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【Research report】

台灣革瑪亞目之分類研究 (瑪蜱亞綱：無氣門目) (I)【研究報告】

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Abstract

摘要

革瑪亞目是瑪蜱亞綱中種類最多之一群；全世界之記錄約有134科700屬。本亞目之種類體形小型至中型，其大小約為300-1200 u之間，外骨骼甚發達，多呈革質；其生活習性相當複雜，多生活於土中，落葉，腐植質，動物的糞便，貯藏食品及生植物體之根莖及葉上。整個生活史可分為6個時期：卵→幼瑪→前若瑪→第二若瑪→後若瑪→成瑪。在早期由於其體形細小，加上生活之特性，故一直被生物學家所忽略。最近幾年來，瑪類學家已發現本亞目之種類對人類有甚密切之關係，故研究已趨活躍。 本亞目之瑪類與人類之直接及間接關係概略的可分為五種：(一)由於其生活於土壤中，腐植質及枯枝落葉，故能分解上述之有機物質而影響土壤之理化性質；(二)由其棲群密度及不同種類之出現之結果可推測土壤之物理性質；(三)已發現為Catenotaeniidae及Anoplocephalidae二科條蟲之中間寄主，這些條蟲除能為害畜動物外並能為害人類；(四)能為害植物體，有不少種已證明能為害馬鈴薯、草莓、鬱金香、柑桔及洋菇、木耳等之根、莖葉；(五)捕食性，能捕食粉瑪，筆者亦發現彼等亦能捕食薊馬之幼蟲及粉蝨之蛹；(六)寄生性，寄生於膜翅目Polynotus zosini 在系統分類學上，本亞目大致可分為高等革瑪及低等革瑪類： 高等革瑪分為翼背板團(Pterogasterina)，本團之革瑪共分為六總科28科259屬。另一為缺翼背皮團(Apt erogasterina)共有19總科68科344屬。 低等革瑪類共有19總科38科111屬。 本文共敘述多年來在台灣所發現28科56屬76種，其中58種為新種，14屬為新屬。文中對所有種類均予以詳細載述。

Key words:
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Chinese J. Entomol. 2(1):53–106 (1982)

TAXONOMICAL STUDY OF ORIBATID MITES FROM TAIWAN (ACARINA: ASTIGMATA) (I)[1]

Yi-Hsiung Tseng[2]

ABSTRACT

This study treats 76 species, in which 58 species and 14 genera are described as new. The species are arranged in 28 families and 56 genera.

The oribatid or cryptostigmatid mites are cosmopolitan group of more than 6500 species relegated to approximate 700 genera and 134 families. The body length of most oribatid species ranges 300-1200 μ. The oribatid mites are darkly coloured and covered with a rigid exoskelecton. The life cycle consists of egg, larva, protonymph, tritonymph, deutonymph and adult. These mites are best known as inhabitants of litter and upper soil strata, their small size and shunning of light caused them to receive little attention for many years. In recently studies of soil fauna, it has been shown that is an economic importance for human, i.e. many species feed on surface plant detritus, and may therefore play a major role in maintaining the fertility of soils; they could become an indicator of soil physical and chemical characters. Some species have also been shown to act as vectors of various tapeworms; they feed almost exclusively on tyroglyphid mites and attack the parasitic hymenopteran, *Polynotus zosini;* and several species are associated with plant, they have been reported to damage the leaf, the foot and the stem of potato, strawberry, turlip, citrus and mushroom.

Systematic studies of these mites are scarcely found in Taiwan. The present paper deals with 76 species, 56 genera in 28 families, among them, 58 species and 14 genera are described as new. The author hopes that this study constitutes an example to show that the wealth of fascinating information could be gained and also hopes that this finding might be useful for elucidating the taxonomy of oribatid mites in Taiwan.

The nomenclature for propodosoma and hysterosema used in the present paper is based on Balogh (1972). The technique and method for this study were followed Lions (1974) modified by the author.

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SYSTEMATIC ARRANGEMENT

Arthoronota

Hypochthonoidea Balogh

Hypochthonoidae Berlese

Eohypochthonius Jacot

1. *gracilis* Jacot

Holonota

Lohmannoidea Grandjean

Lohmanniidae Berlese

Mixacarus Balogh

2. *sublestus* n. sp.

Vigilomicrozetes n.g.

3. *puchellus* n. sp.

Epilohamannoidea Grandjean

Epilohamannidae Oudemans

Epilohamannia Berlese

4. *taiwanica* n. sp.

Nothroidea Grandjean

Camisidae Oudemans

Globonothrus n. g.

5. *limbulatus* n. sp.

Trimalaconothrus Berlese

6. *albulus* Hammer

7. *granulatus* n. sp.

Linothrus

8. *perinfamis* n. sp.

Trhypochthoniidae

Albonothrus n. g.

9. *multisulcatus* n. sp.

Brachypylina

Apterogasterina-Gymnonota

Nanhermannoidea Balogh

Nanhermanniidae Sellnick

Cythermannia Balogh

10. *formosana* n. sp.

11. *bicornicula* n. sp.

Oligotricha

Belboidea Dubinin

Belboidae Dubinin

Belb Von Heyden

12. *flagelleta* n. sp.

Zetorchestoidea Balogh

Zetorchestidae Micheal

Zetorchestes Berlese

13. *saltator* Oudemans

Eremuloidea Grandjean

Eremulidae Grandjean

Eremulus Berlese

14. *rimosus* n. sp.

Liacaroidea Balogh

Metrioppidae Balogh

Ceratoppia Hammer

15. *oblectatoria* n. sp.

16. *violabilis* n. sp.

Carabodoidea Dubinin

Tectocepheidae Grandjean

Tegeocranellus Berlese

17. *opcus* n. sp.

Otocepheoidea Grandjean

Otocepheidae

Paradolicheremaeus n. g.

18. *tabulatus* n. sp.

Fissicepheus Balogh et Mahunka

19. *coronarius* Aoki

Dolicheremaeus Jacot

20. *baloghi* Aoki

21. *elongatus* Aoki

Oppoidea Balogh

Oppidae Grandjean

Pseudobrachioppiella n. g.

22. *ramosa* n. sp.

Oppiella Jacot

23. *nova* Oudemans

Branchioppia Hammer

24. *vitrea* n. sp.

Chuoppia n. g.

25. *triramosa* n. sp.

26. *palmaria* n. sp.

Taiwanoppia n. g.

27. *subtropica* n. sp.

28. *papillaris* n. sp.

Quinquoppia n. g.

29. *nobilis* n. sp.

Multioppia Hammer

30. *formosana* n. sp.

Suctobelbidae Grandjean

Suctobelbella Jacot

31. *laiae* n. sp.

Eremella Berlese

32. *induta* Berlese

Thyrisomidae Grandjean

Banksinoma Oudemans

33. *pretiosa* n. sp.

Pterogasterina-Pronota

Oribatuloidea Wooley

Zetomotrichidae Grandjean

Zetomotrichus Grandjean

34. *linearis* n. sp.

Oribatulidae Thor

Pabulozetes n. g.

35. *plumosus* n. sp.

Zygoribatula Berlese

36. *gratiosa* n. sp.

37. *egelida* n. sp.

38. *vegeta* n. sp.

39. *talis* n. sp.

40. *longiporsa* Hammer

Neolucoppia n. g.

41. *luculenta* n. sp.

Oribatula Berlese

42. *nativa* n. sp.

Dometorina Grandjean

43. *taiwanica* n. sp.

44. *crystallina* n. sp.

45. *limpida* n. sp.

Oribaulidae Thor

Muliercula Hammer

46. *chiayiensis* n. sp.

47. *cuticulata* n. sp.

Hammerobates Balogh

48. *elongatus* n. sp.

Ceratozetidae Jacot

Pseudogeminozetes n. g.

49. *obliques* n. sp.

Allozetes Berlese

50. *latus* n. sp.

51. *africanus* Balogh

Humerobates Sellnick

52. *taiwanensis* n. sp.

Paralobozetes n. g.

53. *longirostalis* n. sp.

Baloghobates Hammer

54. *nudus* Hammer

Hypozetes Balogh

55. *rostralis* n. sp.

Falsolobozetes n. g.

56. *laneus* n. sp.

Oribatellidae

Lamellobates Hammer

57. *palustris* Hammer

Paralamellobates Bhaduri and Raychaudhuri

58. *bengalensis* Bhaduri and Raychaudhuri

Scheloribatidae Hammer

Scheloribates Berlese

59. *papillaris* n. sp.

60. *alisanicus* n. sp.

61. *praeincisus* (Berlese)

62. *praeincisus interruptus* Berlese

Tumeremaeus Sellnick

63. *formosanus* n. sp.

Haplozetidae Grandjean

Vilhenabates Balogh

64. *hyalinus* n. sp.

Lauritzenia Hammer

65. *minuta* n. sp.

66. *carneus* n sp.

Peloribates Berlese

67 *longisetosa* n. sp.

68. *pakistanensis* Hammer

Glaberoribates n. g.

69. *urbanlus* n. sp.

Haplozetes Willimann

70. *loongchiensis* n. sp.

Rostrozetes Sellnick

71. *fovelatus* Sellnick

Galumnidae Gradjean

Pergalumna Grandjean

72. *operata* n. sp.

Galumna Heyden

73. *pallida* n. sp.

74. *pyramidalis* n. sp.

Neokalumma n. g.

75. *laiae* n. sp.

Galumnellidae Piffl

Galumnella Berlese

76. *angustiforns* Aoki

Arthoronota

Hypochthonoidea Balogh

Hypochthonoidae Berlese

GENUS *EOHYPOCHTHONIUS* JACOT

Generic Diagnosis. Notogaster parallel side with a single suture, hence divided the notogaster into two parts. 14 pairs of notogaster setae. Epimeral setae formula 2-1-3-4. Genital aperture with a transverse suture, bearing 10 pairs of genital setae. Legs mionodactyle.

Type species. *Hypochthonius gracilis* (Jacot)

1. *Eohypochthonius gracilis* (Jacot)

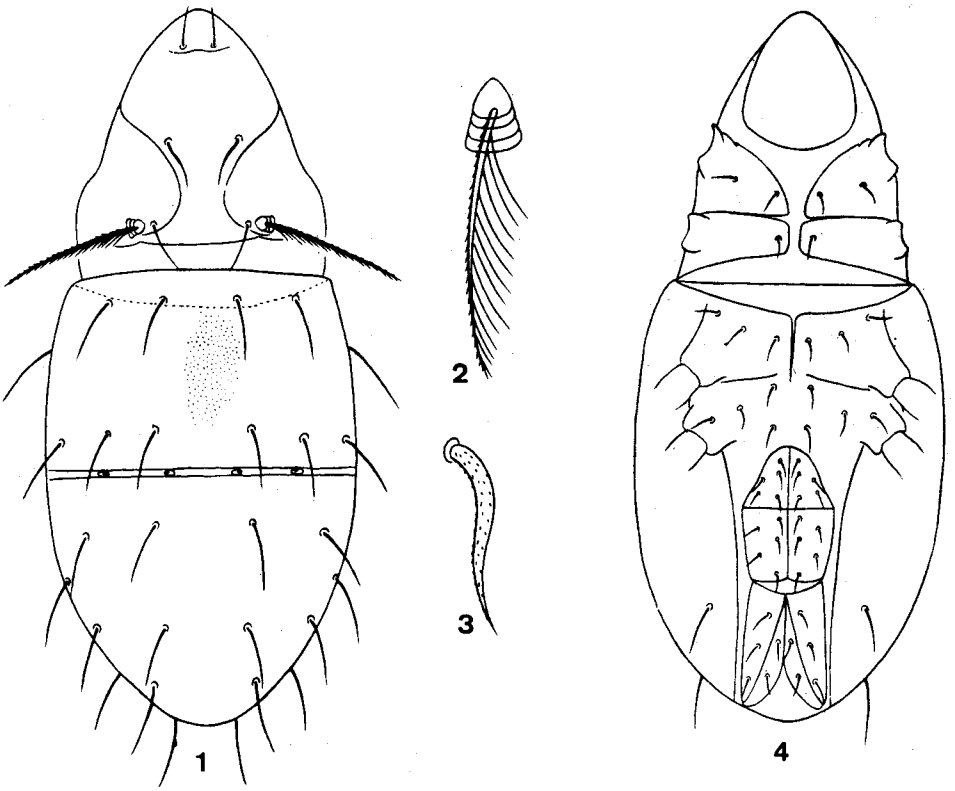
(Figs. 1 - 4)

Body pale brown, elongated and with granular.

Rostral setae, situated dorsal surface of prodorsum, closed together, blade-shaped, almost twice as long as their mutual distance. Lamellar setae stouter than rostral setae, as long as their mutual distance. Interlamellar setae blunt tip, situated interoposterior of bothridium, rather thin and slightly shorter than lamellar setae. Bothridium openning outerior, basket-shaped with 3-4 transverse bands. Pseudostigmatic organ robust, setiform, and with strongly unilateral pectinacted, with minute barbed on opposite.

Notogaster parallel side. 14 pairs of rather long notogasteral setae, stout, lanceolate and in subequal length. A transverse notogasteral suture across the median of notogaster, hence divided the notogaster into 2 subequal large plates, this transverse suture can be found 4 distinctly knobs allied to the sockets of setae.

Apodemata I and II developed, long and converged anterior. Anterior of genital border, with a broadly transverse band, heavily sclerotized, connected with condyles of coxae IV. Integument between apodemata, smooth, pale brown, and the peimeral setae formula 2-1-3-4, Genital aperture



Figs. 1-4. *Eohypochthonius gracilis*
1. Dorsal aspect 2. Pseudostigmatic organ 3. Lamellar setae 4. Ventral aspect

has a tranverse line, divided the genital aperture into 4 plates, each bears 5 genital setae. 3 pairs of adanal setae inserted on adanal plates, 2 pairs of anal setae arising from anal aperture. Anal aperture and genital aperture meeting. Legs monodactyle.

Collection data. ♀, Hualien, 24-VI-1979, ex corn, S. C. Wu.

The specimen collected from Taiwan differs from the type by the shape of interlamellar setae, and with 4 pairs of knob like sockets set on notogasteral suture.

Holonota

Lohmannoidea Grandjean

Lohmanniidae Berlese

Two species of two genera were found in Taiwan.

GENUS *MIXACARUS* BALOGH

Generic diagnosis. Rostral, lamellar, interlamellar, anterior and posterior exopseudostigmatic setae present. Pseudostigmatic organ setiform, pectinate. Notogaster with transverse bands. Genital

aperture bears 10 pairs of genital setae, 4 pairs of adanal setae, 2 pairs of anal setae. Preanal plate present. Legs monodactyle.

Type species. *Mixacarus integer* Balogh.

Key to the known species of the world.

1. Notogaster setae setiform, notogasteral bands at least 4 completely 2
   Notogasteral setae lanceolate, expanded, notogasteral band incompletely..... *hamanni* Balogh
2. Arrangement of genital setae 3-7-7-3 3
   Arrangement of genital setae 4-6-6-4 6
3. Notogaster with 8 notogaster bands, 2 incompletely ..... *sublestus* n. sp.
   Notogaster with 10 notogasteral bands 4
4. Notogaster with 6 incompletely notogasteral bands, S8 interrupted ..... *brevipes* (Banks)
   Notogaster with 5 incompletely notogasteral bands, S8 completely 5
5. Notogasteral setae f1 longer than c1 ..... *exilis* Aoki
   Notogasteral setae f1 half as long as c1 ..... *neotropicus* Balogh
6. Notogaster with 2 incompletely notogasteral bands ..... *integer* Balogh
   Notogaster with only one incompletely notogasteral bands ..... *chapmani* Wallwork

2. *Mixacarus sublestus* n. sp.

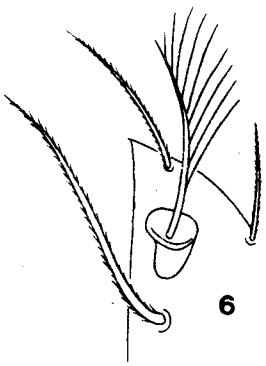
(Figs. 5 - 7)

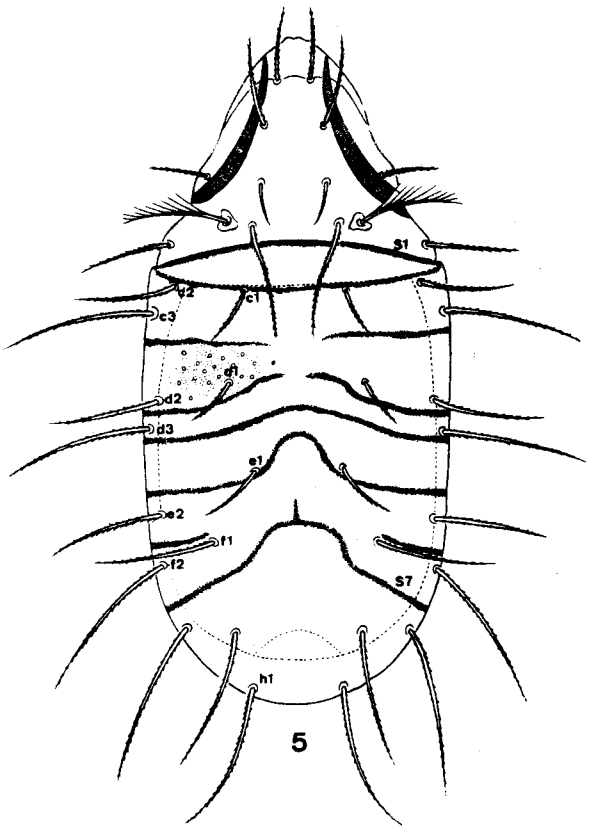
This species can be distinguished by having 8 notogasteral bands, 2 incompletely, f1 as long as c1.

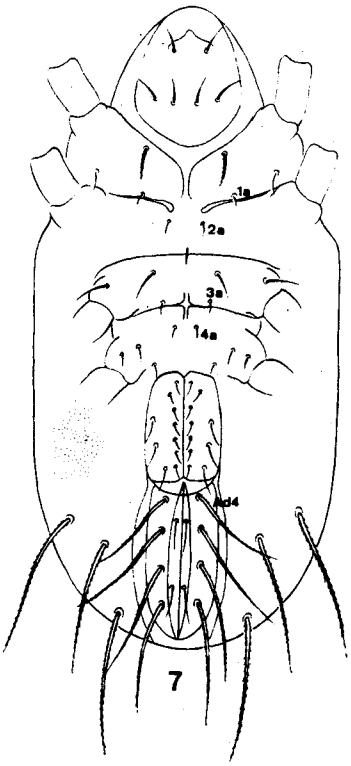
Body rather elongated, paralled side, with fine granules and tinged with sparse round dots.

Prodorsum triangle-shaped, with lateral chitinous ridges from base of prodosum extending to apex of rostrum. Rostrum rounded. Rostral setae stout, barbed, situated on dorsal surface, their length more or less 2.8 times longer than their mutual distance. Just behind the rostral setae, with a transverse ridge across the anterior of prodosum. Lamellar setae stout, barbed and long, almost 1.5 as long as the rostral setae. Interlamellar setae the same as lamellar setae and almost twice as long as the anterior exopseudostigmatic setae. Bothridium openning outerior. Pseudostigmatic organ setiform, with 9 strong branches.

Notogaster parallel side, 8 notogasteral bands present, s1, s2. s5, s6 and s8 complete, s3, s4 and s7 incomplete. Notogasteral setae stout, seta-like, the length ratio of the notogaster setae c1/c2/c3/d2/d3/e1/e2/f1/f2/h1/h2/h3/ps1/ps2/ps3 = 1/1.47/2.35/1/1.7/2.65/1.18/1.94/2/2.76/2.76/2.53/2.53/2.76/2.64/2.76. Apodemata I developed, converged anterior and with inverted Y-shaped sternum extension, apodemata II well developed, not converged anterior, sejugal apodemata developed, converged anerior to form a transverse chitinous band. Apodemata III well developed, not met anterior. A short median sternal bar situated between apodemata III. Apodemata IV developed, converged anterior to form a transverse ridge across the anterior border of genital aperture. Integument between epimeral apodemata smooth, pale brown, epimeral setae formula 3-1-3-4. 1a and 2a subequal length, 1b slight longer than 1a, 1c rather stout, barbed and almost twice as long as 1a, 3c as long as 1a, 3a distinctly shorter than 1a, 3b the same as 3c, 4a, 4b and 4d subequal length, and a little shorter than 1a, 4c more or less as long as 1a. Genital aperture rectangular,







Figs. 5-7. *Mixoacarus sublestus*
5. Dorsal aspect 6. Lateral region of prodorsum 7. Ventral aspect

slightly longer than wide, bearing 10 pairs of setae, arranged in 4 longitudinal row (3-7-7-3). plate present, rather small and triangular. Adanal plates bear 4 pairs of adanal setae, Ad4 distinctly shorter than others, zpairs of anal setal arising from anal plates. Legs monodactyle.

Collection data. Holotype, ♀, Miaoli, 15-III-1981, ex palm, Y. H. Tseng.

GENUS *VIGILOMICROZETES* n.g.

This new genus is differentiated from other known lohmannid genera by having 2 pairs of anal and 2 pairs of adanal setae.

Generic diagnosis. Chelicerae normal. Rostral, lamellar and interlamellar setae present. Bothridium present. Pseudostigmatic organ setiform. 11 pairs of notogasteral setae. Epimeral setae formula 3-3-3-4. Genital aperature bears 9 pairs of genital setae. Preanal plate large, triangular. 2 pairs of adanal setae, 2 pairs of anal setae. Legs tridactylous.

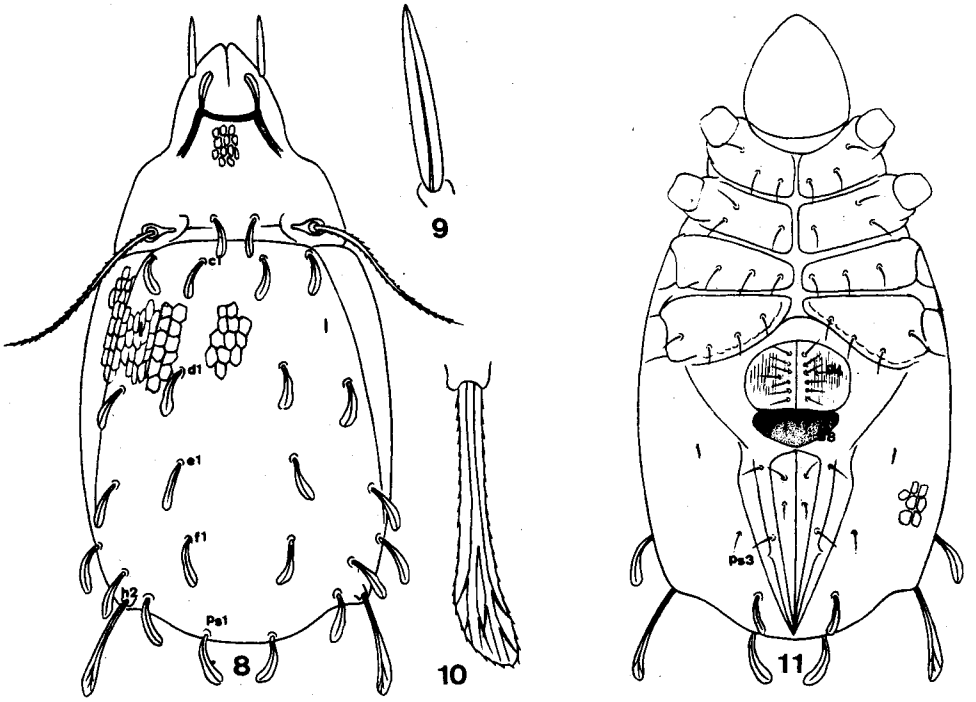
Type species. *Vigilomicrozetes puchellus*

3. *Vigilomicrozetes puchellus* n. sp.
(Figs. 8 - 11)

This is a large species, heavily sclerotized with rather rectangular to oval-shaped reticulation. The tip of rostrum with strongly incised, Rostral setae situated lateral margins of prodorsum, narrow leaf-shaped, with midrib supports on outspreading membrane. Lamellar setae leaf-shaped with serrated margin, arising almost 2/3 from the posterior of prodorsum and set on the chitinous ridge. Interlamellar setae same as lamellars, situated just anterior border of notogaster. Bothridium openning exteroposterior. Pseudostigmatic organ setiform, plumose and tip blunt.

Notogaster with indistinct 4 longitudinal lines, divided notogaster into 5 regions, reticulation on marginal region shown as small and rather long rectangular, reticulation on submarginal region the same as marginals but pale brown, reticulation on dorsocentral rectangular or oval-shaped larger than the marginals or submarginals, 11 pairs of notogaster setae, leaf-shaped, subequal length, except h_2 much longer than others, h_3 with broad midrib supports on outspreading web, margins of web margins of web coarsely barbed, and with capitate apex, short and setiform.

Apodemata developed, converged anterior, epimeral setae formula 3-3-3-4. Genital aperture melon-shaped, wider than long, the plates with finely longitudinal striae, posterior border with heavily chitinous bands. 9 pairs of setae arising from the plates, g1, g2, g3, g5, g6, g7 and g9 arranged in a longitudinal row, g4 and g8 arranged in a longitudinal row, the genital setae formula 2-7-7-2, setae g8 and g9 set on the posterior chitinous band, arranged in a transverse line. Preanal plate large, granular, inverted triangle-shaped. Anal and adanal plates free, 2 pairs of adanal setae, 2 pairs of anal setae, one pair of lateral tubercles on adanal plates near Ad1. Aggenital setae absent, Legs tridactylous.



Figs. 8-11. *Vigilomicrozetes puchellus*
8. Dorsal aspect 9. Rostral setae 10. Setae h2 11. Ventral aspect

Collection data. Holotype, ♀, Wushe, Nantou Hsien, 17-I-1982, ex litter of pine, Y. H. Tseng.

Epilohamannoidea Grandjean

Epilohamannidae Oudemans

One species. *Lohmannia cylindrica* Berlese

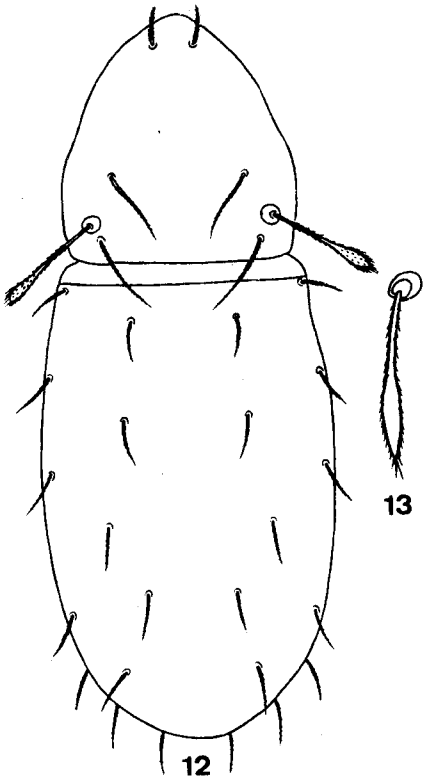
GENUS *EPILOHAMANNIA* BERLESE

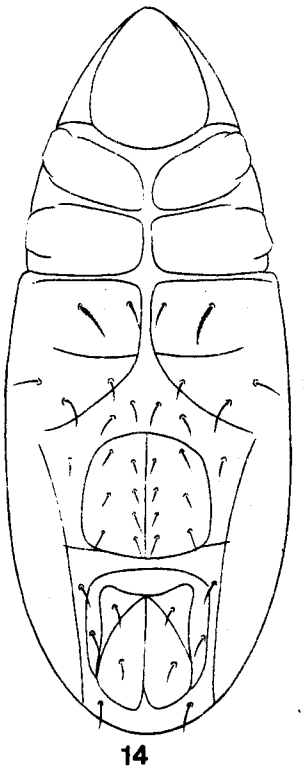
Generic diagnosis. Lamellar, interlamellar, exopseudostigmatic and rostral setae present. Pseudostigmatic organ with swollen head. Genital aperture bears 6-7 pairs of genital setae, posterior of genital with transverse suture.

Type species: .*Lohmannia cylindrica* Berlese

4. *Epilohamannia taiwanica* n. sp.
(Figs. 12 - 14)

This species differs from the others in having the pseudostigmatic organ with expanded apices,





Figs. 12-14: *Epilohamannia taiwanica*
12. Dorsal aspect 13. Pseudostigmatic organ 14. Ventral aspect

pectinated and bifurcated apex. Interlamellar setae arising from posterior border of bothridium.

Body slightly elongated, parallel side and convex posteriorly.

Rostrum narrow rounded, Rostral setae situated dorsal surface of prodorsum, short, stout, plumose and distinctly shorter than their mutual distance. Lamellar setae distinctly shorter than the mutual distance, stout and plumose. Interlamellar setae a little longer than lamellar setae, plumose, situated interoposterior of bothridium. Bothridium openning outerior. Pseudostigmatic organ with swollen head and pectinate.

Notogaster nearly pentagonal, parallel side, straight anterior border, and convex posteriorly 12 pairs of barbed notogasteral setae. Genital aperture rectangular, bearing 7 pairs of genital setae, arranged in 2 longitudinal lines, Arrangement of genital setae 3-4-4-3. Behind the genital aperture with a transverse suture. Anal aperture pentagonal, straight anteriorly and convex posteriorly bearing 2 pairs of anal setae. Adanal plate rounded, surrounding the anal plate, bearing 3 pairs of adanal setae. Legs monodactyle, $\omega 1$ stout and cylinderally, extending to the middle of pretarsus.

Collection data. Holotype, ♀, Hualien, 8-II-1980, ex root of cassava, S. C. Wu.

Nothroidea Grandjean

Five families as Nothridae, Crotoniidae, Camisidae, Trhypochthoniidae and Malaconothridae are included in this superfamily. We have found 3 families 4 genera in Taiwan in the present survey.

Camisidae Oudemans

GENUS *GLOBONOTHRUS* n. g.

This new genus is readily differentiated from other known camisid genera by the shaped of chitinous ridges on the prodorsum, attenuating chelicerae, 7 pairs of submarginal notogasteral setae.

Generic diagnosis. Chelicerae attenuating. Rostral, lamellar, and interlamellar setae present. Pseudostigmatic organ with expanded apex broadly oval shape at tip 7 pairs of marginal notogasteral setae, 2 pairs of anal setae. Legs monodactyle.

Type species. *Globonothrus limbulatus*

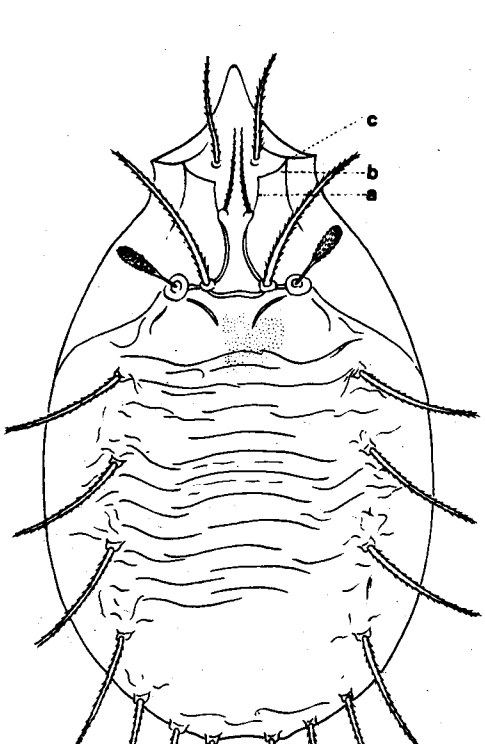
5. *Globonothrus limbulatus* n. sp.
(Figs. 15 - 18)

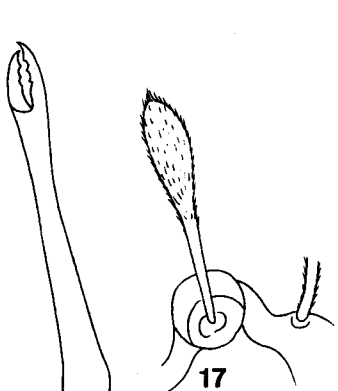
Margins of the prodorsum with 2 pairs of distinctly projections forming the ledder-shaped. Rostrum elongated, pointed tip, with strongly protuberlance. Rostral setae stout and barbed, exceeding to the tip of rostrum, almost 3.8 as long as their mutual distance. Lamellar setae rather thin, finely barbed and closed together. Interlamellar setae stout and barbed. A pair of tapering lamelliform ridges, situated dorsocentral of prodorsum from the anterior border of dorsosejugal suture entered to the middle then outward, and convered with anterolateral chitinous ridges, a pair of sublamelliform ridges converged anterior with lamelliform ridges (shown as figure). Bothridium openning anterior. Pseudostigmatic organ with clavated head and set with setae. Posterior border of bothridium, with 2 pairs of chitinous ridges.

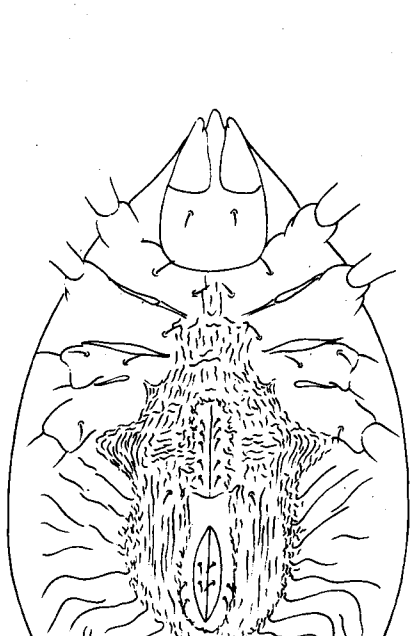
Notogaster flattened. Dorsosejugal suture present, nearly straight. Anterior of notogaster with fine punctates, 10-12 of transverse bands present. 7 pairs of stout, barbed setae situated submarginal regions, the length ratio of m1/m2/m3/m4/m5/m6/m7 = 1/1/1/1/1.1/1.2/0.7. m6 more or less 1.8 as long as m7.

Apodemata broad, well developed, not converged anterior. Epimeral setae formula 2-1-3-1. Genital aperture smooth, elongated, bearing 5 pairs of short setae. One pair of aggenital setae, situated posterior level of genital aperture. Anal aperture olive-shaped, bearing 2 pairs of anal setae, situated anterior half of the aperture. 2 pairs of adanal setae situated posterior half of lateral anal border. Integument of anterior border of genital aperture with rather transverse but irregular short striae. From posterior border of genital aperture to postanal furrow with rather longitudinal, irregular and short striae. Postanal border with semi-circule furrow, lateroposterior of anal border with <-Shaped bands.

Collection data. Holotype, ♀, Lushan, Nantou Hsien, 16-I-1982, ex litter, Y. H. Tseng; paratype, 3 ♀♀, same data as holotype.







Figs. 15-18 *Globonothrus limbulatus*

15. Dorsal aspect
16. Chelicera
17. Lateral region of prodorsum
18. Ventral aspect
a. Lamelliform ridge
b. Sublamelliform ridge
c. Anterolateral ridge

Malaconothridae Berlese

2 genera 3 species have been collected in Taiwan.

GENUS *TRIMALACONOTHRUS* BERLESE

Generic diagnosis. Bothridium and pseudostigmatic organ absent. Rostral, lamellar, interlamellar and exopseudostigmatic setae present. Genital with 4-12 pairs of genital setae. 3 pairs of adanal setae, one pair of anal setae. Legs tridactylous.

Type species. *Walaconothrus* (*Trimalaconothrus*) *indusiantus* Berlese.

6. *Trimalaconothrus albulus* Hammer
(Figs. 19 - 20)

Prodosum with finely granular, strongly concaved posterolateral margins, then anterolateral convex rounded therefore, the prodosum to form a tortosie-head-shape. Rostrum narrowly rouned. Rostral setae situated dorsal surface and distinctly longer than their mutual distance. Lamellar setae removed near the margins of prodorsum, rather stout and barbed, almost as long as their mutual distance. Interlamellar setae thin, setiform. Exopseudostigmatic setae minute, situated close to interlamellar setae.

Anterior of notogaster slightly narrower than posterior margin, filling with fine granules, submarginal and dorsocentral regions tinged with small dots. A pair of indistinctly longitudinal linearising beside c3, extending downward to the posterior margins of notogaster. Notogasteral setae simple with minute barbed, c1, c2, d1 and d2 subequal length, e1 slightly longer than c1, c3, cp and f2 subequal length, about twice as long as c1, h1 equal length to e2, about 3 times longer than e1, h3 long and whip like, more or less twice as long as e2, ps1, ps2 and h2 as long as c3, p2 1.5 longer than p3, ia pori situated behind the setae c2, im situated in front of h1.

Ventral plates with finely granules. Apodemata developed, converging anterior, the epimeral setae formula 2-1-2-2. Granules on the anterior of genital aperture distinctly larger than the posteriors. Genital aperture broader posteriorally, bearing 6 pairs of genital setae, arranged in linear-shaped. One pairs of anal setae, 3 pairs of adanal setae arising from adanal plates. The fissure at the anal field situated close to the border of the anterolateral and parallel to the border, the third adanal setae located behind the anal fissure. Legs tridactylous.

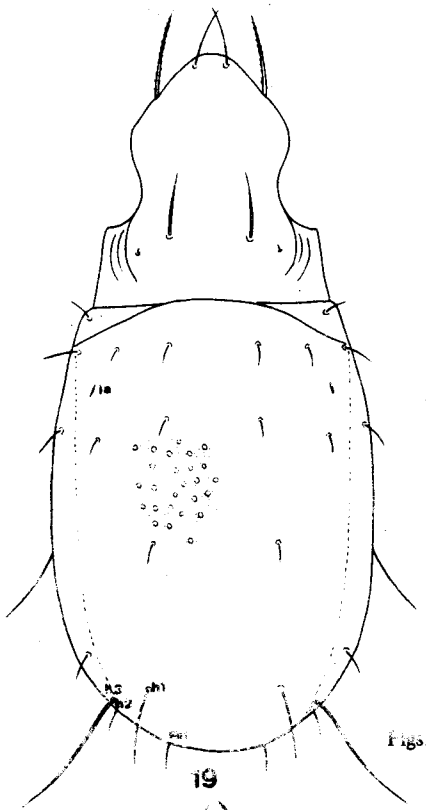
Collection data, ♀, Puli, Nantou Hsien, 28-IX-1981, ex leaf of *Kyllinga borevifolia,* S. S. Wu.

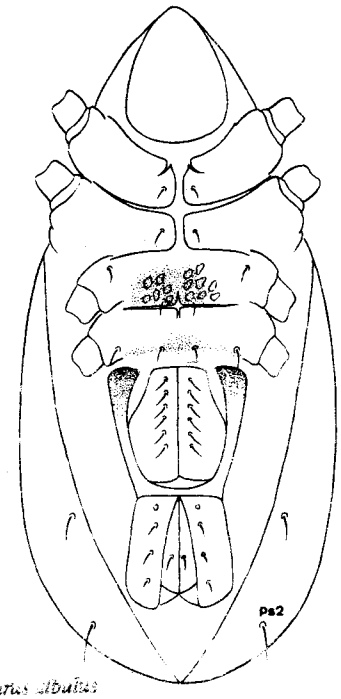
7. *Trimalaconothrus granulatus* n. sp.
(Figs. 21 - 22)

This species is close to *angustrirostrum* Ham. and differs by the notogaster having no round dots, h1, h3 and ps2 long, more or less twice as long as the other setae.

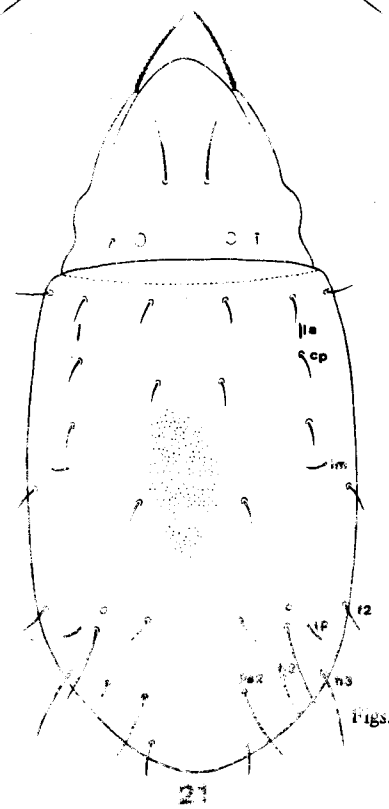
Granular on body distinctly larger than the preceding species, but round dots absent.

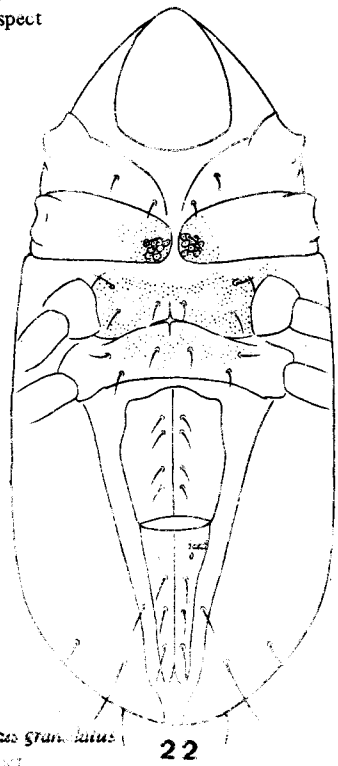
Rostral setae rather long and barbed, situated lateral margins of prodorsum, more or less 1.5 longer than the distance from their base to the tip of rostrum. Exopseudostigmatic setae present,





Figs. 19-20. *Trinematothrips albulus*
19. Dorsal aspect
20. Ventral aspect





Figs. 21-22. *Trinematothrips granulatus*
21. Dorsal aspect
22. Ventral aspect

minute, almost equal distance from their base to the base of interlamellar setae.

Notogaster parallel side, posterior convex. Fissure ia just behind c2, fissure is situated in front of h1, is situated between h1 and f2, pore s1 situated in front of h1. Notogasteral setae subequal length, except h1, h3 and ps2 are almost twice as long as others. Apodemata developed, converged anteriorly, the epimeral setae formula 2-1-3-3. Genital aperture longer than wide, bearing 4 pairs of genital setae, g1 and g2 close together, 3 pairs of adanal setae, arising from adanal plates. Ad1 1.5 length to Ad2, Ad2 and Ad3 subequal length. The fissure at the anal field situated anterior Ad3.

Collection data. Holotype, ♀, Yuching, Tainan Hsien, 23-XII-1980, ex leaf of bracken, Y. H. Tseng.

Trhypochthoniidae

Genus *Linothrus* n. g.

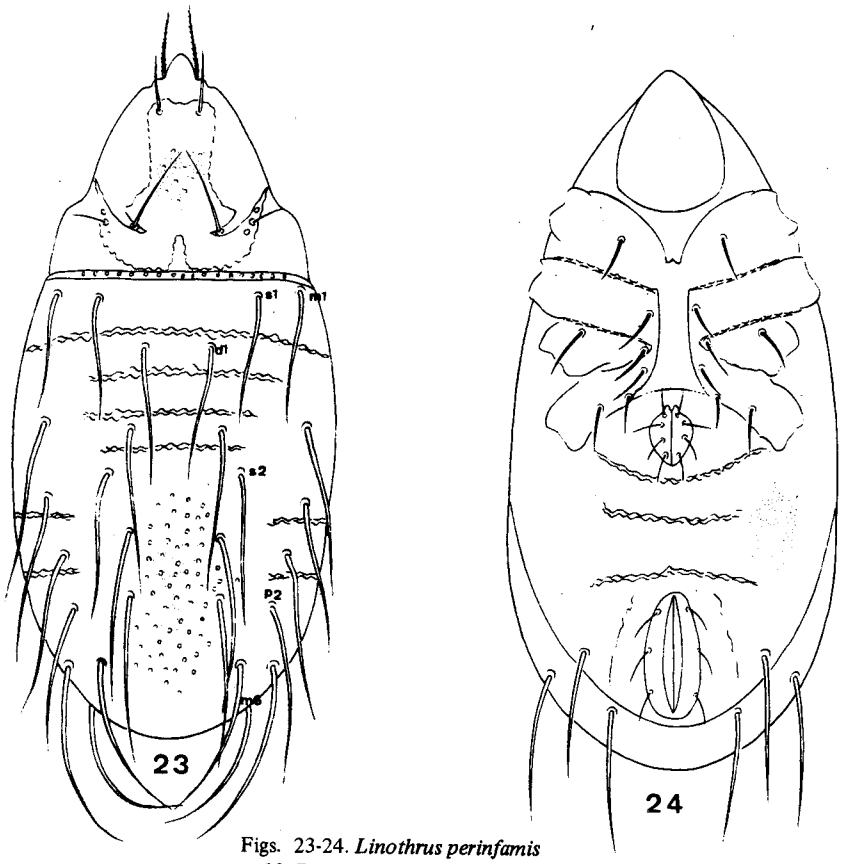
Because of far distance between interlamellar and exopseudostigmatic setae, small genital aperture and well separated with anal aperture were distingushed from the other known genera of the faimily Malaconothridae.

Generic diagnosis. The rostral, lamellar, interlamellar and exopseudostigmatic setae present. Bothridium and pseudostigmatic organ absent. Notogasteral setae long and flagelliform. 4 pairs of genital setae, 3 pairs of adanal setae. Anal and aggenital setae absent. Genital and anal apertures well separated and not converged the entire length of ventral region Legs monodacyle.

8. *Linothrus perinfamis* n. sp.
(Figs. 23 - 24)

Prodorsum triangular. Dorsocentral with chitinous plate shown as in figure. anterior slightly concave, margins of anterior half are rather parallel side, but serrated posterior half broadest, and with horn-like angulations situated on lateral margins, near the lamellar setae. There are strongly incisions, posterior margin with many tooth-shaped processes, the plate with finely granular and with sparse small round dots. The rostrum with hyaline membrane, and tip slight pointed. The rostral setae, barbed and strongly incurved, are situated dorsal surface and arose from strong tubercles. Lamellar setae arising from the propodosal plate, rather short and setiform, are not reach to the base of the rostral setae, an distinctly longer than their mutual distance. The interlamellar setae setiform, almost 1.5 lohger than lamellar setae and about as long as their mutual distance. The lateral angulation of propodosal plate, having 3 pairs of sockets, the middle pair arise the minute setae, naemly exopseudostigmatic setae in present paper.

Notogaster with four transverse furrows. F_1 situated in front of d_1, extending to the lateral of notogaster and nearly interrupted the notogaster. F_2 shorter than F_1, situated behind of d_1. F_3 situated anterior d_2, and about as long as F_2. F_4 situated posterior of d_2, shorter than F_3. Lateral margins with 2 furrow like incisions. Anterolateral one situated posterior of setae m_3, posterolateral



Figs. 23-24. *Linothrus perinfamis*
23. Dorsal aspect 24. Ventral aspect

one located behind the m_4. From posterior of F_4 to the posterior margin, with sparse rounded dots and granulars.

Ventral plates with fine punctates. Apodemata well developed, apodemata I converged anterior, apodemata II well developed, converged with median sternum, apodemata III and sjugal apodemata obliqued, converged their anterior, Epimera III form a triangle-shaped, and sejugal apodemata converging anterior form a transverse ridge across the anterior border of genital aperture. Apodemata IV rather short, connected with anterior genital transverse ridge. Between genital and anal apertures, having 3 transverse furrows, narrow, anterior venteral furrow upward laterally and nearly connected with condyle of coxa IV. Beside the anal aperture, having a pair of longitudinal furrows. Genital aperture brown, small and rounded. The plates with longitudinal striae, bearing 4 pairs of genital setae. 3 apirs of rather long and stout adanal setae inserted the lateral margins of adanal plates. Anal and aggenital setae absent. The distance between genital and anal aperture almost twice of the former and equal length of the latter. Legs monodactyle.

Collection data. Holotype, ♀, Tinzu (h:1,800m), Kaohsiung Hsien, 21-II-1982, ex litter, S. J. Cheng; paratype, 2 ♀♀, same data as holotype.

GENUS *ALBONOTHRUS* n. g.

Similar to *Afronothrus* Wallwork, but differs in having legs monodactyle, 2 pairs of adanal setae and epimeral setae formula 3-2-2-3.

Generic diagnosis. Rostral, lamellar and interlamellar setae present. Pseudostigmatic organ with swollen head. 4 pairs of genital setae, 3 pairs of adanal setae, anal and aggenital setae absent. Legs monodactyle. The epimeral setae formula 3-2-2-3. Notogaster with many distinctly notogasteral bands.

Type species. *Albonothrus multisulcatus*

9. *Albonothrus multisulcatus* n. sp.

(Figs. 25 - 26)

Rostrum rounded. Rostral setae situated on dorsal surface, barbed and almost 1.6 length of their mutual distance, they are more or less twice length from their base to the tip of rostrum. Lamellar setae strongly barbed, equal length of the rostral setae, almost 1.3 longer than their mutual distance. Interlamellar setae long, stout and strongly barbed, almost 1.8 as long as the lamellar setae, also 1.3 longer than their mutual distance. Bothridium openning outerior. Pseudostigmatic organ with oval-shaped head and set minute setae, narrow pedicel with length about 3 times longer than diameter of expanded apex.

Notogaster slightly broader posteriorly, from anterior border of notogaster to posterior of setae d4 with many transverse bands. Posterior of last transverse band, having bee hive-shaped reticulation. Setae d1 and d2 short, rather stout with minute barbed, and in subequal length, d3 stout, strongly barbed, 4 times longer than d1, d4 stout and strongly barbed, almost 5 times longer than d1, s1 rather long, about twice longer than d1, s2 about 3 times longer than d1, m1 and m2 in subequal length, almost as long as d3, m3 whip-like, plumose, more or less 6 times longer than d1, m4 longest and a little longer than m3. 3 pairs of posterior marginal setae rather short, ps2 and ps3 short, in subequal length, half as long as ps1, ps1 equal length to m1.

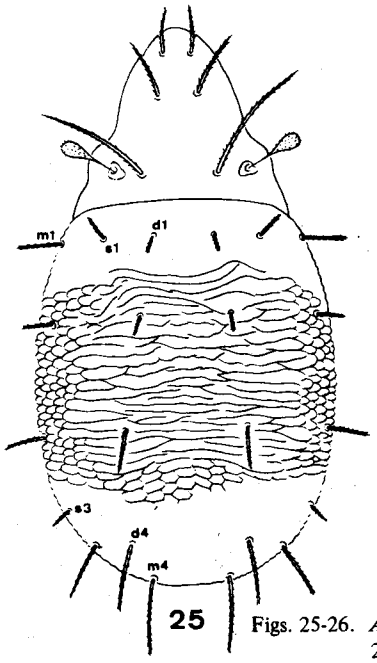
Ventral plates smooth. Apodemata developed, converged anterior, the epimeral setae formula 3-2-2-3. Genital aperture olive-shaped, bearing 4 pairs of genital setae. 3 pairs of adanal setae situated on the adanal plates. Anal and aggenital setae absent. Legs monodactyle.

Collection data. Holotype, ♀, Lysan (h:2100m), Taichung Hsien, 12-VI-1980, ex moss, Y. H. Tseng; paratype, 1 ♀, same data as holotype.

Brachypylina
Apterogasterina-Gymnonota
Nanhermannoidea Balogh
Nanhermanniidae Sellinack

GENUS *CYRTHERMANNIA* BALOGH

Generic diagnosis. Lamellae absent. Lamellar, rostral, interlamellar and exopseudostigmatic



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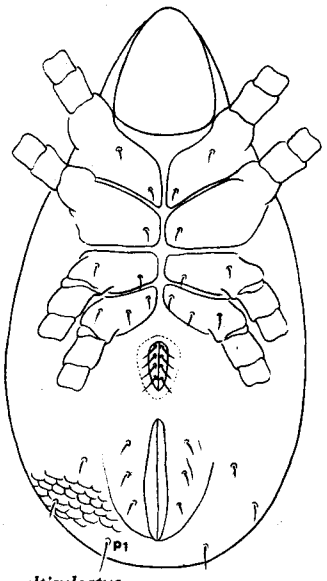

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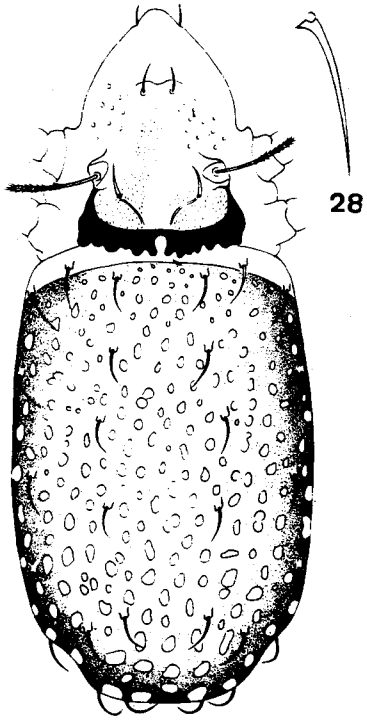
Figs. 25-26. *Albonothrus multisulcatus*
25. Dorsal aspect
26. Ventral aspect



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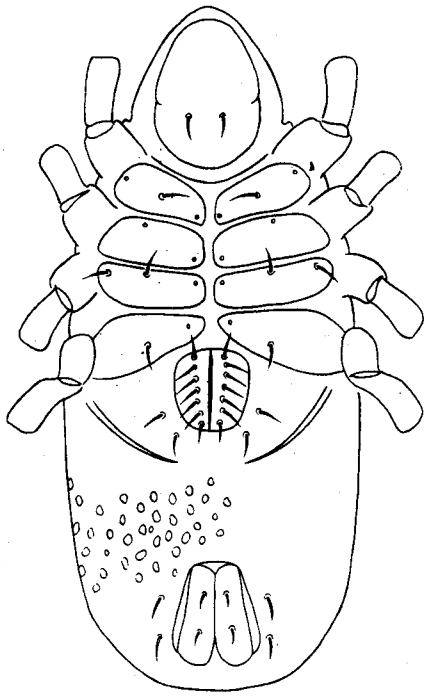

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Figs. 27-29. *Cythermannia formosana*
27. Dorsal aspect 28. Notogasteral setae 29. Ventral aspect

setae present. Pseudostigmatic organ stout. Crest with posterior teeth. 6 pairs of genital setae. Legs monodactyle.

Type species. *Cyrthermannia tuberculata*

10. *Cyrthermannia formosana* n. sp.
(Figs. 27 - 29)

This species is differentiated from other *Cyrthermannia* in having short notogasteral setae. The setae are snorter than half of the intervals between them, and with broadest base but with fine tip. Crests with 7 teeth.

Prodorsum with indistinctly round dots, dorsocentral with fine granules. Rostrum short nose-shaped. Rostral setae stout and unilateral barbed, situated on dorsal surface near nose-shaped base projections, and slightly longer than their mutual distance, also longer than the distance from their base to the rostrum. Lamellar setae short, setiform, and longer than their mutual distance. In front of lamellar setae, with a V-shaped transverse chitinous ridge. Interlamellar setae short, small and broadest base, almost 0.6 as long as their mutual distance. Bothridium openning outerior. Pseudostigmatic organ robust, with strongly pectinated on 1/3 anterior. The rounded ridge behind the pseudostigmatia smooth and slight concave medially. Crests behind of the pseudostigmata with 7 pairs of irregular tubercles, reach to the anterior of notogaster.

Notogaster elongated, more or less 1.5 as long as wide. Parallel side and slightly concaved postero-lateral margin from dordal view, but his concave not shown in ventral. Notogaster heavily sclerotized and with rather rounded dots. Ventral of body with round dots, these are smaller than the dorsals. Apodemata developed, converged anteriorly, a semicircular medially interrupted suture posterior of genital aperture in ventral side. Anal aperture elongated, more or less 1.5 longer than wide. One pair of aggenital setae, 2 pairs of anal seate in subequal length, almost as long as adanal setae.

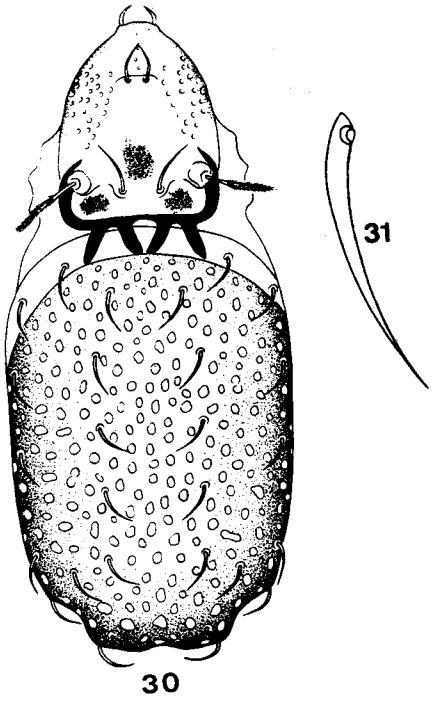
Collection data. Holotype, ♀, Taoyuang, Taoyuang Hsien, 26-X-1981, ex *Galactia tenuiflora*, Y. H. Tseng; paratype, ♀, Miaoli, Miaoli Hsien, 16-III-1981, ex weeds, Y. H. Tseng.

11. *Cyrthermannia bicornicula* n. sp.
(Figs. 30 - 31)

Crests with 2 pairs of long tubercles, are easily distinguished from other known species of *Cyrthermannia*.

Prodorsum with fine punctates.

Rostrum is rounded; rostral setae stout, barbed and strongly incurved. Lamellar setae stout and longer than their mutual distance. Anterior of lamellar setae, with a transverse ridge. Interlamellar setae stout and slightly curved, almost 1.6 longer than their mutual distance. Bothridium openning outerior. Pseudostigmatic organ robust cylinder, with pectinated on 1/3 anterior. Post ridge of prodorsum smooth, crests with 2 pairs of long tubercles, in subequal length, reach to the anterior of notogaster. Notogaster heavily sclerotized, with rounded dots, notogasteral setae rather long and stout, almost longer than 2/3 of intervals between them. Genital with 7 pairs of genital setae, 2 pairs of



Figs. 30-31. *Cythermannia bicornicula*
30. Dorsal aspect 31. Notogasteral setae

anal setae and one pair of aggenital setae subequal length. 2 pairs of adanal setae almost twice length anal setae and one pair of aggenital setae in subequal length. 2 pairs of adanal setae almost twice length

Collection date. Holotype, ♀, Sikang, Tainan Hsien, 16-VIII-1981, ex roots, Y. H. Tseng.

Oligothricha
Belboidea Dubinin
Belbidae

GENUS *BELB* VON HEYDEN

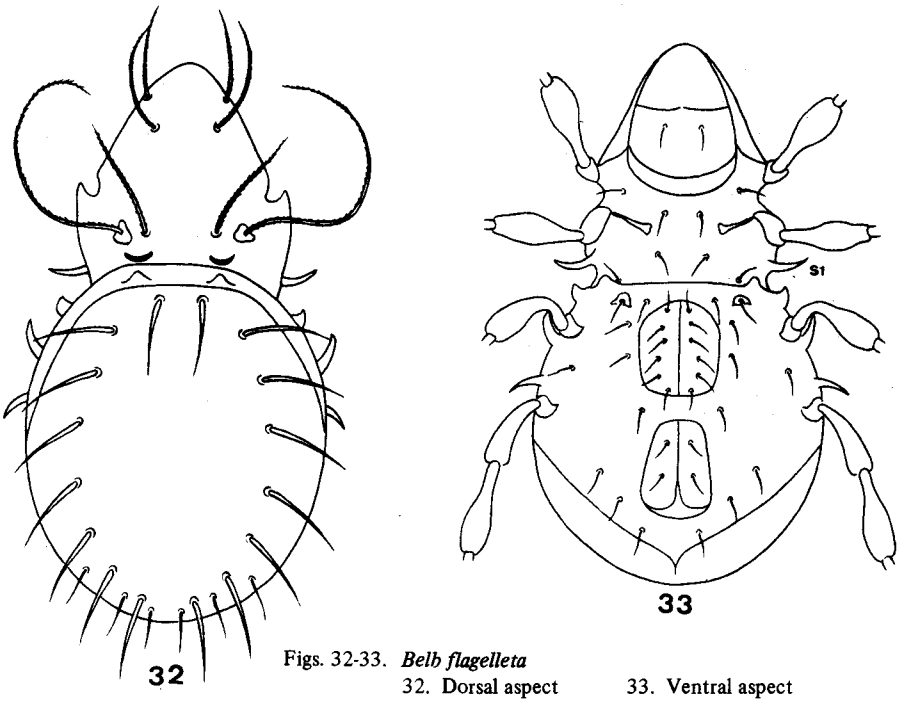
Generic diagnosis. 8-10 pairs of notogasteral setae, arranged in 2 longitudinal rows. 6 pairs of genital setae, one pair of aggenital setae, 3 pairs of adanal setae and 2 pairs of anal setae. Pseudostigmatic organ setiform. 3 setae on genu IV, 2 setae on trochanter II. Legs monodactyle.

Type Species. *Notaspis corynopus* Hammer.

12. *Belb flagelleta* n. sp.

(Figs. 32 - 33)

This species differs from other known *Belb* by having whip-like pseudostigmatic organ, more or



Figs. 32-33. *Belb flagelleta*
32. Dorsal aspect 33. Ventral aspect

less equal length of the prodorsum.

Rostrum broad rounded. Rostral setae situated on dorsal surface, rather stout, curved and minute barbed, the length slightly longer thantthe distance from their base to the tip of rostrum. Lamellae absent. Lamellar setae incurved, thin and with minute barbed. Interlamellar setae rather stout and barbed, situated far distance to the dorsosejugal suture. Lateral of post margin of prodosum with a pair of short boat-shaped chitinous plate, dark brown. Bothridium openning posterior. Pseudostigmatic organ extremely long, whip-like strongly barbed.

Notogaster ball-shaped. Dorsosejugal suture nearly straight, one pair of tubercles situated just behind the boat-shaped plates. 10 apirs of notogasteral setae, among them 8 pairs of setae, robust, long and lanceolate, arranged in 2 longitudinal rows, other 2 pairs minute, situated on posteromargins of the notogaster.

Ventral with sparse rounded spots. Lateral margin with 4 lateral spines, sp1 long, about 1.5 as long as sp4, sp2 and sp3 rather small. Apodemata II short, sejugal apodemata well developed, longer than apodemata II, apodemata III and IV fused into a complete single plate, the epimerata III + IV bear a pair of conical sclerotes, the epimeral setae formula 2-1-6. Genital aperture rounded, bearing 6 pairs of genital setae, arranged in linear. One pair of aggenital setae, 3 pairs of adanal setae and 2 pairs of anal setae. Anal aperture longer than wide, distinctly smaller than genital aperture.

Collection data. Holotype, ♀, Miaoli, Miaoli Hsien, 16-III-1981, ex roots of bamboo, Y. H. Tseng.

Zetorchestoidea Balogh

Zetorchestidae Micheal

GENUS *ZETORCHESTES* BERLESE

Generic diagnoses. 6 pairs of genital setae. 11 pairs of notogasteral setae. Long lamellae. Legs monodactyle with arolium.

Type Specied. *Carabodes micronychus* Berlese

13. *Zetorchestes saltator* Oudemans
(Figs. 34 - 36)

Prodorsum broader than long, granular. Rostrum narrowly rounded. Rostral setae robust, bifurcated, arose from the heavily sclerotes. Lamellae rather narrow, equal in width throughout and extending nearly to the tip of rostrum. Lamellar setae setiform, thin and barbed. Interlamellar setae broader proximally and tip pointed Bothridium openning interior. Pseudostigmatic organ with expanded setose apex set on narrow pedicel.

Notogaster broader than long, the anterior border nearly straight, with 2 median concaved sclerotes. 7 pairs of notogasteral setae, narrow leaf-shaped, among them, 5 pairs arranged in 2 longitudinal lines. Apodemata stout but short, not converging anterior. Epimeral region with 7 pairs of epimeral setae. Genital and anal aperture met together. 6 pairs of genital setae arising from genital aperture. One pair of aggenital setae. Adanal and anal aperture each bears 2 pairs of setae, in subequal length. Anal fissure absent. Legs monodactyle. Pretarsus with arolium.

Collection data. 1 ♀, Kuidan, Tainan Hsien, 20-VII-1980, ex litter, Y. H. Tseng.

Eremuloidea Grandjean

Eremulidae Gandjean

GENUS *EREMULUS* BERLESE

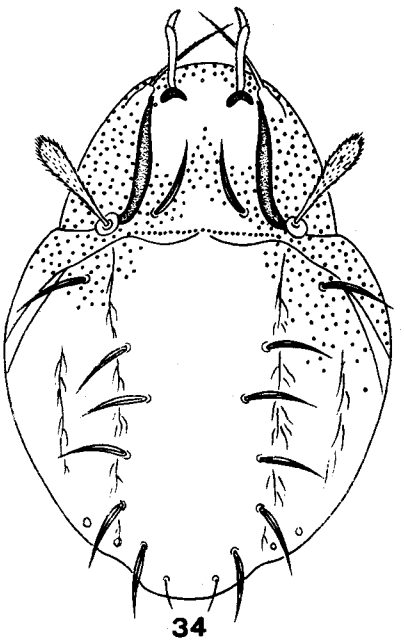
Generic diagnosis. Rostrum with a pair of parallel costulae. Rostral, lamellar, interlamellar and exopseudostigmatic setae present. Pseudostigmatic organ setiform. Notogaster with 11 pairs of notogasteral setae, 3 pairs of aggenital setae, 6 pairs of genital setae. Legs monodactyle.

Type species. *Eremulus flagellifer* Berlese

14. *Eremulus rimosus* n. sp.
(Figs. 37 - 38)

This species fits nearest to *flagellifer* Berlese, but differs in having the interlamellar setae arising just from the anterior border of notogaster and notogaster parallel side.

Rostrum narrowly rounded. Rostral setae thin, and reach beyond to the tip of rostrum. Costtulae situated mediocentral of the prodorsum, irregular and parallel. Lamellar setae arising from the apex of the costulae, rather thin and reach to the tip of rostrum. Interlamellar setae blade-shaped, situated



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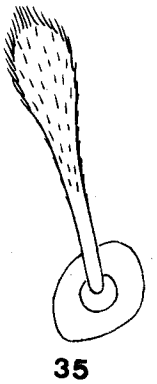

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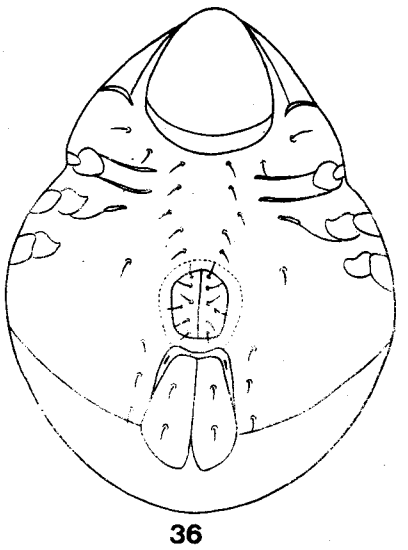

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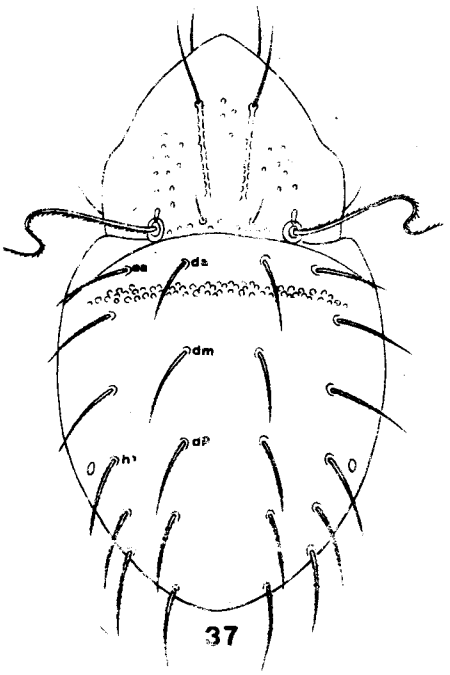
Figs 34-36. *Zetorchestes saltator*
34 Dorsal aspect 35. Pseudostigmatic organ 36. Ventral aspect



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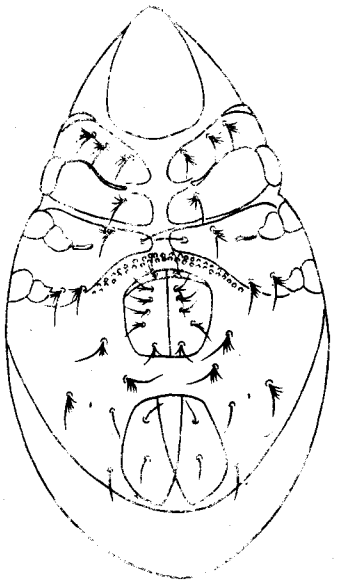

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Figs 37-38. *Eremulus dimidiatus*
37. Dorsal aspect 38. Ventral aspect

just anterior border of the notogaster, almost twice as long as their mutual distance. Bothridium openning posterior. Pseudostigmatic organ long and setiform, with plumose.

Notogaster parallel side. Behind the anterior border with small rounded dots, arranged in 3 indistinctly obliqued transverse rows, Notogaster with 11pairs of setae, stout, minute barbed and in subequal length, except ti and te slightly shorter.

Apodemata II and III short, not converging anterior. Sejugal apodemata broad, developed, converged anterior. Apodemata IV long and narrow, extending to the anterior border of the genital aperture. Behind and along the apodemata IV, with rounded dots, arranged 2 transverse rows. Genital aperture rounded, bearing 6 pairs of branched genital setae, 2 pairs of aggenital setae, branched, 3 pairs of adanal setae, Ad3 branched, Ad2 and Ad1 simple, Ad3 and Ad2 arranged in a transverse line. The anal fissure situated between Ad3 and Ad2, and 2 pairs of anal setae normal. Anal aperture and genital aperture closed together, the distance between them, almost 0.37 length of the former, and 0.3 of the latter. Legs monodactyle.

Collection data. Holotype, ♀, Lushan, Nantou Hsien, 13-II-1981, ex humus, Y. H. Tseng.

Liacaroidea Balogh

Metrioppidae Balogh

GENUS *CERATOPPIA* HAMMER

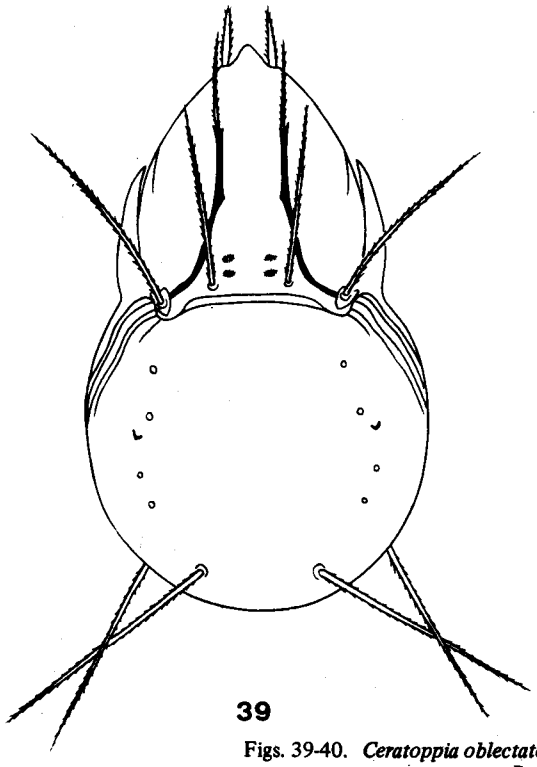
Generic diagnosis. 2 pairs of long, robust, and pectinated posteromarginal setae. 6 pairs of genital setae. 3 pairs of adanal setae. Long lamellae. Pseudostigmatic organ setiform. Legs monodactyle.

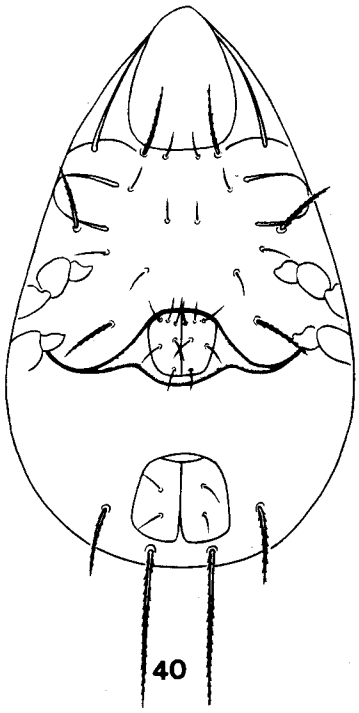
Type species. *Notaspis bipilis* Hermann

15. *Ceratoppia oblectatoria* new species (Figs. 39 - 40)

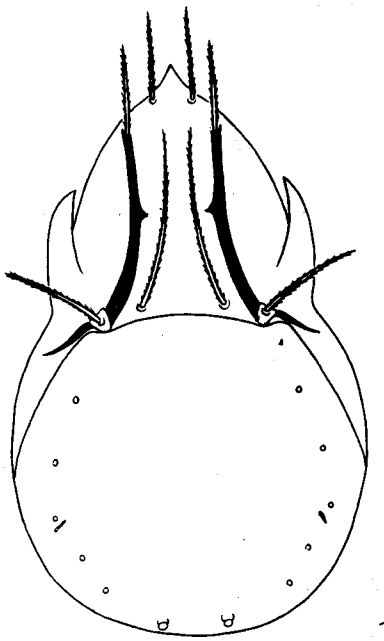
Resembling *sexsetosa* Ham. but immediately differentiated by having stout and strongly barbed adanal setae, rostral setae stoutest, pectinated and straightly directed forward, pseudostigmatic organ distinctly longer than interlamellar setae.

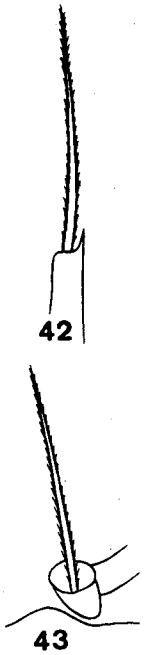
Prodorsum about 0.7 as long as notogaster. Tip of the rostrum pointed rather long Rostral setae inserted on dorsal surface, stoutest, strongly barbed and directed straight forward, almost 1.3 longer than their mutual distance. Lamellae situated far from the lateral margins, narrow and almost straight ridges, equal width throughout. The cusps with 2 sharp tubercles, the outer one distinctly longer than the inners. Lamellar setae arising from the median of the cusps between two tubercles, narrower than rostral setae, strongly barbed and directed straight forward, almost 1.5 longer than rostral setae. Interlamellar setae just arising from the anterior border of the dorsosejugal suture, rather stout and barbed, almost 2.4 longer than lamellar setae. In front of dorsosejugal suture, there with 2 pairs of rounded spots, basin of each spot with sieve-like pattern of small granules. Bothridium openning anterior. Pseudostigmatic organ setiform, barbed, and distinctly longer than interlaemellar setae, also 2.7 longer than lamellar setae.

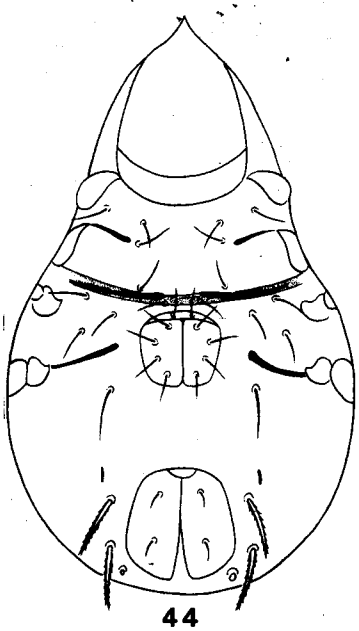




Figs. 39-40. *Ceratoppia oblectatoria*
39. Dorsal aspect 40. Ventral aspect







Figs. 41-44. *Ceratoppia violabilis*
41. Dorsal aspect 42. Cusp
43. Pseudostigmatic organ 44. Ventral aspect

Notogaster rounded, as long as wide, the anterolateral margins angulated. Dorsosejugal suture straight. 5 pairs of pori and one pair of slits presented on notogaster. 2 pairs of posteromaginal setae, long and pectinated, p2 as long as pseudostigmatic organ, p1 equal length to interlamellar setae. Ventral of notogaster shown as figure. Apodemata II and sejugal spodemata short. Apodemata III and IV fused into a single complete plate. 9 pairs of epimeral setae arising from the epimeral region, 1a, 2a, $3a_2$ and $4a_2$ in subequal length, stout and strongly barbed, the remainders setiform and with minute barb. Genital aperture broader than long, bearing 6 pairs of genital setae. One pair of aggenital setae, 3 pairs of adanal setae, 2 pairs of anal setae, the adanal setae stout and barbed, Ad3 about 0.7 longer than Ad2, Ad1 longest, about as long as p1. Anal and aggenital setae similar to the genital setae.

Collection data. Holotype, ♀, Tinzu (1,500m), Kaohsiung Hsien, 11-II-1982, ex litter, Y. H. Tseng; paratype, ♀, Patongkuan (1,800m), Nantou Hsien, 2-I-1982, ex moss, S. C. Wu.

16. *Ceratoppia violabilis* n. sp.
(Figs. 41 - 44)

The most characters of this species are similar to the preceding one. But it can be distinguished from having the long and thin rostral setae. Pseudostigmatic organ shorter than interlamellar setae.

Rostrum tip rather pointed. Rostral setae situated on dorsal surface, thin and barbed, almost 2.5 longer than their mutual distance. Lamellae long narrow and almost straight ridges, and removed far distance from the lateral margins, equal in width throughtout. Lamellar setae rather stout, barbed, and a little longer than rostral setae. Interlamellar setae long and strongly barbed, almost equal length to the lamellae and 2.7 longer than rostral setae. Bothridium openning anterior. Pseudostigmatic organ setiform, barbed and about 0.7 as long as interlamellar setae.

Nototaster rounded, as long as wide, bearing faintly rounded dots, and with 5 pairs of small pori and one pair of slits, arranged in 2 linears. Apodemata II short, the sejugal apodemata long and converged anteriorly 8 pairs of epimeral setae. Genital aperture pale brown, bearing 5 pairs of genital setae. One pair of aggenital setae and 2 pairs of anal setae in subequal length, 3 pairs of adanal setae similar to the preceding species. The fissure at anal field situated far distance to the border of the anterolateral and against to the border.

Collection data. Holotype, ♀, Hualien, Hualien Hsien, 3-X-1979, ex leaf of pine, Y. H. Tseng.

Carabidoidea Dubinin

Tectocephelidae Grandjean

GENUS *TEGEOCRANELLUS* BERLESE

Generic diagnosis. Broad lamellae, interlamellar setae arising from lamellae. 10 pairs of notogastoral setae, 6 pairs of genital setae, 3 pairs of adanal setae and 2 pairs of anal setae. Genital and anal aperture large and nearly met together. Legs monodactyle.

Type species. *Tegeocanus velatus* Micheal

17. *Tegeocranellus opcus* n. sp.
(Figs. 45 - 47)

Dark brown species.

The tip of rostrum broadly rounded, behind the rostrum with a stout chitinous transverse band. Lamellae broad, extending along the lateral margins of prodorsum to the anterior of the rostrum, their median part distinctly broader than anterior and posterior parts. Lamellar setae short, stout and barbed, arising from the apex of the lamellae. Interlamellar setae minute, discernible, situated in lamellae 1/4 from base. Bothridium openning outerior. Pseudostigmatic organ with a capitate head set on narrow pedicel, the head with stout terminal branches.

Notogaster rounded, anterior cones with a pair of tubercles. Dorsosejugal suture nearly arcuated. 7 pairs of notogasteral setae in subequal length, except 2 apirs of dorsocentral setae short, setae may be present (Although the specimen examined under 2,000X phase contrast microscope, the author found the socket-like pori only). The fissure im situated outerior between c1 and c2; the first pore s1 situated posterolateral of c2.

Apodemata I, II, III, sj and IV developed, converged anterior. Epimerata nearly in subequal length. Epimeral setae minute, smooth, the setae formula 1-0-3-0. Genital aperture heavily sclerotized, wider than long, with distinct rounded dots from middle to posterior, bearing 6 pairs of genital setae, arranged in 2 longitudinal lines. Anal aperture much closer to genital aperture, bearing 2 pairs of anal setae. One pair of aggenital setae and 3 pairs of adanal setae in subequal length. The fissure at anal field situated close to lateral border of the latter and parallel to the border. Legs monodactyle.

Collection data. Holotype, ♀, Puli, Nantou Hsien, 28-IX-1981, ex *Commelina undulata*, S. C. Wu.; paratype, 7 ♀♀, same data as holotype.

Otocepheoidea Grandjean

Otocepheidae

GENUS *PARADOLICHEREMAEUS* n. g.

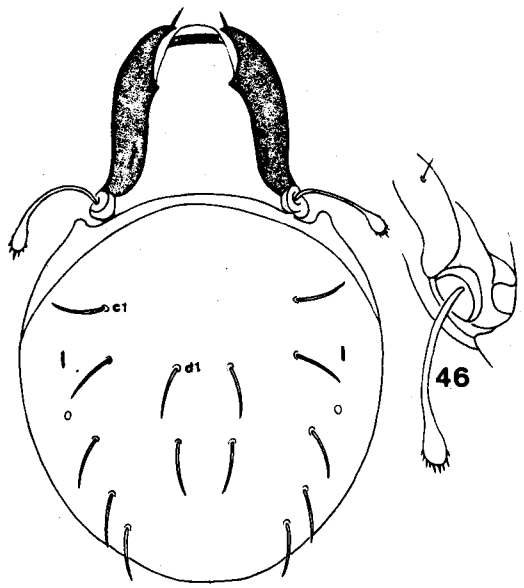
Resembling *Dolicheremaeus* but immediately differentiated in having 16 pairs of notogasteral setae.

Generic diagnosis. Rostral, lamellar, interlamellar and exopseudostigmatic setae paresent. Lamellae long, extending to the apex of rostrum. The lateral lamelliform expanded and subpedotectum present. 2 pairs of notogasteral condyles. Pseudostigmatic organ fusiform. 16 pairs of notogasteral setae. 4 pairs of genital setae, one pair of aggenital setae, 2 pairs of anal setae, 3 pairs of adanal setae. Legs monodactyle.

Type species. *Paradolicheremaeus tabulatus.*

18. *Paradolicheremaeus tabulatus* n. sp.
(Figs. 48 - 49)

Rostrum broadly rounded, with anterior retangular hyaline lobe. Rostral setae set on dorso-



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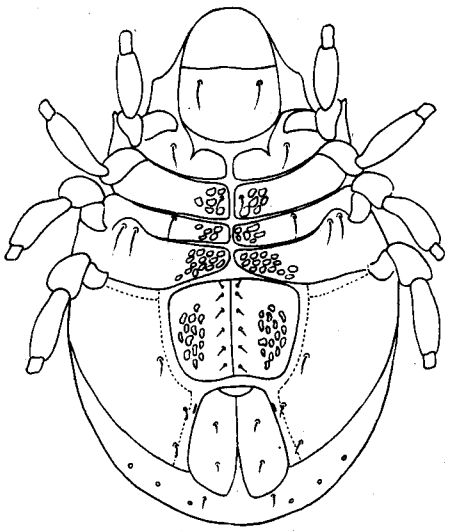

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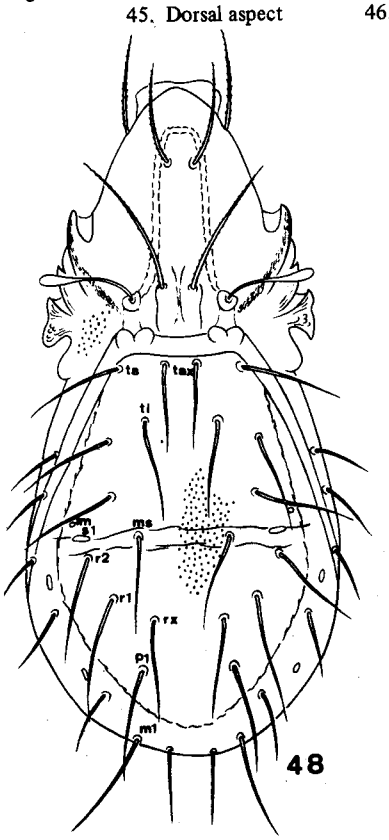
Figs. 45-47. *Tegeocranellus opcus*
45. Dorsal aspect 46. Pseudostigmatic organ 47. Ventral aspect



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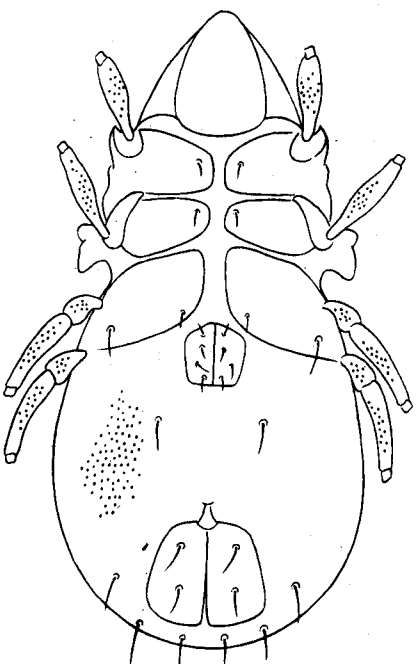

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Figs. 48-49. *Paradolicheremaeus tabulatus*
48. Dorsal aspect 49. Ventral aspect

laterally, rather long, curved and strongly barbed unilaterally, almost reach by half their length beyond to the tip of rostrum. Lamellae edge serrated, anterior part faintly incurved and apex converged. Lamellar setae arising from inner side of lamellae, rather thin and finely barbed, which almost 4 times as long as their mutual distance. Interlamellar setae stout, barbed and blunt tip, almost 3.5 as long as their mutual distance. Bothridium openning outerior. Bothridial sclerotes form a basket-shaped. Pseudostigmatic organ fusiform. Pedotecta conspiciously developed and tail-fin shaped, anterior expansion a little shorter than the posterior expansion.

Notogaster slightly longer than wide, anterior border narrow, 2 pairs of notogasteral condyles round and close together (namely co-$p1_1$ and co-$p1_2$), the distance of co-$p1_2$ to co-$p1_2$ 74μ long. 16 pairs of notogasteral setae, long, barbed and blunt tip, the length ratio of notogasteral setae ta/tax/ti/te/ms/r1/r2/r3/rx/p1/p2/p3/m1/m2/m3/m4 = 1/0.89/0.93/1.22/0.94/1.67/1.26/1.26/1.35/1.56/0.83/0.83/1.26/0.74/0.74/0.74/0.74/0.74. 4 pairs of pori on the notogaster, im located posterolateral of r3, s1 just behind im, s2 located anterolateral of 03, s3 situated anterolateral of p2.

Apodemata I, II, sj and III+IV developed, converged anteriorly. Genital aperture brown, with 4 pairs of genital setae, arranged in 2 longitudinal lines. One pair of aggenital setae, 3 pairs of adanal setae, 2 apirs of anal setae, Ad1 and Ad2 in subequal length, about twice as long as the aggenital setae, Ad3 0.7 as long as Ad1. Legs rather stout, the chaetotaxy of Femur - Genu - Tibia: 4-4-5, 4-4-4, 3-2-3 and 2-2-3. The fissure at the anal field situated close to the border of anterolateral and against to border.

Collection data. Holotype, ♀, Mudan, Pingtung Hsien, 14-IX-1980, ex litter, Y. H. Tseng.

GENUS *FISSICEPHEUS* BALOGH ET MAHUNKA

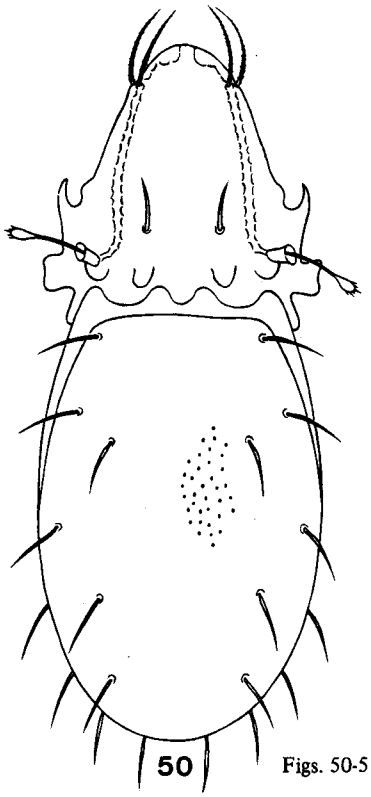
Generic diagnosis. 10 pairs of notogasteral setae. Lamellae long and situated dorsomargins of prodorsum. Lamellar, rostral, interlamellar setae present. Pseudostigmatic organ with broad head. 4 pairs of genital setae and 2 pairs of aggenital condyles. Legs monodactyle.

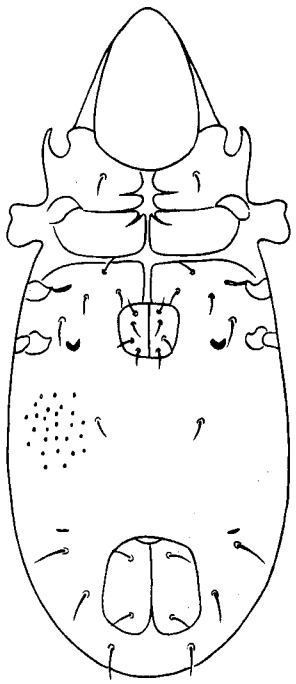
Type species. *Fissicepheus elegans* Balogh and Mahunka

19. *Fissicepheus coronarius* Aoki
(Figs. 50 - 51)

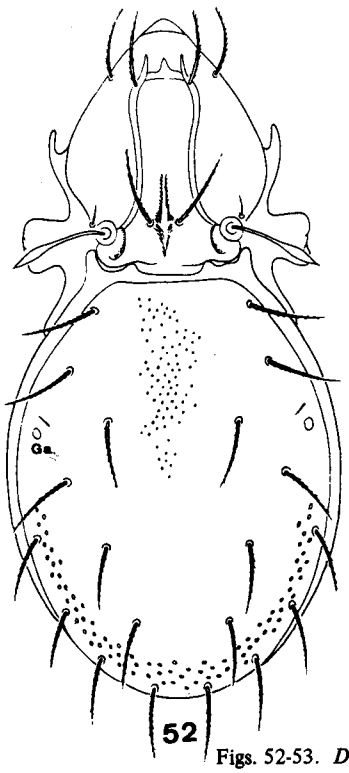
Rostrum broadly rounded. Rostral setae and lamellar setae stout, incurved with fine barb, arranged in a transverse line. Lamellae long, situated at margins of prodorsum, from outerior of bothridium extending to the tip of rostrum. Interlamellar setae long and stout, almost 0.8 as long as their mutual distance. Bothridium openning anterior. Pseudostigmatic organ with broad head, the head with many horn-like projections. 2 pairs of prodorsal condyles ditinctly developed, the lateral prodorsal condyle to form a hemisphere. Anterior to the dorsosejugal suture with 7 pairs of subrectangular spots and arranged in 2 longitudinal lines.

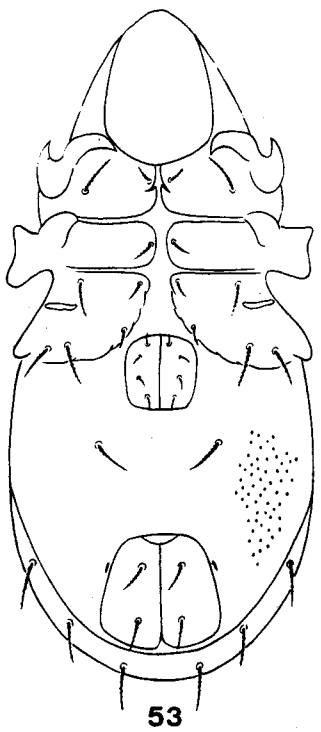
Notogaster elongated, with sparse small rounded dots. 2 pairs of notogasteral condyles situated at anterior margin, the median pair close together, semi-circular. 10 pairs of notogasteral setae, lanceolated, rather long and with hyaline midrib. Genital aperture bear 4 pairs of setae. One pair of aggenital





Figs. 50-51. *Fissicepheus coronarus*
50. Dorsal aspect
51. Ventral aspect





Figs. 52-53. *Dolicheremaeus baloghi*
52. Dorsal aspect
53. Ventral aspect

setae, 2 pairs of anal setae and 3 pairs of adanal setae in subequal length. The fissure at anal field to form a transverse bar, much removed far from the anal aperture, and situated almost on a transverse line with anterior border of anal aperture.

Collection data. 1♀, Pali, Taipei Hsien, 7-III-1982, ex litter, L. L. Lai.

Specimen collected from Taiwan slightly differs from the type in having long notogasteral setae and anterior border of notogaster with 7 pairs of subrectangular spots and arranged in 2 longitudinal lines. I did not see that above mentioned characters are the key character.

GENUS *DOLICHEREMAEUS* JACOT

Generic diagnosis. Prodorsum with costulae, situated medially, removed from prodorsal margin and not converged anteriorly. 10-14 pairs of notogasteral setae, 4 pairs of genital setae, the pedotecta 2+3 rectangular, one pair of aggenital setae, 2 pairs of anal setae and 3 pairs of adanal setae.

Type species. *Dolicheremaeus rubripedes* Jacot

20. *Dolicheremaeus baloghi* Aoki
(Figs. 52 - 53)

Prodorsum with fine granules, tinged with sparse rounded dots.

Rostrum conical. Rostral setae situated dorsolateral at the same distance from the anterior border and arranged in a transverse line with lamellar setae, rather thin, barbed unilaterally, curved and reach just beyond to the tip of rostrum. Costulae long, reach to the tip of rostrum. Lateral lamelliform expansion well developed. Lamellar setae equal length to the rostral setae, slightly curved, barbed unilaterally. Interlamellar setae barbed, straight and tip blunt, a little shorter than lamellar setae, and about twice as long as their mutual distance. Bothridium openning anterior. Pseudostigmatic organ fusiform. The median prodorsal condyles absent, the lateral prodorsal condyle present. Pedotecta II+III rectangular.

Notogaster with fine granules, posterolateral tinged with rather large rounded dots, 10 pairs of notogasteral setae rather long, finely barbed and blunt tip. The distance ti-te equal length to ti-ms. The gland openning situated in ti level. Apodemata II and sejugal apodemata developed, each converging anterior. Epimerata I and II to form 2 complete plates. Epimeral setae strongly barbed, $1a_2$, $3c_3$ and $3c_4$ in subequal length, and about twice as long as the others, the setal formula 2-2-5. Genital aperture brown, with longitudinal striae, bearing 4 pairs of genital setae, simple and barbed, the distance of g2-g3 about twice as g1-g2, g1-g2 in equal length to g3-g4. Anal aperture pale brown, with 2 pairs of anal setae, 3 pairs of adanal setae, Ad1 in equal length to Ad1-Ad2, Ad1 in equal length to Ad2, Ad1 slightly longer than Ad3. The distance between genital and anal aperture almost twice length of the former and slightly longer than the latter.

Collection data. 1 ♀, Mutan, Pingtung Hsien, 14-IX-1980, ex litter, Y. H. Tseng; 1 ♀, Paintienyen, Chiayi Hsien, 10-XII-1980, ex root of weeds, Y. H. Tseng; 2 ♀♀, Miaoli, 15-III-1981, ex root of weeds, Y. H. Tseng; 1 ♀, Kuantsuling, Tainan Hsien, 28-VI-1981, ex humus, Y. H. Tseng; 2 ♀♀, Tsushan, Nantou Hsien, 8-VIII-1981, ex litter; Y. H. Tseng; 1 ♀, Lushan, Nantou Hsien, 16-I-1982, ex litter, Y. H. Tseng; 1 ♀, Tenzu (1,500m), Kaohsiung Hsien, 21-II-1982, ex litter, S. J. Cheng.

21. *Dolicheremaeus elongatus* Aoki
(Figs. 54 -55)

This species closely resembles the former species but it is easily distinguished as following: The body rather small. Pseudostigmatic organ fusiform, with an oval-head, the head without sharply pointed apex; lamellae arising from the bothridium, near the dorsosejugal suture; interlamellar setae less twice longer than their mutual distance; prodorsum without medial prodorsal condyle; the anterior of notogaster with a pair of distinctly median notogasteral condyles; notogasteral setae te situated close to ta than ms; genital aperture without longitudinal striae; the distance between genital and anal aperture twice more, longer than of the former, and 1.5 more longer than of the latter; genital aperture wider than long; adanal setae Ad1-Ad1 euqal length to Ad2-Ad2.

Collection data. 1 ♀, Wushe, Nantou Hsien, 17-I-1982, ex litter (pine leaf), Y. H. Tseng.

Specimen collected from Taiwan differs from the type by the ratio of the notogaster length/ width = 1.3 and anal aperture distinctly wider than long. The author suggests those characters are the morphological variations.

Oppidea Balogh

Oppidae Grandjean

GENUS *PSEUDOBRANCHIOPPIELLA* n. g.

Because of the pseudostigmatia pectinated, costulae short, these resemble *Branchioppiella* Ham. but it differs in having 6 pairs of genital setae, the dorsosejugal suture straight, and the anterior of genital aperture with 2 subepimeral plates.

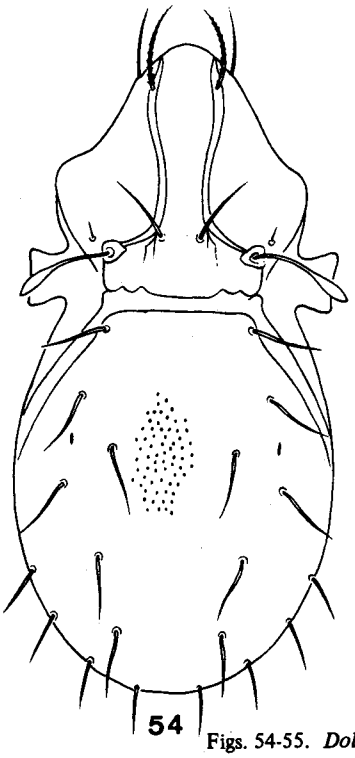
Generic diagnosis. Rostral, lamellar, interlamellar and exopseudostigmatic setae present, pseudostigmatic organ with swallen pectinated head. Short costulae more or less half long as prodorsum, dorsosejugal suture straight, 10 pairs of notogasteral setae, 6 pairs of genital setae, the subepimeral plates present, 2 pairs of anal setae, 3 pairs of adanal setae.

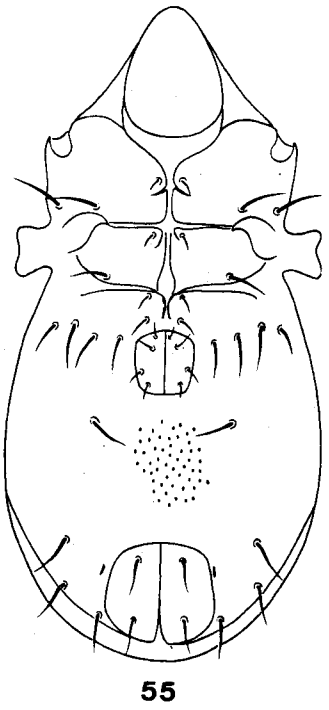
Type species. *Pseudobranchiopiella ramosa.*

22. *Pseudobranchiopiella ramosa* n. sp.
(Figs. 56 - 58)

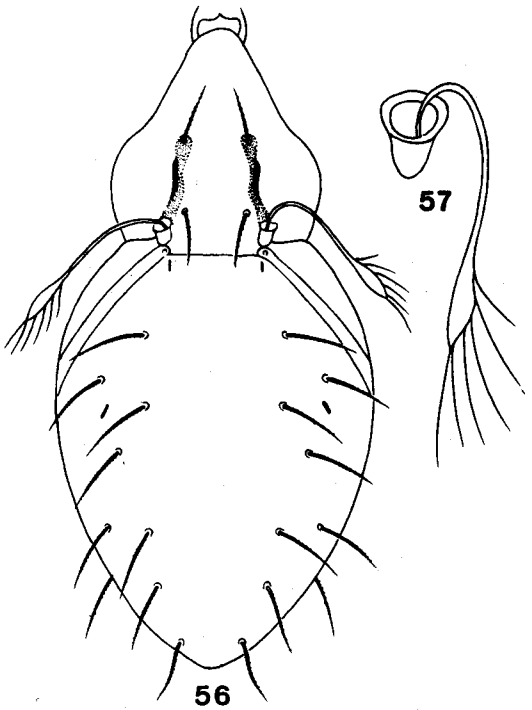
Prodorsum triangle-shaped, as long as wide.

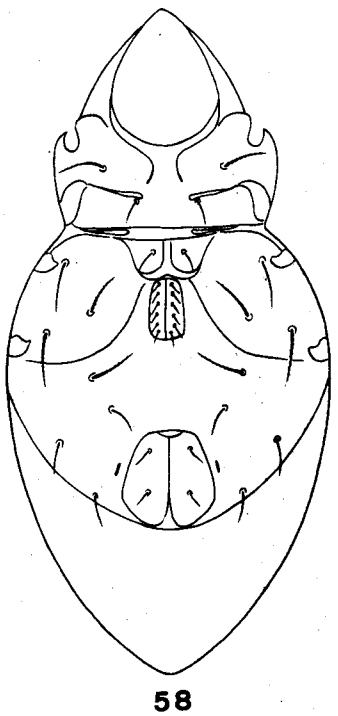
Rostrum with hyaline lobe, short nose-shaped, with lateral projections. Rostral setae situated laterally, stout and plumose, just reach beyond to the tip of rostrum. The anterior of rostral setae with a transverse ridge. Lamellar setae thin, short, and finely barbed, situated at rounded apex of the costulae, slightly longer than their mutual distance. Interlamellar setae situated far anterior of dorsosejugal suture, almost as long as lamellar setae, length of mutual distance of interlamellar setae distinctly longer than the mutual distance of lamellar setae. Bothridium openning anterior. Pseudostigmatic organ with fusiform head, the head bear unilateral branches, proximal one short.





Figs. 54-55. *Dolicheremaeus elongatus*
54. Dorsal aspect 55. Ventral aspect





Figs. 56-58. *Pseudobranchioppiella ramosa*
56. Dorsal aspect 57. Pseudostigmatic organ 58. Ventral aspect

Notogaster smooth. Dorsosejugal suture rather short and straight, 10 pairs of rather long notogasteral setae setiform and finely barbed, ta located anterial angle of the notogaster and also just behind the bothridium. The fissure is situated just behind ta. Ventral side shown as in figure. Anterior of the genital aperture with a pair of subeqpimeral plates, situated anterior of epimerata III+IV, each subepimeral plate bears one set. Genital aperture about 1.5 longer than wide, bearing 6 pairs of genital setae, arranged in linear. One pair of aggenital setae, 2 pairs of anal setae and 3 pairs of adanal setae in subequal length. Anal aperture slightly longer than wide. The distance between genital and anal apertures almost 1.5 length of the former, and slightly shorter than the latter. The fissure at anal field situated close to mediolateral border and parallel to it. Legs monodactyle, leg IV longest.

Collection data. Holotype, ♀, Paintienyen, Chiayi Hsien, 10-XII-1980, ex humus, Y. H. Tseng; paratype, ♀, same data as holotype.

GENUS *OPPIELLA* JACOT

Generic diagnosis. Prodorsum with costulae and notogasteral cristae. Rostrum without incised. Pseudostigmatic organ fusiform and pectinated. 6 pairs of genital setae. 10 pairs of notogasteral setae, setiform, ta present. Legs monodactyle. Dorsosejugal suture smooth, nearly straight.

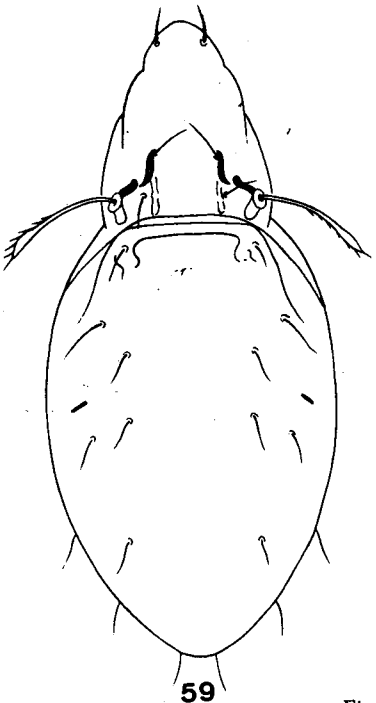
Type species. *Eremaeus novus* Oudemans

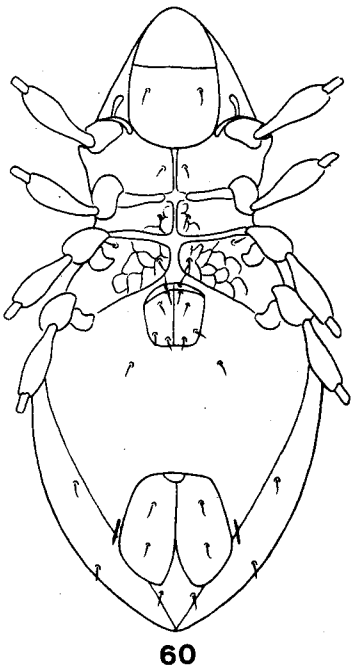
23. *Oppiella nova* (Oudemans)
(Figs. 59 - 60)

Small species. Rostrum conical. Rostral setae situated ventrolaterally, rather stout and barbed. Costulae short, less than half long as prodorsum. Lamellar setae equal length to interlamellar setae, thin and finely barbed. Bothridium openning anterior. Pseudostigmatic organ fusiform, with 7 branches. Interlamellar setae situated outside of the costulae. The distance between interlamellar setae longer than distance between lamellar setae.

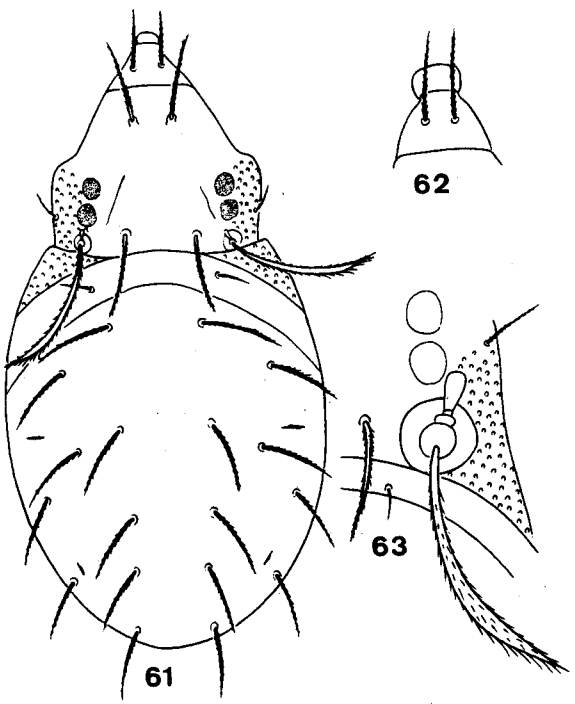
Notogaster smooth, olive-shaped, with 10 pairs of notogasteral setae, short, simple and seta-like. Dorsosejugal suture short and rather straight, behind the dorsosejugal suture with indistinct but rather long cresta. Setae ta present, arising from crista. Genital aperture nearly pentagonal, anterior wider than posterior, bearing 5 pairs of genital setae. One pair of aggenital, 3 pairs of adanal setae and 2 pairs of anal setae in subequal length. The fissure at anal field elongated, situated close to the posterolateral border and parallel to the border. The distance between genital and anal apertures about 1.8 length to the former and shorter than the latter. Legs monodactyle.

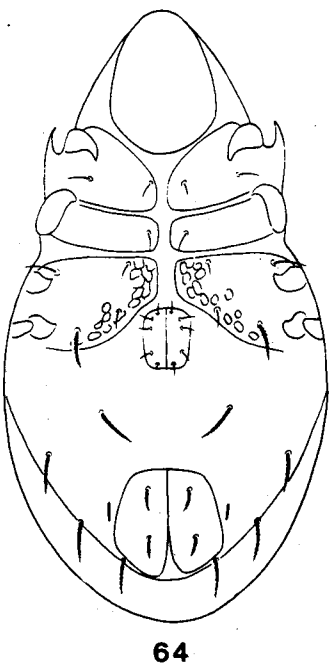
Collection data. 3 ♀♀, Wainchiao, Chiayi Hsien, 25-VI-1980, ex soil, L. L. Lai; 1 ♀, Wainchiao, Chiayi Hsien, 25-IX-1980, ex soil, L. L. Lai; 2 ♀♀, Yunching, Changhua Hsien, 25-X-1981, ex soil of *Chrysanthemum* sp., Y. H. Tseng; 4 ♀♀, Huatang, Changhua Hsien, 15-XI-1981, ex *Eclipta prostrata*, L. L. Lai; 1 ♀, Lushan, Nantou Hsien, 16-I-1982, ex *Ipomoea* sp., Y. H. Tseng.





Figs. 59-60. *Oppiella nova*
59. Dorsal aspect
60. Ventral aspect





Figs. 61-64. *Branchioppia vitrea*
61. Dorsal aspect
62. Rostrum
63. Lateral region of prodorsum
64. Ventral aspect

GENUS *BRANCHIOPPIA* HAMMER

Generic diagnosis. Lamellae and crista absent. Pseudostigmatic organ pectinated. 10 pairs of notogasteral setae, 5 pairs of genital setae, setae ta normal. Legs monodactyle.

Type species. *Branchioppia cuscensis* Hammer

24. *Branchioppia vitrea* n. sp.
(Figs. 61 - 64)

This species is readily differentiated from other known *Branchioppia* in having a round, hyaline lobe situated anterior of the rostrum.

Prodosrum triangle-shaped, as long as wide. Rostrum with a hyaline rounded lobe. Rostral setae situated on dorsal surface, closed together, stout and strongly barbed, about twice longer than the distance from their base to the tip of rostrum, and 2.5 longer than their mutual distance. Lamellae absent but the same position with a pair of indistinctly chitinous ridges. Lamellar setae rather stout and barbed, twice as long as rostral setae, also about 3 times longer than their mutual distance. Interlamellar setae thin and with minute barbed, distinctly shorter than lamellar setae. Exopsudostigmatic setae similar but shorter than interlamellar setae. Bothridium openning anterior. Pseudostigmatic organ with swallen head and pectinated. From the bothridium to the lateral margin of prodorsum with rough granules. Anterior of the bothridium with 2 rounded spots, basin of each spot with sieve-like pattern of small granules, the proximal one distinctly larger than the latter. Between the rostral and the lammellar setae with a transverse ridge.

Notogaster smooth, with round shoulder, 10 pairs of notogasteral setae, simple and minute barbed, setae ta present, about 1/3 as long as ti, setae p group distinctly shorter than setae t group, more or less half long as ti, r group setae relatively shorter than t group setae, ta-ti equal length to ti-te. Apodemata long and developed, converged anterior. Epimerata III+IV distinctly longer than wide, epimeral setae barbed except $1c_3$ smooth and minute. Integument between apodemata with sparse round reticulation. Genital aperture longer than wide, bearing 5 pairs of genital setae, anterior 3 pairs situated anterior half of the plates. One pair of aggenital setae strongly barbed. 3 pairs of adanal setae equal length to the aggenital setae. 2 pairs of anal setae, strongly barbed, the distance a1-a2 about twice as long as a1 to the anterior border of anal aperture, also as long as a2 to the posterior border of anal aperture. The fissure at anal field situated close to mediolateral border and slightly obliquely against border. The distance between genital and anal apertures almost twice length of the former and distinctly longer than the latter.

Collection data. Holotype, ♀, Hualien, Hualien Hsien, 7-X-1981, ex *Hyptis enaveolens.* L. L. Lai.

GENUS *CHUOPPIA* n. g.

This new genus is related to *Pseudobranchioppiella* from Taiwan, and is differentiated in having no costulae on prodorsum. No costulae also allied to *Branchippia* Hammer, but can be distinguished in having 6 pairs of genital setae, and pseudostigmatic organ with broad head and 3

terminal branches.

Generic diagnosis. Lamellae or costulae absent, or having no indistinctly chitinous ridges on the lamellae position of prodorsum. Interlamellar setae much longer than lamellar setae. Pseudostigmatic organ with oval-shaped, bearing 3 terminal branches. 10 pairs of notogasteral setae, ta present. 6 pairs of genital setae. Legs monodactyle.

Etymology: The new genus is named in honor Dr. Y. I. Chu. Professor, Deparrtment of Plant Pathology and Entomology. National Taiwan University, for his kind assist the present work.

Type species. *Chuoppia triamosa*.

25. *Chuoppia triamosa* n. sp.
(Figs. 65 - 68)

Prodorsum longer than wide.

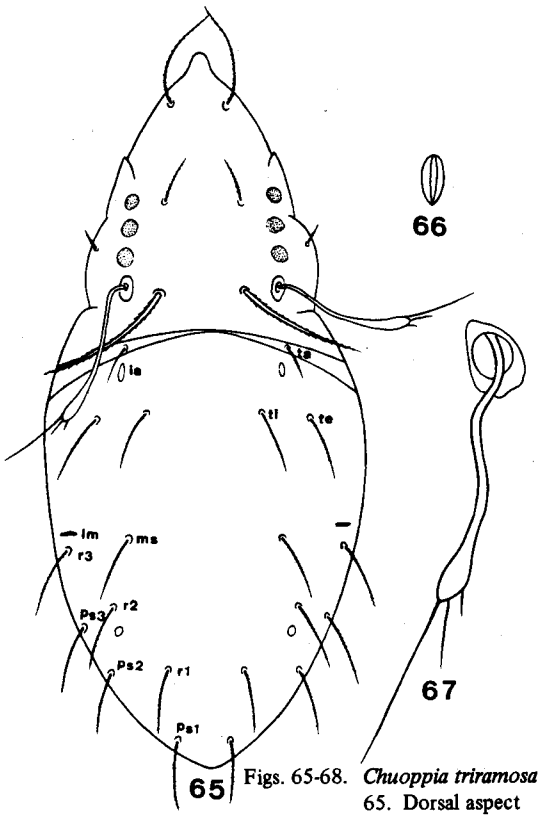
Rostrum tip pointed. Rostral setae thin, incurved, barbed and tip fine, reach just beyond the tip of rostrum. Lamellae absent. Lamellar setae short and barbed, distinctly shorter than their mutual distance. The distance between 1s-1s longer than ro-ro. Interlamellar setae long and barbed, about 2.5 times as long as lamellar setae. Exopseudostigmatic setae distinctly shorter than lamellar setae. Bothridium openning prosterior. Pseudostigmatic organ with long and narrow pedicel supported terminal oval head, the head bears 3 terminal branches, T1 slightly shorter than the length of pseudostigmatic organ, T2 almost 1/3 as long as T1, T3 1/10 as long as T1. Anterior of bothridium with 3 pairs of hyaline spots, arranged in 2 longitudinal lines, basin of each spot with sieve-like granules.

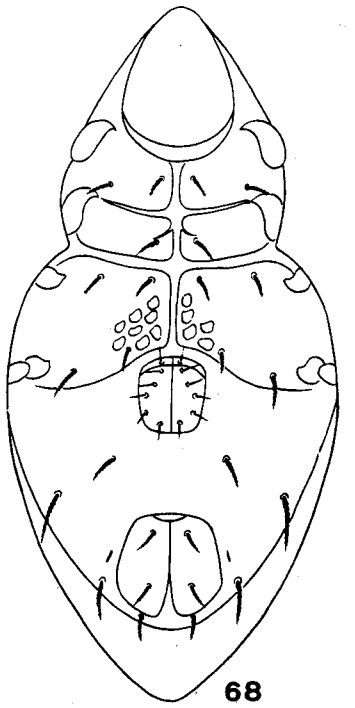
Notogasteral setae setiform, minute barbed, in subequal length except ta short, ta situated anterior of notogaster, about 0.4 as long as ti. The fissure ia situated behind ta, im on the anterior of r3, te setae a little shorter than ti, ms and r group setae in subequal length, 1.2 longer than ti. Apodemata developed, convered anterior. Epimerata I pale brown, rectangular, with 2 pairs of setae and with indistinctly oval-shaped reticulation. Epimerata II brown, with one pair of setae. Epimerata III+IV pale brown, with 4 pairs of setae and with indistinctly polygonal reticulation, setae on epimeral region rather short, stout and barbed, except $4a_3$ and $4a_4$ longest, in subequal length, almost 1.5 as long as $4a_1$. Genital aperture situated posterior of apodemata IV, anterior slightly wider than posterior, bearing 6 pairs of geital setae, arranged in linear-shape. One pair of aggenital setae, barbed, shorter than adanal setae. 3 pairs of adanal setae, barbed, Ad1 almost 1.8 longer than aggenital setae, and slightly longer than Ad2, about 2 times longer than Ad3. The fissure at anal field situated close to mediolateral border and parallel to the border. The distance between genital and anal apertures about 1.8 length of the former and slightly longer than the latter. The length ratio Ls-Ls/Ls/ta/in/te/ti/Ms/r1/r2/r3/p1/p2/p3/Ag/Ad1/T1/T2 = 1/0.7/0.7/1.86/1.79/1.86/2.3/2.3/2.3/2.3/1.7/1.7/1.7/0.57/1/1.86/0.57.

Collection data. Holotype, ♀, Linnei, Yunlin Hsien, 16-XI-1980, ex weeds, Y. H. Tseng.

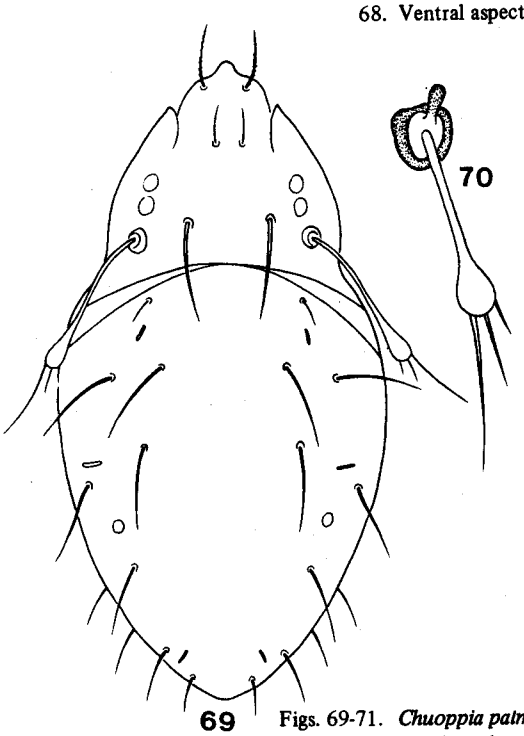
26. *Chuoppia plamaria* n. sp.
(Figs. 69 - 71)

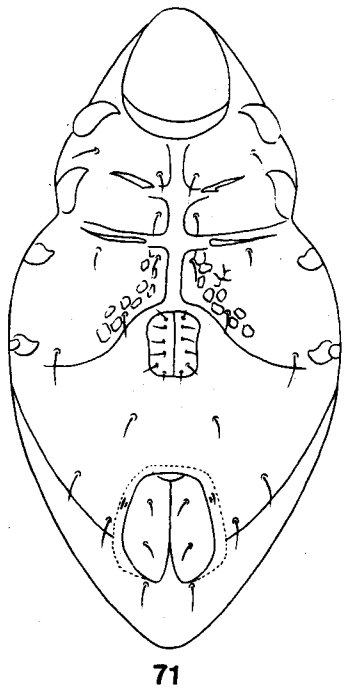
This is a small species, otherwise much like the preceding species for which only a





Figs. 65-68. *Chuoppia triramosa*
65. Dorsal aspect
66. ia
67. Pseudostigmatic organ
68. Ventral aspect





Figs. 69-71. *Chuoppia palmaria*
69. Dorsal aspect
70. Pseudostigmatic organ
71. Ventral aspect

few features will be mentioned. Lamellar setae situated close together, about twice as long as their mutual distance. Interlamelar setae straight, almost 2 times as long as lamellar setae. Pseudostigmatic organ with oval head, the head bears 3 terminal branches. T1 2.6 as long as T2, T2 0.8 as long as the organ. Anterior border of notogaster with an obliqued hyaline rounded spot. Setae ta present, 0.22-0.23 as long as ti, r group setae more or less 0.7 as long as ti, p group setae short, almost 0.3 as long as ti. Aggenital setae rather short. Ad1 and Ad2 in subequal length, and slightly longer than aggenital setae. Genital and anal apertures relatively large, the distance between them almost 1.3 of the former, and shorter than the latter. Epimeral setae formula 2-1-4. The length ratio 1s-1s/1s/ta/in/te/ti/ma/r1/r2/r3/p1/p2/p3/Ag/Ad1/T1/T2 = 1/2/1.5/4.25/5.25/6.5/5.25/4.5/4.5/4.5/2/2/2/1.25/1.5/5.25/4.25/5.25/6.5/5.25/4.5/4.5/4.5/2/2/2/1.25/1.5/5.25/2.

Collection data. Holotype, ♀, Mudan, Pingtung Hsien, 14-IX-1980, ex humus, Y. H. Tseng; paratype, ♀, same data as holotype.

GENUS *TAIWANOPPIA* n. g.

This new genus closely resembles *Lasiobelba* Aoki from Vietnan and Japan in having 6 pairs of genital setae, but it can be distinguished by having pseudostigmatic organ with broad oval-shaped head on a very short pedicel. *Taiwanoppia* also allies to *Heteroppia* Balogh from Ceylon in having pseudostigmatic organ with ball-shape on a very short pedicel, but it differs in having 6 pairs of genital setae.

Generic diagnosis. Rostral, lamellar, interlamellar and exopseudostigmatic setae present. Between dorsosejugal suture and interlamellar setae with a transverse line. Notogaster hemisphere, bearing 10 pairs of notogasteral setae, 8 pairs long and strongly barbed, 2 pairs posteromarginal setae minute. Genital aperture bears 5 pairs of genital setae. Legs long and monodactyle. The chaetotaxy of legs as following: Femur - Genu - Tibis = 5-4-6, 5-3-5, 3-2-4 and 2-2-4.

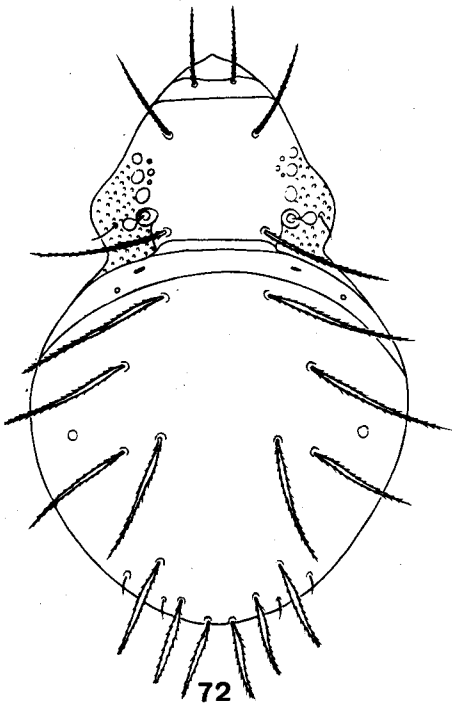
Type species. *Taiwanoppia subtropica*.

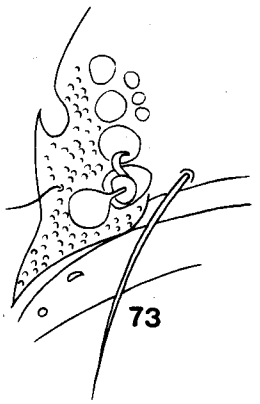
27. *Taiwanoppia subtropica* n. sp.
(Figs. 72 - 74)

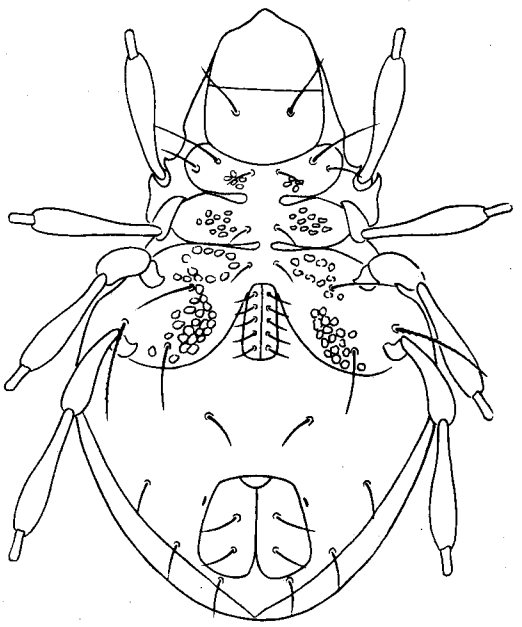
Prodorsum wider than long, posterolateral margin with rough granules.

Rostrum tip. pointed Rostral setae rather stout and barbed, situated dorsally, about 3 times longer than the distance from their base to the apex of rostrum, and almost twice as long as their mutual distance. Anterior of rostral setae with a transverse ridge. Lamellar setae rather stout and distinctly barbed, with fine tip, they are more or less 1.5 longer than rostral setae, and about 1.7 as long as their mutual distance. Anterior of lamellar setae with a transverse ridge. Interlamellar setae stout, strongly barbed and blunt tip, equal length to lamellar setae and almost 1.5 as long as their mutual distance. Bothridium openning outerior. Pseudostigmatic organ with broad head, ball-shape, set on short pedicel, the diameter of head almost 1.5 longer than pedicel. Anterior of bothridium with many hyaline round spots.

Notogaster semi-circle, wider than long. Setae ta absent, ia pore located far distance to ta, ti







Figs. 72-74. *Taiwanoppia subtropica*
72. Dorsal aspect 73. Lateral region of prodorsum 74. Ventral aspect

and te in subequal length, strongly barbed and blunt tip, almost 1.5 longer than interlamellar setae, ms, r3 and im in subequal length, r2 about 0.9 as long as im, r3 and p1 in subequal length, lanceolated and barbed, almost 0.7 as long as im. Integument between apodemata with rather oval-shaped reticulation, epimeral setae formula 3-1-5. Genital aperture 1.5 longer than wide, bearing 5 pairs of genital setae, arranged in linear-shape. One pair of aggenital setae. 2 pairs of anal setae and 3 pairs of adanal setae. Ag equal to Ad1 and about 1.5 longer than Ad2. The distance between genital and anal apertures almost 1.8 longer than the former and as long as the latter. Legs rather long, leg I about 0.8 as long as the idiosoma. The length ratio of epimeral setae $1a_1/1a_2/1a_3/2a_1/3a_1/3a_2/3a_3/3a_4$ = 1/1.8/1.5/1/1.2/1.86/1.4/2.7.

Collection data. Holotype, ♀, Kuantsuling, Tainan Hsien, 29-VI-1981, ex leaf of *Areca catichu*, Y. H. Tseng; paratype, 4 ♀♀, same data as holotype; 1 ♀, Puli, Nantou Hsien, 18-XI-1981, ex *Sida acuta*, S. S. Wu

28. *Taiwanoppia papillaris* n. sp.

(Figs. 75 - 77)

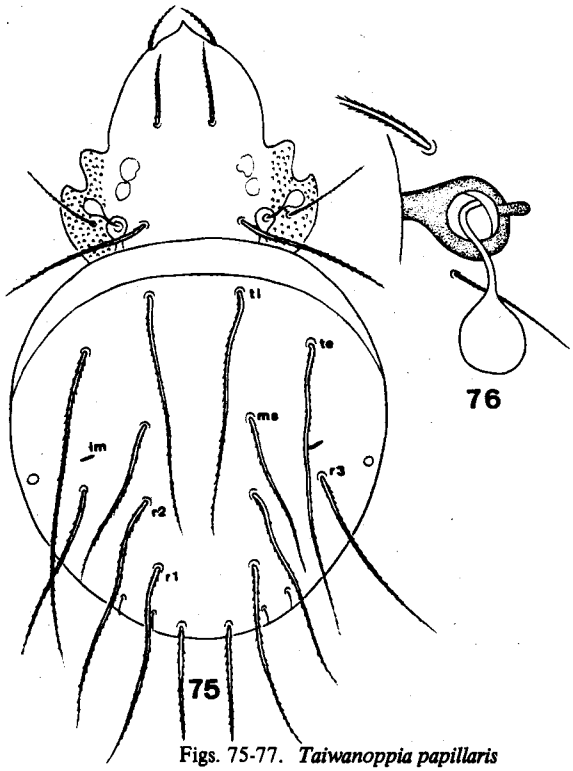
This new species resembles the preceding species, but is differentiated from this in having long notogasteral setae, short rostral setae, and anterior of the bothridium with 2 apirs of kyaline round spots, and short epimeral setae.

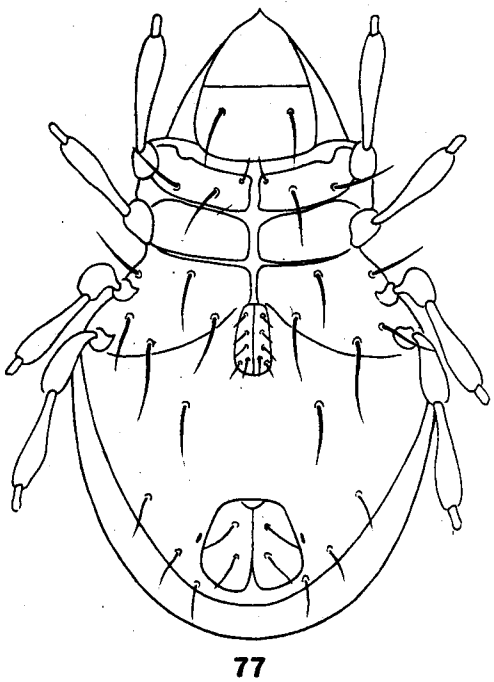
Rostrum tip pointed. Rostral setae situated dorsolaterally, rather short, stout and strongly barbed, about 1.5 as long as the distance from their base to apex of rostrum. Lamellar setae thinner than rostral setae, barbed, directly straight forward, about 1.7 longer than rostral setae, and 1.9 as long as their mutual distance. Interlamellar setae thin, barbed and almost 1.4 longer than rostral setae. Bothridium openning anterior, posterior margin connected with dorsosejugal suture. In front of bothridium with 2 pairs of hyaline round spots. No transverse ridge situated anterior of dorsosejugal suture. Pseudostigmatic organ with broad ball-shaped head, the diameter of head slightly shorter than pedicel.

Notogaster semi-circle, wider than long. 10 pairs of notogasteral setae, ti 2.5 longer than rostral setae, te whip-like, about 2.7 longer than interlamellar setae. The length ratio of ro/1s/im/ti/te/ms/r1/r2/r3/p1/p2/p3 = 1/1.7/1.4/2.5/3.7/1.6/1.89/2.1/1.72/1/0.22. Anterior of r3 with one pair of fissure and one pair of pori, S1 rather round, im forming a short transverse slit. The epimeral setae formula 3-1-5. The length ratio of epimeral setae $1a_1/1a_2/1a_3/2a_1/3a_1/3a_2/3a_3/3a_4/3a_5$ = 1/2.6/1.25/1/1/2.63/3.76/1.88/3.88. Genital aperture longer than wide, bearing 5 pairs of genital setae. One pair of aggenital setae, rather long, about 2.2 as long as Ad1. 3 pairs of adanal setae in subequal length. 2 pairs of anal setae euqal length to adanal setae. The distance between genital and anal apertures almost 1.4 length of the former and almost as long as the latter. Legs similar to the preceeding species. The chaetotaxy of legs: Femur - Genu = Tibia = 5-3-6, 5-3-5, 3-2-4 and 2-1-4.

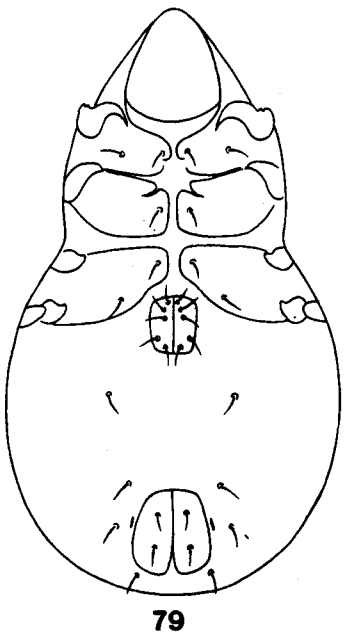
Collection data. Holotype, ♀, Miaoli, Miaoli Hsien, 15-III-1981, ex *Morus albata*, Y. H. Tseng; paratype, 4 ♀♀, same data as holotype.

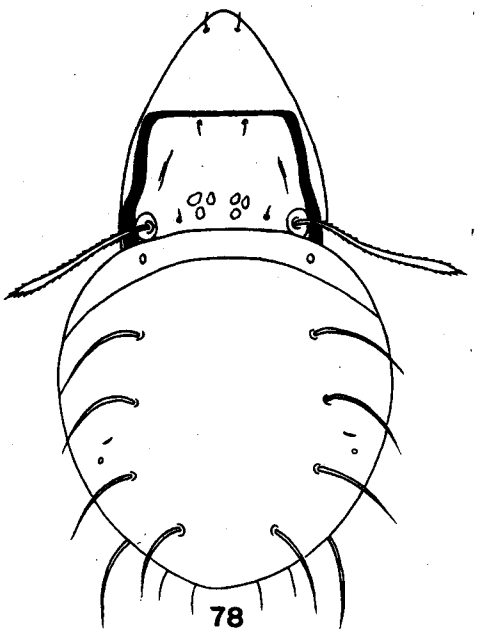
Specimens collected from Taiwan on *Morus albata* much differs from type *subtropica* of the genus *Taiwanoppia* in having the whip-like notogasteral setae and setae formula of genu 3-3-2-1.





Figs. 75-77. *Taiwanoppia papillaris*
75. Dorsal aspect 76. Pseudostigmatic organ 77. Ventral aspect





Figs. 78-79. *Quinquoppia nobilis*
78. Dorsal aspect 79. Ventral aspect

GENUS *QUINQUOPPIA* n. g.

This genus is differentiated from *Otoppia* Balogh and Mahunka in having the pseudostigmatic organ laneolated, 6 pairs of very long notogasteral setae on submarginal position. This new genus also shows a close resemblance to *Lasiobelba* Aoki because of 5 pairs of genital setae present, setae ta absent, it differs in having 7 pairs of notogasteral setae, 5 very long in submarginal position and setae on prodorsum minute.

Generic diagnosis. Rostral, lamellar and interlamellar setae present, tiny, the lateral margins with lateral ridges rather broad, situated from anterior border of notogaster extending to the middle of prodorsal margin. Pseudostigmatic organ long and slightly swollen with pointed tip. 7 pairs of notogasteral setae, 5 pairs extremely long and on submarginal position, ta absent. 6 pairs of genital setae. Legs monodactyle.

Type species. *Quinquoppia nobilis nobilis.*

29. *Quinquoppia nobilis* n. sp.
(Figs. 78 - 79)

Body tiny, pale brown.

Prodorsum much longer than wide, with broad lateral chitinous ridges from anterior border of notogaster, extending to the middle of lateral prodorsum, a transverse narrow ridge connected with lateral chitinous ridges. Rostrum elongated conical tip. Rostral setae tiny, arising from the strong tubercles, shorter than their mutual distance. Interlamellar setae tiny, but discernible, situated just in front of dorsosejugal suture. Bothridium openning anterior. Pseudostigmatic organ rather long barbed. Slightly swollen posterior and pointed tip. Inside of bothridium with 3-4 pairs of subrectangular spots. Lamellae position insteaded by a pair of faintly short chitinous ridge.

Notogaster ball-shape, smooth, with 4 pairs of indistinctly hyaline small round spots in submarginal position. 7 pairs of notogasteral setae, anterior 6 pairs ulta long, barbed and on submarginal postion, arranged in linear-shape, 2 pairs of posteromarginal setae shortest, ta absent form a large pore. Apodemata II and sejugal apodemata developed, converged anterior to from 2 transverse chitinous bands, apodemata IV long, upward anterior, connected with each other. Integument between apodemata, smooth, pale brown, epimarata III+IV to form a complete plate, almost as long as wide and with indistinct reticulation. Genital aperture longer than wide, bearing 5 pairs of genital setae, arranged in 2 longitudinal lines. 3 pairs of adanal setae, 2 pairs of anal setae and one pair of aggenital setae in subequal length. Ad1 far distance to the anal border, the distance Ad1-Ad2 equal length to Ad2-Ad3. The fissure at anal field, elongated, situated close to mediolateral border and aligned obliquely to the border. The distance between genital and anal apertures almost 1.7 length of the former and equal length to the latter.

Collection data. Holotype, ♀, Tsushan, Nantou Hsien, 8-VIII-1981, ex litter, Y. H. Tseng.

GENUS *MULTIOPPIA* HAMMER

Generic diagnoses. Body small, crista and costulae absent, 13 pairs of notogasteral setae. Pseudo-

stigmatic organ pectinated. Legs monodactyle.

Type species. *Multioppia radiata* Hammer

30. *Multioppia formosana* n. sp.
(Figs. 80 - 82)

This species resembles *wilsoni* Aoki, but differs in pseudostigmatic organ with oval-head and pectinates bilaterally.

Rostral setae incurved, strongly plumose proximally, thin and smooth distally. Lamellae absent, instead of a faintly chitinous ridge. Lamellar setae and interlamellar setae short and smooth. Bothridium openning outerior. Pseudostigmatic organ with oval head, the head bears bilateral long branches. 12 pairs of short, simple notogasteral setae, ta absent. Apodemata developed, all converged anterior. Genital aperture bears 5 pairs of genital setae. One pair of aggenital setae, 3 pairs of adanal setae and 3 pairs of anal setae in subequal length. Ad1 situated far distance to the anterolateral border of anal aperture, Ad1 - Ad2 equal length to Ad2 - Ad3. The fissure on the anal aperture close to mediolateral border of anal and parallel of the border. Legs monodactyle.

Collection data. Holotype, ♀, Houli, Taichung Hsien, 19-IX-1981, ex litter, L. L. Lai.

Suctobelbidae Grandjean

GENUS *SUCTOBELBALLA* JACOT

Generic diagnosis. Rostrum with 2 pairs of teeth. Lamellar and interlamellar setae present. Pseudostigmata organ with swollen apex. Notogaster with 2 pairs of chitinous tubercles, 9 pairs of notogastral setae, 5 pairs of genital setae. Legs monodactyle.

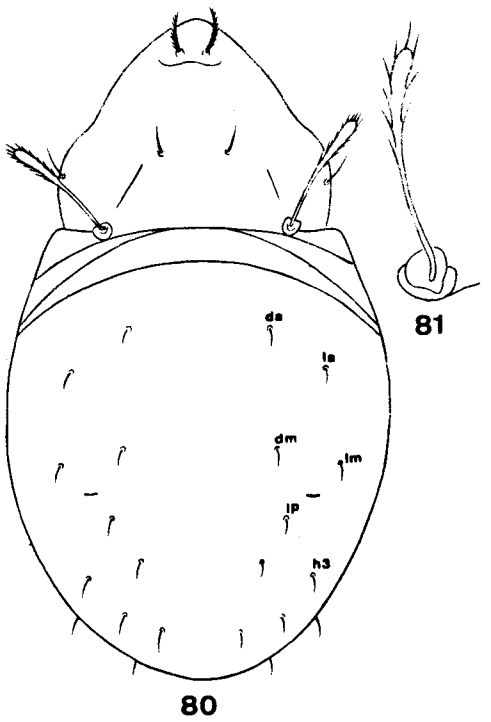
Type species. *Suctobelbella serratirostrum* Jacot

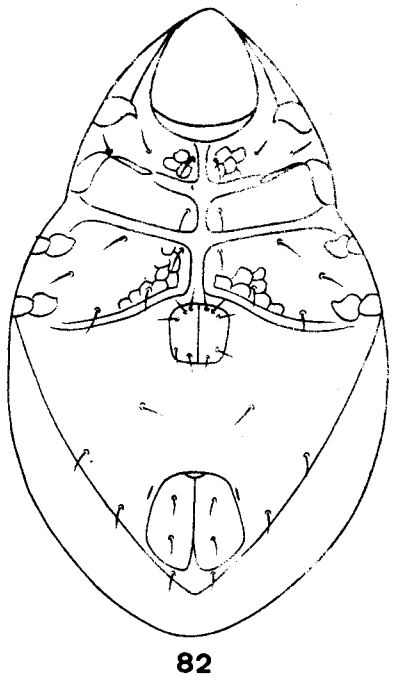
31. *Suctobelbella laiae* n. sp.
(Figs. 83 - 85)

Close to *chitralensis* Hammer but differs in having the pseudostigmatic organ with broad ovai head and pointed tip.

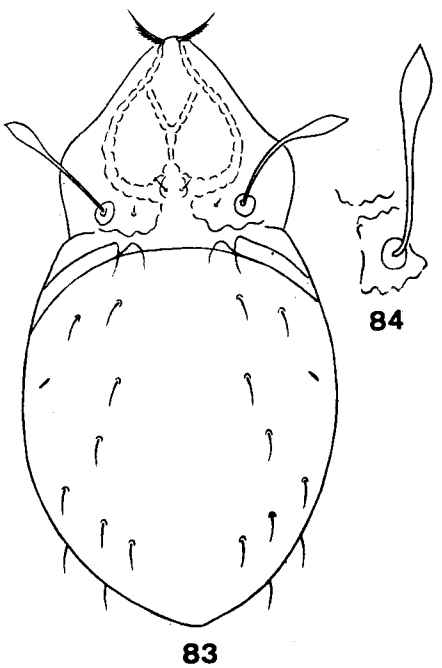
Prodorsum longer than wide. Rostrum with 2 pairs of sharp teeth, rather large and direct forward. Rostral setae plumose unilaterally and thin posteriorly. Lamellar setae minute, arising from the lamellar knob. From the lamellar knob, bears a pair of lateral chitinous irregular bands, then upward, and bears one of central broader chintinous irregular band, all converging anterior of prodorsum, the anterior of prodorsum to form a nose-shape granules and brown plate. Interlamellar setae much short, but discernible, situated just interior of the bothrium. Bothrium openning posterior, with 2 pairs of posterior lobes. Pseudostigmatic organ with a long rather stout pedicel, posterior with broad oval-shaped head and pointed tip.

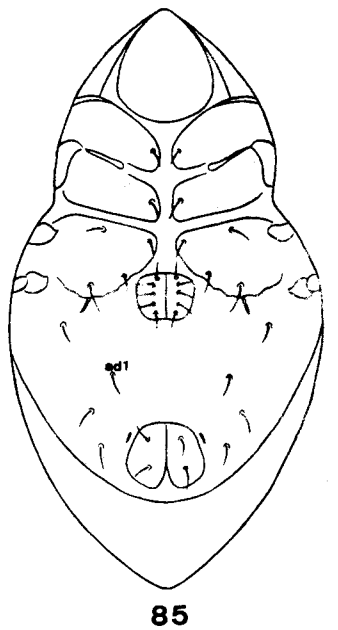
Notogaster rounded. The dorsosejugal suture faintly in the middle part, 2 pairs of notogasteral





Figs. 80-82. *Multioppia formosana*
80. Dorsal aspect 81. Pseudostigmatic organ 82. Ventral aspect





Figs. 83-85. *Scutobelbella laiae*
83. Dorsal aspect 84. Pseudostigmatic organ 85. Ventral aspect

tubercles on anterior border. 2 hollows each arises from lateral pair of notogaster tubercles extending to the anterior of setae ti. 9 pairs of notogasteral setae short and simple. Apodemata I, II and sejugal apodemata well developed, not converged anteriorly. Apodemata IV long and broad, connected with genital border. Anterior of the genital border with a rather broad rectangular sternum expansion, longer than wide and brown colour. Genital aperture bears 5 pairs of the genital setae, arranged in linear-shape. One pair of the aggenital, 3 pairs of adanal and 2 pairs of anal setae in subequal length. a_1 situated post half of the anal aperture, Ad1 situated far distance to middle of anterior border, Ad_1 - Ad_2 equal length to Ad_2 - Ad_3. Fissure on anal field situated close to anterior hal of lateral border and parallel to that, almost as long as anal setae. Legs monodactyle.

Collection data. Holotype, ♀, Houli, Taichung Hsien, 19-OX-1981, ex litter, L. L. Lai; paratype, 1 ♀, same data as holotype.

Etypmology. This new species is named in honor of Miss L. L. Lai, to thank her kind assistance of the project.

Eremellidae Balogh

GENUS *EREMELLA* BERLESE

Generic diagnosis. Notogaster heavily sclerotized with arevolate and polygonal reticulation. Costulae obsolesent and form an indistinct X-shape. 6 pairs of genital setae. 10 pairs of notogasteral setae pyriform or dilated, ta present. Pseudostigmatic organ with broad oval-shaped head. Legs monodactyle.

Type species. *Eremella vestita* Berlese

32. *Eremella induta* Berlese

(Figs. 86 - 87)

This is a smaller species.

Prodorsum nearly pentagonal, about half as long as notogaster. Rostrum narrowly rouned. Rostral setae setiform, twice as long as the length from their base to tip of rostrae. Costulae forming indistinct X-shape. Lamellar and interlamellar setae short, spiniform, serrated edges. Bothridium openning posterior. Pseudostigmatic organ with broad round setose head, set on short pedicel.

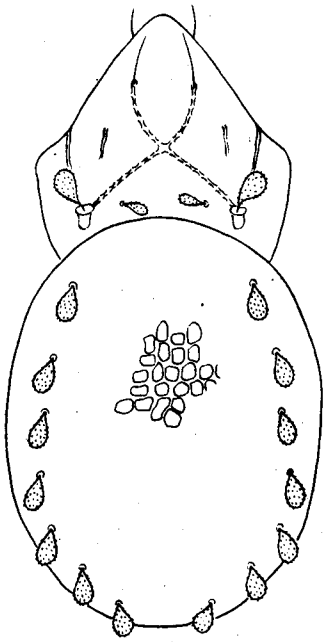
Notogaster rounded, heavily sclerotized with polygonal reticulation. 10 pairs of notogasteral setae, broad leaf-shape, ta present, short. Dorsosejugal suture slightly convex. Apodemata rather short. Genital aperture bears 6 pairs of genital setae. One pair of aggenital, 2 pair of anal and 3 pairs of adanal setae in subequal length. Fissure on anal field situated close to lateral border and parallel to that. Legs monodactyle with a long stalk.

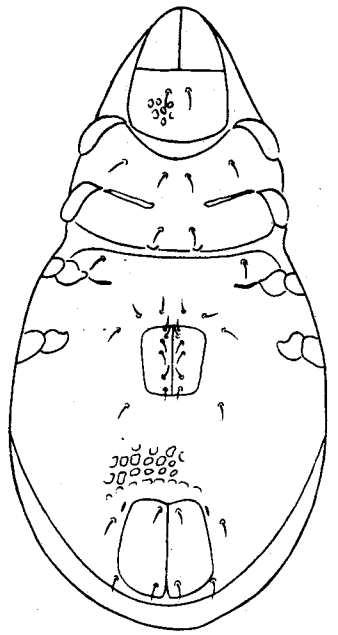
Collection data. 1 ♀, Puli, Nantou Hsien, 15-III-1980, ex weeds, Y. H. Tseng.

Thyrisomidae Grandjean

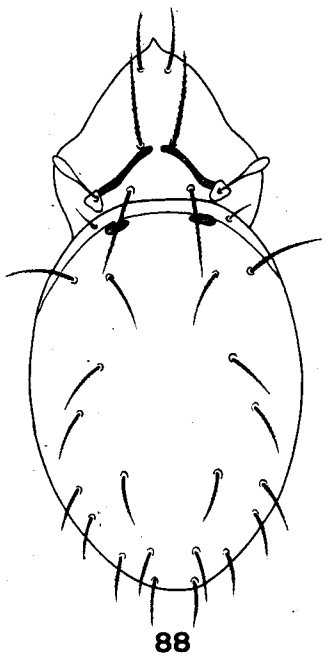
GENUS *BANKSINOMA* OUDEMAN

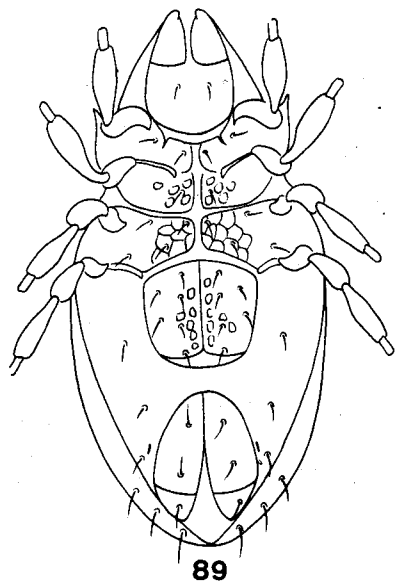
Generic diagnosis. Costulae short. Pseudostigmatic organ variated 6 pairs of genital setae.





Figs. 86-87. *Eremulus induta*
86. Dorsal aspect 87. Ventral aspect





Figs. 88-89. *Banksinoma pretiosa*
88. Dorsal aspect 89. Ventral aspect

10 pairs of notogasteral setae, ta present. Legs monodactyle. Rostral, lamellar and interlamellar setae present, genital and anal apertured developed, close together.

Type species. *Notospis lanceslata* Micheal

33. *Banksinoma pretiosa* n. sp.
(Figs. 88 - 89)

Similar to *lanceolata* (Micheal), but differing in having te setae longer than other notogasteral setae, pseudostigmatic organ with broad oval-shaped head, and fissure on anal field situated close to lateral border of the latter and parallel to border.

Body rather small, pale brown. Tip of rostrum pointed. Rostral setae situated on dorsal surface and close together, almost 2.3 as long as their mutual distance Lamellae present, indistinctly developed, aligned obliquely, the distance between anterior narrower than the distance between posterior, to form a /\-shape. Lamellar setae just arising from anterior border of lamellae, long and barbed, about 3.7 longer than their mutual distance, and 1.6 as long as rostral setae. Interlamellar setae 0.73 as long as lamellar setae rather thin and finely barbed, almost 1 8 length to their mutual distance. Bothridium openning outerior. Pseudostigmatic organ with broad oval-shaped head, almost 0.9 as long as pedicel.

Notogaster olive-shape, anterior rather round and convex posteriory,bearing 11 pairs of simple and minute barbed setae, the length ratio ta/ti/te/ms/r3/r2/r1/p4/p2/p3/p1 = 1/1.86/2.13/1.6/1.6/1.61/1.6/1.6/1.6/1.6/1.6.ta present, situated at anterior corner of notogaster, rather short, 17 μ long, ti, ms, r2 and r1 on submarginal position, ta, r3, m4 on marginal position Apodemata developed, converged anterior, integument between apodemata smooth, pale brown, with minute epimeral setae, the setal formula 2-1-4. Genital aperture large, slightly wider than long, bearing 6 pairs of genital setae, one seta in antiaxial line and 5 in paraxial (1-5-5-1). g3 and g4 arranged in transverse line. One pair of aggenital, 3 pairs of adanal and 2 pairs of anal setae in subequal length. Anal aperture rounded anterior. Fissure on the anal field situated close to lateral border of the latter and parallel to that. Genital and anal apertures extremely large, nearly meet, together occupying almost entire length of ventral aspect.

Collection data. Holotype, ♀, Wush, Nantou Hsien, 19-I-1982, ex bark of pine tree, Y. H. Tseng; paratype, 2 ♀♀, same data as holotype.

The main generic characters of this genus are the pseudostigmatic organ setiform, or filiform or slightly lanceolated, and the fissure on anal field situated rather far distance to lateral border of anterior and against to border, these characters are differentiated from on are pseudostigmatic organ with broad oval-shaped head set on short pedicel, and the anal fissure close to lateral border of latter and paralled to the border.

I suspect that the characters of *prectiosa* may represent a new genus, but I need more specimens for further studies.

Pterogasterina – Pronota
Oribatuloidea Woolley
Zetomotrichidae Grandjean

GENUS *ZETOMOTRICHUS* GRANDJEAN

Generic diagnosis. Rostrum with many teeth. Rostral, lamellar and interlamellar setae present, arranged in linear-shape. A lamelliform ridge, rather short. Dorsosejugal suture absent. Notogasteral setae tiny, hardly discernible. Pseudostigmatic organ setiform. 4 pairs of genital setae. Legs monodactyle.

Type species. *Zetomotrichus lacrimans* Grandjean

34. *Zetomotrichus linearis* n. sp.
(Figs. 90 - 91)

This species resembles *lacrimans* Grandjean, but differs from rostrum broader, with 5 pairs of small teeth, the lamelliform ridge extends to the middle between interlamellar and lamellar setae, and epimeral setae 1b longer than 1a, 4b absent.

Rostrum broader, with 5 pairs equal small teeth. Rostral setae straight forward, situated on dorsal surface, stout, minute barbed and reach by 3 times their length beyond the tip of rostrum. Lamellae absent. Lamelliform chitinous ridge arising from the anterolateral border of notogaster, extending to the middle between lamellar and interlamellar setae. Lamellar setae rather stout, minute barbed, 1.5 longer than rostral setae. Interlamellar setae situated posterior of the lamellar setae arranged in a longitudinal line. From bothridium to lamellar setae with a row of small pori. Bothridium opening posterior. Pseudostigmatic organ setiform, plumose.

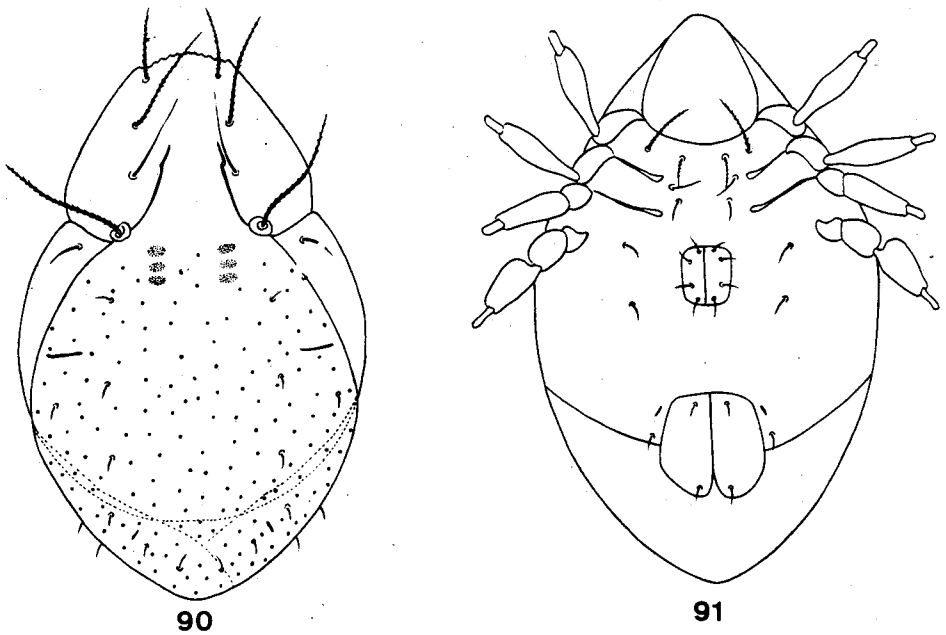
Notogaster rounded, with many small pori, and 8 (may be 10) pairs of tiny, hardly discernible notogasteral setae arising from small tubercles. 2 pairs of notogasteral fissures, im twice as long as il Dorsosejugal suture absent. Apodemata II and sejugal apodemata aligned obliquely, parallel to each other, the former distinctly shorter than the latter, apodemata IV absent. Integument between apodemata with oval-shaped reticulation. Epimeral setae formula 2-2-1, 1b stout, lanceolate and strongly barbed, 1a thin and minute barbed, distinctly shorter than 1b, the other epimeral setae thin and finely barbed, about half as long as 1a. Genital aperture rather small, rectangulare, longer than wide, bearing 4 pairs of genital setae, form 2 longitudinal lines. The distance g2 - g3 twice as long as g3 - g4. One pair of aggenital setae arranged in the same level of genital aperture. Anal aperture sub-oval, 2 pairs of the anal setae, 2 pairs of adanal setae tiny, in subequal length. Fissure on the anal field situated a little short distance to lateral border of median, aligned boliquely to border. Distance between genital and anal apertures almost twice the length of the former and a little longer than the latter. Legs monodactyle, with longer stalk, tibia I short, triangle-shape, proximal about 4.5 times as wide as distal.

Collection data. Holotype, ♀, Lushan, Nantou Hsien 13-II-1981, ex humus, Y. H. Tseng

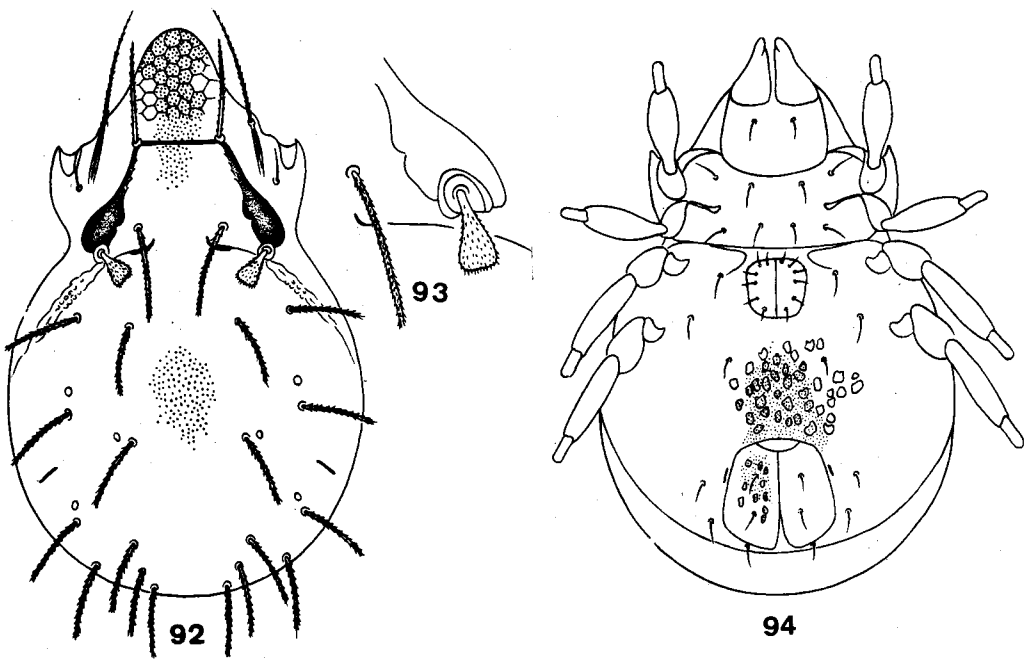
Oribatulidae Thor

GENUS *PABULOZETES* n. g.

This new genus is characterized the other genera of Oribatulidae by the dorsosejugal suture



Figs. 90-91. *Zetomotrichus linearis*
90. Dorsal aspect 91. Ventral aspect



Figs. 92-94. *Pabulozetes plumosus*
92. Dorsal aspect 93. Pseudostigmatic organ 94. Ventral aspect

absent, 9 pairs of the notogasteral setae and 6 pairs of the genital setae.

Generic diagnosis. Rostral, lamellar, interlamellar and exopseudostigmatic setae present. Lamellae present, narrow. Pseudostigmatic organ with broad oval head. 9 pairs of notogasteral setae. 6 pairs of genital setae, dorsosejugal suture absent. 3 pairs of sacculi and one pair of notogasteral fissure present, sejugal apodemata converging anterior to form a transverse band. Legs tridactylous.

Type species. *Pabulozetes plumosus.*

35. *Pabulozetes plumosus* n. sp.
(Figs. 92 - 94)

Prodorsum wider than long, triangle-shape.

Rostrum broad rounded. Rostral setae situated near the median of lateral margin of prodorsum, thin, unilateral barbed, 1.5 longer than distance from their base to the tip of rostrum. Distal of lamellae lsightly broader than the proximal, Lamellar setae stout, distinctly barbed, almost as long as rostral setae. A faint translamella connected with terminal of lamellae. Interlamellar setae situated far distance from the anterior border of notogaster, stout and strongly barbed, about equal length to lamellar setae, slightly shorter than their mutual distance, the mutual distance ls - ls/in - in = 1/1.5. Lateral lamelliform expansion present. Bothridium openning posterior. Pseudostigmatic organ with broad oval-shaped head set on short and narrow pedicel, the head with short setae. Anterior of translamella with rather large and rectangular reticulation, but posterior of the translamella with rough granules.

Ntogoaster rounded, as long as wide, with fine granules, tinged with rather round dots. 9 pairs of stout, strongly barbed notogasteral setae, in subequal length, distinctly shorter than interlamellar setae, and arranged almost in 2 longitudinal line. 3 pairs of pori and 1 pair of fissures on notogaster. S1 situated anterior of te, S2 just located outside of ms, S3 situated naterior of r3, im siutated between te and r3. Ventral with fine granules, tinged with irregular dots. Apodemata II short, not converging anterior, sejugal apodemata converging anteriorly to form a transverse band across the anterior border of genital aperture. Apodemata IV absent. Integument between apodemata smooth, the epimeral setae simple, setal formula 2-2-2. Genital aperture broad and flattened, anterior wider than posterior, bearing 6 pairs of the genital setae, arranged in linear-shaped. 3 pairs of adanal, 2 pairs of anal and one pair of aggenital setae simple in subequal length. Anal aperture with irregular, small dots. Fissure on anal field situated close to anterolateral border and parallel to broder. Distance between the genital and the anal apertures almost 1.7 longer than the former and as long as the latter. Legs tridactylous, the chaetotaxy of each leg as follow: Femur - Genu - Tibia = 3-4-6, 3-3-5, 3-2-4 and 2-2-3.

Collection data. Holotype, ♀, Kuanfui, Hualien Hsien, 12-VI-1979, ex leaf of *Crypotomeria japonica.* S. C. Wu; paratype, 2 ♀♀, Miaoli, Miaoli Hsien, 16-III-1981, ex *Ipomea* sp., Y. H. Tseng.

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台灣革蟎亞目之分類研究（蟎蜱亞綱：無氣門目）（I）

曾義雄

中 文 摘 要

革蟎亞目是蟎蜱亞綱中種類最多之一群；全世界之記錄約有134科700屬。本亞目之種類體形小型至中型，其大小約爲300-1200 μ之間，外骨骼甚發達，多呈革質；其生活習性相當複雜，多生活於土中，落葉，腐植質，動物的糞便，貯藏食品及生植物體之根莖及葉上。整個生活史可分爲6個時期：卵→幼蟎→前若蟎→第二若蟎→後若蟎→成蟎。在早期由於其體形細小，加上生活之特性，故一直被生物學家所忽略。最近幾年來，蟎類學家已發現本亞目之種類對人類有甚密切之關係，故研究已趨活躍。

本亞目之蟎類與人類之直接及間接關係概略的可分爲以五種：㈠由於其生活於土壤中，腐植質及枯枝落葉，故能分解上述之有機物質而影響土壤之理化性質；㈡由其棲群密度及不同種類之出現之結果可推測土壤之物理性質；㈢已發現爲Catenotaeniidae及Anoplocephalidae二科條蟲之中間寄主，這些條蟲除能爲害家畜動物外並能爲害人類；㈣能爲害植物體，有不少種類已證明能爲害馬鈴薯、草莓、鬱金香、柑桔及洋菇、木耳等之根、莖葉；㈤捕食性，能捕食粉蟎，筆者亦發現彼等亦能捕食蛔馬之幼蟲及粉蝨之蛹；㈥寄生性，寄生於膜翅目 *Polynotus zosini* 。

在系統分類學上，本亞目大致可分爲高等革蟎及低等革蟎類：

高等革蟎分爲翼背板團（Pterogasterina），本團之革蟎共分爲六總科28科259屬。另一爲缺翼背板團（Apterogasterina）共有19總科68科344屬。

低等革蟎類共有19總科38科111屬。

本文共敘述多年來在台灣所發現28科56屬76種，其中58種爲新種，14屬爲新屬。文中對所有種類均予以詳細載述。