

**STUDIES ON PREDATORY PROSTIGMATID MITES OF  
NORTHEAST INDIA WITH DESCRIPTIONS OF NEW SPECIES AND  
NEW RECORDS FROM INDIA**

S. K. GUPTA

*Zoological Survey of India, New Alipore, Calcutta - 700 053*

**INTRODUCTION**

Many of the prostigmatid mites belonging to the families : Stigmaeidae, Bdellidae, Cunaxidae, Tydeidae and Cheyletidae, are known to be efficient predators of phytophagous mites and small insects and thereby play important role in biological control programme (Chaudhri *et al.*, 1974; Ueckermann & Smith—Meyer, 1987). However, our knowledge regarding prostigmatid mites from India is scanty and excepting Gupta & Ghosh (1980) practically nothing is known from India. So far as the predatory prostigmatid-mites of northeast India is concerned, practically no studies have so far been made although that region is floristically very rich with luxuriant vegetation and, hence, it can be presumed that fauna thereof will also be equally rich. Therefore, with a view to exploring the predatory prostigmatid mite fauna of northeast India and also to throw some light if they have any importance in natural control of pests, this programme was taken up and this, being the first part of the study dealing with the faunal survey, is presented in this paper.

A total of 34 species under 8 families and 14 genera are dealt with, of which, 21 species, 9 under Stigmaeidae, 5 under Bdellidae, 3 under Cunaxidae, 2 under Tydeidae and 1 each under Cheyletidae and Anystidae are described here as new to science. In addition, 2 species and 5 genera are reported here for the first time from India. Incidentally, all are new reports for the region. Descriptions and illustrations of all the new species are given here. Measurements given in the text are in microns. All the types are deposited in the National Collection of the Zoological Survey of India, Calcutta. The entire collection was made by the author.

**Order PROSTIGMATA**

**Key to the families of predatory prostigmatid mites found in northeast India.**

1. Without palpal thumb-claw complex ..... 2  
With palpal thumb-claw complex ..... 5
2. Rod-like solenidion on tarsus I usually lying flush with tarsus in a specialised membranous depression; anteriorly propodosoma with a tubercle bearing 1-pair of setae, soft bodied, without projection over gnathosoma .....Eupodidae  
Rod-like solenidion on tarsus 1 erect, arising from a small circular membranous base ..... 3

3. Cheliceral bases fused, or if not fused, not capable of lateral scissors-like motion over gnathosoma.....Tydeidae  
Cheliceral free, attached at base and free to move scissors-like laterally across gnathosoma.....4
4. With 2 pairs of genital suckers, the relatively long palpi turned inward, distal segment usually claw-like, free living..... Cunaxidae  
With 3 pairs of genital suckers, the relatively long palpi elbow-like with distal setae, free living ..... Bdeiliidae
5. Chelicerae free, hinged at bases so that they are capable of scissors-like motion in a horizontal direction ..... Anystidae  
Chelicerae bases fused or partly fused, with needle-like or hook-like movable chelae .....6
6. Cheliceral bases closely fused with gnathosoma and without indication of suture; peritreme usually M-shaped, may be present on gnathosoma .....Cheyletidae  
Chelicerae bases fused with each other but not with gnathosoma having suture ; conspicuous; peritreme usually present on anterior portion of propodosoma ..... 7
7. Dorsal plating absent or feebly developed; cheliceral bases fused to form stylophore which dorsally may bear sinuous chambered peritreme or else the peritreme reaching into chelicerae ; freelifving .....Caligonellidae.  
Dorsal plating variable ; peritremes not reaching into chelicerae ; cheliceral bases independently movable but may be adnate or stylophore like ; legs I and II directed anteriorly and III and IV directed posteriorly .....Stigmaeidae.

#### Family STIGMAEIDAE Oudemans, 1931

##### Key to the genera and species of Stigmaeidae occurring in northeast India

1. Propodosoma covered by one or more unpaired plates .....*Agistemus*,  
Hysterosoma covered by one extensive plate.....*Ledermulleria*  
*L. parryorum* sp. nov.
2. Propodosomal shield reticulate.....3  
Propodosomal shield not reticulate .....6
3. Ratio of setae ae/ae-ae more than 2.....4  
Ratio of setae ae/ae-ae less than 2..... *heterophylla* sp. nov.
4. Ratio of setae ae/ae-ae more than 3 .....*gamblei* sp. nov.  
Ratio of setae ae/ae-ae more than 3.....5

5. Reticulation pattern of propodosomal and hysterosomal plates as in fig 1 .....*fleschneri* Summers  
 Reticulation pattern of propodosomal and hysterosomal plates as in fig 8.....  
 .....*lakoocha* sp. nov.
6. Setae ae/ae - ae 1.5 or more .....9  
 Setae ae/ae-ae less than 1.5 .....7
7. Setae a/a-a less than 1.....*hystrix* sp. nov.  
 Setae a/a-a 1 or more than 1 .....8
8. Setae a and 1a almost equal .....*javanicum* sp. nov.  
 Setae 1a considerably longer than a ..... *edulis* sp. nov.
9. All dorsal setae barbed ..... 10  
 Dorsal setae not barbed..... 11
10. Setae 1e much longer than e .....*obscura* sp. nov.  
 Setae 1 e much shorter than e .....*industani* Gonzalez
11. Postocular body very large almost touching setae be and ce .....  
 .....*macrommatus* Gonzalez  
 Postocular body never so large ..... 12
12. Setae ae and be almost of same length ..... *exsertus* Gonzalez  
 Setae ae shorter than be ..... 13
13. Setae c and 1a almost of same length ..... *aramatai* sp. nov.  
 Setae c longer than 1a ..... *garrulus* Chaudhri *et al.*

Genus *Agistemus* Summers

1. *Agistemus fleschneri* Summers

(Fig. 1)

1960. *Agistemus fleschneri* Summers, Proc. ent. Soc. Wash., 62 : 237-240.

*Female* : Dorsal propodosomal plate with polygonal reticulation, reticulation on median plate with not less than 12 cells between successive dorsocentral setae, as figured., covering 2/3 of hysterosoma, with polygonal cell-type reticulation. Measurements of setae : ae-44, ae/ae-ae- 2.5, be-69, be/be-1.5, ce-60, ce/ce-61, a-50, a/a-a- 73, 1a-47, b-46, lm-52, c-52, li-56, e-33, le-13. Palpus extends upto genutibial joints. Legs moderately long with smooth setae. Dorsal setae weakly barbed. Postocular body inconspicuously outlined, its diameter not twice greater than that of eyes. Ventral opisthosomal setae strong ; g<sub>1</sub> extends beyond g<sub>2</sub> Body 365 long, 170 wide.

*Material examined* : 1 Female, Arunachal Pradesh, Siji, ex unknown plant, 15.x.1981; 1 Female, Assam, Badarpur, ex litchi, 7. xii. 1983; 1 Female, Manipur, Bishenpur, ex mango, 22.xi.1985; 1 Female, Tripura, Agartala, ex *Lantana*, 12.xii. 1983.

*Remarks* : Earlier, this mite was reported from Assam, Delhi, Punjab and West Bengal in India (Gupta, 1985) and from outside India it was reported from U.S.A. (Gonzalez, 1965) and Taiwan (Tseng, 1982). Wood (1967) and Tseng (1982) considered *Agistemus* Summers as synonym of *Zetzellia* Oudemans which the present author does not agree at this stage. This mite was often associated with eriophyid colony on mango (Manipur) but its feeding was not observed.

## 2. *Agistemus aramatai* sp. nov.

(Figs. 2-4)

*Female* : Propodosomal and hysterosomal plates smooth, with 3 pairs of setae on the former plate and 5 pairs on the latter plate. All setae weakly barbed. Setae  $ae > ae-be$ ,  $be \geq be-be$ ,  $ae/ae-ae$  1.5,  $a-la$  -67,  $ae-44$ ,  $be-67$ ,  $ce-49$ ,  $a-44$ ,  $b$ -broken,  $la-44$ ,  $c-53$ ,  $lm-44$ , setae  $b$  nearer to  $la$  than to  $lm$ . Palp tibial claw of same length as that of palp tarsus.  $Pg_1 > Pg_2$ ,  $g_1 = g_3 > g_2 = g_4$ . Chaetotaxy of legs in respect of segments : femur, genu, tibia and tarsus : 1-5, 3, 6, 12, 11-4, 1,6,10,III-2,0,6,7,IV-2,0,6,? Body 408 long, 256 wide. Postocular body distinct.

*Male* : Unknown.

HOLOTYPE : Female, INDIA : Arunachal Pradesh, Garu, ex *Castanopsis armata*, 15. vii. 1981.

*Remarks* : This species is close to *Agistemus unguiparvtis* Gonzalez (1965) but differs in respect of relative length and ratios of dorsal setae. It differs from *A. garrulus* Chaudhri et al. (1974) in relative length of  $ae/ae-ae$ . This mite was collected from a colony of *Tetranychus cinnabarinus* on which it might have fed as the gut content of the predator was deeply reddish.

## 3. *Agistemus obscura* sp. nov.

(Figs. 5-7)

*Female* : Body 443 long, 112 wide. Propodosomal plate distinct, with 3 pairs of setae, all reasonably long, barbed and measure :  $ae-47$ ,  $ae/ae-ae$ -1. 8,  $be/be-be$ -1. 1,  $ce-60$ ,  $ce/ce-ce$ -40. Postocular body as figured, diameter-33. Propodosomal plate unornamented. Seta  $be$  longer than the distance between its base and that of  $ce$ , all the setae thick and gently barbed. Hysterosoma well differentiated, unornamented with setae  $a-51$ ,  $b-62$ ,  $la-64$ ,  $lm-67$ ,  $c-67$ ,  $li-60$ ,  $le-40$ ,  $e-22$ ,  $e$  almost half of  $le$  and the latter is shorter than  $ae$ ,  $he-53$ . Humeral plate distinct. Posterior portion of hysterosoma striated. Tibial claw longer than tarsus, the latter with 3-forked seta. Ventrally,  $Pg_1$  and  $Pg_2$  equal, 18 long,  $g_1-g_3$ -16-18,  $g_4$ -12. Legs I-

IV with claws, each rayed. Genu I with 1 long barbed seta, other tibiae with 2 barbed setae; tarsus I with 2 long setae; tarsus II with long setae, tarsus III-IV lack long setae. Intercalaries plate closer to median plate.

*Male* : Unknown.

HOLOTYPE : Female INDIA : Manipur, Imphal, ex *Ficus obscura*, 14. xi.1983.

*Remarks* : This new species is close to *Agistemus longisetus* Gonzalez(1963) from which it differs in relative ratios of ae/ae-ae and a/a-a. Further, from *A. giganteus* Ehara and Wongsiri (1984) it differs in relative length of be/be-be and also in length of e and l e as e longer than l e in *giganteus* while it is half the length of l e in this new species.

#### 4. *Agistemus lakoocha* sp. nov. (Figs. 8 - 10)

*Female* : Body 331 long, 204 wide. Palp tibial claw slightly shorter than palptarsus. At the base of tibial claw, 4 stout setae present. Palp tarsus with a trifid seta. Propodosomal and hysterosomal plates reticulate, the former bears 3 pairs of setae measuring : ae-38, ae/ae-ae- 2.5, be-71, be/be-be-1.4, ce-58, ce/ce-ce-.6. Area immediately posterior to propodosomal plate with transverse striation, laterally obliquely striated. All setae thick, not serrate. Propodosomal plate gently reticulate. Median plate reticulate with 5 pairs of setae measuring a-47, la-44, b-47, lm-53, c-53, he-35. Area lateral to median plate longitudinally and posterior to median plate transversely striated. Setae li-54, le-33, e-17. Paragenital setae 2 pairs, annogenital setae 4 pairs. Genu I and II each with 1 lateral seta, those of other legs not discernible. Tarsus I with 2 long setae, tarsus II with 1 long seta, tarsus III - IV without such seta. Postocular body well demarcated.

*Male* : Unknown.

HOLOTYPE : Female INDIA : Arunachal Pradesh, Tezu, on *Artocarpus lakoocha*, 23.i.1983.

*Remarks* : This new species resembles *Agistemus fleschneri* Summers (1960) from which it differs in relative length and ratios of dorsal setae and in leg chaetotaxy.

#### 5. *Agistemus heterophylla* sp. nov. (Figs. 11-14)

*Female* : Propodosomal plate with 3 pairs of setae and hysterosomal plate with 5 pairs of setae, both the plates with reticulation as figured. All setae long, unbarbed measuring ae-40, be-78, ce-58, ae/ae-ae- 1.2, be/be-be-1. 1, ce/ce-ce-. 31, he-45, a-58, la-71, b-56, lm-64, c-64, li-56, le-31, e-20. Palptarsus almost as long as palptibial claw. Tarsus I-IV with 2 claws, tarsus I with 1 long seta, tarsus II with 1 long seta, tarsus III-IV without long setae.

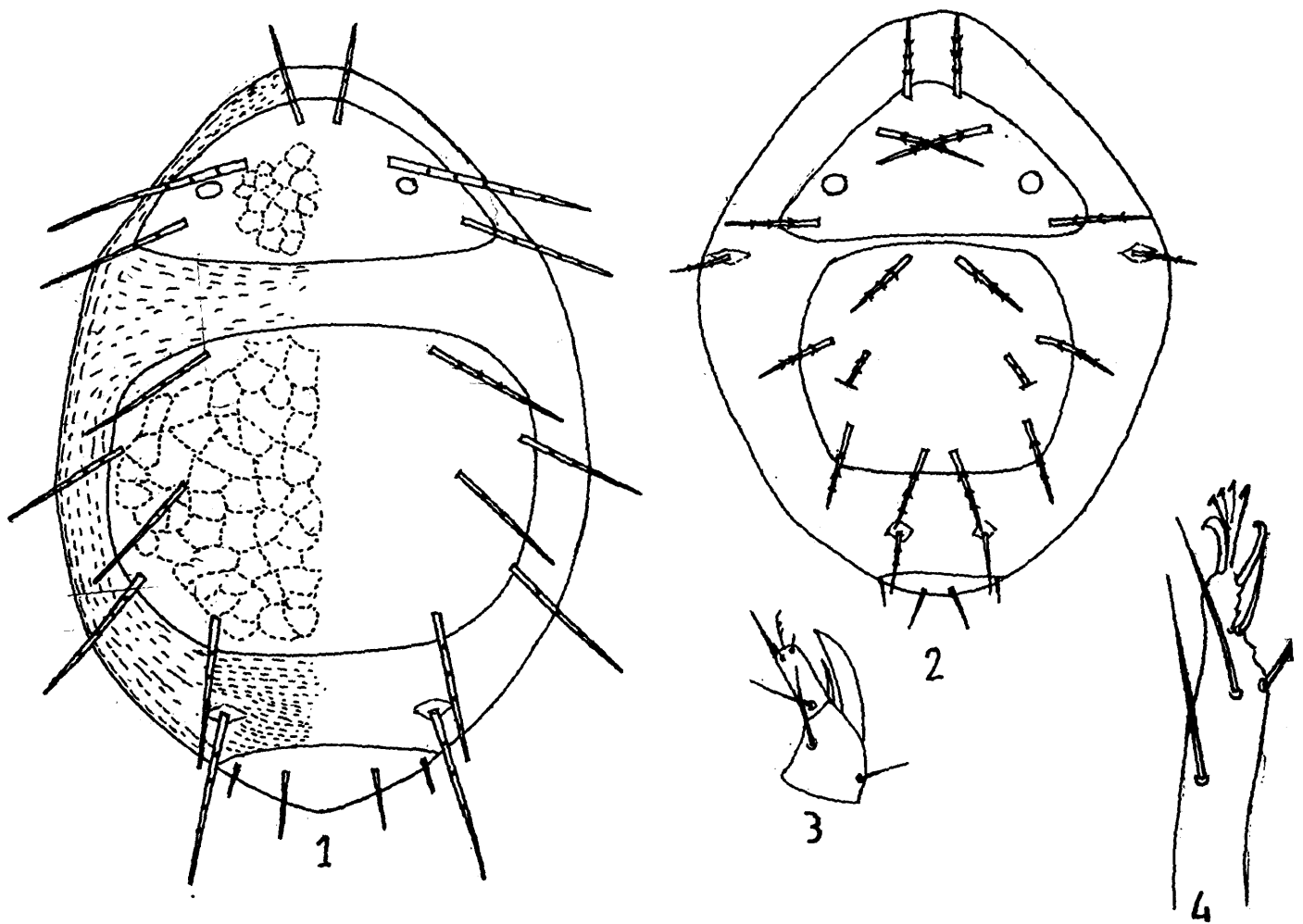
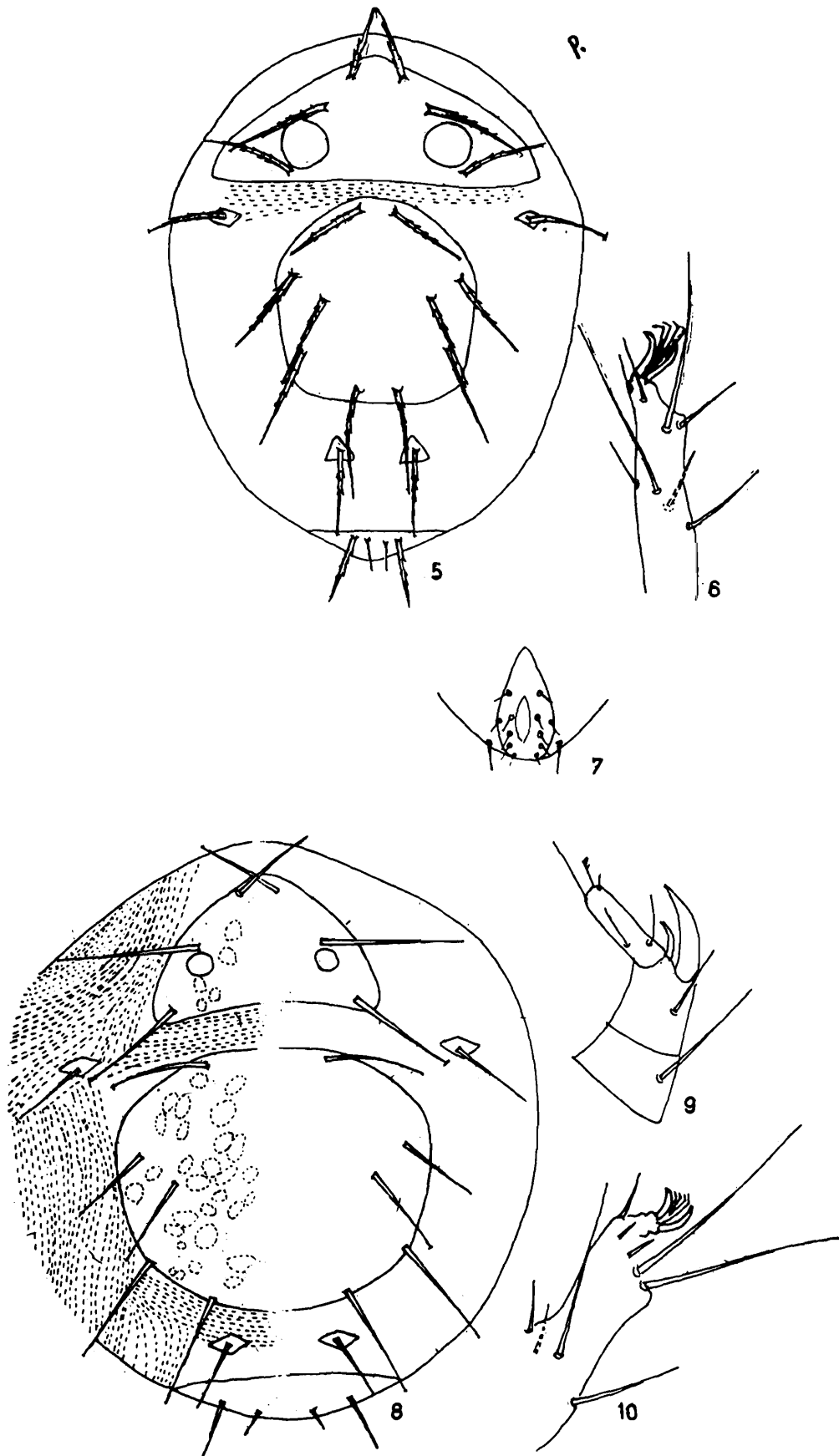


Fig. 1. *Agistemus fleschneri* Summers dorsal aspect.

Figs. 2-4 : *Agistemus aramatai* sp. nov. (Female). 2-dorsal aspect; 3-tibial and tarsal segments of palp ; 4- tarsus of leg I.



**Figs. 5-7 : *Agistemus obscura* sp. nov. (Female). 5- dorsal aspect; 6- leg I, 7- Venter of opisthosoma.**

**Figs. 8-10 : *Agistemus lakoocha* sp. nov. (Female). 8- dorsal aspect; 9- tibial and tarsal segments ; 10- tarsus of leg I.**

Barbed seta on genu I shorter than segment. Paragenital setae 2 pairs, subequal. Genital seta  $g_1$  reaches almost upto  $g_3$ ;  $g_1 \cdot g_2 = g_3 = g_4$ . Leg chaetotaxy : femora I-IV-5, 4,2,2; genu I-IV-3, 1, 0, 0; tibia I-IV-6,6,6,6.

*Male* : Unknown.

HOLOTYPE: Female, INDIA : Arunachal Pradesh, Loilang, ex *Girardinia heterophylla*, 22.i.1983.

*Remarks*: This species is close to *Agistemus fleschneri* Summers (1960) but differs from the latter in relative lengths of be/be-be and ce/ce-ce. From *A. impavidus* Chaudhri *et al.* (1974) it differs in relative ratios of e/l e which is less than 1 in this new species and one and half times in *impavidus*. This mite was seen in the field in a colony of *Eotetranychus*, chasing a nymph.

#### 6. *Agistemus hystrix* sp. nov. (Figs. 15-17)

*Female* : Propodosomal and hysterosomal plates well demarcated, the former bearing 3 pairs of setae and the latter with 5 pairs of setae. Most of the dorsal setae thick and minutely barbed. Integument transversely striated between propodosomal and hysterosomal plates. Measurements of setae : ae/ae-ae-1.4, be-73, ce-51, he-44, a-56/a-a- .67, b-56, b/b-b- 4, la-broken, lm-broken, le-20, e-26. Diameter of postocular body-28. Paragenital setae 2 pairs, extends upto the tip of  $g_2$ . Body 458 long, 295 wide. Dorsalmost seta of femur 1-44 long. Chaetotaxy of femur and genu of legs I,II,III,IV: 5,4; 4, 1; 2, 0; 2, 0. Apical sensillum of palptarsus trifold; Setation of tibia I - IV nude.

*Male* : Unknown.

HOLOTYPE: Female, INDIA : Manipur, Moreh, ex *Castanopsis hystrix*, 25.xi.1983.

*Remarks* : This new species is close to *A. terminalis* (Quayle, 1912) but differs from the latter in relative ratio of ae/ae-ae, ce > he and palptarsus as long as tibia I. From *A. siamensis* Ehara and Wongsiri (1984) it differs in relative length of a/a-a which is less than 1 in this new species and more than 1 in *siamensis*.

#### 7. *Agistemus exertus* Gonzalez (Figs. 18-19)

1963. *Agistemus exertus* Gonzalez, *Acarologia*, 2 : 343 - 344.

*Male* : Propodosomal and hysterosomal plates with 3 and 5 pairs of setae respectively, all setae nude, long, measure : ae - 49, be-47, ce-53, ae-ae-31, ae-be-26, be-ce-40, a-53, b-34, c-51, la-56, lm-34, a-a-53, he-38. Postocular body distinct.  $Pg_1$  shorter than  $Pg_1 - Pg_2$ .



*Female* : Could not be collected.

*Material examined* : 1 Female, Assam, Bhuban hills, ex an undetermined weed, 6. xii. 1983.

*Remarks* : This is first report of this species from India. Earlier to this it was known from Taiwan (Tseng, 1982) and Japan (Gonzalez, 1963). It was found in the colony of an eriophyid species but it was not seen to attack it.

#### 8. *Agistemus macrommatus* Gonzalez (Figs 20-22)

1965. *Agistemus macrommatus* Gonzalez, *Univ. Calif. Pub. Ent.*, 41 : 38-39.

*Female* : Propodosomal and hysterosomal shields smooth. Dorsal setae thick and insignificantly barbed. Integument transversely striated between propodosomal and hysterosomal plates ; integument posterior to it transversely striated. Measurements of setae : ae- 51, ae-ae- 33, ae/ae-ae- 1.5, be- 78, be-be- 72, ce-56, be>be-ce, a-58, a-a- 53, b- 60, c- 67, la- 56, lm- 67, he-56, e- 35, le- 15 ; diameter of postocular body - 35. Paragenital setae 2 pairs, annogenital setae 4 pairs ;  $g_1$  extends almost upto the middle of  $g_2$ . Palptarsus and tibial claw of same length ; palptarsus with 3-tined seta. Dorsalmost seta of femur I as long as or slightly shorter than the lateral seta. Body 560 long, 250 wide.

*Material examined* : 2 Females, Arunachal Pradesh. Deban, ex papaya, 16. i. 1983.

*Remarks* : The description of Gonzalez (1965) more or less agrees with the present description. Originally it was described basing on specimens collected from Coimbatore and was subsequently reported from Taiwan (Tseng, 1982). In the field, it was found to be feeding on the nymph of *Eutetranychus orientalis* (Klein).

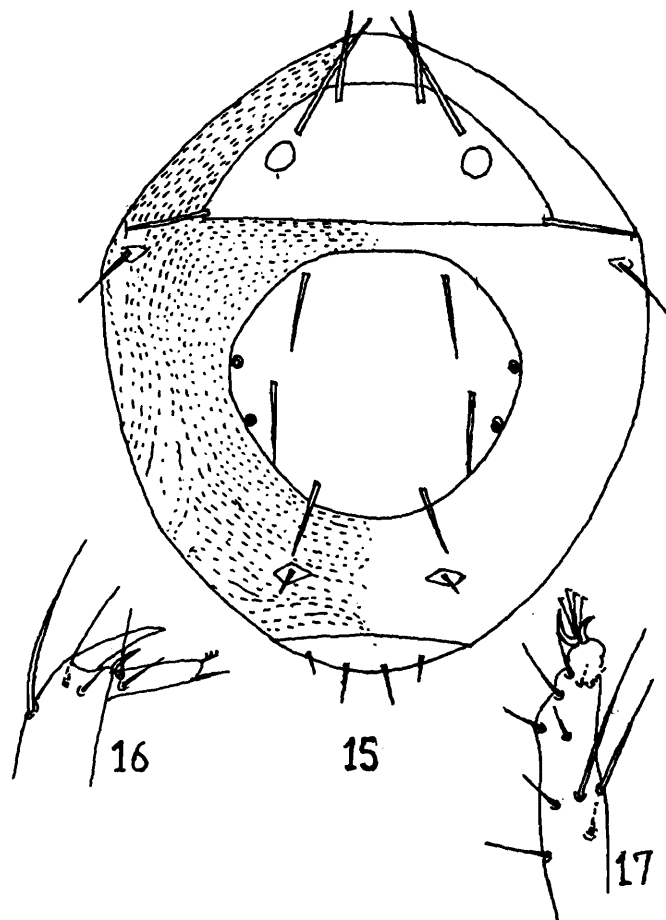
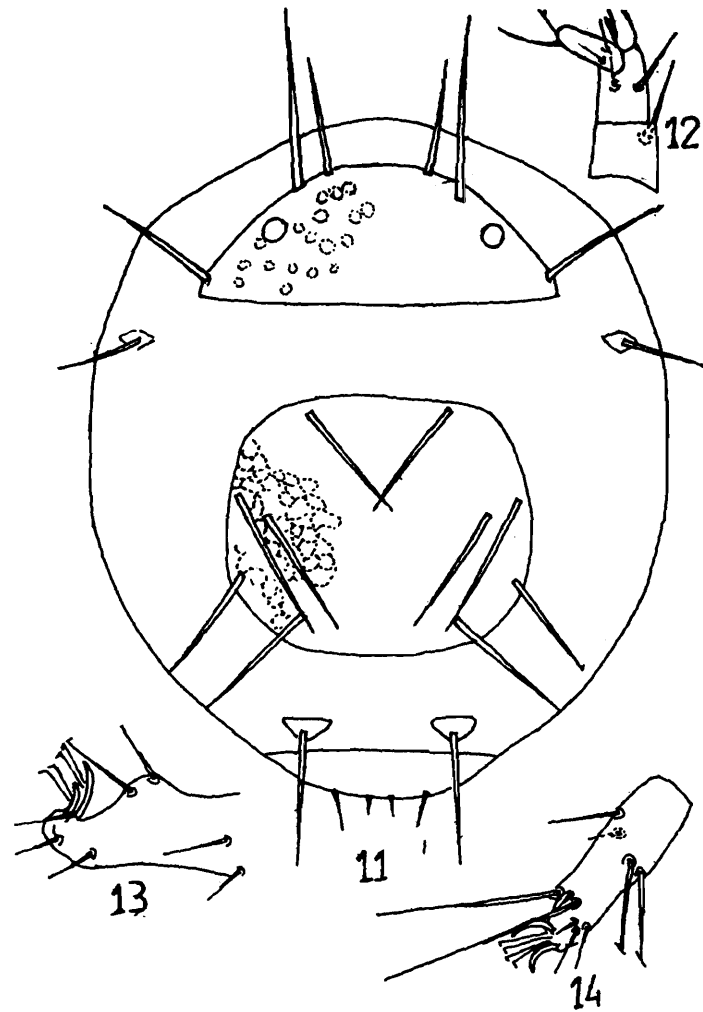
#### 9. *Agistemus industani* Gonzalez (Fig. 23)

1965. *Agistemus industani* Gonzalez, *Univ. Calif. Pub. Ent.*, 41 : 40.

*Female* : Body 492 long, 295 wide. Measurements of setae : ae-56. ae-ae- 29, ae/ae-ae- 1.9, be-78, be-ce- 71. ce-60, a- 56, a-a-49, b-67, a-b- 67, c- 69, la-67, lm- 67, e- 38, le- 24, li- 67, he- 51. All dorsal setae barbed minutely, thick, not tapered ;  $g_1$  extends upto half of  $g_2$ . Dorsalmost seta of genu I little over 1.3 times as long as lateral seta.

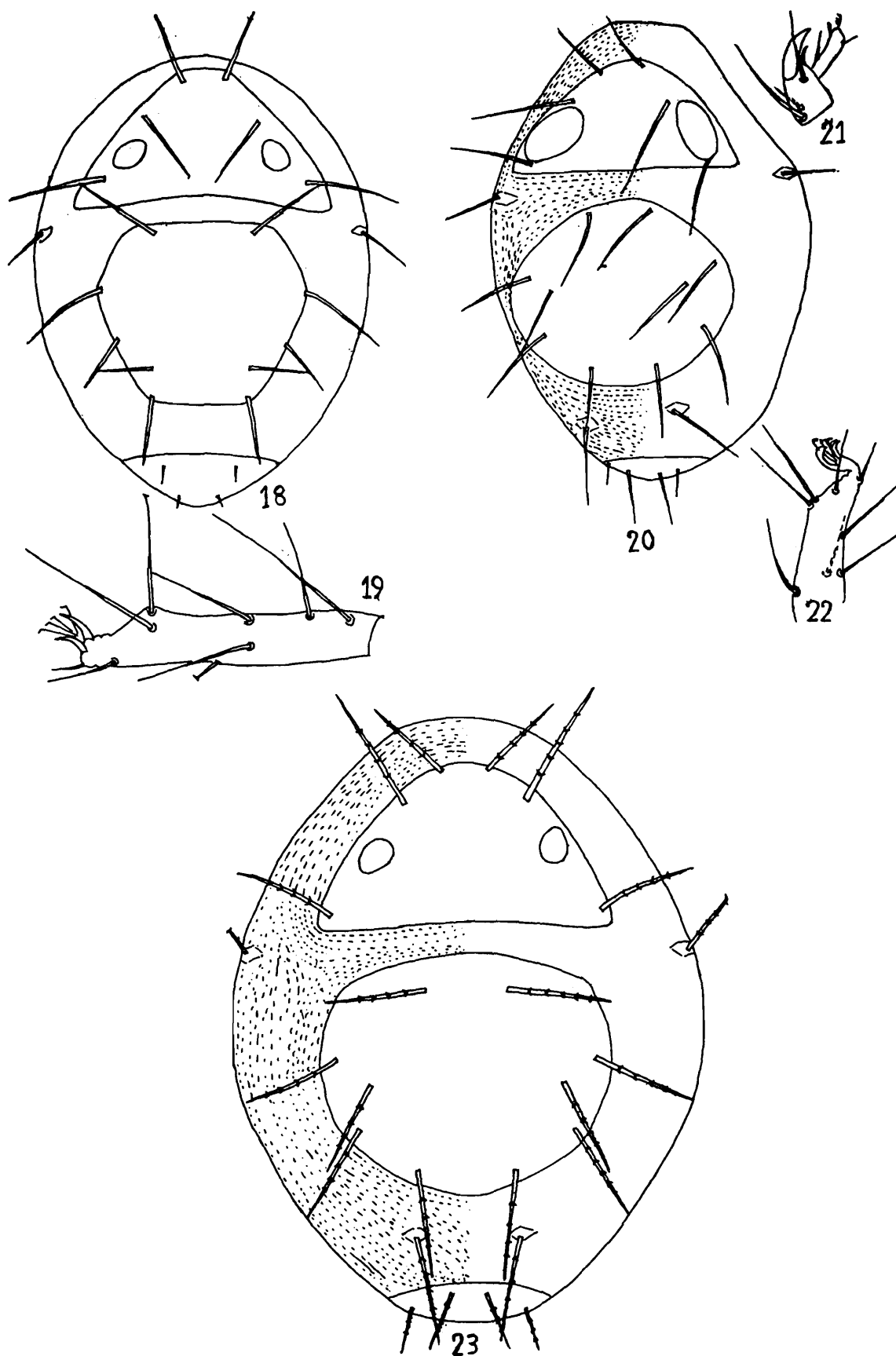
*Material examined* : 1 Female, Nagaland, Kohima, ex *Maoulla puya*, 14. xi. 1985.

*Remarks* : This species was earlier known from Coimbatore. It is the second report of this species from India. It was collected from a colony of *Eotetranychus* sp. on which it was not found feeding.



Figs. 11-14 : *Agistemus heterophylla* sp. nov. (Female). 11-dorsal aspect; 12- tibial and tarsal segments of palp ; 13- tarsus of leg II ; 14- tarsus of leg I.

Figs. 15-17 : *Agistemus hystrix* sp. nov. (Female). 15-dorsal aspect; 16. tibial and tarsal segments of of palp ; 17- tarsus of leg I.



**Figs. 18-19 : *Agistemus exertus* Gonzalez (Female) : 18- dorsal aspect; 19- tarsus of leg I.**

**Figs. 20-22 : *Agistemus macrommatus* Gonzalez (Female). 20- dorsal aspect; 21- tibial and tarsal segments of palp ; 22- tarsus of leg I.**

**Fig. 23 : *Agistemus industani* Gonzalez (Female) - dorsal aspect.**

10. *Agistemus javanicum* sp. nov.

(Figs. 24-26)

*Female* : Body 450 long, 290 wide. Propodosomal and hysterosomal plates well demarcated with the former bearing 3 pairs of setae and the latter bearing 5 pairs of setae. Measurements of setae : ae-49, ae-ae- 35, ae/ae-ae- 1. 4, be-71, a-56, a-a-56, b-51, a/a-a-1, la-60, lm-71, c-51, li-62, le-24, e-33, he-56. Integument between propodosomal and hysterosomal plates transversely striated, lateral area of hysterosomal plate longitudinally striated. Palp tarsus with 3 tined seta. Chaetotaxy of femur, genu and tibia of legs : I- 5, 4, 6 ; II- 4, 1, 6 ; III- 2, 0, 6, IV- 2, 0, 6. Seta  $g_1$  longer than  $Pg_1$ . All setae on tibia I and II nude. Palptibial claw greater than palptarsus.  $Pg_1$  and  $Pg_2$  almost of same length. Postocular body almost as long as broad.

HOLOTYPE: Female, INDIA : Manipur, Ukhrul, ex *Cleidion javanicum*, 16. xi. 1983.

*Remarks* : This new species is close to *Agistemus terminalis* (Quayle, 1912) but differs in having ae/ae-ae-1. 4, a/a-a-1,  $li < lm$  and  $e < li$ .

11. *Agistemus edulis* sp. nov.

(Fig. 27)

*Male* : Propodosomal and hysterosomal plates distinct with 3 pairs of setae on former and 5 pairs on the latter. Measurements of setae : ae-44, be-78, ce-62, a-56, b-62, c-67, la-67, ae-ae-31, ae-be-26, a-b-67. Width of postocular body much less than the distance between be-ce. Striation transverse between anterior propodosomal and posterior hysterosomal shields. Legs all crumpled and, hence, chaetotaxy not discernible.

*Female* : not known.

HOLOTYPE: Male, INDIA ; Arunachal Pradesh, ex *Macheles edulis*, 24.i.1983.

*Remarks* : It is close to *Agistemus siamensis* Ehara & Wongsiri (1984) but differs in relative length of dorsal propodosomal setae.

12. *Agistemus gamblei* sp. nov.

(Figs 28-30)

*Female* : Propodosomal and hysterosomal plates distinct, reticulate, the former with 3 pairs of setae and the latter with 5 pairs of setae. The measurements of setae : ae-44, ae/ae-ae-3.6, be-76, be/be-be-1.4, ce-67, ce/ce-ce- 6, a-44, la-47, lm-58, c-56, he-39, li- 53, le-26, e-33, a/a-a-. 5  $ae > ae-be$ ,  $a-la \approx$  little less than one and half of a, be nearer to la than to lm. Postocular body not well demarcated. Body 408 long, 204 wide.

*Male*: Unknown.

**HOLOTYPE:** Female, INDIA : Arunachal Pradesh, Digaru, ex *Machilus gamblei*, 28.i.1983.

**Remarks :** This new species differs from *Agistemus impavidus* Chaudhri *et al.* (1974) in relative length of e/le which is .6 in this new species and 1.6 in *impavidus* and from *A. fleschneri* it differs in relative ratios of ae/ae-ae as it is 3.6 in this new species and 2.5 in *flechneri*.

### 13. *Agistemus garrulus* Chaudhri, Akbar & Rasool

1974. *Agistemus garrulus* Chaudhri, Akbar & Rasool, Univ. Agril. Lyallpur, Pakistan, p. 197-200.

**Material examined:** 1 Female, Meghalaya, Songsok, ex mulberry, 28. ix. 1988.

**Remarks:** This species was collected in association with *Panonychus ulmi* chasing a nymph of the latter. This is the first record of the species from India and earlier to this it was known only from Pakistan.

### Genus *Ledermuelleria* Oudemans

#### 14. *Ledermuelleria parryorum* sp. nov. (Figs. 31-32)

**Female :** Length (excluding gnathosoma) 257, 235 wide. Body oval. Dorsum entire, no suture between propodosomal and hysterosomal regions, dorsum reticulate, the walls of network thin and indistinct, visible only with high powered microscope. Dorsum bears 8 pairs of setae, all being spine-like, barbed. The length of setae : anteriormost-72, 4 laterals measure respectively 89, 78, 82, 78; posteriormost-56; 2 setae present mediodorsally ; both being 74 long, one pair of eyes present between second pair of propodosomal setae. Gnathosoma : palptarsus extends upto tibiae I, palptibial claw well developed. Chelicerae fine, needle-like. Legs all very short ; tarsi of first leg with 1 pair of setae, a pair of claws present. Ventrally, with 2 pairs of preanal setae, 3 pairs of annogenital setae present.

**Male :** Unknown

**HOLOTYPE:** Female, INDIA : Arunachal Pradesh, Hyauling, ex *Mussandra parryorum*, 26. i. 1983.

**Remarks :** This new species is close to *Ledermuelleria acidophila* Wood (1972) from which it differs in setation of dorsal plate and in striation pattern of dorsal plate. From *L. corticola* Wood (1966) it differs in nature of hysterosomal setae.

### Family BDELLIDAE Duges, 1834

#### Key to the genera and species of Bdellidae occur in northeast India

1. Tibia I, II, IV and tarsi III, IV with long sensory setae .....  
 ..... Odontoscirinae *Bdellodes*, 2  
 Tibia I, IV and tarsi III, IV with long sensory setae ..... Bdellinae, *Bdella*, 3

2. Chelicera with 2 setae, hysterosoma with 11 pairs of setae ..... *Bdellodes manipurensis* sp. nov.  
 Chelicera with 1 seta, hysterosoma with 15 pairs of setae ..... *Bdellodes grandiflora* sp. nov.
3. Hysterosomal setae of characteristic shape as in fig. .... *Bdella khasyana* sp. nov.  
 Hysterosomal setae not like above ..... 4
4. Palp tibiotarsus with 9 setae ..... *Bdella atro* sp. nov.  
 Palp tibiotarsus with 10 setae ..... *Bdella angustifolius* sp. nov.

Subfamily BDELLINAE Grandjean  
 Genus *Bdella* Latreille

15. *Bdella atro* sp. nov.  
 (Figs. 33-35)

*Female* : Body 855 long, 358 wide. Propodosoma and hysterosoma not separated by suture. Entire dorsum finely striated. Striation of propodosoma anteriorly transverse, posterior to that longitudinal and tortuous. Hysterosomal striae mostly longitudinal laterally. Propodosoma with 2 pairs of sensilla, anterior pair 90 long, posterior pair 71 long; anterior sensilla and posterior sensilla 78 apart ; median propodosomal setae-67 long. Hysterosomal setae 9 pairs, internal humeral-76 long. Chelicera longer than palp femur, transversely striated. Hysterosomal setae of similar length. Ventral idiosomal setae of moderate length, simple, pointed. Each genital plate with 2 pairs of setae, of those, 2 are in linear row ; 1 pair of preanal setae present. Each leg with 2 well developed claws and empodium, each 5-7 rayed. Tibia I - 112 long, II - 89, III-110, IV-112 long. Coxal setal formula : I-2, II-2, III-2, IV-2. Other leg setae.

	Coxa	Trochanter	Basifemur	Telofemur	Genu	Tibia	Tarsus
I	3	5	3	3	4	7 + 1 trichoboth.	20
II	?	6	3	4	3	5 + 1 trichoboth.	26
III	3	5	4	3	4	7	14 + 1 trichoboth
IV	3	?	?	?	4	5 + 1 trichoboth.	14 + 1 trichoboth.

Fifth segment of palp cylindrical with 2 long setae ; 3rd and 4th segments equal.

*Male* : Unknown

HOLOTYPE: Female, INDIA : Arunachal Pradesh, Siji, ex *Viburnum atro*, 15. x. 1981.

*Remarks* : This new species differs from *Bdella neograndjeani* Meyer & Ryke (1959) in relative length of propodosomal sensory setae and in palpal chaetotaxy. This mite was observed in a colony of *Tarsonemus* sp. on which probably it fed.

16. *Bdella angustifolius* sp. nov.  
(Figs 36-38)

*Female* : Body 1020 long, 525 wide. Palp with striation, 3rd and 4th segments almost equal ; 5th segment cylindrical with a pair of long setae. Chelicera 510 long, a pair of setae present. Hypostome transversely striated, striation indistinct, with 6 pairs of setae. Dorsum of idiosoma striated as figured ; anterior sensillum - 89 long, posterior sensillum- 89 long, median propodosomal seta- 85. Hysterosomal thick, pointed, internal humeral-80 long, external humeral - 80 long. Venter of hypostome appears to be striated. Each genital plate with 4 setae in linear arrangement. Legs with claw having at least 5 rays. Coxal setal formula of legs I-IV : I-2, 2, 3, 3. Length of tarsus and tibiae of legs I-IV : I- 182, 78 ; II-156, 78 ; III- 170, 89 ; IV-172, 90. Leg chaetotaxy not clearly discernible. Tarsus III-IV with a trichoboth, tibiae I, II and IV also with sensory setae.

*Male* : Unknown.

HOLOTYPE: Female, INDIA; Manipur, Moreh, ex *Canthium angustifolium*, 24. xi. 1983.

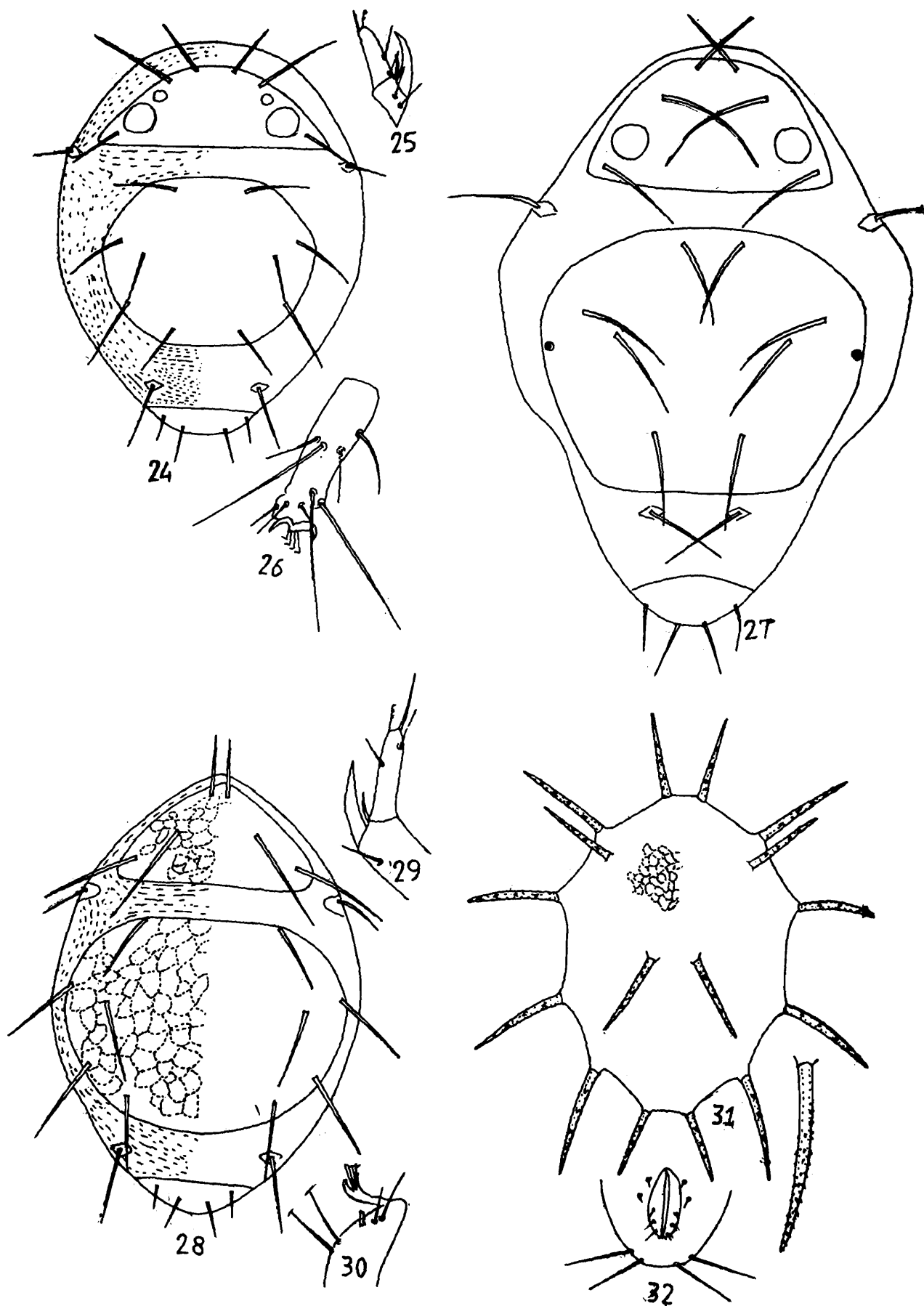
*Remarks*: This species differs from *Bdella atro* sp. nov. in palpal and leg chaetotaxy and from *B. thori* Meyer & Ryke (1959) in palpal chaetotaxy.

17. *Bdella khasyana* sp. nov.  
(Figs. 39-41)

*Female* : Suture absent between propodosoma and hysterosoma. Two pairs of eyes present on each side of propodosoma. Propodosoma with 4 pairs of setae. Lateral propodosomal seta longer than median propodosomal seta. Striation on propodosoma mostly longitudinal ; hysterosoma bears 9 pairs of setae and those are of characteristic shape as figured. Striation of hysterosoma transverse in the region of dorsocentral setae and longitudinal laterally. Chelicera with longitudinal striation, chela edentate ; movable digit sickle shaped ; 2 setae on chelicera. Palp with normal segmentation ; tibiotarsus with 6 setae, 2 long whip - like setae present terminally ; genu with 4 setae. Hypostome with 6 pairs of setae. Each leg with 2 claws and rayed empodium. Detail leg chaetotaxy not discernible as the legs are crumpled.

*Male* : Unknown.

HOLOTYPE: Female, INDIA : Arunachal Pradesh, Along, ex *Litsaea khasyana*, 19. xi. 1981.



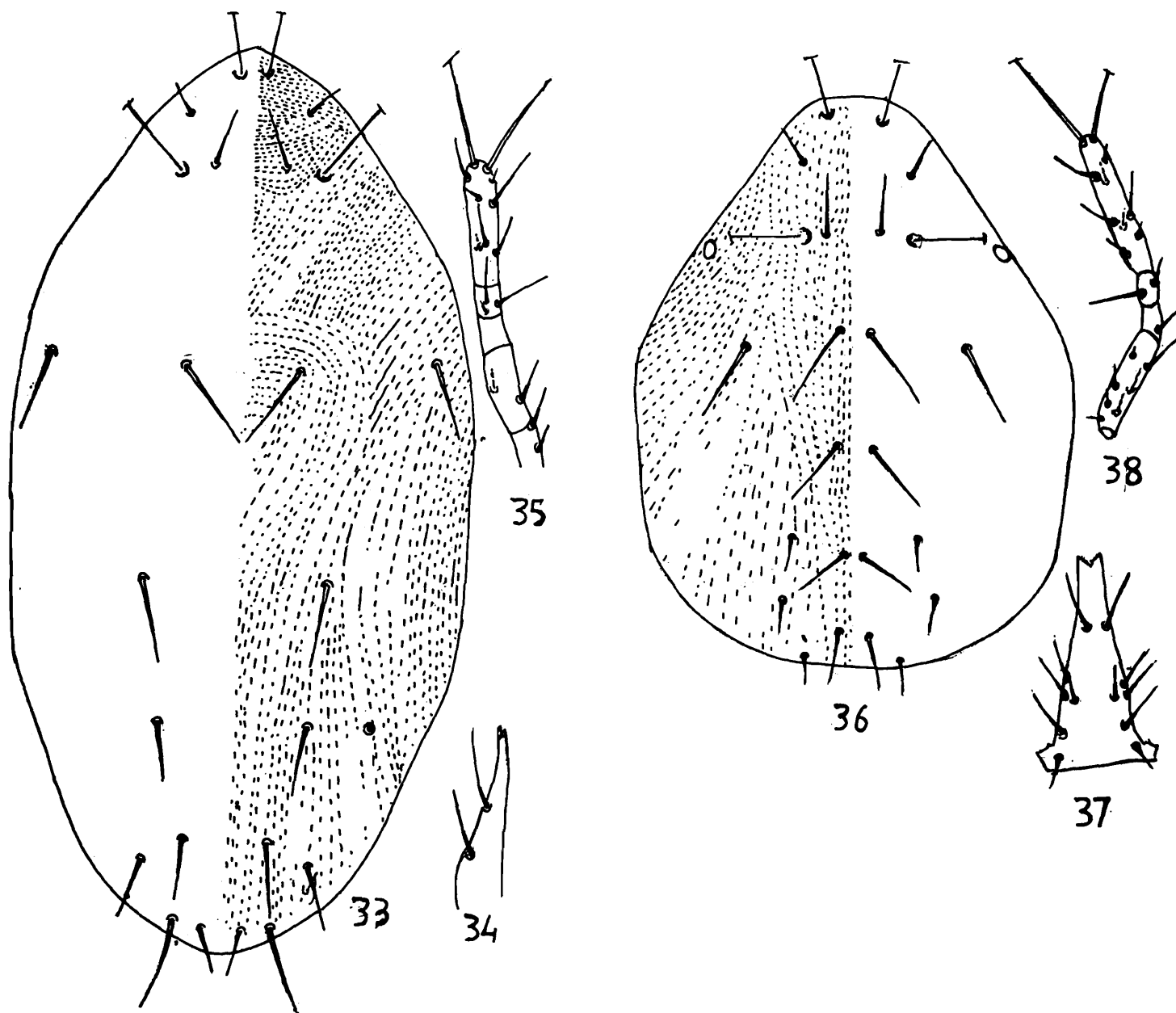
Figs. 24-26: *Agistemus javanicum* sp. nov. (Female). 24- dorsal aspect ; 25- tibial and tarsal segments of palp ; 26- tarsus of leg I.

Fig. 27 : *Agistemus edulis* sp. nov. (Male)- dorsal aspect.

Figs. 28-30 : *Agistemus gamblei* sp. nov. (Female). 28- dorsal aspect; 29- tibial and tarsal segments of palp; 30- tarsus of leg I.

Figs 31-32 : *Ledermulleria parryorum* sp. nov. (Female). 31-dorsal aspect; 32- venter of





**Figs. 33-35 :** *Bdella atro* sp. nov. (Female) 33-dorsal aspect, 34-chelicera; 35- palp.

**Figs. 36-38 :** *Bdella angustifolius* sp. nov. (Female). 36-dorsal aspect; 37- ventral aspect of gnathosoma ; 38- palp.

*Remarks* : This species differs from *Bdella captiosa* Atyeo (1063) but differs in relative length of dorsal idiosomal setae and their characteristic shape.

### Genus *Bdellodes* Oudemans

#### 18. *Bdellodes manipurensis* sp. nov. (Figs. 42-44)

*Female* : Body 663 long (from base of gnathosoma to posterior tip of body), 331 wide (at the base of II coxae). Propodosoma and hysterosoma continuous having no suture in between. The striation of propodosoma mostly transverse, in mid-dorsal region of propodosoma the striation transverse and longitudinal towards the margin. Propodosoma bears 4 pseudostigmata each with a long seta, anterior one 112 long. The setae on hysterosoma much longer (over 110 long). One median eye and 2 pairs of lateral eyes present on propodosoma ; 11 pairs of setae present on hysterosoma ; posterior setae longer than the distance between their bases. Ventrally, hysterosoma with 4 pairs of setae. The length of setae from basal pairs onwards ; 27, 33, 45, 45. Hypostome longitudinally striated allthrough ; Chelicera little inflated at base with 2 setae. Movable digit sickle shaped. Pedipalp with no seta on coxa, basifemur with 8 setae (5 dorsal, 3 ventral), telofemur with 1 seta, genu with 3 setae, tibiotarsus - 11 setae. Among the 2 whip like setae on tibiotarsus, one is slightly longer than the other. Palp segments all along transversely striated. All the legs with a pair of claws and rayed empodium.

HOLOTYPE: Female, INDIA : Manipur, Imphal, *ex mango*, 26. i. 1983.

*Remarks* : The new species differs from all the related species by presence of 11 pairs of hysterosomal setae as well as in setation palptarsus.

#### 19. *Bdellodes grandiflora* sp. nov. (Figs. 45-48)

*Female* : Body 750 long, 270 wide. Propodosoma with striation not of superimposed type. Anterior propodosomal sensory seta 123 long, posterior sensory seta 134 long, median propodosoma 124 long, quite thick. No demarcation between propodosoma and hysterosoma. Striation pattern in propodosomal plate mostly longitudinal, striation transverse anteriorly. Hysterosoma with 15 pairs of setae, all thick and appear to be weakly barbed. Chelicera with 1 seta and having 2 digits, both edentate, movable digit sickle shaped. Palp with tibiotarsus long, cylindrical with 12 setae including 2 whip like setae measuring respectively 189, 299 ; a thick seta present at the tip ; genu with 4 setae and telofemur with 1 seta ; telofemur and genu almost of same length. Hypostome ventrally with 6 pairs of setae. All legs with a pair of claws and rayed pulvillus.

*Male* : Unknown

**HOLOTYPE:** Female, INDIA : Arunachal Pradesh, Garu, ex *Thunbergia grandiflora*, 16. x. 1981. Paratype Female, data same as for holotype.

*Remarks :* This species resembles *Bdellodes tanta* Atyeo (1963) in having 1 seta on chelicera but differs from it in having genu with 4 setae only insted of over 6 setae. It also resembles *Bdellodes oraria* Atyeo (1963) in having genu with 4 setae but differs from it in having 1 cheliceral seta.

Family CUNAXIDAE Thor, 1902

Key to the genera and species of Cunaxidae occur in northeast India

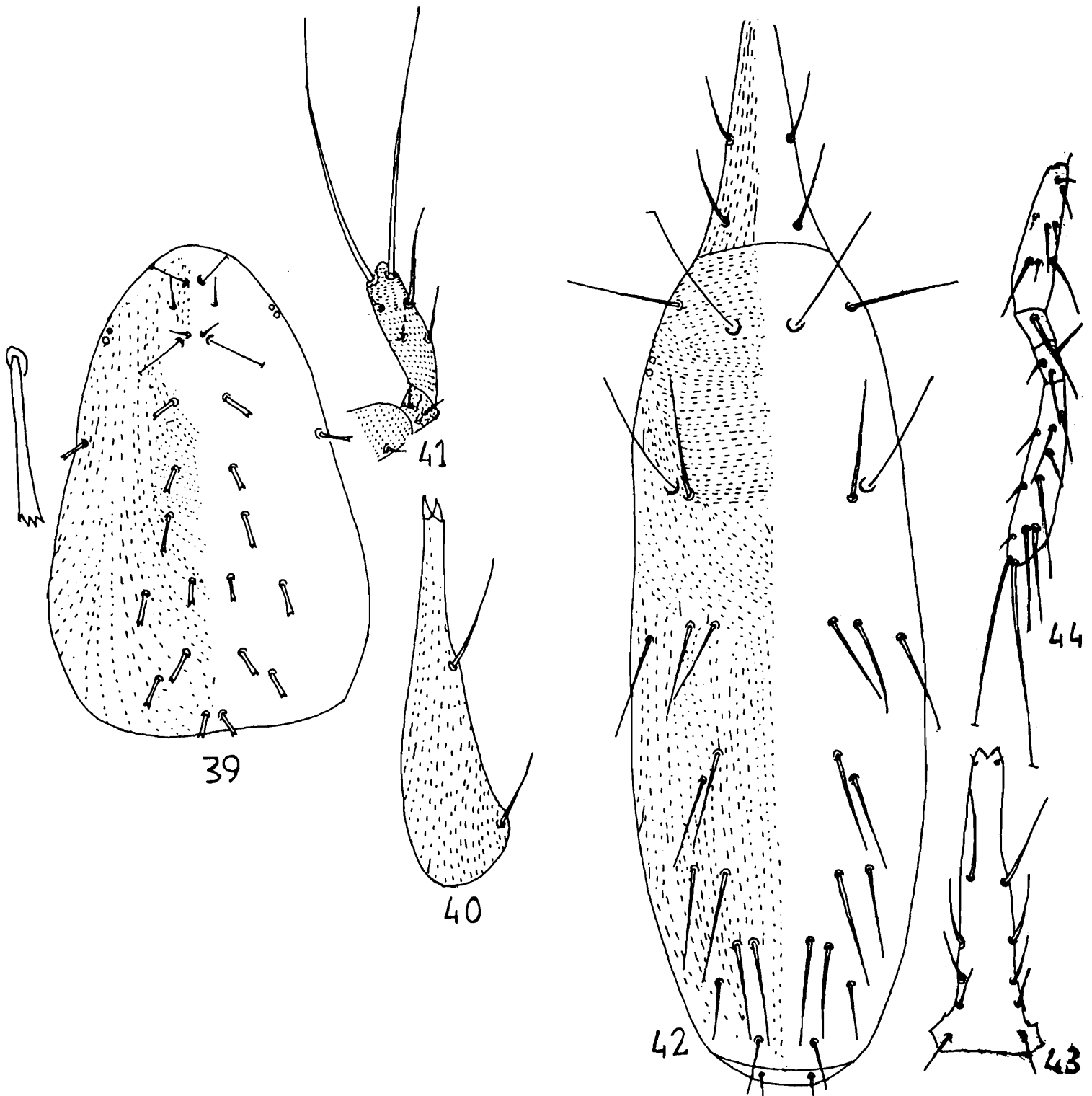
1. Palp 3 segmented ..... *Neocunaxoides cerasoides* sp. nov.  
    Palp 5 segmented ..... *Cunaxa*, 2
2. Dorsal scutum transversely divided into 2 scuta, femoral process of palp longer and flange like ..... *Cunaxa capreolus*
3. Palp genu with a strong, blunt and broadly tipped process.....  
    ..... *Cunaxa curassavica* sp. nov.  
    Palp genu without such process ..... 4
4. Palp with strong spine on the mesal surface of genu, tibia and tarsus.....  
    ..... *C. setirostris*  
    No such spine ..... 5
5. Tibiotarsus with inner spine and in addition with 3 other setae ; chelicera exceeds the length of palptibiotarsus.....*C. bambusae*  
    Tibiotarsus with altogether 2 setae, having no spine ; Chelicera extends upto the length of palptibiotarsus ..... *C. crista* sp. nov.

Genus *Neocunaxoides* Smiley

20. *Neocunaxoides cerasoides* sp. nov.

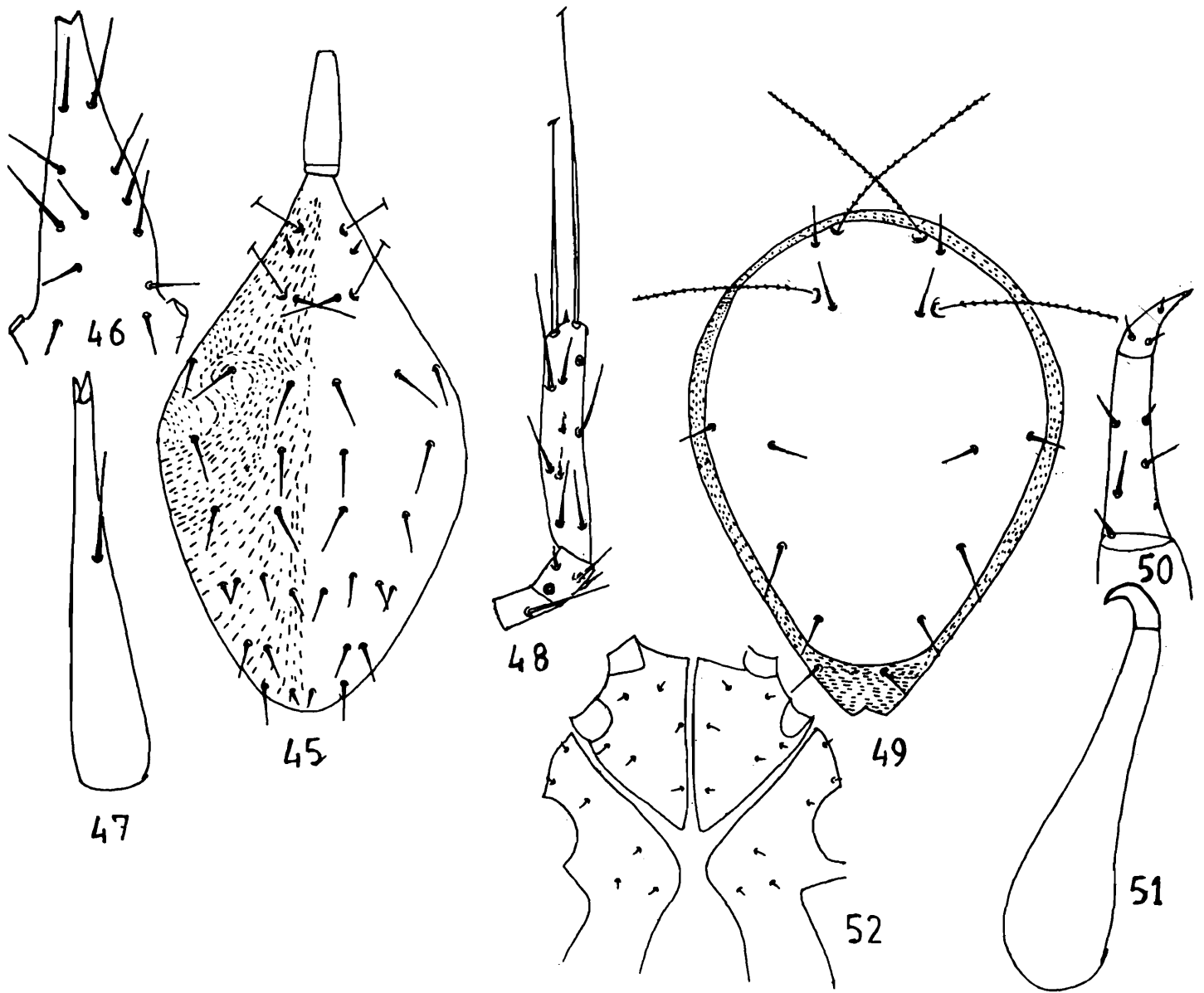
(Figs 49-52)

*Female :* Palp 3 segmented, 85 long, as long as hypostome. Chaetotaxy of palpus ; trochanter= nil, femur- 1 anterior dorsal, 2 outer lateral, 2 inner lateral ; tibiotarsus - 1 outer lateral, 1 inner lateral, 1 distal. Chelicera elongate, attenuate distally, broad at base, extending upto the base of tibiotarsus, dorsally striated. Fixed digit of chelicera absent, movable digit pointed, curved. Gnathosoma attenuate distally, broadest at base with 1 pair of marginal setae. Dorsum covered with single shield, anterior portion with 2 pairs of finely branched sensory setae and 2 pairs of simple setae ; posterior portion with setae L1, D1 - D3. Ventrally anterior portion divided medially into 2 distinct plates, anterior portion with



Figs. 39-41 : *Bdella khasyana* sp. nov. (Female). 39-dorsal aspect; 40-chelicera ; 41- palp.

Figs. 42-44 : *Bdelodes manipurensis* sp. nov. (Female). 42-dorsal aspect; 43-ventral aspect of gnathosoma; 44-palp.



Figs. 45-48 : *Bdellodes grandiflora* sp. nov. (Female). 45- dorsal aspect; 46- ventral aspect of gnathosoma; 47- chelicera; 48- palp

Figs. 49-52 : *Neocunaxoides cerasoides* sp. nov. (Female). 49- dorsal aspect ; 50- palp ; 51- chelicera ; 52- anterior ventral aspect.

coxae I and II posterior portion with coxae III and IV. Anteroventral plate with 6 setae ; lateroventral plate also with 6 setae. Leg I and II directed anteriorly, III and IV directed posteriorly. Leg chaetotaxy of basifemur, telofemur, genu tibia and tarsus.

	Basi femur	Telo femur	Genu	Tibia	Tarsus
I	2	4	6	9	15
II	3	3	7	7	18
III	3	3	6	5	14
IV	1	2	7	5	10 + 1 trichoboth

Tarsi I-IV with 2 claws and empodium with 4 raylets. Body 321 long, 229 wide.

*Male* : Unknown

**HOLOTYPE**: Female, INDIA : Assam, Badarpur, ex *Polyalthia cerasoides*, 7. xii. 1983.

*Remarks* : This species differs from *N. pradhani* Gupta & Ghosh (1980) in chaetotaxy of palp and leg.

### Genus *Cunaxa* V. Heyden

#### 21. *Cunaxa crista* sp. nov. (Figs 53-55)

*Female* : Palp 5 segmented, 113 long, as long as hypostome. Chaetotaxy of palp : trochanter-nil, basifemur - 1 outerlateral, telofemur - 1 outerlateral, genu- innerlateral, 1 outerlateral, tibiotarsus- 1 innerlateral and 1 distal. Chelicera attenuate, extending almost upto palp tibiotarsus. Fixed digit of chelicera absent, movable digit curved. Gnathosoma subtriangular, attenuate distally. Propodosoma with very indistinct sclerotized shield with 2 pairs of finely branched sensory setae. Hysterosoma without shield, indistinctly striated with seta L 1 and D 1-D5 .... Coxa II and I contiguous ; coxae III and IV also contiguous; leg I and II directed anteriorly, III and IV directed posteriorly. Leg chaetotaxy:

	Basi femur	Telo femur	Genu	Tibia	Tarsus
I	2	1	4	5	14 + 2 solenidia
II	2	2	5	5	15 + 1 Solenidion
III	1	2	5	5	14
IV	1	2	4	3 + 1 trichoboth	7

Tarsus I-IV with 2 claws and with rayed empodium. Body 392 long, 158 wide.

*Male* : Unknown

HOLOTYPE: Female, INDIA : Arunachal Pradesh, Likabali, ex *Caesalpinia crista*, 7.x.1981.

*Remarks* : This new species is close to *C. bambusae* Gupta & Ghosh (1980) from which it differs in chaetotaxy of palp and legs.

22. *Cunaxa curassavica* sp. nov.  
(Figs. 56-57)

*Female* : Palp 174 long, much longer than hypostome. Chaetotaxy of palpus : trochanter- O, basifemur- 1 outerlateral, telofemur- 1 dorsal seta placed laterally, 1 ventrolateral spine, genu- 1 outerlateral, 1 innerlateral, 1 antero dorsal and 1 process at the basal innerlateral position as figured ; tibiotarsus with 1 medially placed innerlateral spine, 1 basally placed innerlateral spine, 1 medio dorsal, 1 outerlateral and 1 distal ; the latter 4 setae all simple. Chelicera attenuate distally, 3 pairs of marginal setae, the basal pair being the longest. Propodosoma with shield having 2 pairs of short simple setae and 2 pairs of long sensory strae. Hysterosoma striated without shield having setae LI, D1-D5. Chaetotaxy of legs :

	Basi femur	Telo femur	Genu	Tibia	Tarsus
I	1	4	7	7 + 1 Sol.	14 + 1 tricho. + 1 Sol.
II	2	4	6	6	13 + 1 Sol.
III	3	4	5	5	10
IV	1	4	5	2 + 1 trichoboth	9 + 1 trichoboth

Leg I-IV with 2 claws. Body gnathosoma 490 long, 325 wide.

*Male* : Unknown

**HOLOTYPE:** Female, INDIA : Arunachal Pradesh, Itanagar, ex *Asclepias curassavica*, 3. xi. 1981.

*Remarks:* This species is close to *C. Setirostris* (Hermann, 1804) but differs in chaetotaxy of palp.

### 23. *Cunaxa setirostris* (Hermann)

1804. *Cunaxa setirostris* Hermann, *Apteologique*, p. 60-62.

*Material examined:* 1 Female, Arunachal Pradesh, Keying, ex *Eugenia* sp., 20. xi. 1981.

*Remarks:* Formerly, it was known from soil (Singh & Mukherjee, 1971), Andaman Isls. (Gupta & Ghosh, 1980) while outside India it is known to be a cosmopolitan species.

### 24. *Cunaxa bambusae* Gupta & Ghosh

1980. *Cunaxa bambusae* Gupta & Ghosh, *Rec. zool. Surv. India*, 77 : 198-199.

*Material examined:* 1 Female, Arunachal Pradesh, Likabali, ex *Combretum decandrum*, 17. x. 1981.

*Remarks:* It was known earlier from Andaman Nicobar Isls. (Gupta & Ghosh, 1980).

### 25. *Cunaxa capreolus* (Berlese)

1890. *Scirus capreolus* Berlese, *Acari, Myriopoda et Scorpiones hucusque in Italia reperta*, Fasc. 57, No. 9.

*Material examined:* This mite was seen associated with *Tetranychus neocaledonicus* and might be feeding on it as the gut content of that species was reddish. In India, it was earlier reported from nests (Gupta & Paul, 1985) and outside India it is known from U.S.A.

### Family TYDEIDAE Kärner, 1877

#### Key to the genera and species of TYDEIDAE occurring in northeast India

1. With hysterosomal setae L2 in normal lateral position ..... 2  
 With hysterosomal setae L2 in dorsal position, femora III and IV each with a prominent forked seta ..... *Parapronematus ferox* sp. nov.
2. Dorsal striae forming reticulate pattern ..... *Lorryia stricta* sp. nov.  
 Dorsal striae forming no reticulate pattern ..... *Tydeus*



26. *Parapronematus ferox* sp. nov.  
(Figs. 58-63)

*Female* : Gnathosoma visible from above. Palpal setal formula : 5, 1, 2 ; distal segment long and slender with 3 short, thick may be barbed setae placed anteriorly the other two placed little below the level, other segments as figured. Propodosomal striation indistinct, even under high magnification, P2 missing, P1 placed posteriorly between sensory setae. Setae stout, barbed ; sensory seta-49, P1-24. Striation pattern on hysterosoma very much indistinct. First and second rows of hysterosomal setae similar to propodosomal setae, third and fourth rows much longer, weakly barbed. Ventrally genital area as figured. Leg chaetotaxy as for genus. Tibia and tarsus I subequal. Solenidion short, slender placed little ahead of the midpoint of the segment, tibia with 2 pairs of setae and a solenidion which is very short and anteriorly placed ; other leg setae pilose. Femur III and IV each with long Y-shaped setae. Length of body excluding gnathosoma 266, width 156.

*Male* : Unknown.

HOLOTYPE: Female, INDIA : Arunachal Pradesh Miao, ex *Rubus ferox*, 10. i. 1983.

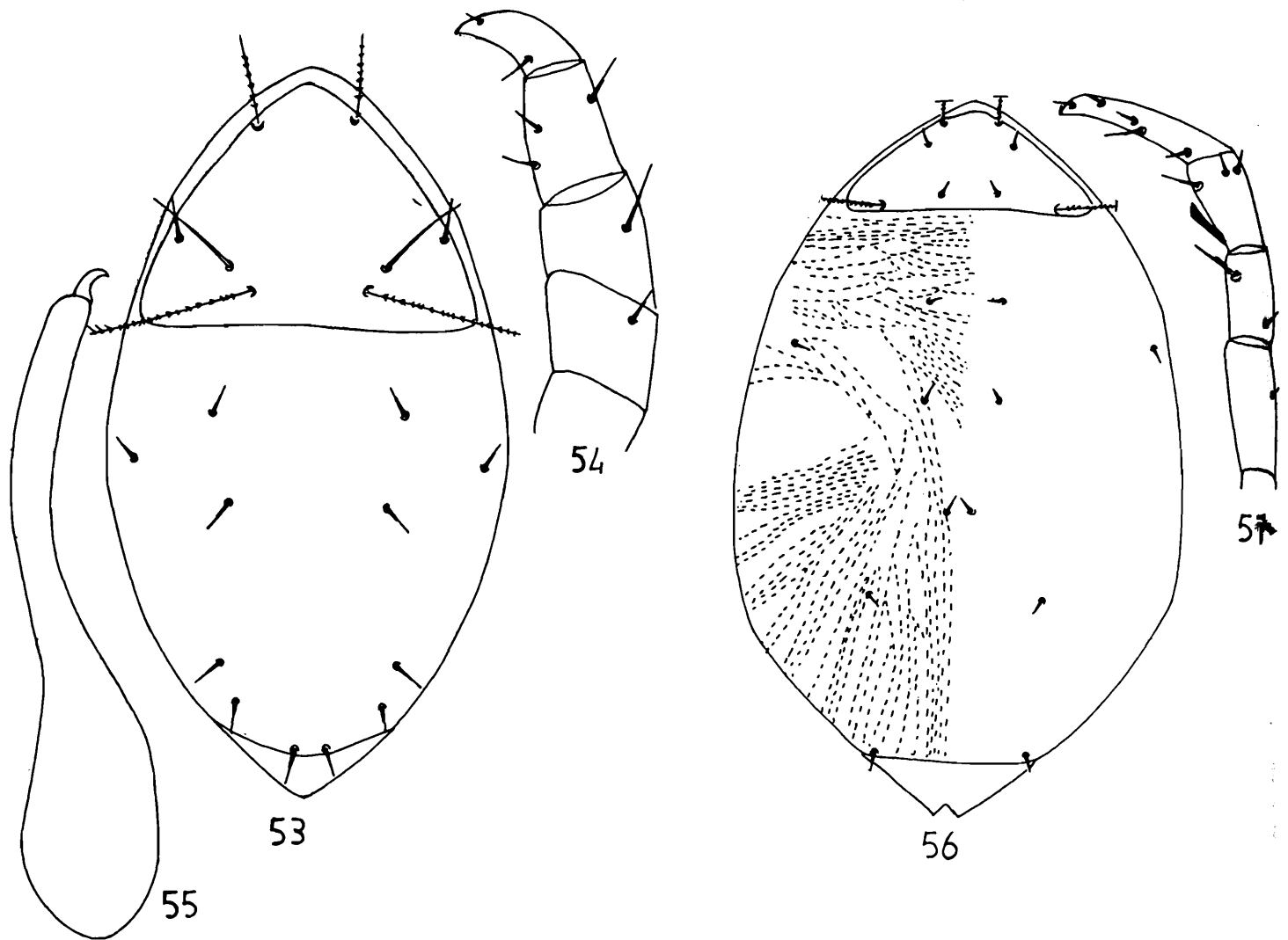
*Remarks* : This species is close to *P. acaciae* Baker (1965) but differs from it in having forked seta one and half times as long as segment ; tibial solenidion not being rounded, in tibial setal pattern and in relative length of posterior hysterosomal setae.

27. *Lorryia stricta* sp. nov.  
(Figs 64-67)

*Female* : Gnathosoma distinct. Distal palpal segment longer than broad. Body outline irregular, indented all along but more prominent anteriorly and posteriorly. Palp setal formula 5, 1, 2. Reticulation of propodosoma as illustrated. Propodosoma with a pair of sensory setae almost touching the base of D1, in addition to 3 pairs of propodosomal setae, P3-44, P2-27, P1-26, all strong and curved, S1-45. Hysterosoma with L1 in normal lateral position. D1-31, D2-26, D3-26, D4-24, L1-26, L2-29, L3-27, L4-24, L5-20. Tips of hysterosomal reticulation as indicated. A short strip between D1 and D2 without reticulation. All empodia with strong claws. Tarsus I with simple seta and rod-like solenidion. Tarsus with dorsal longitudinal striation. Ventrally 5 pairs of genitals; 4 pairs of paragenitals and 1 pair of anal setae present. Leg setal formula :

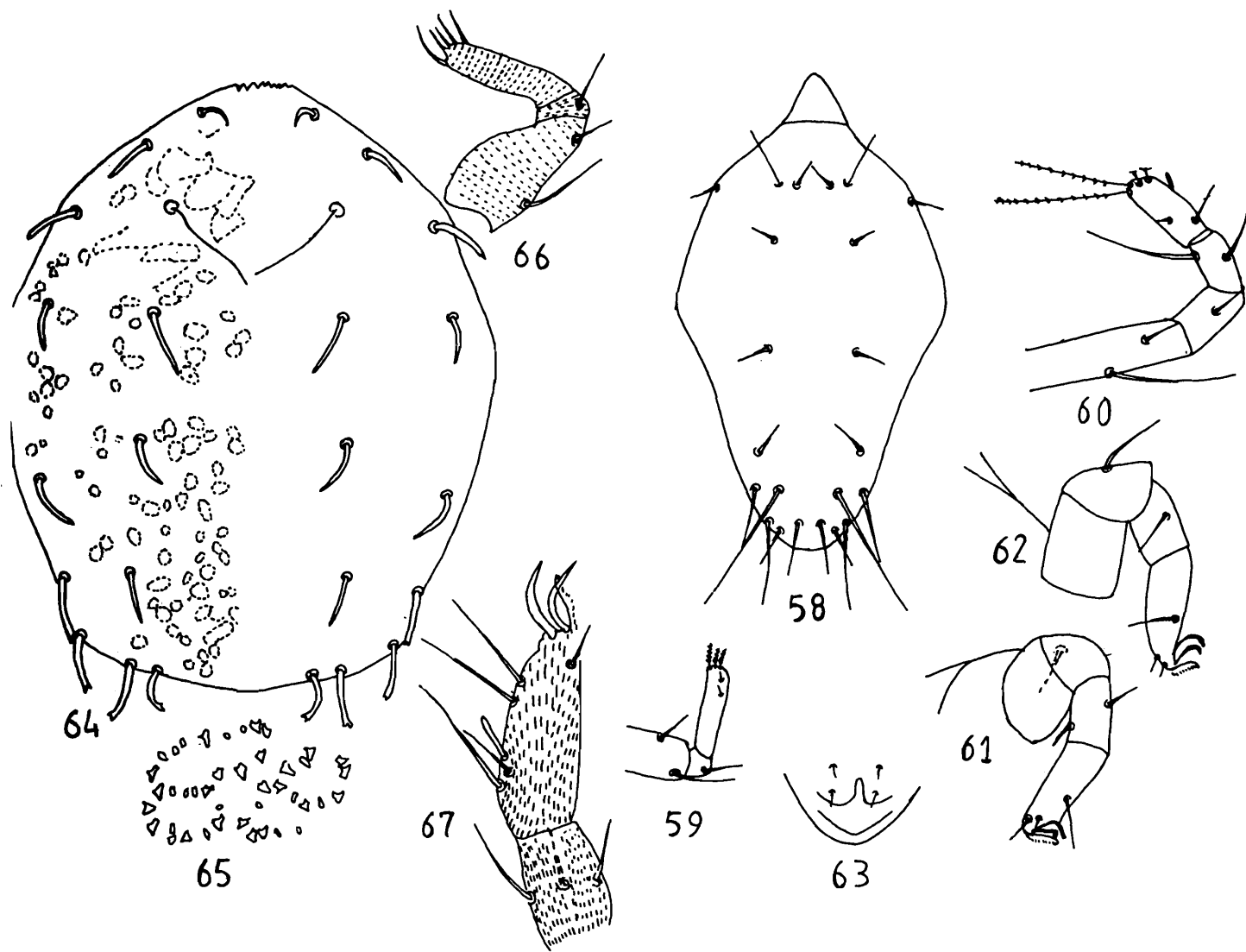
I	8, 3, 3, 2, 1, ?
II	6, 2, 2, 3, 0, ?
III	5, 2, 1, 2, 1, ?
IV	5, 2, 1, 1, 0, ?

*Male* : Unknown.



Figs. 53-55 : *Cunaxa crista* sp. nov. (Female) 53- dorsal aspect; 54-palp; 55-chelicera.

Figs. 56-57 : *Cunaxa currasavica* sp. nov. (Female). 56-dorsal aspect; 57-palp.



Figs. 58-63 : *Parapronematus ferox* sp. nov. (Female). 58- dorsal aspect; 59-palp; 60-leg I; 61- leg III; 62- leg IV; 63-genital region.

Figs. 64-67 : *Lorryia stricta* sp. nov. (Female). 64- dorsal aspect; 65- ornamentation pattern of dorsum ; 66-palp ; 67- tibia and tarsus of leg I.

HOLOTYPE: Female, INDIA : Nagaland, Botsa ex *Erythrina stricta*, 26. i. 1983.

*Remarks* : This new species is close to *L. formosa* Cooreman (1958) but differs from it in striation pattern of dorsum, in shape of dorsal idiosomal setae and in palp chaetotaxy.

### 28. Tydeus sp.

*Material examined* : 1 Female, Meghalaya, Rongjeng Reserved Forest, ex Magnolia champa, 1. x. 1988.

*Remarks* : Because of being in badly damaged condition, the specific identity could not be determined.

### Family CHEYLETIDAE Leach, 1814

Key to the general and species of CHEYLETIDAE occur in northeast India

1. Eyes not evident, setae on the margins of dorsal shield acicular.....*Cheyletus*  
 Omega of tarsus I distinctly expanded towards its base, usually with 1 tooth at the base of pedipalpal claw.....*C. malaccensis*  
 Eyes present (one paired), dorsal body setae fan like.....  
 .....*Hemicheyletia, H. indica* sp. nov.

### Genus Cheyletus Latreille

#### 29. Cheyletus malaccensis Oudemans

1930. *Cheyleus malaccensis* Oudemans, *Ent. Ber. Ned. Ver.*, 1(12). 84.

*Material examined* : 1 Female, Meghalaya, Rongjeng, ex paddy, 2. x. 1988.

*Remarks* : This mite was collected from a colony of *Schizotetranychus andropogoni* infesting paddy. However, no feeding was observed. This mite was earlier known from U.K., Portugal, Czechoslovakia, Germany, Iran, Turkey, U.S.A., U.S.S.R., Australia (Hughes, 1976) and from India it was reported from house dust (Gupta & Datta Ray, 1975).

### Genus Hemicheyletia Volgin

#### 30. Hemicheyletia indica sp. nov.

(Figs 68-70)

*Female* : Palp claw with 7-8 teeth. Stylophore cone-shaped. Both outer and inner comb with 7 setae. Tegmen covered with microtubercles of same size. Eyes large, protuberant.

Peritreme curved. Dorsal setae 15 pairs in addition to humerals ; marginal setae elongate, spatulate with 5 ribs ; 2 pairs of propodosomal and 4 pairs of hysterosomal setae, highly modifeid and stag-horn like, those on hysterosoma slightly wider than those on propodosoma. These specialised setae look cluster of irregularly shaped sclerotic particles. Tarsus I as figured. Solenidion on tarsus I much longer than guard seta.

*Male* : Unknown.

HOLOTYPE: Female, INDIA : Arunachal Pradesh, Miao, ex *Pavetta indica*, 10.i.1983.

*Remarks*: This new species is similar to *H. wellsi* (Baker, 1949) but differs in dorsal setal structure and in chaetotaxy of leg I.

#### Family ANYSTIDAE Oudemans, 1902

Key to the genera and species of ANYSTIDAE occur in northeast India

1. Prodorsal shield absent.....*Walzia*  
 Prodorsal shield present ..... *Anystis nagalandensis* sp. nov.

#### Genus *Anystis* V. Heyden

#### 31. *Anystis nagalandensis* sp. nov. (Figs. 71-77)

*Female* : Gnathosoma : Palp tibia with 3 claws, 2 almost of same length and the other one smaller ; palp tarsus bears at least 14-15 long thick setae and a short spine. Chelicera broad basally and gradually narrowed down disatally; movable chela hooklike. Each chelicera with 8 setae (2 dorsally, 6 ventrally).

*Legs* : Legs radiate from the body and the coxae are grouped together. All the legs are profusely covered with setae. Tarsi with combed claw, middle hairs are longer than those at the ends.

*Dorsum* : Naso on anterior margin of idiosoma bearing a pair of sensilla. Propodosomal shield trapezoidal bearing 3 pairs of setae. Two pairs of eyes present laterally, placed little posterior from 3rd coxal bases. Area between naso and propodosomal plate transversely striated. Apart from the 3 pairs of setae, there are other 6 pairs of long setae present on dorsum, all being setose.

*Venter* : The setae on genital plate as figured.

HOLOTYPE Female INDIA : Nagaland, Botsa, ex fern, 30. xi. 1985.

*Remarks* : This species is close to *Anystis baccarum* Linnaeus 1958 but differs in shape of prodorsal shield and in having very small spine on palp. From *A. salicinus* (Linn. 1758; as figured by Smith Meyer, 1987) in lacking ornamentation on prodorsal shield.

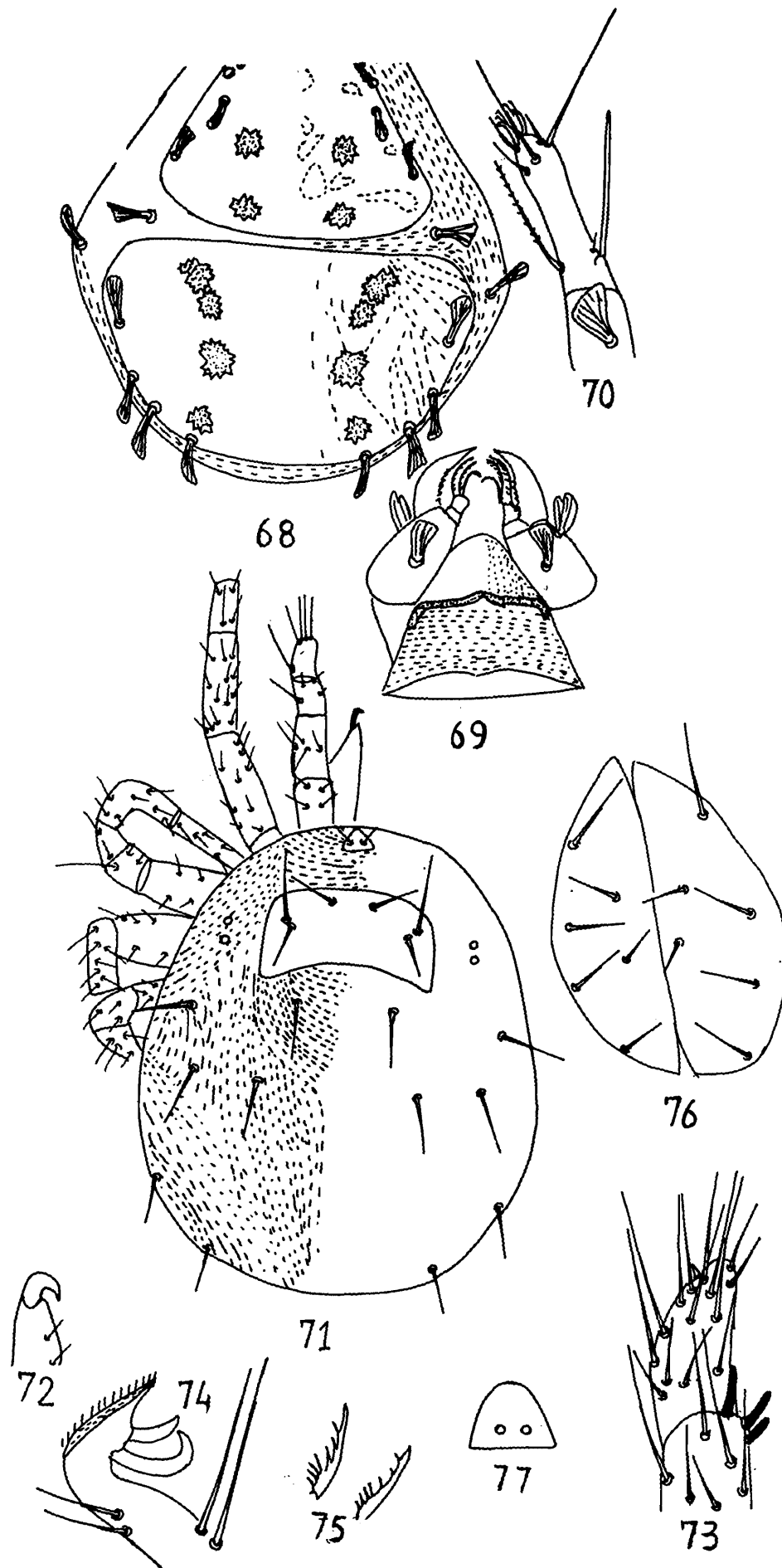


Fig. 68-70 : *Hemicheyletia indiaca* sp. nov. (Female). 68- dorsal aspect; 69- gnathosoma; 70- tibia and tarsus of leg I.

Figs. 71-77 : *Anystis nagalandensis* sp. nov. (Female). 71-dorsal aspect; 72- chelicera; 73- tibial and tarsal segments of palp; 74- tarsal appendages of leg; 75- claw; 76- annogenital area; 77- Naso.

Genus *Walzia* Oudemans

32. *Walzia* sp.

*Material examined* : 1 Female, Meghalaya, Rongjeng, ex palm, 30. ix. 1988.

*Remarks* : The species identity could not be ascertained due to lack of adequate information.

Family CALIGONELLIDAE Grandjean, 1944

Genus *Molothrognathus* Summers & Schlinger

33. *Molothrognathus* sp.

*Material examined* : 1 Female, Tripura, Agartala, ex bamboo, 12. xii. 1983.

*Remarks* : Because of being in badly damaged condition, the specific identity could not be determined.

Family EUPODIDAE Koch, 1842

Genus *Eupodes*

34. *Eupodes* sp.

*Material examined* : 1 Female, Meghalaya, Songsok, ex mango, 27. ix. 1988. 1 Female, Tripura, Agartala, ex palm, 12. xii. 1983.

SUMMARY

A total of 34 species of predatory prostigmatid mites are reported from various parts of northeast India. These include 21 new species, 9 under Stigmaeidae, 5 under Bdellidae, 3 under Cunaxidae, 2 under Tydeidae and 1 each under Cheyletidae and Anystidae and all these are described and illustrated here. In addition, 2 species and 5 genera are also recorded here for the first time from India. Keys to all taxonomic categories are provided.

ACKNOWLEDGEMENTS

The author is thankful to the Director, Zoological Survey of India, for the facilities and encouragements.

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