FAUNA OF MIZORAM
(Part-2)

Edited by
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INTRODUCTION

Mites constitute one of the major groups of arthropod in the animal kingdom. Among the mites, oribatids or 'beetle' or 'moss' mites are the most commonly found and numerically dominant group. They are very common inhabitants of all possible habitats in nature (Sanyal, 2000).

Oribatid mites are of great economic importance. They help to promote soil fertility through humification of organic matter. They also act as an agent for biological control of pests. These tiny mites feed on plants, carry fungal spores causing diseases to plants and transmit helminth diseases to domestic animals. The saprophytic oribatids help in regulating soil nematode populations. There are many Oribatids occurring in house-dust cause respiratory allergic diseases in man.

No work on oribatid fauna of Mizoram was known before the present work was initiated. The present work is based on collection of oribatid mites from Mizoram done by the author and his associates.

A brief account of the surveys undertaken for the study is given below:


The most important habitats like litter, soil, humus, decomposed cowdung, etc. were thoroughly surveyed for collection of oribatid mites.

THE CONTENTS OF THE PRESENT PAPER

The paper deals with the oribatid fauna collected from Mizoram during 1994 and 1995. Altogether 40 species belonging to 29 genera and 22 families have been recorded in the paper. All the species incorporated are reported for the first time from the State of Mizoram. The original and most recent references, if any, diagnostic features and distribution of each species and keys to the identification of families, genera and species known from the State have been provided. The species studied in the work are deposited in the National Zoological Collection, Zoological Survey of India.

For details of the morphological features of oribatid mite, various terminologies and materials and methodology followed Sanyal, 2002 may be consulted.

The species were diagnosed on the basis of the keys for identification prepared by Balogh (1972), Balogh and Mahunka (1983), Balogh and Balogh (1988), Subias and Balogh (1989) and Balogh and Balogh (1990).
LIST OF ORIBATID TAXA KNOWN FROM MIZORAM

1. Family PHTHIRACARIDAE
   1. Genus Atropacorus *(Hoplophorella)* Niedbala
   1. A. (H). scapellatus (Aoki)
   2. A. (H). sp.
   2. Genus Hoplophthiracarus Jacot
   3. H. punctatus Mondal and Kundu

2. Family EUPHTHIRACARIDAE
   3. Genus Rhysotritia Markel and Meyer
   4. R. ardua (Koch) var. otaiheitensis Hammer

3. Family HYPOCHTHONIIDAE
   4. Genus Hypochthonius Koch
   5. Hypochthonius sp.

4. Family HAPLOCHTHONIIDAE
   6. H. clavatus (Hamer)

5. Family LOHMANIIDAE
   6. Genus Javacarus Balogh

6. J. kuhnelii Balogh

7. Genus Phaeozygotes Grandjean

8. Genus Eugeiopharella Balogh and Banerjee

9. Genus Nephrilacnormphus Koch

10. A. russeolus Wallwork

11. A. longisetosus Aoki

9. Family NANOHERMANNIIDAE
11. Genus Cyrthermannia Balogh
12. C. vicinicornuta Aoki

10. Family PLASMOBATIDAE
12. Genus Plasmobates Grandjean
13. P. pagoda Grandjean

11. Family MICROZETIDAE
13. Genus Berleszetes Mahunka
14. B. auxiliaris (Grandjean)

12. Family EREMOBELBIDAE
14. Genus Eremobelba Berlese
15. E. himalayensis Mondalba Berlese

13. Family TECTOCEPHIDAE
15. Genus Tectocephes Berlese
16. T. velatus (Michael)

14. Family OTOCEPHIDAE
16. Genus Dolicheremaeus Jacot
17. D. himalayensis Chakrabarti, Bhaduri and Kundu

18. D. nepalensis Aoki
19. Dolicheremaeus sp.

15. Family OPPIDAE
17. Genus Arcopippia Hammer
20. A. bidentata Hammer
18. Genus Hexoppiia Balogh
21. H. heterotricha Balogh
19. Genus Multiopipia Hammer
22. M. gracilis Hammer
20. Genus Oppia Koch
23. O. yodai Aoki

16. Family CHAUNOPROCTIDAE
21. Genus Chaunoproctus Pearce

24. C. clavisetosus Bhaduri, Bhattacharya and Chakrabarti
SANYAL : Oribatid Mites (Acari : Oribatei)

17. Family XYLOBATIDAE Balogh and Balogh
   22. Genus Xylobates Jacot
25. X. seminudus Hammer
18. Family HAPLOZETIDAE
23. Genus Phalacrozetes Aoki
26. P. sinatus Aoki
24. Genus Rostrozetes Sellnick
27. R. foveolatus Sellnick
28. R. punctatus Karppinen
19. Family SCHELORIBATIDAE
25. Genus Scheloribates Berlese
29. S. albialatus Hammer
30. S. indicus Sanyal
31. S. natalensis Pletzen
32. S. parvus Pletzen
33. S. praecincus (Berlese)
34. S. thermophilus Hammer
20. Family AUSTRACHIPERIDAE
26. Genus Hypozetes Balogh
35. H. laysanensis Aoki
27. Genus Lamellobates Hammer
36. L. hauseri Mahunka
37. L. palustris Hammer
21. Family CERATOZETIDAE
28. Genus Ceratozetes Berlese
38. C. gracilis Michael
22. Family GALUMNIDAE
29. Genus Galumna von Heyden
39. G. crenata Deb and Raychaudhuri
40. G. flabellifera orientalis Aoki

SYSTEMATIC ACCOUNT

Key to the families

1(4) Body ptychoid, propodosoma can be shut back against the hysterosoma and ventral region like blade of penknife; body generally laterally compressed
2(3) Anogenital region wide; body not much compressed laterally ........................................ Phthiracaridae Perty, 1841
3(2) Anogenital region narrow; body considerably compressed laterally ......................... Euphthiracaridae Jacot, 1930
4(1) Body not ptychoid, propodosoma can not be shut back against the hysterosoma and ventral region; body never laterally compressed
5(14) Anogenital region macropyline type
6(9) Notogaster with 1-3 transverse sutures
7(8) Notogaster with a single transverse suture; notogaster flattened, elongate or pentagonal, without reticulation .............. Hypochthoniidae Berlese, 1910
8(7) Notogaster with three transverse sutures; shield NA bearing only setae c; peranal plate absent ............................................. Haplochthoniidae Hammer, 1959
9(6) Notogaster without transverse suture
10(11) Body dichoid; preanal plate present .......... Lohmanilidae Berlese, 1916
11(10) Body holoid; preanal plate absent
12(13) Epimeral neotrichy strong; epimeres II with 3-6 pairs of setae ............................. Nothridae Berlese, 1985
13(12) Epimeral neotrichy absent; epimeres II with 0 or 1 pair of setae .......................... Thrypochthoniidae Willmann, 1931
14(5) Anogenital region of brachypyline type
15(32) Notogaster pycnonotic i.e., areae sacculi or pori absent, usually without pteromorphae
16(21) Eight or nine pairs of genital setae present
17(20) Ventral plate with transverse suture
18(19) Anogenital region of schizogastric type (genital and anal plates separated by a
straight continuous line); notogastral setae 14 pairs; eight pairs of genital setae arranged in two longitudinal rows; anal setae 3 pairs ............................................. ......... **Epilohmanniidae** Oudemans, 1923

19(18) Anogenital region of diagnostically type (genital and anal plates separated by a medially incomplete curved line); notogastral setae 15 pairs; nine pairs of genital setae aligned in a single longitudinal row; anal setae 2 pairs ............................. Nanhermanniidae Sellnick, 1928

20(17) Ventral plate without transverse suture (hologastric type); lamellar setae hardly visible; hysterosoma with concentrically arranged scalps, notogaster foveolate; notogastral setae 6-8 pairs, minute; seven pairs of genital setae ................................ .......... **Plasmobatidae** Grandjean, 1961

21(16) Genital setae 3-6 pairs

22(23) Notogaster with ventrally deflected, immovable pteromorphae; smaller species; lamellae very large; notogaster broad; apodemata IV thickened ................................. .......... **Microzetidae** Grandjean, 1936

23(22) Notogaster without pteromorphae

24(27) Prodorsum having lamellae with cuspidae

25(26) Dorsosejugal suture absent; lamellar-interlamellar complex H-shaped; notogastral setae hardly visible .................... Tectocepheidae Grandjean, 1958

26(25) Dorsosejugal suture incomplete in the middle; lamellar-interlamellar complex not H-shaped; notogastral setae long ......................... Chaulonopteridae Pearce, 1906

27(24) Prodorsum without true lamellae; either thin crest-shaped lamellae or thin costulae present or both lamellae and costulae absent

28(29) Ventral neotrichy present, more than four pairs of aggenital + adanal setae; notogaster usually with polygonally arranged granulation; two pairs of anal setae .......... .............. **Eremobelbidae** Balogh, 1961

29(28) Ventral neotrichy absent

30(31) Body elongate, mostly at least twice longer than wide; prodorsal and notogastral condyles present ............................................. .......... **Otocephiidae** Balogh, 1961

31(30) Body not elongate, mostly never twice as long as wide; chelicerae normal; prodorsum without tectopodial-fields and lamellar knob ............ Oppiidae Grandjean, 1954

32(15) Notogaster poronotic i.e. areae porosae, sacculi or pori present; pteromorphae usually present

33(34) Pteromorphae movable; articulate or semicircular; prodorsum without true projecting lamellae; some chitinous lines present on the prodorsum ......................... .............. Galumnidae, Jacot, 1925

34(33) Pteromorphae immovable but never articulate, sometimes absent

35(36) Prodorsum without tutorium; usually 3-5 pairs of genital setae (exceptionally six pairs) of genital setae (exceptionally five or four pairs); lamellae broad, sometimes synlamella type ............................................. .......... **Austrachipteriidae** Luxton, 1985 (35)

36(35) Prodorsum without tutorium; usually 3-5 pairs of genital setae (exceptionally six pairs)

37(40) Notogaster with true areae porosae

38(39) Sensillus long, reclinate, setiform, often slightly lanceolate at its tip ..................... Xylobatidae Balogh and Balogh, 1984

39(38) Sensillus capitate with short stalk; 6 pairs of genital setae .............. Ceratozetidae ............................................. Jacot, 1925

40(37) True areae porosae absent, notogaster with sacculi or pori

41(42) Pteromorphae movable, hinged ....................... .......... **Haplozetidae** Grandjean, 1936

42(41) Pteromorphae immovable or absent ............ Scheloribatidae Grandjean, 1953
1. Family PHTHIRACARIDAE
Perty, 1841

Key to the genera of Phthiracaridae

1 (2) Genital setae forming a row or almost a row located near the paraxial margin, distance between \( g_6 \) and \( g_5 \) greater than that between \( g_5 \) and \( g_4 \). \textit{Atropacarus (Hoplophorella)}

... Niedbala, 1986

2 (1) Genital setae \( g_1 \) and \( g_5 \) forming, almost one row located near paraxial margin; seta \( g_5 \) away from paraxial margin; \( g_7-g_9 \) displaced from the side of paraxial margin and forming one row; distance between \( g_5 \) and \( g_6 \) shorter than that between \( g_5 \) and \( g_4 \).

....... \textit{Hoplophthiracarus} Jacot, 1933

1. Genus \textit{Atropacarus} Ewing


\textit{Atropacarus (Hoplophorella)} Niedbala

1986. \textit{Atropacarus (Hoplophorella)} Niedbala, \textit{Acarologica}, 287(1) : 80.

1. \textit{Atropacarus (Hoplophorella) scapellatus} (Aoki)


\textit{Diagnosis}: Colour yellowish brown; lateral carina reaches, sinus; rostral setae robust, thick, rough, directed inwards; lamellar setae spiniform, minute; interlamellar setae lanceolate, rough; sensillus long, narrow, inflated in middle, covered with thin spines; notogastral setae 15 pairs, foliate, covered with thin spines; \( c_1 < c_1 - d_1 \); genitoaggenital plate with formula of genital setae; \( 6(4 + 2) : 3 ; a_d_5 \) foliate with spines, \( a_d_1 \) and \( a_d_3 \) spiniform; short, smooth.


\textit{Remark}: The specimens could not be identified up to species level as they are in damaged condition.

2. Genus \textit{Hoplophthiracarus} Jacot


3. \textit{Hoplophthiracarus punctatus} Mondal and Kundu


\textit{Diagnosis}: Densely punctate aspis with foveolation antero-dorsally; smooth and simple rostral setae; lamellar setae finely barred distally; interlamellar setae long, erect, stout, distally barred; sensillus with slender stalk, anteriorly wide, distal part with uneven rounded brims; notogaster densely punctated; notogastral setae 15 pairs, stiff, erect, distal one third finely barbed; genital setae 9 pairs.


\textit{Distribution}: India: Mizoram (Aizawl), Sikkim, West Bengal.

2. Family EUPHTHIRACARIDAE, Jacot, 1930

3. Genus \textit{Rhysotritia} Markel and Meyer


4. \textit{Rhysotritia ardua} (Koch) var. \textit{otaheitensis} Hammer


\textit{Diagnosis}: The variety differs from the main form by the shape of pseudostigmatic organ and
number of claws. The pseudostigmatic organ in the variety is dilated distally into a flat head set with coarse bristles on its surface. The variety possesses one or three claws.


*Distribution*: India: Mizoram (Aizawl), Manipur, Meghalaya, Sikkim, Tripura, West Bengal.

3. Family HYPOCHTHONIIDAE
   Berlese, 1910

4. Genus *Hypochthonius* Koch

5. *Hypochthonius* sp.


   *Remark*: Due to bad condition of the specimen specific identification could not be done.

4. Family HAPLOCHTHONIIDAE
   van Der Hammen, 1959

5. Genus *Hoplochthonius* Willmann

6. *Hoplochthonius clavatus* (Hammer)

   *Diagnosis*: Both rostral and lamellar setae on short apophyses, strong, equally thick throughout, a faint line connects the apophyses; a distinct sharp line between lamellar setae; sensillus long, flat, club-shaped, beset with fine bristles; notogastral setae 15 pairs, straight, stiff.


   *Distribution*: India: Mizoram (Lunglei), Tripura, West Bengal.

5. Family LOHMANNIIDAE Berlese, 1916

6. Genus *Javacarus* Balogh

7. *Javacarus kuhnelti* Balogh

   *Diagnosis*: Prodorsum with small-sized tubercles; rostrum sculptured; prodorsal setae lanceolate; sensillus with 7 secondary branches; notogaster with light spots forming a pattern of beaded line; notogastral setae lanceolate without midrib; 10 pairs of genital setae.

   *Material examined*: Aizawl district: 1♀, Aizawl, Pachhunga University College Campus, 10.x.1995, from litter and soil, coll. A. K. Sanyal.

   *Distribution*: India: Mizoram (Aizawl), Tripura, West Bengal.

6. Family EPILOHMANNIIDAE
   Oudemans, 1923

7. *Epilohmannia* Berlese

8. *Epilohmannia pallida indica* Bhattacharyya and Banerjee

   *Diagnosis*: Rostral setae small, fine, smooth; lamellar and interlamellar setae long, thick, strongly barbed; slightly fusiform with a distal
barbed thickening; notogastral setae 13 pairs, finely barbed; genital setae 7 pairs.


**Distribution**: India: Mizoram (Aizawl), West Bengal.

### 7. Family NOTHRIDAE Berlese, 1896


**Diagnosis**: Hysterosoma with parallel lateral border; rostral setae short, stiff; lamellar setae on apophyses, connected by thin straight line, thick, bushy, tips bent down wards; interlamellar setae broad, flat, feathered; sensillus equally thick throughout, with minute bristles; notogastral setae transparent, delicate, hardly discernible; K1, p1 and p2 situate on short apophyses.


**Distribution**: India: Mizoram (Aizawl), Assam, Manipur, Meghalaya, Sikkim, West Bengal.

8. Family TRHYPOCHTHONIIDAE Willmann, 1931

**Key to the genera of Trhypochthoniidae**

1(2) Legs monodactylous; seven pairs of genital setae; notogastral setae simple; quadrangular notogaster ......................

2(1) Legs tridactylous; seven to fourteen pairs of genital setae; notogastral setae flabelliform; pentagonal notogaster ............

.............................. *Allonothrus* Hammer

9. Genus *Allonothrus* Hammen


**Diagnosis**: Prodorsum with minute punctations; lateral prodorsal ridges strongly curved, central ridges fused anteriorly; rostral setae pointed, barbed; an interrupted transverse ridge behind the interlamellar setae; other dorsal setae fan-shaped; notogaster with circular or polygonal areolae surrounded by reddish-brown ridges; genital setae 13 pairs.


**Distribution**: India: Mizoram (Aizawl), Assam, Manipur, Meghalaya, Sikkim, West Bengal.

10. Genus *Archegozetes* Grandjean


**Diagnosis**: Prodorsum punctate; prodorsal and notogastral setae long, fine, densely beset with fine bristles; sensillus long, fine, densely beset with bristles, d1 longer than their mutual distance; genital setae 7 pairs, 4a about half as long as 4b; solenidia on palp sharp.

Distribution: India: Mizoram (Aizawl), Assam, Gujarat, Kerala, Meghalaya, Sikkim, Tripura, West Bengal.

9. Family NANHERMANNIDAE
Sellnick, 1928

11. Genus Cyrthermannia Balogh


12. Cyrthermannia vicinicornuta Aoki


Diagnosis: Prodorsum and notogaster foveolated; prodorsal setae smooth; lamellar setae short, placed very closely on tubercles; two triangular horn-like processes present on posteromedian border of prodorsum; notogastral setae 14 pairs, simple and lanceolate; epimeral setae pilose; genital setae 7 pairs, simple; epimeral setal formula 3-2-3-3.


Distribution: India: Mizoram (Aizawl), West Bengal.

10. Family PLASMOBATIDAE
Grandjean, 1961

12. Genus Plasmobates Grandjean


13. Plasmobates pagoda Grandjean


Diagnosis: Rostrum incised; rostral setae inwards, smooth, setiform; lamellar setae very small, on small tubercle; interlamellar setae minute; baciliform, obtusely bifurcate; aggenital setae close to genital plate; ventral setae fine, short.

Material examined: Aizawl district : 1♀, Kolasib, from litter and soil, coll. S. Basak.

Distribution: India: Mizoram (Aizawl), West Bengal.

11. Family MICROZETIDAE
Grandjean, 1936

13. Genus Berlesezetes Mahunka


14. Berlesezetes auxiliaris (Grandjean)


Diagnosis: Lamellae long, folded to a sharp angle along the paraxial crest, not reaching the tip of rostrum; translamella well developed; rostral setae long, fine, smooth; apex of cuspis with incision; lamellar setae very long, stout, extended beyond the tip of rostrum, notogaster granulated.


Distribution: India: Mizoram (Lunglei), Orissa, Sikkim, Tripura, West Bengal.

12. Family EREMOBELBIDAE
Balogh, 1961

14. Genus Eremobelba Berlese

15. *Eremobelba himalayensis* Mondal and Kundu


**Diagnosis:** Rostral setae barbed unilaterally on the outerside; interlamellar setae sparsely barbed bilaterally; sensillus long, filiform, barbed sparsely and unilaterally; two semilunar structures in the interpseudostigmatic region; notogastral setae 11 pairs, curved at the distal end; right half of ventral plate with 19 and left half with 16 setae; genital setae 6 pairs; epimeral setae 1a, 2a, 3a and 4a simple, others pentra or hexaradiate.


**Distribution:** India: Mizoram (Aizawl), Manipur, West Bengal.

13. Family **TECTOCEPHEIDAE** Grandjean, 1954

14. Genus *Tectocephenus* Berlese


15. *Tectocephenus velatus* (Michael)


**Diagnosis:** Body rough with irregularly raised dots; rostrum trifid; lamellae large detached blades, lying nearly horizontal, extend beyond the lateral margin of the cephalothorax, median portion broad, cusps narrow or thick, almost reaching the tip of rostrum; translamella distinct; rostral and lamellar setae curved inward and barbed unilaterally; interlamellar setae minute, smooth, inserted near the base of lamellae; sensillung long with slender stalk, head licheniform, dorsosejugal suture interrupted; paired *iad* large, placed parallel to the anterior part of the lateral side of anal field.

**Material examined:** Lunglei district : 1♀, Lunglei, 25.i.1994, from moss and soil, coll. S. Basak; Aizawl district : 3♀, Kolasib, 28.i.1994, from litter and soil, coll. S. Basak.

**Distribution:** India: Mizoram (Aizawl, Lunglei), Manipur, Sikkim, West Bengal.

16. Genus *Dolicheremaeus* Jacot


**Key to the species of Dolicheremaeus**

1(2) Median prodorsal condyle semilunar-shaped; sensillus lanceolate ................... *himalayensis* ....... Chakrabarti, Bhaduri and Kundu, 1981

2(1) Median prodorsal condyle form a frame-like structure; sensillus filiform .........................

......................... *nepalensis* Aoki, 1967

17. *Dolicheremaeus himalayensis* Chakrabarti, Bhaduri and Kundu


**Diagnosis:** Rostral and lamellar setae unilaterally barben on outerside; interlamellar setae bilaterally barbed; sensillus slender, lanceolate; notogastral setae 10 pairs, bilaterally finely barbed; genital setae 4 pairs.

**Material examined:** Lunglei district : 1♀, Lunglei, 25.i.1994, from moss and soil, coll. S. Basak; Aizawl district : 3♀, Kolasib, 28.i.1994, from litter and soil, coll. S. Basak.

**Distribution:** India: Mizoram (Aizawl, Lunglei), Manipur, Sikkim, West Bengal.
18. *Dolicheremaenus nepalensis* Aoki


**Diagnosis**: Rostral and lamellar setae barbed, terminating in fine tips; interlamellar setae blunt at tips, finely barbed; sensillus filiform, apex pointed; anterior extension of *co. pm.* on each side forms a frame-like suture; *co. nl.* sharply triangular; genital setae 4 pairs.


**Distribution**: India: Mizoram (Aizawl), West Bengal.

19. *Dolicheremaenus* sp.


**Remark**: The specimens were not in good condition, hence specific identification was not possible.

15. Family OPPIDAE Grandjean, 1954


20. *Arcoppia bidentata* Hammer


**Diagnosis**: The tip of rostrum tripartite; rostral setae slightly rough, twice as long as their mutual distance; lamellar arch incomplete; lamellar setae short, smooth, little shorter than their mutual distance; interlamellar setae thick, longer than rostral setae; a light furrow in front of interlamellar setae; sensillus with moderately long stalk having angular head with one long branch and two tiny tips or teeth; integument on the sides of prodorsum covered with tubercles; notogastral setae slightly rough, different in lengths, *ti*, *te*, *ms* longer than remainder, *r*₂ longer than *r₁*, *r₃* and *p₁*-*p₃*; genital setae 6 pairs, short; aggenital setae longer than anal setae.


**Distribution**: India: Mizoram (Aizawl), Tripura.

17. Genus *Hexoppia* Balogh


21. *Hexoppia heterotricha* Balogh


**Diagnosis**: Crista strongly developed, extending posteriorad at least to 1/3 of notogastral length; 3 pairs of notogastral setae essentially longer and thicker than all other ones.

**Material examined**: Aizawl district: 1 ♀, Aizawl, Sirang, 10.x.1995, from litter and soil, coll. A. K. Sanyal.

**Distribution**: India: Mizoram (Aizawl).

19. *Multioppia* Hammer


22. *Multioppia gracilis* Hammer


**Diagnosis**: Rostral setae proximally barbed; lamellar setae smooth, shorter than their mutual distance; interlamellar setae smooth, little longer than lamellar setae; three pairs of light spots in between interlamellar setae; exopseudostigmatic setae slightly barbed, situated on low tubercles; sensillus very long, slender secondary branches on a thin stalk; notogaster broad, circular; notogastral setal 12 pairs, short, smooth; sternum
well developed; epimeres faintly reticulated; epimeral setal formula \( 3 : 1 : 2 : 3 \); distance between genital and anal fields less than twice the length of genital field; genital setae 5 pairs; \( \text{id} \) parallel to sides of anal field; genital, anal and adanal setae smooth.


*Distribution:* India: Mizoram (Aizawl), Tripura.

20. Genus *Oppia* Koch

23. *Oppia yodai* Aoki

*Diagnosis:* Prodorsal setae finely barbed; lamellar setae twice as long as their mutual distance; interlamellar setae directed backwards; sensillus spindleshaped, beset with fine bristles; one pointed protrusion behind the bothridium; notogastral setae 5 pairs.


*Distribution:* India: Mizoram (Aizawl), Manipur, Sikkim, Tripura, West Bengal.

16. Family *CHAUNOPROCTIDAE*
Balogh, 1961

21. Genus *Chaunoproctus* Pearce

24. *Chaunoproctus clavisetosus* Bhaduri, Bhattacharya and Chakraborti

*Diagnosis:* Rostral setae mounted on apophyses; rostral and lamellar setae barbed; interlamellar setae club-shaped, densely feathered; sensillus with granulated rounded head; notogastral setae 10 pairs, setose, clavate; genital plates trapezoid in shape with 6 pairs of setae.


*Distribution:* India: Mizoram (Aizawl, Lunglei), West Bengal.

17. Family *XYLOBATIDAE* J. Balogh and P. Balogh, 1984

22. Genus *Xylobates* Jacot

25. *Xylobates seminudus* Hammer

*Diagnosis:* Rostral setae unilaterally barbed; lamellar and interlamellar setae also barbed; sensillus with long stalk and lanceolate head, both of which beset with long bristles on outer border; notogastral setae 10 pairs represented by pores on the dorsum; ventral setae present; genital setae 5 pairs.


*Distribution:* India: Mizoram (Aizawl), Manipur, Meghalaya, Sikkim, Tripura, West Bengal.

18. Family *HAPLOZETIDAE*
Grandjean, 1936

*Key to the genera of Hoploziidae*

1(2) 14 pairs of notogastral setae; dorsosejugal suture with three arches

..........................*Rostrozetes* Sellnick, 1925
2(1) 10 pairs 1 of notogastral setae; dorsosejugal suture with a single arc.......................... Phalacrozetes Aoki, 1965

23. Genus Phalacrozetes Aoki

1965. Phalacrozetes Aoki, Nat. Life Southeast Asia, 4 : 188.

26. Phalacrozetes sinatus Aoki

1965. Phalacrozetes sinatus Aoki, Nat. Life Southeast Asia, 4 : 188.

Diagnosis: Rostral setae rough, directed inward; lamellar setae on the tip of lamellar cuspis, minute; interlamellar setae very minute; sensillus directed backward, spindle-shaped, distal end pointed; head beset with fine setae; notogastral setae represented by 10 pairs of alveoli; At elliptical and placed on dorsosejugal suture; PSI distinct; genital setae 5 pairs.


24. Genus Rostrozetes Sellnick


Key to the species of Rostrozetes

1(2) Prodorsum and notogaster foveolated .......... foveolatus Sellnick, 1925

2(1) Prodorsum and notogaster punctated .......... punctatus Karppinen, 1966

27. Rostrozetes foveolatus Sellnick


Diagnosis: Body distinctly foveolated; prodorsal setae long, thin, unilaterally finely barbed; sensillus with swollen brush-like head; notogastral setae 10 pairs, short, fine; distance between t1-ms and ms-h3 almost same; genital setae 5 pairs, minute, fine.


Distribution: India: Mizoram (Aizawl), Himachal Pradesh, Meghalaya, Sikkim, West Bengal.

28. Rostrozetes punctatus Karppinen


Diagnosis: Body punctated; rostral and lamellar setae curved sharply medially; 10 pairs of notogastral setae, minute.


Distribution: India: Mizoram (Aizawl), Tripura, West Bengal.

29. Family SCHELORIBATIDAE


Key to the genera of Scheloribates

1(2) All tarsi monodactylous; apodemata III and IV meet each other and abutting anterior rim of genital capsule; notogaster longer than broad; sensillus long and lanceolate, the head reaching the lateral margin of pteromorph ......................... natalensis Pletzen, 1963

2(1) All tarsi tridactylous; apodemata III and IV never meet each other.

3(4) Hysterosoma as broad as long; lamellar setae thinner than rostral setae; sensillus with short stalk and disc-shaped head ................. albialatus Hammer, 1961
4(3) Hysterosoma longer than broad.
5(6) Prodorsal setae smooth ........................................ ................................. 

......................................................... 

.............................. indicus Sanyal, 1992
6(5) Prodorsal setae barbed.
7(8) Sensillus club-shaped; lamellae thin not keel-shaped; notogastral setae minute ...... 

.................... 

.............................. praeincisus (Berlese, 1910)
8(7) Sensillus not club-shaped.
9(10) Sensillus with clavate head; rostral setae on apophyses ............... parvus Pletzen, 1963
10(9) Sensillus with lanceolate head; rostral setae not on apophyses ............... thermophilus Hammer, 1961

29. Scheloribates albialatus Hammer 

Diagnosis : Rostral and lamellar setae barbed; interlamellar setae smooth; sensillus with short, round, disc-shaped head set with fine scales; no setae on notogaster; chitinous pores on notogaster; genital setae 4 pairs.


Distribution : India : Mizoram (Aizawl), Manipur, West Bengal.

31. Scheloribates natalensis Pletzen 

Diagnosis : Prodorsal setae short, fine; lamellar and dorsal setae barbed throughout; distal halves of interlamellar setae unilaterally barbed; sensillus very long, with slightly thickened heads, unilaterally barbed on the anterior side; notogastral setae minute; ad3 very small; genital setae 5 pairs; monodactylyous tarsi.


Distribution : India : Mizoram (Aizawl), Sikkim, West Bengal.

32. Scheloribates parvus Pletzen 

Diagnosis : All prodorsal setae barbed; sensillus with short stalk and clavate head set with distinct setae; ad3 nearly parallel with iad; nearly parallel with iad; genital setae 4 pairs, legs tridactylyous.

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**Distribution**: India: Mizoram (Aizawl), Assam, Meghalaya, West Bengal.

33. *Scheloribates praeciscus* (Berlese)


**Diagnosis**: Prodorsal setae very long, lamellar and interlamellar setae almost equal in length; sensillus long, club-shaped; notogastral setae hardly discernible.


**Distribution**: India: Mizoram (Aizawl, Lunglei), Tripura, West Bengal.

34. *Scheloribates thermophilus* Hammer


**Diagnosis**: All prodorsal setae finely barbed; lamellar and interlamellar setae not much longer than lamellae; sensillus with lanceolate head, pointed at tip and anterior margin set with fine setae; notogastral setae not discernible except at the posterior end of notogaster; all tarsi with 3 claws.


**Distribution**: India: Mizoram (Aizawl, Lunglei), Gujarat, Manipur, Meghalaya, Sikkim, West Bengal.

20. Family AUSTRACHIPTERIIDAE

Luxton, 1985

**Key to the genera of Austrachipteriiidae**

1(2) Adanal region with 3 pairs of setae .......... .......................... *Hypozetes* Balogh, 1959

2(1) Adanal region with 1 or 2 pairs of setae .. .......................... *Lamellobates* Hammer, 1958

27. Genus *Hypozetes* Balogh


35. *Hypozetes laysanensis* Aoki


**Diagnosis**: Rostrum tricuspidate; rostral setae densely barbed on each side and situated on apophyses; lamellar and interlamellar setae minutely barbed; sensillus with a finely barbed club-shaped head; notogastral setae 10 pairs, minutely barbed; sacculi sa placed closer to ti than to te.


**Distribution**: India: Mizoram (Aizawl), Tripura, West Bengal.

27. Genus *Lamellobates* Hammer


**Key to the species of Lamellobates**

1(2) Outer lamellar cuspides extremely long and narrow ............... *hauseri* Mahunka, 1977

2(1) Outer lamellar cuspides not long and narrow .......................... *palustris* Hammer, 1958
36. **Lamellobates hauseri** Mahunka

**Diagnosis**: Inner cuspides of lamellae convexly rounded, outer lamellar cuspides extremely long and narrow; lamellar setae obtuse, densely barbed; interlamellar setae attenuating, densely barbed; sensillus spatulate, heavily barbed; notogastral setae 9 pairs; genital setae 6 pairs.


**Distribution**: India : Mizoram (Aizawl), West Bengal.

37. **Lamellobates palustris** Hammer

**Diagnosis**: Inner cuspides of lamella rounded, outer lamellar cuspides tapering into a short and sharp point; lamellar setae equally very thick throughout, rough; interlamellar setae long, rough; sensillus club-shaped, tip pointed, beset with short setae; notogastral setae 9 pairs, genital setae 6 pairs.


**Distribution**: India : Mizoram (Aizawl), Gujarat, Himachal Pradesh, Meghalaya, Tripura, West Bengal.

21. Family **CERATOZETIDAE**, Jacot, 1925

28. Genus **Ceratozetes** Berlese

38. **Ceratozetes gracilis** Michael

**Diagnosis**: Rostral setae long, stout, unilaterally finely barbed; lamellae long, inclining, broadest at the base of cusps; no translamella; lamellar setae stiff, slightly rough; interlamellar setae long, stout, unilaterally barbed; sensillus long, slender, head swollen with fine setae; notogastral setae represented by pores; genital setae 6 pairs.

**Material examined**: Aizawl district : 1 ♀, Aizawl, Pachhunga University College campus, 10.x.1995, from litter and soil, coll. A. K. Sanyal.

**Distribution**: India : Mizoram (Aizawl), Sikkim, West Bengal.

22. Family **GALUMNIDAE**, Jacot, 1925

29. Genus **Galumna** von Heyden
Key to the species of *Galumna*

1(2) Sensillus with club-shaped head; *im* curved and directed antero-posteriorly; a crenate line runs across the hypostome; *gen*₁ and *gen*₂ placed on the anterior border of genital plate .................................................. .......................... *crenata* Deb and Raychaudhuri, 1975

2(1) Sensillus with long broad head; *im* straight and placed obliquely; no crenate line; *gen*₁₋ *gen*₃ placed on the anterior border of left part of genital plates ...............................................

...... *flabellifera orientalis* Aoki, 1965


**Diagnosis**: Rostral setae not found; lamellar and interlamellar setae represented by pits; sensillus club-shaped with short but stout bristles; *ad* guittiform, provided with comma-like slit on the inner end; *hy* leaf-like; *Aa* placed obliquely; *im* slightly curved, directed antero-posteriorly; notogastral setae represented by 10 pairs of pits; a crenate line runs across the hypostome; genital setae 6 pairs.


**Distribution** : India : Mizoram (Aizawl, Lunglei), Manipur, Sikkim, Tripura, West Bengal.


**Diagnosis**: Rostral and interlamellar setae thin, short, lamellar setae very minute; sensillus with long broad head, anterior margin round and beset with spur-like bristles, posterior margin flat, without bristles; *ia* placed obliquely to the longitudinal axis of the body; areae porosae large; *gen*₁₋ *gen*₃ placed on the anterior border of left genital plate; *gen*₃ in right genital plate not placed on the anterior border.


**Distribution** : India : Mizoram (Aizawl, Lunglei), Manipur, Sikkim, Tripura, West Bengal.

**DISCUSSION**

The oribatid mites of Mizoram was not studied by anybody till the present work was started in 1994. The present work is an overall assessment of this group of mite of Mizoram which shows that a total of 40 species under 29 genera and 22 families are known from the State. All the species are recorded here for the first time from Mizoram. The analysis of the present account shows that 9.5% of Indian oribatid fauna are known from the State. It is also noted that Oppiidae, Scheloribatidae and Galumnidae are numerically dominant families in the State of Mizoram.

**SUMMARY**

The paper deals with the Oribatid fauna collected from different districts of Mizoram. A
total of 40 species pertaining to 29 genera and 22 families have been recorded. All the species incorporated here are the first record from the State of Mizoram. Before undertaking the present work no species of oribatid was known from the State. Keys to identification of families, genera and species are dealt in paper. The first reference, diagnostic features and distribution of species in India have also been incorporated.

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REFERENCES

INSECTA : HIMIPTERA : HOMOPTERA : FULGOROIDEA, CERCOPOIDAE, CICADOIDEA AND MEMBRACIDAE

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INTRODUCTION

Homopteran insects are mainly characterized by the presence of uniformly chitinous forewings, which differs from the Heteropterans insects by having more scelerotized forewings with membranous apical portion. Homopterans also have sloping wings over the abdomen whereas wings are overlapping on the abdomen in case of Heteropterans.

This paper deals with the homopterous insects with antennae having the terminal aristae called Auchenorhyncha except Cicadellidae, which has been dealt with separately with 22 species, under 16 genera belonging to 6 families. The other series being Sternorrhyncha or soft bodied Homopteran insects without terminal aristae on the antennae. In the present paper Superfamily Fulgoroidea has been reported with 3 families while a single family and 2 families represent Cicadoidea and Cercopoidea respectively whereas a single family Membracidae represents Superfamily Cicadelloidea.

The present paper gives an account of 22 species under 18 genera and 7 families. All the species are recorded for the first time from the state of Mizoram. Diagnostic characters, references and distribution in India and abroad of each species, taxonomic keys to different taxas and a chart showing district wise distribution have also been provided in this paper.

SYSTEMATIC ACCOUNT

Suborder HOMOPTERA
Superfamily FULGOROIDEA
Family 1. LOPHOPIDAE
Genus 1. Pitambara Distant, 1906
1. Pitambara interrupta Distant
Genus 2. Corethrura Hope, 1845
2. Corethrura fuscovararia Hope

Family 2. DICTYOPHARIDAE
Genus 3. Symplana Kirby, 1891
3. Symplana viridinervis Kirby
Genus 4. Chanithus Kalenati, 1857
4. Chanithus pallida Donovan

Family 3. CIXIIDAE
Genus 5. Oliarus Stal, 1862
5. Oliarus indicus Distant
Genus 6. Mnemosyne Stal, 1862
6. Mnemosyne punctipennis (Distant)

Superfamily II CERCOPOIDAE
Family 4. APHROPHORIDAE
Genus 7. Philagra Walker, 1853
7. Philagra fusiformis (Walker)
Genus 8. Clovia Stal, 1866
8. Clovia conifer (Walker)
9. Clovia puncta (Walker)
Genus 9. Peucepytelus Sahlberg, 1871
10. Peucepytelus sigilifer (Walker)

Family 5. CERCOPIDAE
Genus 10. Abidama Distant, 1908
11. Abidama producta (Walker)
Genus 11. **Leptataspis** Schmidt, 1911
2. **Leptaspis fulviceps** (Dallas)

Genus 12. **Cosmoscarata** Stal, 1869
13. **Cosmoscarata dimidiata** var. **tripunctata** (Dallas)
14. **Cosmoscarata elegans** (Walker)

Superfamily III CICADOIDEA
Family 6. **GAENINIDAE**
Genus 13. **Platylomia** Stal, 1870
15. **Platylomia assamensis** Stal
16. **Platylomia similis** Distant
17. **Platylomia nagarasinga** Distant

Superfamily IV CICADELLOIDEA
Family 7. **MEMBRACIDAE**
Division 1. **Gargararia**
Genus 14. **Ebhul** Distant, 1902
18. **Ebhul formicarius** Distant
Genus 15. **Gargara** Amy. & Serv., 1843
19. **Gargara robusta** Distant
Division 2. **Centrotusaria**
Genus 16. **Tricentrus** Stal, 1866
20. **Tricentrus cuneatus** Distant
Division 3. **Leptocentria**
Genus 17. **Leptocentrus** Stal, 1866
21. **Leptocentrus taurus** (Fabr.)
Genus 18. **Darthula** Kirk., 1900
22. **Darthula hardwickii** (Gray)

**Key to the Superfamily of the order HOMOPTERA**

1. Wings without ambient veins, 1A & 2A of the forewings joined apically to form “Y” vein; tegulae usually present; antennal pedicle with numerous sensilla............. DORYLAIMINA
   - Wings with ambient veins; tegulae absent .... 2

2. Head with distinct forns and three ocelli; hind legs elongated, slender but not saltatorial; male with conspicuous stidulatory organ at the base of abdomen .................. CICADELLOIDEA
   - Head with forns not distinct and with two ocelli; hind legs saltatorial ..................... 3

3. Head with postclypeus greatly expanded occupying most part of the face and extending on the dorsal side; hind legs with tibiae elongated and bearing one or two large lateral spines and double apical groups of small spines ........................................ CERCopoIDEA
   - Head with postclypeus not greatly expanded on dorsal side; hind legs with tibiae ridged ang bearing longitudinal rows of spines on lateral margin ..................... CICADELLOIDEA

2. Odontostyle long and attenuated oesophagus with only three glands ... LONGIDOROIDEA
   - Cheilostome usually thin walled without onchia or denticles ........................................ 2
   - Odontostryle comparatively much smaller, Oesophagus with five glands ......................... 3

3. Expanded part of Oesophagus enclosed in spiral muscular sheath ................ BELONDIROIDEA
   - Expanded part of oesophagus not enclosed in spiral muscular sheath ......................... 4

   **Superfamily 1 FULGOROIDEA**

   **Key to family of the Superfamily FULGOROIDEA**

1. Claval vein not reaching apex, united with commissural margin near apex .................. 2
   - Claval vein continued to the apex or united with claval suture near apex, thorax tricarinate or tubercular on disk; first joint of posterior tarsi robust only moderately long ... LOPHOPIDAE

2. Face without an apical ocellus, lateral margin of the clypeus always carinate or acute...... ........................................ DICTYOPHORIDAE
   - Face usually with three ocelli, one on which isd sinuate on the apex of the front; lateral margin of clypeus are convex and not carinate. ........................................ CIXIIDAE

   **Family 1 LOPHOPIDAE**

   **Key to genera of the Family LOPHOPIDAE**

1. Tegmina about three times twice as long as broad ........................................ Pitambara
   - Tegmina not twice but three times longer than broad ........................................ Corethrura
Genus 1. *Pitambara* Distant, 1906


1. *Pitambara interrupta* Distant


*General Diagnosis*: Body brownish yellow; vertex with two oblique linear black central spots; pronotum and scutellum black, its central and lateral portion brownish, tegmina blackish red, its basal area deep brown and its apical area paler, crossed by broad transverse irregular blackish red fasciae with spots on basal portion of costal membrane, a large subtriangular spot on the middle lateral area two oblique reddish spots interrupted and not meeting inwardly, wings smoky brown, legs brownish and with blackish red spots, abdomen blackish red.

*Length*: 4 mm.

*Distribution*: Mizoram (Chin tui pui Dist.), Assam Elsewhere: Mayanmar.

Family 2 DICTYOPHARIDAE

Key to genera of the family Dictyopharidae

1. Posterior tibiae with seven spines: pro and meso sternum longitudinally sulcate ............. SYMPLANA
   - Posterior tibiae with seven spines; pro and mesosternum not sulcate .......... CHANITHUS

3. *Symplana* Kirby, 1891


3. *Symplana viridinervis* Kirby


*Diagnostic character*: Body greenish brown; vertex centrally deeply grooved; pronotum blood red; body beneath blackish red; tegmina brownish with inner margin blood red; a double series of transverse veins before apex, outermost straight, inner series obliquely angulate, upper portion beyond the transverse series obliquely veined and the lower portion longitudinally veined, wings pale brownish, legs and abdomen blackish red.

*Length*: 6 mm.

*Distribution*: Mizoram (Aizwal Dist.)

Genus 4 *Chanithus* Kolenati, 1857

4. *Chanithus pallida* (Donovan)


**General Diagnosis**: Body pale yellowish brown, eyes reddish brown; head robust, longitudinally sulcate, the ridges very prominent and six in number; cephalic process shorter; apex of cephalic process and central ridge of face subacutely rounded, pronotum and mesonotum with three yellowish carinae; mesonotum with pitchy black spots at its basal angle; tegmina glassy transparent, its venation and stigma reddish brown, legs with longitudinal pitchy black strip; abdomen yellowish brown.

**Length**: 22.5 mm.

**Distribution**: Mizoram (Dist., Aizwal), Maharashtra, Meghalaya, Sikkim, Tamil Nadu, West Bengal, Elsewhere: Borneo, Myanmar, Sri Lanka.

**Family 3 CIXIIDAE**

**Key to genera of the family CIXIIDAE**

1. Apical ocellus present on face. \(\Rightarrow\) *Oliarus*
   - Apical ocellus absent on face. \(\Rightarrow\) *Mnemosyne*

**Genus 5 *Oliarus* Stal, 1862**


**5. *Oliarus indicus* Distant**


**General Diagnosis**: Body black; margin of vertex longer than broad its lateral margin strongly elevated, pronotal margin prominent, mesonotum with five longitudinal ridges, tegmina whitish semihyaline, with deep brown shade and with narrow basal fasciae before middle to apical margin, its vein and stigma reddish brown, wings subhyaline; legs brownish yellow; abdomen black.

**Length**: 6 mm.

**Distribution**: Mizoram (Aizwal Dist.).

**Genus 6. *Mnemosyne* Stal, 1866**


6. *Mnemosyne punctpennis* (Distant)


**General Diagnosis**: Body brightly red brownish, face and clypeus centrally longitudinally carinate, their lateral margins acute; pronotum centrally strongly longitudinally ridged and near each lateral margin of pronotum an obliquely carinate line; tegmina transparent, with cellular area thickly minutely setose with fuscous spots, their venation and stigma reddish brown; mesonotum with distinct longitudinal carinae; legs brownish yellow; hind tibiae with two spines; abdomen brownish yellow.

**Length**: 9 mm.

**Distribution**: Mizoram (Aizwal), Sikkim, Tamil Nadu, West Bengal, Elsewhere : Myanmar.

**Superfamily II CERCOPOIDEA**

**Key to families of the Superfamily CERCOPOIDEA**

1. Anterior margin of pronotum rounded or angulate; eyes moderately transverse, scutellum flat & triangular. \(\Rightarrow\) APRHROPHORIDAE
   - Anterior margin of pronotum straight; eyes as long as broad. \(\Rightarrow\) CERCOPIDAE
Family 4 APHROPHORIDAE

Key to the genera of the family APHROPHORIDAE

1. Vertex of head as long as broad, subangularly or elongately produced; ocelli nearer to each other than to eyes; face centrally carinate

- Vertex of head wider than length; convexly rounded anteriorly

2. Head and pronotum with a single central longitudinal carination

Genus 7 Philagra Walker, 1854


7. Philagra fusiformis (Walker)


Diagnostic character: Body testaceous covered with large deep, round, brown pits; head brown, but the central carina and a spot on each side behind and broader of scutellum pale; some smooth spaces surrounded with brown area in front of pronotum; face with deep brown punctures in transverse rows, a pale spot broadered with darker areas sometime visible in the middle of the tegmina.

Length: 7-7.5 mm.

Distribution: Mizoram (Aizwal Dist.).

Family CERCOPIDAE

Key to genera of the family CERCOPIDAE

1. Anterior legs elongate, anterior femora longly passing the lateral margin of body; head in male longly acute produced infront of eyes


Diagnostic character: Body testaceous or fuscous, flavescent, face castaneous with ochraceous margins, lateral areas of sternum castaneous with ochraceous longitudinal fascia; tegmina with median large and a larger apical, costal, hyaline spot, head between the eyes subtriangularly rounded, its length almost as long as center of pronotumwhih is posteriorly sinuate.

10. Clovia conifer (Walker)


Diagnostic character: Testaceous covered with large deep, round, brown pits; head brown, but the central carina and a spot on each side behind and broader of scutellum pale; some smooth spaces surrounded with brown area in front of pronotum; face with deep brown punctures in transverse rows, a pale spot broadered with darker areas sometime visible in the middle of the tegmina.

Length: 7-7.5 mm.

Distribution: Mizoram (Aizwal Dist.).
Anterior legs of moderate length, anterior femora only slightly passing the lateral margin of body ........................................................... 2
2. Posterior margin of pronotum foliaceous and without any protuberances .............................................................. Leptataspis

Posterior margin of pronotum not foliaceous, its greatest breadth about two thirds of its length ................................................... Cosmoscarata

Genus 10 Abidama Distant, 1908


General Diagnosis : Head, pronotum, scutellum, abdomen beneath black; apex of scutellum and tegmina rufotestaceous but the apical margin of tegmina black, metasternum and legs dark blood reddish, apices of the tibiae and tarsi piceous; wings hyaline with the veins dark.

Length : Including tegmina 7-8 mm.

Distribution : Mizoram (Aizwal Dist.), Assam, Bihar, Uttar Pradesh; Elsewhere : China, Mayanmar, Nepal.

Genus 11. Leptataspis Schmidt, 1911


Diagnostic character : Head, pronotum and lateral margin of pronotum luteous, abdomen above, body beneath, tegmina black; tegmina with a short sanguineous basal streak to clavus, pronotum with three transverse foveations before anterior margin, one central and other two behind it on each side.

Genus 12 Cosmoscarata Stal, 1869


Key to species of the genus Cosmoscarata

1. Pronotum with a pale transverse fascia or with pale discal spots, tegmina black with two angulated transverse fasciae, the first at about middle and the second broken, near apical area sanguineous ........................................ dimidiata

Pronotum unicolorus, tegmina black with a short slender basal longitudinal streak, abroader curved fascia at base of clavus and a transverse fascia before apical area testaceous red ......... ........................................................... egens

13. Cosmoscarata dimidiata var. tripunctata
(Dallas) 1866. Cercopis dimidiata Dallas, Tr. E. S., 11.


Diagnostic character : Head, pronotum, scutellum sternum, legs, black; pronotum with a transverse ochraceous fascia on disk nearer to anterior margin; abdomen bluish black with segmental margin brownish, tegmina black with two sanguineous fasciae first at middle and the second broken near apical area; mesonotum with two flattened sub triangular tubercle.

Length : Excluding tegmina 5-8 mm.; Expansion tegmina 27-33 mm.
**Distribution**: Mizoram (Aizwal Dist.), Assam, Nagaland, Sikkim, West Bengal, Elsewhere; China, Mayanmar, Oriental region.

**Superfamily III. CICADOIDEA**

**Family 6. GAENINIDAE**

**Genus 13. Platylomia** Stal, 1870


**Key to species of the genus Platylomia**

1. Opercula in male with their apices rounded

- Opercula in male with their apices obtusely angulate and just passing the posterior margin of the penultimate abdominal segment; tegmina without the marginal spots at the apices of the longitudinal veins to apical area ................

**assamensis**

2. Opercula in male not reaching penultimate abdominal segment; the venation of the tegmina greenish ochraceous; costal membrane greenish

- Opercula in male reaching base of the last abdominal segment; venation of tegmina ochraceous or fuscous; costal membrane ochraceous .................................................................

**nagarasingna**

15. *Platylomia assamensis* Distant


**Material examined**: 1 ex., Ruatlong, Dist. Aizwal, 22.10.93, A. R. Lahiri & party coll.

**General Diagnosis**: Body pale-greenish; head and the area of ocelli blackish red in colour, posterior and anterior margin of pronotum black, mesonotum with two longitudinal black fasciae on each side of which a short oblique black fascia at outer margin; cruciform with two black spots at front side, tegmina and wings hyaline, its venation greenish brown its costal membrane greenish, abdomen with short, broad oblique chalky white tomentose fascia; legs pale greenish brown.

**Length**: 50 mm.

**Distribution**: Mizoram (Aizwal), Assam, Sikkim.

17. *Platylomia nagarasingna* (Distant)

1881. *Dundubia nagarasingna* Distant, Jr. E. S., : 635.


**Diagnostic characters**: Body brownish, an oblique brownish fascia on each side of ocelli at central position on front of vertex, pronotum with a central brownish fascia; two centerior central black obconical blackspot and basal cruciform elevation present on mesonotum; tegmina hyaline, its costal membrane brownish; its venation blackish red, legs light brown; abdomen tomentose and greyishly pilose.

**Length**: 36 mm.
Distribution: Mizoram (Chikntuipui), Tamil Nadu. Elsewhere: China, Japan, Mayanmar.

Superfamily IV. CICADELLOIDEA
Family 7. MEMBRACIDAE

Key to division of the family MEMBRAEIDAE
1. lateral process of the pronotum absent or at least practically obsolete; scutellum complete ......................................................... Gargararia

- lateral process of the pronotum present ...... 2

2. Wings have three apical area..........................

..................................................

..................................................

2. Wings have four apical areas, scutellum transverse, nearly equally as long as brood, the apex broad, sinuate or truncate and on each side prominently durtate ...... Leptocentraria

Division 1. GARGARARIA

Key to the genera of the division Gargararia
1. Posterior pronotal process strongly sinuate .... ......................................................... EBHUL

- Posterior pronotal process straight; veins to the apical area of tegmina straight .... GARGARA

Genus 14. Ebhul Distant, 1902


18. Ebhul formicarius Distant


Diagnostic characters: Head pronotum brownish, sternum and legs dark brownish ochraceous, feinora piceous; abdomen beneath piceous, segmental margins ochraceous, legmina brownish with greyish markings which are more prominent in apical area; pronotum strongly elevated at base and apex is strongly foveate with the margin ridged. The posterior process sinuately waved arched at base and separated from the scutellum, which is slightly longer then broad with its apex slightly recurred.

Length: 5.5 mm.

Distribution: Mizoram (Aizawl); West Bengal.

Genus 15. Gargarara Amy & Serv. 1843


19. Gargarara robusta Distant


Material examined: 1 ex., Aibak, Aizawl, 17.11.1995; M. S. Shishodia & party coll.

Diagnostic characters: Body beneath, head, pronotum black; tegmina subhyaline, black at base and punctate at extreme apical margin and near the end of clavus a pale brownish transverse spot; posterior process short and robust only just passing the apex of the claval area, centrally and laterally carinate.

Length: 3.5 mm; breadth lateral pronotal angle 2 mm.

Distribution: Mizoram (Aizawl); West Bengal.

Genus 16. Tricentrus Stal, 1866


20. Tricentrus cuneatus Distant


Diagnostic characters: Body black, tegmina subhyaline, veins fuscons, apical area bronzy brown, base black, transverse lateral prouss not carinate, broad, slightly directed upward, their apices broadly obliquely truncate, prouss centrally carinate, broad, robust, reaching the posterior angle of the inner margin.

Length: 7 mm. breadth lat. Pronotal process 4.5 mm.

Distribution: Mizoram (Aizawl); West Bengal.
Division III LEPTOCENTRARIA
Genus 17. Leptocentrus Stal, 1866


21. Leptocentrus tavrus (Fabr.)


Diagnostic characters : Body beneath, head, pronotum thickly punctate, in fresh specimens pale ochraceously pilose; posterior pronotal process strongly tyricarinate above; curved and apically touching the interior margin of tegmina; transverse process robust, strongly recurved above tricarinate.

Length : 6-8 mm. width lateral pronotal process 5.6 mm.

Distribution : Mizoram (Aizawl); Assam, Sikkim, West Bengal; Elsewhere : Borneo.

Division II CENTROTUSARARIA
Genus 16. Tricentrus Stal, 1866


20. Tricentrus cuneatus Distant


Diagnostic characters : Body black, tegmina subhyaline, veins fuscos, apical area bronzy brown, base black, transverse lateral pross not carinate, broad, slightly directed upward, their apices broadly obliquely truncate, ridged, posterior proceus centrally carinate, broad, robust, reaching the posterior angle of the inner margin.

Length : 7 mm. breadth lat. Pronotal process 4.5 mm.

Distribution : Mizoram (Aizawl), West Bengal.

Division III LEPTOCENTRARIA
Genus 17. Leptocentrus Stal, 1866


21. Leptocentrus tavrus (Fabr.)


Material examined : (ex.) Jairei, xi. 1995, M. S. Shishodia coll.

Diagnostic characters : Body beneath, head, pronotum black; pronotum thickly punctate, in fresh specimens pale ochraceously pilose; posterior pronotal process strongly tyricarinate above; curved and apically touching the interior margin of tegmina; transverse process robust, strongly recurved above tricarinate.

Length : 7 mm. breadth lat. Pronotal process 4.5 mm.

Distribution : Mizoram (Aizawl), West Bengal.
Length: 6-8 mm. width lateral pronotal process 5.6 mm.

Distribution: Mizoram (Aizawl), Assam, Sikkim, West Bengal; Elsewhere: Borneo.

Genus 18. Darthula Krik, 1900


22. Darthula hardwicki (Gray)


Diagnostic characters: Pronotum and scutellum ferruginous or piceous brown, finely punctate; central carination laminately raised; ligmina ferruginous or piceous brown abdomen above with segmental margins more or less ochraceous posterior process piceous or piceous brown, clothed with erect bristly hairs.

Length: Exch post process 12-17 mm.; post process 13-17 mm. Exp. Tegmina 26-33 mm.

Distribution: Mizoram (Lunglei), Assam, Meghalaya, Nagaland, West Bengal.

Elsewhere: Nepal, Mayanmar.

Summary

This paper deals with 22 species under 18 genera belonging to 4 super families of the sub-order Homoptera from the State of Mizoram. Keys to the various taxa, original references, diagnostic characters, distribution of each species in India as well as abroad have been incorporated in the present paper. A chart showing the districtwise distribution of each species has also been cited. All the species dealt with in this paper, have been recorded for the first time from the State.

Acknowledgement

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References


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<tr>
<th>Sl. No.</th>
<th>Name of the species</th>
<th>Districts of Mizoram</th>
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<tr>
<td></td>
<td></td>
<td>Aizawl</td>
</tr>
<tr>
<td>1.</td>
<td>Pitambara interrupta Distant</td>
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<td>2.</td>
<td>Corethrura fuscovaria Hope</td>
<td>-</td>
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<td>3.</td>
<td>Symplana viridinervis Kirby</td>
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<td>4.</td>
<td>Chanithus pallida Donovan</td>
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<td>5.</td>
<td>Oliarus indicus Distant</td>
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<td>6.</td>
<td>Mnemosyne punctipennis (Distant)</td>
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<td>7.</td>
<td>Philagra fusiformis (Walker)</td>
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<td>8.</td>
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<td>9.</td>
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<td>10.</td>
<td>Peucepyelus sigilifer (Walker)</td>
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<td>11.</td>
<td>Abidama producta (Walker)</td>
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<td>12.</td>
<td>Leptataspis fulviceps (Dallas)</td>
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<td>13.</td>
<td>Cosmocarta dimidiate var tripunctata (Dallas)</td>
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<td>15.</td>
<td>Platylomia assamensis Stal</td>
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<tr>
<td>17.</td>
<td>Platylomia nagarasinga Distant</td>
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