Bilaspur dist, A.K.Singh & Party.

Distribution : India : Madhya Pradesh & Chhatisgarh Andaman & Nicobar islands, Karnataka and Maharashtra.

Elsewhere : None

Family ASILIDAE

Genus *Nusa* Walker, 1851125. *Nusa bengalensis* Joseph & Parui1987. *Nusa bengalensis* Joseph & Parui, *Oriental Ins.*, 21 : 136. Type-locality : Chapmari forest, Darjeeling, West Bengal

Material examined : 1 ♂, Bilaspur dist., Achanakmar forest, 21.vii.2004, coll. A. Singh & party. Chumna, Hoshangabad, 2 ♂♂, 5. vi.1999, coll. K.Chandra; Delakhari, 1 ♂ Chhindwara, 20.x.2002 A.K. Singh & Pty. 1 ♂ Diyavan, Bilaspur dist, 09. v. 2005, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Hoshangabad, Chhindwara), Chhatisgarh (Bilaspur) and West Bengal.

Elsewhere : None

Genus *Microstylum* Macquart, 1938126. *Microstylum bhattacharyai* Joseph & Parui1984. *Microstylum bhattacharyai* Joseph & Parui; *Ent. Scand*, 15 : 450-452. Type-locality : Tamil Nadu & Kerala.

Material examined : 1 ♀ Lumni forest, Bilaspur district, 21.viii.04, coll. A.K. Singh & Pty., 2 ♀ Sambhor D.R, Bilaspur dist, 26. vii. 2004, coll. A.K. Singh & Pty., 2 ♀ Chhirhata F.R. Bilaspur, 29.vi.04., 1 ♀, Motinala, Bilaspur dist, 26. vii. 2004, coll. A.K. Singh & Pty., 1 ♀, Lumni, R.H., Bilaspur dist, 09. v. 2005, coll. A.K. Singh & Pty., 3 ♀ ♀, Mandri Sarai, Bilaspur dist, 23. vi. 2004, coll. A.K. Singh & Pty., 2 ♀ Katami, Bilaspur dist, 22. vii. 2004, coll. A.K. Singh & Pty., 3 ♀ ♀, Jalda, 27.vii.04, Bilaspur dist, A.K. Singh & Pty, 1 ♀ Rakshasakh, 30.vi.2004, Bilaspur dist, A.K. Singh & Pty; 1 ♀ Sattapani, 09.vi.2004, Bilaspur dist, A.K. Singh & Pty; Gandelneura, 27.vi.04, Bilaspur dist, A.K. Singh & Pty; Madai NR, Hoshangabad dist, 14.vi.1999, coll. K. Chandra; 1 ♀ Gupta malaider, Hoshangabad, 5.vi.1999, coll. K. Chandra; Churona Bari, Hosangabad, 15.vi.1999, coll. K. Chandra.

Distribution : India : Madhya Pradesh (Hoshangabad), Chhatisgarh (Bilaspur), Kerala, Pondicherry and Tamil Nadu.

Elsewhere : Sri Lanka.

127. *Microstylum varshneyi* Joseph & Parui

1984. *Microstylum varshneyi* Joseph & Parui; *Ent. Scand.* 15 : 452-453. Type-locality : Tamil Nadu, Karnataka & Kerala

Material examined : 1 ♂, Atariya forest., Bilaspur, 17.vi.2004; coll. A.K. Singh & Pty., 1 ♂, Atariya forest, Bilaspur, 18.vi.2004; 1 ♀, Marrahi forest, 20.vi.2004, coll.A.K. Singh & Pty.; 1 ♀, Diyavan Bilaspur dist., 25.vi.2004; 1 ♀ 1 ♂, Baharithar forest, Bilaspur dist. 28.vii.2004; 1 ♀, Diyavan forest, Bilaspur dist., 28.vii.2004, coll. A.K. Singh & Party; 1 ♂, Chhirhata F.R. Bilaspur, 29.vi.04, coll. A.K. Singh & Pty., 1 ♂, Madai N R, Hoshangabad dist, 14.vi.1999, coll. K. Chandra.

Distribution : India : Madhya Pradesh (Hoshangabad), Chhattisgarh (Bilaspur), Bihar, Karnataka, Kerala and Tamil Nadu..

Elsewhere : None

Genus *Clephyroneura* Becker, 1925

128. *Clephyroneura pulla* Oldroyd

1938. *Clephyroneura pulla* Oldroyd, *Ann. Mag. Nat. Hist.*, (11) 1 : 467. Type-locality : South India

Material examined : 1 ♂, 1 ♀, Diyavan, Bilaspur dist, 28. vii. 2004, coll. A.K. Singh & Pty., 1 ♂ Jalda, 20.vii.2004, Bilaspur dist, A.K. Singh & Pty, 1 ♂, Jalda, 27.vii.2004, Bilaspur dist, A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andhra Pradesh, Karnataka and Tamil Nadu.

Elsewhere : None

Genus *Leptogaster* Meigen, 1803

129. *Leptogaster cheriani* Bromley

1938. *Leptogaster cheriani* Bromley, *Indian J. Agric. Sci.* 8 : 893, Type-locality : Coimbatore, Tamil Nadu

Material examined : 1 ♂, Parasia, Chhindwara, 25. x. 2002, coll. Y.N. Gupta.

Distribution : India : Madhya Pradesh (Chhindwara), Tamil Nadu and Rajasthan.

Elsewhere : None.

Genus *Neolophonotus* Engel, 1838

130. *Neolophonotus indicus* Bromley

1935. *Neolophonotus indicus* Bromley, *Rec. Indian Mus.* 37 : 222, Type-locality : Amarkantak, (M.P.)

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Uttar Pradesh.

Elsewhere : None

Genus *Michotamia* Macquart, 1838

131. *Michotamia aurata* (Fabricius)

1794. *Asilus aurata* Fabricius, *Ent. Syst.* 4 : 387. Type-locality : East India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Arunachal Pradesh, Bihar, Karnataka, Kerala, Madhya Pradesh, Orissa, Pondicherry, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Celebes, Myanmar, Pakistan, Taiwan.

Genus *Laxenecera* Macquart, 1838

132. *Laxenecera albibarbis* Macquart

1838. *Laxenecera albibarbis* Macquart, *Dipt.exot.*, 1(2) : 77. Type-locality : West Bengal

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhattisgarh, Bihar, Gujarat, Himachal Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and West Bengal.

Elsewhere : None

Genus *Philodicus* Loew, 1848

133. *Philodicus femoralis* Ricardo

1921. *Philodicus femoralis* Ricardo, *Ann. Mag. Nat. Hist.* (9)8 : 190. Type-locality : Myanmar

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhattisgarh Arunachal Pradesh (East Siang, Papumpare, Changlang), Assam, Bihar, Himachal Pradesh, Karnataka, Meghalaya, Orissa, Rajasthan, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar.

134. *Philodicus pruthii* Bromley

1935. *Philodicus pruthii* Bromley, *Rec. Indian Mus.*, 37 : 224, Type-locality : Madras, India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh, Chhattisgarh and Tamil Nadu.

Elsewhere : None.

Genus *Ommatius* Wiedemann, 1821

135. *Ommatius minor* Doleschall

1857. *Ommatius minor* Doleschall, *Nat. Tijd. Ned. India.* 14 : 394. Type-locality : Ambionia. Moluccas

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhattisgarh.

Elsewhere : Borneo; Moluccas; New Guinea.

Genus *Promachus* Loew, 1848

136. *Promachus duvaucelii* (Macquart)

1838. *Trupanea duvaucelii* Macquart, *Dipt. Exot.*, 1(2) : 97. Type-locality : Bengal

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhattisgarh Delhi, Gujarat, Madhya Pradesh, Punjab, Uttar Pradesh and West Bengal.

Elsewhere : None

Genus *Stenopogon* Loew, 1847

137. *Stenopogon raven* (Bromley)

1938. *Stenopogon raven* (Bromley), *Indian. J. agric. Sci.*, 8(6) : 865, Type-locality : Madras

Material examined : 1♂, Kavachi, Bilaspur dist, 22. vi. 04, coll. A.K. Singh & Pty., 1♂1♀, Chhaprawa, Bilaspur dist, 13. vi. 05, coll. A.K. Singh & Pty., 2♂♂, Sambhar D R Bilaspur dist, 26. vii. 04, coll. A.K. Singh & Pty., 1♂, Khammeth, Seoni, 24.vii.06, coll. K. Chandra; 1♂, Atariya, Bilaspur district, 17.vi.04, coll. A.K. Singh & Pty.; 1♀, Mahadeorali, Hoshangabad district, 10.vi.99, coll. K. Chandra; 1♂, Rakshasakh, 30.vi.04, Bilaspur dist, A.K. Singh & Pty; 1♂, Jalda, 20.vii.04, Bilaspur dist, A.K.Singh & Pty, 2♂♂, Rakshasakh, 30.vi.04, Bilaspur dist, A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Hoshangabad, Seoni), Chhattisgarh (Bilaspur) and Tamil Nadu.

Elsewhere : None.

Superfamily EMPIDOIDEA

Family DOLICHOPODIDAE

Genus *Chrysosoma* Guerin-Meneville, 1831

138. *Chrysosoma punctiforme* Becker

1922. *Chrysosoma punctiforme* Becker, *Capita zool.* 1(4) : 145; Type-locality : Sukna, E. Himalayas

Material examined : Reported from literature

Distribution : India : Madhya Pradesh & Chhattisgarh, West Bengal.

Elsewhere : None

Division ASCHIZA
Family SYRPHIDAE
Subfamily SYRPHINAE

Genus *Asarkina* Macquart, 1892

139. *Asarkina (Asarkina) ericetorum* (Fabricius)

1781. *Syrphus ericetorum* Fabricius, *Spec. Insect.*, 2 : 425.
Type-locality : "Africa aequinoctial"

Material examined : 1♂, Bilaspur dist., Jalda P.R., 20, vii.2004, Coll. A. Singh & Party; 1♀, Jalda, Bilaspur dist, 20. vii.04, coll. A.K. Singh & Party.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Arunachal Pradesh, Assam, Jammu & Kashmir, Manipur, Meghalaya, Sikkim, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Oriental; Australian; Ethiopian.

Genus *Paragus* Latreille, 1804

140. *Paragus (Paragus) serratus* (Fabricius)

1805. *Mulio serratus* Fabricius, *Syst. Antliat.*, : 186. Type-locality : (Tranquebar) Tamilnadu, India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Bihar, Goa, J&K, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Sikkim, Tamilnadu, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Jakarta, Java, East Malaysia, Nepal, Pakistan SriLanka; Africa, Papuan sub regions.

141. *Paragus (Paragus) yerburiensis*
Stuckenberg

1954. *Paragus yerburiensis* Stuckenberg, *Trans. R. ent. Soc. Lond.* 105 : 415, Type-locality : Ceylon

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : Sri Lanka, Nepal

Genus *Syritta* Lepeletier and Serville, 1828

142. *Syritta pipiens* (Linnaeus)

1758. *Musca pipiens* Linnaeus, *Syst. Nat. Ed.*, 10 : 594.
Type-locality : Europe

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Uttarakhand, Himachal Pradesh, Punjab, Uttar Pradesh and West Bengal.

Elsewhere : Nepal; Holarctic.

Genus *Dideopsis* Matsumura, 1917

143. *Dideopsis aegrotus* Fabricius

1805. *Dideopsis aegrotus* Fabricius, *Syst. Antliat.*, : 243.
Type-locality : China.

Material examined : 2♀ 1♂, Atariya, Bilaspur district, 18.v.2005, coll.A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur) Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Sikkim, Tripura and West Bengal.

Elsewhere : Nepal, throughout SE Asia; Australia, Moluccas; New Guinea

Genus *Episyrphus* Matsumura & Adachi, 1917

144. *Episyrphus balteatus* (De Geer)

1776. *Musca balteata* De Geer, *Mem. pour Serv. Hist. Ins.*, 6 : 116. 1975. Type-locality : Europe.

Material examined : 3♂♂, Atariya, Bilaspur district, 18.v.2005, coll.A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Karnataka, Kerala, Manipur, Meghalaya, Orissa, Sikkim, Tamil Nadu, Tripura, Uttarakhand and West Bengal.

Elsewhere : China, Malay and other parts of the Oriental region; Australia, Bonin Islands and Palaeartic Region.

Genus *Ischiodon* Sack, 1913

145. *Ischiodon scutellaris* (Fabricius)

1805. *Scaeva scutellaris* Fabricius, *Syst. Antliat.* : 252.
Type-locality : Tranquebar (Tamil Nadu), India.

Material examined : 2♀♀ Totta dodhi, Chhindwara, 16.viii. 2001, coll. Y.N. Gupta.

Distribution : India : Madhya Pradesh (Chhindwara) & Chhatisgarh, Uttaranchal, Andhra

Pradesh, Assam, Chandigarh, Delhi, Jammu & Kashmir, Karnataka, Kerala, Madhya Pradesh, Manipur, Meghalaya, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Java, Philippines, Taiwan and other parts of the S.E. Asia; Australia, Hawaii, Japan and Micronesia.

Genus *Baccha* Fabricius, 1805

146. *Baccha (Allobaccha) sapphirina* Wiedemann

1830. *Baccha sapphirina* Wiedemann, *Aussereurop. zweifl. Insekt.* 2 :96, Type-locality : East Indies

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Maharashtra, Rajasthan and Tamil Nadu.

Elsewhere : Sri Lanka, Formosa, New Guinea; Aden; Africa.

Genus *Eristalinus* Rondani, 1845

147. *Eristalinus (Eristalinus) arvorum*
(Fabricius)

1787. *Syrphus arvorum* Fabricius, *Mantissa Insect.* 2 : 335. Type-locality : China.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Arunachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Orissa, Sikkim, Tripura, Uttrakhand and West Bengal.

Elsewhere : China and other parts of the S.E. Asia; Australia, Hawaii, Japan and Micronesia.

148. *Eristalinus (Eristalinus) quinquestriatus*
(Fabricius)

1794. *Syrphus quinquestriatus* Fabricius, *Ent. Syst.*, 4 : 289. Type-locality : " Indian Orientali".

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Uttarakhand, Assam, Bihar, Karnataka, Kerala, Nagaland, Orissa and West Bengal.

Elsewhere : China and other parts of the Oriental Region; Japan.

149. *Eristalinus (Merodonoides) multifarius*
(Walker)

1852. *Eristalinus multifarius* Walker, *Insecta saundersiana*, 1 : 248, Type-locality : East Indies

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam and Tamil Nadu.

Elsewhere : Sri Lanka, Java, Malaya, Nepal, Viet Nam.

Genus *Eristalis* Latreille, 1804

150. *Eristalis aeneus* Scopoli

1763. *Conops aeneus* Scopoli, *Ent. Carniolica* : 356, Type-locality : Europe

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : Northern Oriental region; Australia, Bermuda, Hawaii, North America; Palaearctic.

Genus *Phytomia* Guerin-Meneville, 1834

151. *Phytomia (Phytomia) argyrocephala*
(Macquart)

1842. *Eristalis argyrocephala* Macquart, *Dipt.exot.* 2(2) : 45(105), Type-locality : "Indes orientalis"

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Karnataka, Tamil Nadu and West Bengal.

Elsewhere : Myanmar, java, Laos, Sumatra, Sumbawa.

Genus *Mesembrius* Rondani, 1857

152. *Mesembrius quadrivittatus* (Wiedemann)

1819. *Eristalis quadrivittatus* Wiedemann, *Zool. Mag.*, 1 : 17 Type-locality : Tranquebar, India.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Assam, Bihar, Gujarat, Karnataka, Madhya Pradesh, Orissa, Punjab, Tamil Nadu, Tripura and West Bengal.

Elsewhere : Java, Moluccas, Nepal, Sri Lanka.

Genus *Xanthandrus* Verrall, 1901

153. *Xanthandrus indicus* Curran

1933. *Xanthandrus indicus* Curran, *Stylops*, 2 : 46, Type-locality : Hoshangabad, M.P., India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Hoshangabad).

Elsewhere : None.

Genus *Microdon* Meigen, 1803

154. *Microdon (Microdon) auricinctus* Brunetti

1908. *Microdon Auricinctus* Brunetti, *Rec. Indian Mus.*, 2 : 93, Type-locality : Ceylon

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, West Bengal.

Elsewhere : Sri Lanka.

SCHIZOPHORA

ACALYPTRATE

Superfamily DIOPSOIDEA

Family DIOPSIDAE

Genus *Sphyracephala* Say, 1828

155. *Sphyracephala hearseiana* Westwood

1845. *Diopsis hearsiana* Westwood, *J. Proc. ent. Soc. Lond.*, 1 : 1844 : 99. Type-locality : India.

Material examined : 5 ♀ ♀, Jabalpur district, 20.iii.1965, coll. M.L. Koshta.

Distribution : India : Madhya Pradesh (Jabalpur) & Chhatisgarh, Chandigarh and Gujarat.

Elsewhere : Bangladesh and Pakistan.

Superfamily CARNOIDEA

Family CHLOROPIDAE

Genus *Anatrichus* Loew

156. *Anatrichus pygmaeus* Lamb

1918. *Anatrichus pygmaeus* var *erinaceus* Lamb, *Ann. Mag. nat. Hist.* (9) : 1 : 348, Type-locality : Ceylon

Material examined : 1 ♀ 1 ♂, 2 km from Motorstand, Konta, Bastar district, dt. Nil, coll. Nil.; 1 ♀, 2 km away east of forest rest house,

Sarguja district, dt. Nil, coll. Nil.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bastar, Sarguja)

Elsewhere : Throughout Oriental region; Japan.

Genus *Pachylophus* Loew, 1858

157. *Pachylophus rufescens* (de Meijere)

1904. *Myrmomorpha rufescens* de Meijere, *Bijdr. Dierk.* 17-18 : 113. Type-locality : Java.

Material examined : 1 ♀, Hoshangabad district, 26. xii.1964, coll. Khajuria & Pty. 1 ♀, Jabalpur district, 6.ii.1965, coll. H.P. Agarwal; 1 ♀, 2 km from Motorstand, Konta, Bastar district, dt. Nil, coll. Nil.

Distribution : India : Madhya Pradesh (Hoshangabad, Jabalpur), Chhatisgarh (Bastar), Assam, Bihar, Himachal Pradesh, Maharashtra, Gujarat, Orissa, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Java, Nepal, Philippines, Sumatra, Thailand, Viet Nam; Australia.

Genus *Oscinella* (Linnaeus, 1758)

158. *Oscinella pura* (Becker)

1912. *Oscinella pura* Becker, *Annls hist. nat. Mus. nat. hung.* 9 : 151, Type-locality : Bombay, India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Maharashtra.

Elsewhere : None

Superfamily EPHYDROIDEA

Family EPHYDRIDAE

Genus *Typopsilopa* Cresson, 1916

159. *Typopsilopa chinensis* (Wiedemann)

1830. *Notiphila chinensis* Wiedemann, *Aussereurop. Zweifl. Insekt.* 2 : 592. Type-locality : "AusChina"

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam and West Bengal.

Elsewhere : China, Nepal, Philippines, Ryukyu Islands, Thailand; Australia, Caroline Islands.

Genus *Paralimna* Loew, 1862

160. *Paralimna hirticornis* de Meijere

1913. *Paralimna hirticornis* de Meijere, *Bijdr. Dierk*; **19** : 65, Type-locality : Saonet, nr Waigui Islands

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Tamil Nadu.

Elsewhere : Myanmar, Nepal, Pakistan, Philippines, Sri Lanka, Taiwan; New Guinea, West Irian.

Subfamily PARYDRINAE

Genus *Ochthera* Latreille, 1802

161. *Ochthera brevitibialis* de Meijere

1908. *Ochthera brevitibialis* de Meijere, *Tijdschr. Ent.*, **51** : 167, Type-locality : Java

Material examined : Reported from literature

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Tamil Nadu.

Elsewhere : Java, Philippines, Sumatra

Family DROSOPHILIDAE

162. *Drosophila (Sophophora) jambulina*
Parshad & Paika

1964. *Drosophila jambulina* Parshad & Paika, *Res. Bull. Panjab Univ. (n. Ser.)*, **15** : 240. Type-Localities : Chandigarh and Malerkotla.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Uttarakhand, Karnataka, Kashmir, Maharashtra and Punjab.

Elsewhere : Cambodia, Formosa, Hong Kong, Java.

163. *Drosophila (Sophophora) kikkawai* Burla

1954. *Drosophila kikkawai* Burla, *Revta Bras. Biol.*, **14** : 47. Type-Localities : Brazil.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh Chhatisgarh Uttarakhand (Kumaon), Bihar, Kashmir, Maharashtra, Manipur, Orissa, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Borneo, China, Formosa, Java, Malaya, Nepal, Philippines, Sri Lanka; Ryukyu Island, Sumatra; Thailand, Vietnam; ? Africa, Fiji, Hawaii, Japan, Korea, Micronesia, Neotropical, New Guinea, Samoa.

164. *Drosophila (Sophophora) malerkotliana*
Parshad & Paika

1964. *Drosophila malerkotliana* Parshad & Paika, *Res. Bull. Panjab Univ. (n. Ser.)*, **15** : 230. Type-Localities : Chandigarh, Pinjore and Malerkotla.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh Chhatisgarh Uttarakhand (Kumaon), Andaman & Nicobar Island, Assam, Bihar, Karnataka, Maharashtra, Manipur, Orissa, Punjab, Uttar Pradesh and West Bengal.

Elsewhere : Borneo, Celebes, Java, Malaya, Philippines, Singapore, Sri Lanka, Sumatra, Thailand.

165. *Drosophila (Sophophora) takahashii*
Sturtevant

1927. *Drosophila takahashii* Sturtevant, *Philipp. J. Sci.*, **32** : 371. Type-Localities : Taipei, Formosa.

Material examined : Reported from literature

Distribution : India : Madhya Pradesh & Chhatisgarh Uttarakhand, Karnataka, Maharashtra, Manipur, Punjab, Uttar Pradesh and West Bengal.

Elsewhere : Borneo, China, Formosa, Java, Malaya, Nepal, Philippines, Ryukyu Island, Thailand; Japan, Korea, Manchuria, Micronesia.

166. *Drosophila (Scaptodrosophila) chandraprabhiana* Gupta and Ray-Chaudhuri

1970. *Drosophila chandraprabhiana* Gupta and Ray-Chaudhuri, *Proc. R. ent. Soc. Lond.*, (B) **39** : 62. Type-Localities : Chandraprabha, Varanasi.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Uttarakhand, Karnataka and Uttar Pradesh.

Elsewhere : None.

167. *Drosophila (Scaptodrosophila) paratriangulata* Gupta & Ray chaudhury

1970. *Drosophila (Scaptodrosophila) paratriangulata* Gupta & Ray chaudhury, *Proc. R. ent. Soc. Lond.* (B) 39 : 66. Type locality : Chandraprabha, Chakia forest, Varanasi, Sisri and Mirzapore, India.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Uttar Pradesh.

Elsewhere : None.

168. *Drosophila (Scaptodrosophila) latifshahi* Gupta & Ray chaudhury

1970. *Drosophila latifshahi* Gupta & Ray chaudhury, *Proc. R. ent. Soc. Lond.*, (B) 39 : 67. Type-Localities : Chandra prabha, Varanasi, India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : None.

Superfamily TEPHRITOIDEA

Family PYRGOTIDAE

Genus *Taeniomastix* Enderlein, 1942

169. *Taeniomastix pictiventris* (Hendel)

1914. *Aprygota pictiventris* Hendel, *Arch. Naturgesch.* (A) 79 : 107. Type-Localities : Sri Lanka

Material examined : Reported from literature

Distribution : India : Madhya Pradesh & Chhatisgarh, Bihar, Sikkim.

Elsewhere : Sri Lanka.

Family ULIDIDAE (=OTITIDAE)

Genus *Physiphora* Fallen, 1810

170. *Physiphora aenea* (Fabricius)

1794. *Musca aenea* Fabricius, *Ent. Syst.*, 4 : 335. Type-locality : "In India Orientale"

Material examined : 1♂, Atariya, Bilaspur, 18.v.02, coll. A.K. Singh & Pty.; 5♂♂ 4♀♀, Singanaum P W D rest house, Hoshangabad, 28.x.2000, coll. Y.N. Gupta.

Distribution : India : Madhya Pradesh (Hoshangabad), Chhatisgarh (Bilaspur), Chandigarh, Assam, Orissa and West Bengal.

Elsewhere : Widespread from Seychelles to Samoa; Hawaii to Australia; North and South Americas.

Family TEPHRITIDAE

Genus *Sphenella* Robineau Desvoidy, 1830

171. *Sphenella sinensis* Schiner

1868. *Sphenella sinensis* Schiner, *Reise der osterreichischen Fregatte novara, Dipt.*, 2 : 267. Type-locality : China

Material examined : 1♀, Pench Tiger reserve, Madhya Pradesh.

Distribution : India : Madhya Pradesh (Seoni), Tamil Nadu.

Elsewhere : China, Philippines and Viet Nam.

Genus *Dacus* Fabricius, 1805

172. *Dacus (Zeugodacus) caudatus* Fabricius

1805, *Dacus caudatus* Fabricius, *Syst. Antliat* : 276 Type-locality : Java

Material examined : 1♀ Achanakmar, Bilaspur, 25.vii.04, coll. A.K.Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh, Tamil Nadu, West Bengal.

Elsewhere : Java, Malaysia, Myanmar, Formosa, Thailand, Viet Nam.

173. *Dacus (Zeugodacus) duplicatus* (Bezzi)

1916. *Chaetodacus duplicatus* Bezzi, *Bull. Ent. Res.* 7 : 707. Type-locality : Panchmari (M.P.), India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh (Panchmari)

Elsewhere : None

174. *Dacus (Zeugodacus) tau* (Walker)

1849. *Dasyneura tau* Walker, *List Spec. Dipt. colln. Brit. Mus.*, 4 : 1074. Type-locality : China

Material examined : Reported from literature

Distribution : India : Madhya Pradesh & Chhatisgarh, Arunachal Pradesh, Bihar, Karnataka, Maharashtra, Meghalaya, Punjab, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Oriental (Widespread).

175. *Dacus (Zeugodacus) cucurbitae* Coquillett

1899. *Dacus cucurbitae* Coquillett, *Ent. News*, **10** : 129.
Type-locality : Honolulu, Hawaii

Material examined : 1 ♀ 1 ♂, Jabalpur district, 20.iii.1965, coll. M.L.Koshta; 3 ♀ ♀, Jabalpur district, 1 ♀, 14.iv.1965, coll. H.P. Agarwal.

Distribution : India : Madhya Pradesh (Jabalpur), Chhatisgarh, Arunachal Pradesh (East & West Kameng, Papumpare).

Elsewhere : Widespread Oriental, including China, Ryukyu Islands; Japan, Pacific, New Guinea, Solomon Islands, Bismark Archipelago, Darwin; Australia, Mauritius; Africa.

Genus *Platensina* Enderlein, 1911

176. *Platensina acrostacta* (Wiedemann)

1824. *Platensina acrostacta* Wiedemann, *Analecta Ent.* 54.
Type-locality : India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Arunachal Pradesh, Bihar, Tamil Nadu and West Bengal.

Elsewhere : Cambodia, Pakistan, Sri Lanka, Thailand.

Superfamily LAUXANIODEA

Family CELYPHIDAE

Genus *Spaniocelyphus* Hendel, 1914

177. *Spaniocelyphus scutatus* (Wiedemann)

1830. *Celyphus scutatus* Wiedemann, *Aussereurop. zweifl. Insekt.* **2** : 601. Type-locality : East Indies

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Karnataka.

Elsewhere : None.

Superfamily SCIOMYZOIDEA

Family SEPSIDAE

Genus *Sepsis* Fallen, 1810

178. *Sepsis nitens* Wiedemann

1824. *Sepsis nitens* Wiedemann, *Analecta Ent.* : 57. Type-locality : India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh, Chhatisgarh, Andhra Pradesh, Assam, Bihar, Orissa, Punjab, Sikkim and Uttar Pradesh.

Elsewhere : Java, Lesser Sunda Islands, Pakistan, Philippines, Sri Lanka, Taiwan; Australiasian Region; Japan.

179. *Sepsis rufa* Macquart

1850. *Sepsis rufa* Macquart, *Dipt. Exot. Suppl.* **4** : 269. Type-locality : Arunachal Pradesh.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Arunachal Pradesh, Assam, Bihar, Himachal Pradesh, Meghalaya, Orissa, Punjab, Sikkim, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar, Nepal.

Superfamily OPOMYZOIDEA

Family AGROMYZIDAE

Genus *Melangromyza* Hendel, 1920

180. *Melanagromyza cuscatae* Hering

1958. *Melanagromyza cuscatae* Hering, *Dr. Ent. Z. (N.F.)*, **5** : 217. Type-locality : Germany.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Bihar, Rajasthan, Uttar Pradesh.

Elsewhere : Myanmar, Pakistan, Germany.

181. *Melanagromyza obtusa* (Malloch)

1914. *Agromyza obtusa* Malloch, *Annl. hist.-nat. Mus. Nat. Hung.*, **12** : 323. Type-localities : Sokotsu, Takao, Yentempo, Tainan, Formosa.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Assam, Bihar, Delhi, Maharashtra and Uttar Pradesh.

Elsewhre : Myanmar, Formosa.

182. *Melanagromyza sojajae* (Zehnter)

1900. *Agromyza sojajae* Zehntner, *Indian Natur.*, **11** : 113. Type-locality : Java

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Bihar, Uttar Pradesh.

Elsewhere : Flores Island, Formosa, Jawa, Malaya, Sumbawa, Taiwan; Australia, Egypt, Fiji, Japan, Melanesia, Micronesia, USSR.

Genus *Ophiomyia* Braschnikov, 1897

183. *Ophiomyia phaseoli* (Tryon)

1892. *Oscinis phaseoli* Tryon, *Trans. Nat. Hist. Soc. Qd.*, 1 : 4. Type-locality : Australia.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Delhi, Kerala, Uttar Pradesh.

Elsewhere : Flores Island, Formosa, Java, Malaya, Nepal, Philippines, Ryukyu Island, Sri Lanka, Viet Nam; Africa, Australia, Hawaii, Melanesia, Micronesia.

Subfamily PHYTOMYZINAE

Genus *Pseudonapomyza* Hendel, 1920

184. *Pseudonapomyza malheri* Singh & Ipe

1973. *Pseudonapomyza malheri* Singh & Ipe, *Mem. Sch. Ent.*, No. 1 : 147. Type-locality : Malhera (M.P.) India

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Malhera).

Elsewhere : None

185. *Pseudonapomyza spicata* (Malloch)

1914. *Pseudonapomyza spicata* Malloch, *Annls hist.-nat. Mus. natn. hung.*, 12 : 334. Type-locality : Tainan, Takao, Formosa.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Punjab.

Elsewhere : Formosa, Philippines, Thailand; Australia; Hawaii; Micronesia; Polynesia.

CALYPTRATE

Family HIPPOBOSCIDAE

Genus *Lipoptena* Nitzsch, 1818

186. *Lipoptena axis* Maa

1969. *Lipoptena axis* Maa, *Pacif. Insects Monogr.*, 20 : 210. Type-locality : India.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh Rajasthan.

Elsewhere : Nepal, Sri Lanka.

Genus *Basilina* Miranda Ribeiro, 1905

187. *Basilina (Paracyclopodia) chlamydophora* (Speiser)

1903. *Nycteribia (Acrocholidia) chlamydophora* Speiser, *Fasc. Malayenses. Zool.*, 1 : 123. Type-locality : Biserat nr Jalor, Patani State, Peninsular Thailand.

Material examined : Reported from literature

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Arunachal Pradesh (Lower Subnsiri), Meghalaya, Karnataka, Tamil Nadu.

Elsewhere : China, Borneo, Java, Malaya, Myanmar, Sri Lanka, Sumatra, Thailand, Viet Nam.

Family MUSCIDAE

Genus *Morellia* Robineau-Desvoidy, 1830

188. *Morellia hortensia* (Wiedemann)

1824. *Musca hortensia* wiedemann, *Analecta Ent.* : 49. Type-locality : Java

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Tamil nadu, Punjab, Uttar Pradesh and West Bengal.

Elsewhere : Java, Malaya, Nepal, Philippines, Ryukyu Islands, Sumatra, Sumbawa, Sri Lanka, Papuan Subregion.

Genus *Musca* Linnaeus, 1758

189. *Musca (Byomya) conducens* Walker

1859. *Musca conducens* Walker, *J. Proc. Linn. Soc. Lond.*, *Zool.*, 4 : 138 Type-locality : Celebes

Material examined : 4♂♂, Atariya, Bilaspur district, 18.v.2005, coll.A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Assam, Andaman, Orissa, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : China, Flores Island, Formosa,

Java, Lombok, Malaya, Nepal, Philippines, Ryukyu Islands, Sarawak, Sumatra, Sumbawa, Thailand, Ethiopian, New Guinea, S. Palaeartic, Sri Lanka.

190. *Musca (Byomyia) confiscata* Speiser

1924. *Musca (Byomyia) confiscata* speiser, *Beitr. Tierk.* : Type-locality : Seychelles

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh (Jabalpur), Andhra Pradesh, Delhi, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : China, Malaya, Philippines, Ryukyu Islands, Sri Lanka, Taiwan, Ethiopian and Palaeartic.

191. *Musca (Byomyia) pattoni* Austen

1910. *Musca pattoni* Austen, *Ann. Mag. Nat. Hist.* 8(5) : 115 Type-locality : Madras, India

Material examined : 1 ♀ 7 ♂ ♂, Atariya, Bilaspur district, 18.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Rewa), Chhatisgarh (Bilaspur), Andhra Pradesh, Assam, Bihar, Tamil Nadu, Uattar Pradesh and West Bengal.

Elsewhere : China, Myanmar, Nepal, Pakistan, Sri Lanka.

192. *Musca (Byomyia) planiceps* (Wiedemann)

1824. *Musca (Byomyia) planiceps* Wiedemann, *Analecta Ent.* : 48. Type-locality : Java

Material examined : 1 ♀ 2 ♂ ♂, Atariya, Bilaspur district, 18.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Indore, Jabalpur), Chhatisgarh Andaman Islands, Assam, Delhi, Kerala, Karnataka, Punjab and Uttar Pradesh.

Elsewhere : Bali, China, Java, Nepal, Philippines, Sri Lanka, Sumbawa.

193. *Musca (Byomyia) sorbens* Wiedemann

1830. *Musca sorbens* Wiedemann, *Anssereurop. Zweifl.* Type-locality : Sierracone

Material examined : 4 ♂ ♂, Atariya, Bilaspur district, 18.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Rewa), Chhatisgarh (Bilaspur), Andhra Pradesh, Assam, Bihar, Tamil Nadu, Goa, Uttar Pradesh. and West Bengal.

Elsewhere : China, Chsistmas Islands, Cocos Island, Fomosa, Java, Lombok, Malay, Maldive Islands, Myanmar, Nepal, Pakistan, Philippines, Ryukyu Islands, Sumatra, Sumbawa, Talur Islands, Sri lanka, Thailand, Ethiopian, Hawaii, Micronesia, S palaeartic.

194. *Musca (Eumusca) lusoria* Wiedemann

1824. *Musca (Eumusca) lusoria* Wiedemann, *Analecta Ent.*, *Analecta Ent.*, : 47. Type-locality : South Africa

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Assam, Bihar, Tamil Nadu, Uttar Pradesh and W. Bengal.

Elsewhere : Myanmar, Nepal, Sri Lanka, Ethiopian.

195. *Musca (Musca) domestica* Linnaeus

1758. *Musca domestica* Linnaeus, *Syst. Nat.* Ed. 10, 1 : 596. Type-locality : Europe, America

Material examined : 10 ♂ ♂, Atariya, Bilaspur district, 18.v.2005, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Seoni, Rewa), Chhatisgarh Bilaspur) and in many other states of India.

Elsewhere : Borneo, Burma, Celebes, China, Christmas Island, Cocos Islands, Flores Island, Formosa, Java, Krakatu, Malaya, Maldive Islands, Nepal, Pakistan, Philippines, Ryukyu Islands, Sumatra, Sumbawa, Talur Islands, Sri Lanka, Thailand.

196. *Musca (Philaematomyia) crassirostris* Stein

1903. *Musca Crassirostris* Stein, *Mitt. Zool. Mus. Berl.*, 2(3) : 99. Type-locality : Egypt

Material examined : 1 ♂, Diyavan, Bilaspur dist, 09. v.2005, coll. A.K. Singh & Pty.,.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andhra Pradesh, Assam, Bihar, Kerala, Tamil Nadu, Maharastra, Punjab, Uttar Pradesh and W. Bengal.

Elsewhere : China, Java, Kalimantan, Lombok, Malaya, Myanmar, Nepal, Philippines, Sumatra, Sri Lanka, Taiwan, Thailand, Ethiopian, S. Palaeartic.

Genus *Orthellia* Robineau-Desvoidy, 1863

197. *Orthellia diffidens* (Walker)

1856. *Musca diffidens* Walker, *J. Proc. Linn. Soc. Lond., Zool.* 1 : 26. Type-locality : Malaya.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Tamil Nadu, Uttar Pradesh and W. Bengal.

Elsewhere : Celebes, China, Java, Malaya, Myanmar, Philippines, Sumatra, Sumbawa, Sri Lanka, Taiwan, Thailand, Vietnam.

198. *Orthellia indica* (Robineau-Desvoidy)

1830. *Lucilia indica* Robineau-Desvoidy, *Mem. pres. Div. Sav. Acad. Sci. Inst. Fr.*, 2 : 453. Type-locality : Bengal

Material examined : 5 ♀ ♀, Shivpuri, Parasia, Chhindwara district, 27.x.2002, coll. Y.N. Gupta.

Distribution : India : Madhya Pradesh & Chhatisgarh (Chhindwara), Andhra Pradesh, Assam, Bihar, Tamil Nadu, Maharashtra, Uttar Pradesh and West Bengal.

Elsewhere : China, Flores Island, Formosa, Java, Laos, Lombok, Malaya, Myanmar, Philippines, Ryukyu Islands, Sumatra, Sumbawa, Sri Lanka, Taiwan, Thailand.

199. *Orthellia lauta* (Wiedemann)

1830. *Musca lauta* Wiedemann, *Aussereurop. Zweifl. Insekt.* 2 : 410 Type-locality : Java

Material examined : 3 ♂ ♂, Tilaidobra, Bilaspur district, 5.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andhra Pradesh, Assam, Bihar, Tamil Nadu, Uttar Pradesh and W. Bengal.

Elsewhere : China, Flores Island, Formosa, Java, Laos, Lambok, Malaya, Myanmar, Nepal, Pakistan, Philippines, Ryukyu Islands, Sumatra, Sri Lanka, Taiwan, Thailand, Australia, Iran.

200. *Orthellia timorensis* (Robineau-Desvoidy)

1830. *Lucilia timorensis* Robineau-Desvoidy, *Mem. Pres. div. Sav. Acad. Sci. Inst. Fr.*, 2 : 460. Type-locality : Timor

Material examined : 2 ♂ ♂, Patalkot, Tahnia, Chhindwara district, 23.x.2002, coll. Y.N. Gupta; 1 ♀ 2 ♂ ♂, Shivpuri, Parasia, Chhindwara district, 27.x.02, coll. Y.N. Gupta; 7 ♀ ♀, Singanema west, Panchmari, Hoshangabad district, 7.ix.2000, coll. Y.N. Gupta; 1 ♀ 3 ♂ ♂, Tilaidobra, Bilaspur district, 15.v.05, coll. Singh & Pty.; 1 ♀, Atariya, Bilaspur district, 11.v.2005, coll. A.K. Singh & Pty.; 5 ♀ ♀, Diyavan, Bilaspur dist, 09.v.2005, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Chhindwara, Hoshangabad), Chhatisgarh (Bilaspur), Andhra Pradesh, Assam.

Elsewhere : Java

Genus *Pyrellia* Robineau-Desvoidy, 1830

201. *Pyrellia scintillans* Bigot

1888. *Pyrellia scintillans* Bigot, *Bull. Soc. Zool. Fr.* 12 : 616. Type-locality : South Africa

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Bihar, Punjab, Uttar Pradesh, West Bengal.

Elsewhere : Malaya, Nepal, Egypt, Ethiopian.

Genus *Helina* Robineau-Desvoidy, 1830

202. *Helina punctata* (Robineau-Desvoidy)

1830. *Rhorella punctata* Robineau-Desvoidy, *Mem. Pres. div. Sav. Acad. Sci. Inst. Fr.*, 2 : 492. Type-locality : France.

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Himachal Pradesh, Assam, Madhya Pradesh, Tamil Nadu, Uttaranchal (Kumaon), Uttar Pradesh, West Bengal.

Elsewhere : Nepal, Holarctic.

Genus *Phaonia* Robineau-Desvoidy, 1830

203. *Phaonia longipalpis* Emden

1965. *Phaonia longipalpis* Emden, *Fauna Brit. India. Muscidae*, 1 : 264, Type-locality : Burma

Material examined : 1 ♂ Atariya, Bilaspur district, 11.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur).

Elsewhere : Myanmar.

Genus *Dichaetomyia* Malloch, 1921

204. *Dichaetomyia luteiventris* (Rondani)

1893. *Anthomyia luteiventris* Rondani, *Aurali Mus. civ. stor. nat. Giacomo Doria*, 4 : 288, Type-locality : Ethiopia

Material examined : 3 ♂ ♂, Tilaidobra, Bilaspur district, 15.v.05, coll. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Maharashtra, Tamil Nadu, Uttar Pradesh.

Elsewhere : Myanmar, Sri Lanka, Formosa, Java, Malya, Nepal, Sumatra; Ethiopia.

205. *Dichatomyia quadrata* (Wiedemann)

1824. *Anthomyia quadrata* Wiedemann, *Analecta ent.* : 52, Type-locality : Java

Material examined : 1 ♀ 1 ♂, Diyavan, Bilaspur dist, dt. 09. v. 05, coll. A.K. Singh & Pty., 1 ♂ Atariya, Bilaspur district, 18.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Assam, Sikkim and Tamil Nadu.

Elsewhere : Throughout Oriental region; Melanesia.

Genus *Gymnodia* Robineau-Desvoidy, 1863

206. *Gymnodia tonitruui* (Wiedemann)

1824. *Anthomyia tonitruui*, Wiedemann *Analecta Ent.*, : 52, Type-locality : E.Indies

Material examined : 1 ♀, Jaldapara forest, Bilaspur district, 12.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andhra Pradesh, Assam, Himachal Pradesh, Maharashtra, Uttar Pradesh and West Bengal.

Elsewhere : China, Malaya, Nepal, Pakisatan, Taiwan, Ethiopian, S. Palaeartic, Sri Lanka.

Genus *Myospila* Rondani, 1856.

207. *Myospila bina brueneifemorata* Emden

1965. *Xenosia bina brunneiofemorata* Emden, *Fauna. Brit. India, Muscidae*, 1 : 433. Type-locality : Mussorie.

Material examined : 2 ♀ ♀, Diyavan, Bilaspur dist, dt. 09.v.05, coll. A.K. Singh & Pty..

Distribution : India : Madhya Pradesh (Jabalpur), Chhatisgarh (Bilaspur), Uttarakhand (Mussorie).

Elsewhere : None.

Genus *Atherigona* Rondani, 1865

208. *Atherigona (Atherigona) falcata* (Thomson)

1869. *Atherigona falcata* Thomson, *K svenska Fregatten Eugenie Resa. Zool. Dipt.* : 560, Type-locality : China

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh.

Elsewhere : Myanmar, Sri Lanka, China, Formosa; Australia.

209. *Atherigona (Atherigona) oryzae* (Malloch)

1925. *Atherigona oryzae* Malloch, *Mem. Dep. Agric. India (ent. ser.)* 8(11) : 117, Type-locality : Tamil Nadu

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Bihar, Kerala, Tamil Nadu, Maharashtra, Karnataka, Rajasthan, Uttar Pradesh, West Bengal.

Elsewhere : Throughout Oriental; Australasian; Japan.

210. *Atherigona (Atherigona) pulla* (Wiedemann)

1830. *Coenosia pulla* Wiedemann, *Aussereurop. Zweiffl. Insekt.* 2 : 441. Type-locality : Madras

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Bihar, Tamil Nadu, maharashtra, Karnataka, Punjab, Rajasthan, Uttar Pradesh.

Elsewhere : Myanmar, Pakistan, Thailand; Ethiopian; South Palaearctic.

211. *Átherigona (Atherigona) soccata*

1871. *Atherigona soccata*, *Bull. Soc. Ent. ital.* 2 : 332, Type-locality : Italy

Material examined : Reported from literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Bihar, Tamil Nadu, maharashtra, Karnataka, Punjab, Rajasthan, Uttar Pradesh.

Elsewhere : Myanmar, Pakistan, Thailand; Ethiopian; South Palaearctic.

Genus *Lispe* Latreille, 1796

212. *Lispe assimilis* (Wiedemann)

1824. *Lispe assimilis* Wiedemann, *Analecta Ent.* : 51, Type-locality : E. India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Orissa, Tamil Nadu, West Bengal.

Elsewhere : Throughout Oriental; Japan

213. *Lispe geniseta* Stein

1909. *Lispe geniseta* Stein, *Tijdschr. Ent.* 52. 256, Type-locality : Batavia, Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : Java

214. *Lispe leucospila* (Wiedemann)

1830. *Coenosia leucospila* Wiedemann, *Aussereurop. zweiffl. Insekt.*, 2 : 441. Type-locality : E.India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Assam, Bihar, Tamil Nadu, Karnataka, Punjab, Uttar Pradesh, and West Bengal.

Elsewhere : Throughout Oriental, New Guinea.

215. *Lispe mirabilis* Stein

1918. *Lispe mirabilis* Stein, *Annl. hist.-nat. Mus. natn. Hung.*, 16 : 176, Type-locality : Mhow (M.P.)

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Bhopal, Jabalpur).

Elsewhere : Sri Lanka, Thailand

216. *Lispe orientalis* Wiedemann

1824. *Lispe orientalis* Wiedemann, *Analecta Ent.* : 51, Type-locality : E. India

Material examined : Reported from Literature

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Bihar, Himachal Pradesh, Sikkim, Uttar Pradesh and West Bengal.

Elsewhere : Myanmar, Sri Lanka, China, Flores Island, Formosa, Malaya, Pakistan, Sumatra; Japan.

Genus *Coenosia* Meigen, 1826

217. *Coenosia exigua* Stein

1910. *Coenosia exigua* Stein, *Trans. Linn. Soc. Lond. zool.* 14 : 161. Type-locality : Seychelles

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Himachal Pradesh, Tamil Nadu and West Bengal.

Elsewhere : Throughout Oriental region.

Genus *Haematobia* Le Peletier & Serville, 1828

218. *Haematobia irritans* ssp. *exigua* de Meijere

1903. *Haematobia exigua* de Meijere, *Meded. Proefstn oost-Java* (3)44 : 17 Type-locality : Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andamans, Assam, Kerala, Tamil Nadu, Maharashtra, Karnataka, Uttar Pradesh, West Bengal.

Elsewhere : Throughout Oriental region.

219. *Haematobia minuta* (Bezzi)

1892. *Lyperosia minuta* Bezzi, *Annali Mus. Civ. Stor. Nat. Giacomo Doria* (2)12 : 192, Type-locality : Somalia

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh, Bihar, Goa, West Bengal.

Elsewhere : Sri Lanka, Thailand; Iran; Ethiopia.

Genus *Stomoxys* Geoffroy, 1762

220. *Stomoxys calcitrans* (Linnaeus)

1758. *Conops calcitrans* Linnaeus, *Syst. Nat., Ed., 10, 1* : 604 Type-locality :

Material examined : 1♂2♀, Atariya, Bilaspur district, 11.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur), Manipur, Nagaland, Sikkim.

Elsewhere : Cosmopolitan.

Family CALLIPHORIDAE

Genus *Bengalia* Robineau-Desvoidy, 1830

221. *Bengalia jejuna* (Fabricius)

1787. *Musca jejuna* Fabricius, *Mant. Ins., 2* : 342. Type-locality : Tranquebar, India

Material examined : 2♂♂ Madai Satpur, Hoshangabad, 14.vi.1999, K.Chandra; 1♂, Achanakmar, Bilaspur district, 19.vii.2004, coll. A.K. Singh & Pty.; 5♀♀, Delakhari, Chhindwara, 20.x.2002 A.K. Singh & Pty.; 1♂, Chhaprawa, Bilaspur dist, 21.vii.2004, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Chhindwara, Hoshangabad, Seoni,), Chhattisgarh (Bilaspur) and Uttar Pradesh.

Elsewhere : Celebes, Malaya, Philippines, Sri Lanka.

222. *Bengalia torosa* Wiedemann

1819. *Musca torosa* Wiedemann, *Zool. Mag. 3* : 21 Type-locality : Bengal.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh Chandigarh, TamilNadu, West Bengal.

Elsewhere : Sri Lanka; Java; Philippines; Pakistan; Taiwan; Thailand.

223. *Bengalia bezii* Senior-White

1923. *Bengalia bezii* Senior-White, *Spolia zeylan, 12* : 306. Type-locality : Sri Lanka

Material examined : 1♂, Atariya, Bilaspur district, 17.vi.04, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur).

Elsewhere : Sri Lanka, Java, Malaya

Genus *Hemipyrellia* Townsend, 1918

224. *Hemipyrellia liguirrens* (Wiedemann)

1830. *Musca liguirrens* Wiedemann, *Aussereurop. zweiffl. Insekt., 2* : 655, Type-locality : Java

Material examined : 2♂, Atariya, Bilaspur district, 18.v.2005, coll. A.K. Singh & Pty.; 1, Tiliadobra, Bilaspur district, 15.v.2005, coll : A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur), Bihar and Tamil Nadu.

Elsewhere : Throughout Oriental region

Genus *Lucilia* Robineau-Desvoidy, 1830

225. *Lucilia papuensis* Macquart

1842. *Lucilia papuensis* Macquart, *Mem. Soc. Sci. Agric. Lille, 1842* : 298 (1843 : 141), Type-locality : Papua

Material examined : 3♂♂, Diyavan, Bilaspur dist, 09. v. 2005, coll. A.K. Singh & Pty., 1♂ Atariya, Bilaspur district, 11.v.2005, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur).

Elsewhere : Entire Oriental region; Micronesia

Genus *Chrysomya* Robineau-Desvoidy, 1830

226. *Chrysomya megacephala* (Fabricius)

1794. *Musca megacephala* Fabricius, *Syst. Ent., 4* : 317. Type-locality : Guam

Material examined : 3♂♂, Chisna FRH, Hoshangabad, 18.04.01, Y.N. Gupta, 1♀, Panch River, Parasia, Chhindwara district, 27.x.02, coll. Y.N. Gupta, 4♂♂, Mendi Sarai, Bilaspur dist, 14.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh

(Hoshangabad, Chhindwara), Chhatisgarh (Bilaspur), Arunachal Pradesh and also in other states in India.

Elsewhere : Oriental region, North China and Japan of the Palaearctic region; Australasian region; Malagasy sub-region of the Ethiopian region.

227. *Chrysomya rufifacies* (Macquart)

1843. *Lucilia rufifacies* Macquart, *Mem. Soc. Sci. Agric. Lille*, 1842 : 303 (1843 : 146), Type-locality :

Material examined : 2♂♂, Anthoni Jhinta, Panchmari, Chhindwara, coll. 28.ii.2002, coll. Y.N. Gupta; 1♂, Hoshangabad, Detenochad, Pachmari, 8.ix.2006, coll. Y.N. Gupta; 5♀♀, Singanama, Hoshangabad, 7.ix.2006, coll. Y.N. Gupta; 1♂ Rajendregiri, Hoshangabad, 2.ix.2000, coll. Y.N. Gupta; 1♂ Churagarh, Hoshangabad district, 1.ix.2000, Y.N. Gupta; 4♂♂, Rakshasakh, 10.v.05, Bilaspur dist, A.K. Singh & Pty.

Distribution : India : Madhya Pradesh (Chhindwara, Hoshangabad), Chhatisgarh (Bilaspur).

Elsewhere : Entire Oriental region; Australia.

Genus *Cosmina* Robineu-Desvoidy, 1830

228. *Cosmina bicolor* (Walker)

1856. *Idia bicolor* Walker, *J. Proc. Linn. Soc.*, I : 23, 77. Type-locality : Java

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Arunachal Pradesh, Meghalaya, Karnataka and Tamil Nadu.

Elsewhere : China, Borneo, Java, Malaya, Myanmar, Sri Lanka, Thailand.

Genus *Rhinia* Robineu-Desvoidy, 1830

229. *Rhinia melanostoma* (Wiedemann)

1830. *Idia melanostoma* Wiedemann, *Aussereurop. Zweifl. Insekt.*, 2 : 253. Type-locality : Java.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Seoni), Chhatisgarh, Himachal Pradesh, Tamil Nadu and West Bengal.

Elsewhere : China, Java, Sri Lanka.

Genus *Rhyncomya* Robineu-Desvoidy, 1830

230. *Rhyncomya divisa* (Walker)

1856. *Musca divisa* walker, *Insecta saundersiana*, I : 333. Type-locality : "East Indies."

Material examined : Reported from Literature

Distribution : India : Madhya Pradesh & Chhatisgarh

Elsewhere : Sri Lanka, Java.

231. *Rhyncomya pollinosa* (Townsend)

1917. *Trichometallea pollinosa* Townsend, *Rec. Indian Mus.*, 13 : 194. Type-locality : Umballa, Punjab, India.

Material examined : 2♂♂ P.B.S. Matkuli, Hoshangabad, 7.viii.2006, coll. Y.N. Gupta; 1♂ Shivpuri, Parasia, Chhindwara district, 27.x.2002, coll. Y.N. Gupta, 1♂ P.W.D. rest house, Hoshangabad, 6.ix.2000, coll. Y.N. Gupta, 1♂ Parasia, Chhindwara district, 26.x.2002, coll. Y.N. Gupta.

Distribution : India : Madhya Pradesh (Chhindwara, Hoshangabad), Chhatisgarh, Maharastra, Punjab, Uttar Pradesh and Tamil Nadu.

Elsewhere : China, Sri Lanka.

Genus *Idiella* Braeuer and Berensteamn, 1889

232. *Idiella mandarina* (Wiedemann)

1830. *Idia mandarina* Wiedemann, *Aussereurop. zwifl. Insekt.*, 2 : 350. Type-locality : China

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Assam, Bihar, Gujarat, Haryana, Kerala, Madhya Pradesh, Maharashtra, Meghalaya, Orissa, Punjab, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh, China, Indonesia, Malaysia, Myanmar, Sri Lanka, Taiwan and Thailand.

Genus *Idiellopsis* Townsend, 1917

233. *Idiellopsis xanthogaster* (Wiedemann)

1820. *Idia xanthogaster* Wiedemann, *N. Dipt. Gen.* : 21. Type-locality : Java.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh, Assam, Bihar, Uttar Pradesh.

Elsewhere : Formosa, Java, Malay, Sri Lanka, Taiwan; Australia, Moluccas.

Genus *Isomyia* Walker, 1860

234. *Isomyia discalis* James

1970. *Isomyia discalis* James, Smithson, Centr. Zool. 67 : 12, Type-locality : Philippines.

Material examined : 1♂, Achanakmar, Bilaspur district, 27. vii. 2004, coll. A.K. Singh & Pty.; 1♂, Chhaprawa, Bilaspur dist, 21. vii. 2004, coll. A.K. Singh & Pty., 1♂, Mendri Sarai, Bilaspur dist, 14.v. 2005.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur).

Elsewhere : Philippines

Family SARCOPHAGIDAE

Genus *Sarcorohdendorfia* Baranov, 1938

235. *Sarcorohdendorfia seniorwhitei* (Ho)

1938. *Sarcophaga seniorwhitei* Ho, Ann. trop. Med. Parasit., 32(2) : 117. Type-locality : Not given

Material examined : 1♂, Diyavan, Bilaspur dist, 08. v. 2005, coll. A.K. Singh & Pty., 1♂, Rakshasakh, 10.v.05, Bilaspur dist, A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur).

Elsewhere : Taiwan, Thailand, Nepal, Indonesia, Japan, Krilslands (???) Papua New Guinea, South Korea, Australia.

Genus *Iranihindia* Rohdendorf, 1961

236. *Iranihindia futilis* (Senior-White)

1924. *Sarcophaga futilis* Senior-White, Rec. Indian Mus., 26(3) : 246. Type-locality : Sri Lanka

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh.

Elsewhere : None

237. *Iranihindia martellata* (Senior-White)

1924. *Sarcophaga martellata* Senior-White, Rec. Indian Mus., 26(3) : 247, Type-locality : Sri Lanka.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhattisgarh Uttaranchal, Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Karnataka, Kerala, Maharashtra, Madhya Pradesh, Nagaland, Mizoram, Orissa, Tamil Nadu, Tripura, West Bengal.

Elsewhere : Nepal and Sri Lanka.

238. *Iranihindia martellatoides* (Baranov)

1931. *Sarcophaga martellatoides* Baranov, Konowia, (2)10 : 14, Type-locality : Sri Lanka

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Bhopal, Jabalpur), Chhattisgarh. (Bilaspur), Bihar, Karnataka, Maharashtra, Orissa, Tripura, Uttar Pradesh and West Bengal.

Elsewhere : Sri Lanka.

Genus *Parasarcophaga* Johnston & Teigs, 1921

239. *Parasarcophaga (Parasarcophaga) albiceps* (Meigen)

1826. *Sarcophaga albiceps* Meigen, Syst. Be. Schr. Europ. Zweifl. Insekt. 5 : 22. Type-locality : Europe

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore, Bhopal, Panchmari, Jabalpur), Chhattisgarh (Bilaspur), Andaman and Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Chandigarh, Delhi, Goa, Gujrat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : China, Kalimantan, Malaysia, Nepal, Philippines, Ryukyu Islands, Taiwan, and Thailand, Bismarck Archipelago, Europe, Hawai, Israel, Japan, Korea, New Britain; New Guinea Solomon Island and Turkey.

240. *Parasarcophaga (Parasarcophaga) misera*
(Walker)

1849. *Sarcophaga misera* Walker, *List. dipt. Br. Mus.*, 4 : 829. Type-locality : Not given

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore, Bhopal, Panchmari, Jabalpur), Chhatisgarh (Bilaspur), A & N Islands, Andhra Pradesh, Arunachal Pradesh Assam, Bihar, Chandigarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Pondicherry, Punjab, Rajasthan, Sikkim, Tamil Nadu, Uttar Pradesh and West Bengal.

Elsewhere : Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka; Afganistan, Borneo, Caroline Islands, China, East Indies; Micronesia; Palaeartic; Australia.

241. *Parasarcophaga (Parasarcophaga) sericea* (Walker)

1852. *Sarcophaga sericea* Walker, *Ins. Saunders. Dipt.*, 4 : 326. Type-locality : Not given

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore, Bhopal, Panchmari, Jabalpur), Chhatisgarh (Bilaspur), Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam Bihar, Chandigarh, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Pondicherry, Punjab, Rajasthan, Sikkim, Tamilnadu, Uttar Pradesh, West Bengal.

Elsewhere : Bangladesh, Bhutan, Myanmar, Nepal, Pakistan, Sri Lanka; Borneo, Caroline Islands, China, East Indies; Micronesia; Palaeartic; Australia.

242. *Parasarcophaga (s. str.) hirtipes*
(Wiedemann)

1830. *Sarcophaga hirtipes* Wiedemann, *Aussereurop. zweifl. Insekt.*, 2 : 361. Type-locality : Egypt

Material examined : 2♂♂, Atariya, Bilaspur district, 18.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhatisgarh (Bilaspur), Andaman & Nicobar Islands; Andhra Pradesh, Bihar, Delhi, Gujarat, Karnataka, Kerala, Punjab, Maharashtra, Rajasthan, Tamil Nadu, Uttarakhand, West Bengal.

Elsewhere : Bangladesh; Pakistan; Afganistan; Algeria; Angola; Arabia; Azerbaijan; Botswana; Bulgaria; China; Egypt; Gambia; Guinea; Iran; Iraq; Israel; Jordan; Kazakhstan; Kenya; Kyrgyzstan; Lebanon; Liberia; Morocco; Namibia; Russia; Saudi Arabia; Senegal; South Africa; Sudan; Syria; Tajikistan; Tanzania; Turkey; Turkmenistan; Uganda; Uzbekistan; Zaire; Zambia and Zimbabwe.

243. *Parasarcophaga (Liopygia) ruficornis*
(Fabricius)

1794. *Musca ruficornis* Fabricius, *Ent. Syst.*, 4 : 314. Type-locality : East India.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur, Indore), Chhatisgarh Andaman & Nicobar Islands, Arunachal Pradesh, Assam, Bihar, Delhi, Goa, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Meghalaya, Mizoram, Maharashtra, Manipur, Nagaland, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttaranchal West Bengal, Dadra and Nagar Haveli, Pondicherry and Lakshadweep.

Elsewhere : Bangladesh; Bhutan; Nepal; Pakistan; Sri Lanka; Borneo; Botswana, Brazil; Canada; Guam; Hainan Island; Hawaiian Islands; Japan (including Ryukyu Islands); Korea; Madagascar; Malaysia; Mariana Islands; Moluccas Islands; Myanmar; Nigeria; Panama; Papua New Guinea; Philippines; Saudi Arabia; Singapore; Socotra Island; South Africa; Taiwan; Thailand; Uganda; USA; Western Samoa and Zaire.

244. *Parasarcophaga (Baranovisca) cantrelli*
Verves

1991. *Parasarcophaga (Baranovisca) cantrelli* Verves, *Proc. Zool. Inst., USSR*, 240 : 133. Type-locality : Not given

Material examined : 2♂♂, Atariya, Bilaspur district, 18.v.05, coll. A.K. Singh & Pty.

Distribution : India : Madhya Pradesh & Chhattisgarh (Bilaspur), Tamil Nadu.

Elsewhere : None

245. *Parasarcophaga (Liosarcophaga) amplicerus* Shinonaga and Tumrasvin

1979. *Parasarcophaga amplicerus* Shinonaga and Tumrasvin, *Jap. J. sanit. Zool.*, **30**(2) : 143. Type-locality : Not given

Material examined : 4♂♂, Jhandi dozri, Bilaspur district, 8.v.05, coll. A.K.Singh & Pty.; 2♂♂, Diyavan, Bilaspur dist, 09. v. 2005, coll. A.K. Singh & Pty., 1♂, Tilaidobra, Bilaspur district, 15.v.2005, coll. Singh & Pty.

Distribution : India : Madhya Pradesh (Bilaspur, Jabalpur), Tamil Nadu and Karnataka.

Elsewhere : Thailand

246. *Parasarcophaga (Liosarcophaga) dux* (Thomson)

1869. *Sarcophaga dux* Thomson, *K. svenska Vetensk Akad. fregatten Eugenie resa omkring jorden*, **2**(1) : 534. Type-locality : Kano and Shinonaga, 1994, *Jap.J.sanit. Zool.*, **45** : 259.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore), & Chhattisgarh Andaman & Nicobar Islands, Assam, Andhra Pradesh, Arunachal Pradesh, Bihar, Goa, Gujarat, Jammu & Kashmir, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Punjab, Rajasthan, Tamil Nadu, Tripura, Uttarakhand, West Bengal.

Elsewhere : Bangla Desh; Bhutan; Nepal, Pakistan; Myanmar; Sri Lanka; Albania; Australia; Austria; Azerbaijan; Azores; Bismarck Archipelago; Bonin Islands; Borneo; Bulgaria; Cape Verde Islands; caroline Islands; China; Czech Republic; Denmark; Egypt; Fiji; Finland; France; Germany; Great Britain, Greece; Gruzia; Guam; Hainan Islands; Hawaiian Islands; Hungary; Indonesia (Irian Jaya); Israel; Italy; Japan; Kazakhstan; Kirbati; Madagascar; Malta; Mariana Islands; Micronesia; Mongolia; New Guinea; Niue; Palau; Philippines; Poland; Pitcairn Islands; Romania; Russia; Serbia; Singapore; Slovakia; South Korea; Spain; Sweden; Switzerland;

Taiwan; Tajikistan; Thailand; Ukraine.; Uzbekistan; Wake Islands and Western Samoa.

247. *Parasarcophaga (Liosarcophaga) brevicornis* (Ho)

1934. *Sarcophaga brevicornis* Ho, *Bull. Fan Mem Inst. Biol.*, **5** : 23. Type-locality : Peiping, China

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Jabalpur), Chhattisgarh (Bilaspur), Andamans, Arunachal Pradesh, Andhra Pradesh, Bihar, Delhi, Himachal Pradesh, Kerala, Gujarat, Maharashtra, Manipur, Meghalaya, Mizoram, Nagaland, Orissa, Rajasthan, Tamil Nadu, West Bengal.

Elsewhere : Nepal, Pakistan, Sri Lanka; Hainan islands, Indonesia; Japan, Malaysia, Philippines, Russia, Singapore, Taiwan, Thailand.

Genus *Sarcosolomonina* Baranov, 1934

248. *Sarcosolomonina (Parkerimyia) nathani* Lopes and Kano

1969. *Sarcosolomonina (Parkerimyia) nathani* Lopes and Kano, *Pacif. Insects*, **11**(1) : 184. Type-locality : Nilgiri Hills, South India

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Indore), Chhattisgarh, Orissa, Tamil Nadu, Uttarakhand and West Bengal.

Elsewhere : None.

Genus *Seniorwhitea* Rohdendorf, 1937

249. *Seniorwhitea reciproca* (Walker)

1856. *Sarcophaga reciproca* Walker, *J. Proc. Linn. Soc. Lond., Zool.*, **1** : 22. Type-locality : Singapore

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh (Bhopal, Panchmari, Jabalpur), Chhattisgarh, Andaman & Nicobar Islands, Andhra Pradesh, Arunachal Pradesh, Assam, Bihar, Gujarat, Haryana, Himachal Pradesh, Karnataka, Kerala, Maharashtra, Manipur, Meghalaya, Nagaland, Orissa, Sikkim, Tamil Nadu, Tripura, Uttarakhand, Uttar Pradesh, West Bengal.

Elsewhere : Bhutan, Indonesia, Laos, Malaysia, Myanmar, Nepal, Pakistan, Singapore, Sri Lanka,

Taiwan, Thailand; China, France, Hainan Island, Hawaiian Islands.

Family TACHINIDAE

Subfamily GONIINAE

Genus *Palexorista* Townsend, 1921

250. *Palexorista solennis* (Walker)

1858. *Palexorista solennis* Walker, *J. Proc. Linn. Soc. Lond.*, **3** : 98. Type-locality : Aru Island.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Karnataka, Maharashtra, Manipur, Tamil Nadu, Uttar Pradesh.

Elsewhere : Aru Island, Borneo, China, Formosa, Indonesia, Java, Malaysia, Melanesia, Myanmar, Sri Lanka, Thailand, Australia, Taiwan, Tonga.

251. *Palexorista parachrysops* (Bezzi)

1925. *Sturmia parachrysops bezzi*, *Bull. Ent. Res.*, **16** : 114. Type-locality : Kuala Lumpur, Malaya.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Tamil Nadu.

Elsewhere : Malaysia, Sri Lanka, W. Africa, E. Africa.

252. *Palexorista laxa* (Curran)

1927. *Sturmia laxa* Curran, *Bull. Ent. Res.*, **17** : 335. Type-locality : Morogoro, Tanzania.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : Widespread Ethiopian Region.

Genus *Peribaea* Robineau-Desvoidy, 1863

253. *Peribaea orbata* (Wiedemann)

1830. *Tachina orbata* Wiedemann, *Aussereur. Zweiflugel. Ins.*, **2** : 336. Type-locality : 'Ostindien' (of neotype Azra, [Assam] India).

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Andhra Pradesh, Assam, Gujarat, Kerala, Tamil Nadu, Rajasthan, West Bengal.

Elsewhere : Formosa, Malaysia, Philippines, Sumatra, Sri Lanka, Thailand; Melanesia and Micronesia, Australia, Africa, Middle East.

Genus *Carcelia* Robineau-Desvoidy, 1830

254. *Carcelia (Senometopia) illota* (Curran)

1927. *Zenillia illota* Curran, *Bull. Ent. Res.*, **17** : 328. Type-locality : Tanzania

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Gujarat, Karnataka, Maharashtra, Orissa, West Bengal.

Elsewhere : Tanzania.

Genus *Hapalioloemus* Baranov, 1934

255. *Hapalioloemus machaeralis* Baranov

1934. *Hapalioloemus machaeralis* Baranov, *Encyc. Ent. (B)II*, **7** : 162. Type-locality : Rahatgaon, [Madhya Pradesh] India.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : None

Genus *Prosopodopsis* Townsend, 1926

256. *Prosopodopsis orbitalis* (Baranov)

1938. *Dolichocolon orbitalis* Baranov, *Bull. Ent. Res.*, **29** : 406. Type-locality : Hoshangabad, Rahatgaon, [Madhya Pradesh] India.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh, Kerala.

Elsewhere : None

Genus *Suensonomyia* Mesnil, 1953

257. *Suensonomyia setinerva* Mesnil

1953. *Suensonomyia setinerva* Mesnil, *Bull. Anns Soc. Ent. Belg.*, **89** : 99. Type-locality : Yenpingfu, Fukien, China.

Material examined : Reported from Literature.

Distribution : India : Madhya Pradesh & Chhatisgarh.

Elsewhere : China.

SUMMARY

An enumeration of 257 species belonging to 124 genera spread over 29 families of Diptera so far known from Madhya Pradesh and Chhattisgarh states based on the past published records and actual.. *Material examined* housed at Zoological Survey of India, Kolkata and Central Zone Regional Centre, Zoological Survey of India, Jabalpur is provided.

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REFERENCES

- CHANDRA, K. 2003. Insect Biodiversity in Madhya Pradesh and Chhattisgarh. *In* Advancement in Insect biodiversity, (R.K. Gupta ed.) Agrobios (India), Jodhpur
- CHANDRA, K., R.M. SHARMA AND PRAVEEN OJHA. 2010. A Compendium on the Faunal Resources of Narmada River Basin in Madhya Pradesh. *Rec. zool. Surv. India, Occ. Paper No. 310* : 1-152.
- DELFINADO, M.D. AND HARDY, D.E. 1973. (eds.). *A Catalog of Diptera of the Oriental Region, 1* : 1-617. Univ. of Hawaii Press, Honolulu.
- DELFINADO, M.D. AND HARDY, D.E. 1975. (eds.). *A Catalog of Diptera of the Oriental Region, 2* : 1-459. Univ. of Hawaii Press, Honolulu.
- DELFINADO, M.D. AND HARDY, D.E. 1977. (eds.). *A Catalog of Diptera of the Oriental Region, 3* : 1-852. Univ. of Hawaii Press, Honolulu.
- MCALPINE, J.F AND D.M. WOOD. 1989 (eds.). *Manual of Nearctic Diptera*, Vol. 3. Research Branch, Agriculture Canada, Monograph, **32** : 1-606
- MITRA, B, MUKHERJEE, M. AND PARUI, P. 2007. New records of True flies (Diptera :Insecta) from Chattisgarh and Madhya Pradesh. *Bionotes*, **9(2)** : 54-55.
- NANDI, B.C. 2002. Diptera : Sarcophagidae. *Fauna of India and adjacent countries*. Vol. **10** : 1-608. Zoological Survey of India, Kolkata
- NANDI, B.C. 2004. Checklist of Calliphoridae (Diptera) of India. *Rec. zool. Surv. India, Occ. Paper No. 231* : 1-47.
- PARUI, P AND MITRA, B. New record of a fruit fly *Sphenella sinensis* Schiner (Diptera : Tephritidae) from Madhya Pradesh. *Bionotes*, **8(1)** : 16.
- RAJPUT, K.B. AND KULKARNI, S.M. 1991. Record of Culicinae Mosquitoes from Bastar district (Madhya Pradesh), India (Diptera : Culicidae), Part III, Genus–*Aedes*. *Rec. zool. Surv. India*, **89(1-4)** : 309-318.
- RAJPUT, K.B. AND KULKARNI, S.M. 1991. Record of Culicinae Mosquitoes from Bastar district (Madhya Pradesh), India (Diptera : Culicidae), Part II, Genus–*Aedomyia*, *Armigeres*, *Coquilleltidia*, *Heizmannia*, *Mansonia* and *Mimomyia*. *Rec. zool. Surv. India*, **89(1 4)** : 251-255.
- RAJPUT, K.B. AND KULKARNI, S.M. 1992. Record of Culicinae Mosquitoes from Bastar district (Madhya Pradesh), India (Diptera : Culicidae), Part IV, Genus–*Culex*. *Rec. zool. Surv. India*, **90(1-4)** : 7-22.
- SHARMA, R.M. 2009. Checklist of Indian Gall midges (Insecta : Diptera : Cecidomyiidae). [http://www.zsi.gov.in/zoological survey of India/zsidata/checklist](http://www.zsi.gov.in/zoological%20survey%20of%20India/zsidata/checklist)
- VEER, VIJAY. 2004. Tabanidae Flies (Diptera) from the Indian subregion. *Annals of Forestry*, **12 (2)** : 301-447.