

STUDIES ON ORIENTAL DERMAPTERA PRESERVED IN THE
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INTRODUCTION

The present study is based on a collection of Dermaptera from various countries of the Oriental Region. Altogether 57 species (excluding 5 species determined up to generic level) belonging of 29 genera which include seven new species viz., *Diplaty daviesi*; *Epilandex wagneri*; *Gonolabis emarginata*; *Paralabis rossi*; *Isolabis rossi*; *Chaetospania acuminata* and *Proreus ledyardi*. Besides two new combinations, namely *Leptisolabis fletcheri* (Burr) and *Liparura debrepaniensis* (Kapoor, Bharadwaj & Banerjee) are proposed. In addition, the female sex of *Labia emarginata* Srivastava is recorded for the first time.

Chaetospania bihastata (Borg) which was hitherto known from Africa is reported for the first time from India (Darjeeling) on a male and female. *Spongovostox hakeni* Ramamurthi is treated as synonym of *Spongovostox semiflavus* (Bormans).

Most of the collections were made by E. S. Ross and D. Q. Cavagnaro except as otherwise stated and are deposited in the California Academy of Sciences, Sanfrancisco, U.S.A.

The accompanying table provides at a glance the details of distribution of various species dealtwith. The highest number of species i.e., 27 are from India, followed in descending order, by 19 from Philippine Islands; 7 from Thailand; 4 each from Bangladesh, Malaya and Moluccas; 3 each from Sri Lanka and localities, not known; 2 each from Pakistan and Borneo and 1 each from South Vietnam, China, Java.

PYGIDICRANOIDEA

PYGIDICRANIDAE

DIPLATYINAE

Schizodiplatys daviesi sp.n.

Figs. 1-5

♂ : General colour yellowish brown with shades of black on certain body parts; head elytra and wings dark blackish brown; legs with joints and basal half of hind femora yellowish, abdominal tergites laterally and ultimate tergite blackish with a triangular yellowish brown area in middle posteriorly; forceps blackish, at extreme base lighter in colour. Build slender, pubescent.

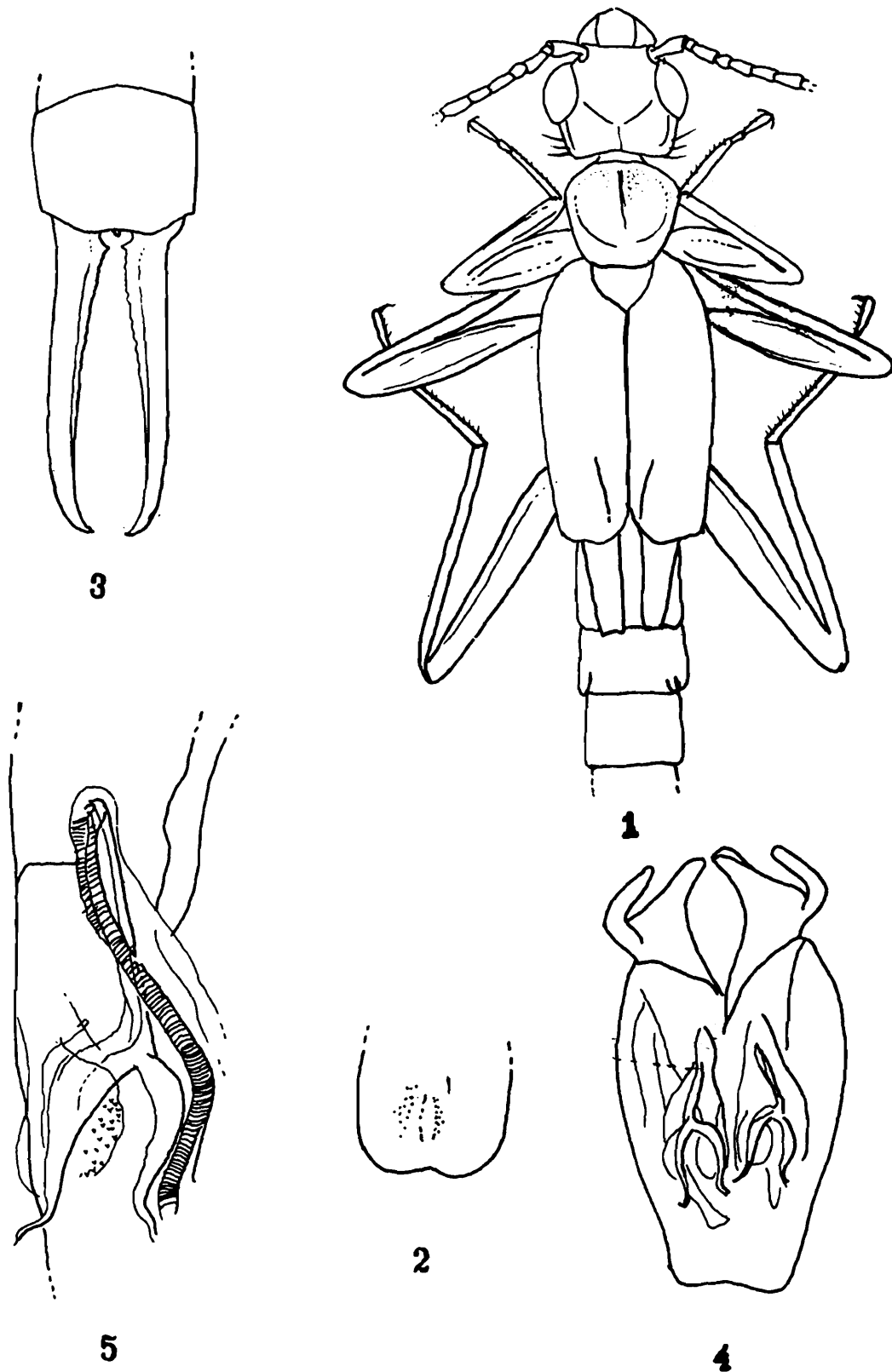
Table : Distribution of various species represented in the collection. Distributional areas are denoted by numbrs as : 1. Pakistan, 2. India, 3. Nepal, 4. Bangladesh, 5. Sri Lanka, 6. Thailand, 7. South Vietnam, 8. China, 9. Malaya, 10. Sumatra, 11. Java, 12. Borneo, 13. Philippine islands, 14. Moluccas and 15. Locality Unknown.

Name of Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
PYGIDICRANIDAE															
DIPLATYINAE															
1. Diplatys daviesi sp. n.												+			
2. Diplatys sp.		+													
3. Diplatys sp.		+													
ECHINOSOMATINAE															
4. Echinostoma parvulum Dohm		+													
5. Echinostoma trilineatum Borelli		+													
6. Echinostoma convolutum Hincks			+			+									
PARAPSALINAE															
7. Parapsalis infemalis (Burr)		+											+		
ANISOLABIDIDAE															
PLATYLABIINAE															
8. Platylabia sp.		+													
9. Platylabia major Dohm						+									
TITANOLABIDINAE															
10. Titanolabis maindroni (Borelli)		+													
CARCINOPHORINAE															
11. Euborellia rajasthanensis Srivastava	+														
12. Euborellia stali (Dohm)		+													
13. Euborellia annulipes (Lucas)		+													
14. Euborellia plebeja (Dohm)				+											

Name of Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
15. Euborellia femoralis (Dohrn)					+										
16. Euborellia philippinensis Srivastava													+		
17. Epilandex wagneri sp.n.														+	
18. Gonolabis emarginata sp.n.									+						
19. Epilabis punctata Srivastava		+													
20. Epilabis penicillata (Borelli)		+													
21. Epilabis sp.		+													
22. Paralabis lefroyi (Burr)		+													
23. Paralabis rossi sp.n.													+		
24. Aborolabis nepalensis (Brindle)			+												
ISOLABIDINAE															
25. Leptisolabis fletcheri (Burr) comb.n.		+													
26. Isolabis rossi sp.n.									+						
27. Isolabis ocellata Srivastava						+									
LABIDURIDAE															
ALLOSTETHINAE															
28. Gonolabidura astruci Burr		+													
NALINAE															
29. Nala lividipes (Dufour)	+	+		+		+							+		
LABIDURINAE															
30. Labidura riparia (Pallas)		+							+				+		

Name of Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
SPONGIPHORIDAE (= LABIIDAE)															
NESOGASTRINAE															
31. <i>Nesogaster apoensis</i> Rehn													+		
32. <i>Nesogaster redivus</i> Rehn														+	
IRDEXINAE															
33. <i>Irdex nitidipennis</i> (Bormans)						+							+		
SPONGIPHORINAE															
34. <i>Spongovostox gracilis</i> Borelli													+		
35. <i>Spongovostox anamaliensis</i> Srivastava		+													
36. <i>Spongovostox mucronatus</i> (Stal)													+		
37. <i>Spongovostox semiflavus</i> (Bormans)		+				+							+		
38. <i>Marava arachidis</i> (Yersin)														+	
LIBIINAE															
39. <i>Apovostox serratus</i> (Kapoor)		+													
40. <i>Apovostox jupiter</i> (Burr)												+			
41. <i>Labia curvicauda</i> (Motschulsky)		+		+	+	+							+		
42. <i>Labia emarginata</i> Srivastava													+		
43. <i>Labia minor</i> (L.)					+						+		+		
44. <i>Chaetospania lanceolata</i> Borelli									+				+		
45. <i>Chaetospania nigriceps</i> (Kirby)		+											+		
46. <i>Chaetospania thoracica</i> (Dohrn)		+													
47. <i>Chaetospania acuminata</i> sp. n.		+													
48. <i>Chaetospania minuta</i> Borelli									+						
49. <i>Chaetolabia bihastata</i> (Borg)		+													

Name of Species	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
CHELISOCHIDAE															
CHELISOCHINAE															
50. <i>Proreus simulans</i> (Stal)													+		
51. <i>Proreus ledyardi</i> sp. n.													+		
52. <i>Proreus laetior</i> (Dohrn)														+	
53. <i>Chelisoche semirufus</i> Borelli															+
54. <i>Chelisoche rubriceps</i> (Burr)															+
55. <i>Hamaxas crassus</i> Borelli													+		
56. <i>Adiathetus tenebrator</i> (Kirby)		+													
FORFICULIDAE															
FORFICULINAE															
57. <i>Hypurgus</i> sp.															+
58. <i>Hypurgus fulvus</i> Borelli													+		
OPISTHOCOSMIINAE															
59. <i>Liparura debrepaniensis</i> (Kapoor Bharadwaj & Banerjee) comb.n.		+													
60. <i>Eparchus insignis</i> (Haan)				+											
61. <i>Opisthocosmia longipes</i> (Haan)													+		
62. <i>Cordax armatus</i> (Haan)								+							



Figs. 1-5. *Diplatys daviesi* sp.n., Holotype ♂; 1. Anterior portion of body, 2. Posterior margin of penultimate sternite, 3. Ultimate tergite and forceps, 4. Genitalia, 5. A portion of distal lobe, enlarged.

Head triangular, longer than broad, frons raised, occiput depressed, post-ocular carina distinct, extending from eye to hind margin, transverse suture obsolete, median suture short and distinct, hind margin emarginate. Eyes prominent, distinctly longer than the post-ocular length. Antennae (partly broken since only 21 segments on the right side and 7 on the left remaining) with segments long and slender, basal segment stout, expanded apically, about as long as the distance between antennal bases; 2nd transverse; 3rd long and cylindrical; 4th stouter, only slightly longer than broad, shorter than the preceding; 5th slightly longer than the 4th; 6th about as long as the 3rd, afterwards segments gradually increasing in length and thinner. Pronotum about as long as broad, smooth; strongly narrowed posteriorly, anteriorly convex, sides straight, hind margin briefly rounded, median sulcus distinct, prozona strongly convex and well demarcated from flat metazona. Elytra and wings well developed, former with axillary angles rounded off to show a triangular scutellum. Legs typical for the genus. Abdomen convex, smooth, long and slender, lateral tubercles on 3rd and 4th tergites well marked, gently expanded from 8th tergite onwards. Penultimate sternite oblong, hind margin rounded with slight emargination in middle. Ultimate tergite weakly transverse, disc convex, sloping backwards, posteriorly in middle with a triangular pilose area, hind margin trisinate, oblique above the base of forceps, posterolateral angles a little projecting. Pygidium vertical with a small point in middle posteriorly. Forceps long, slender, tapering apically, depressed above, almost straight, gently incurved near apex, internal margin at base with a small tubercle, afterwards finely serrated, at base above with an oblique triangular crest. Genitalia as seen in fig. 4 and 5.

♀ : Unknown.

Measurements : (in mm)

Holotype

♂

Length of body

13.4

Length of forceps

2.7

Material examined : Borneo: Sabah State, Poring, 9 mi. Ni. of Ranau, alt. 1600 ft., Holotype ♂ (genitalia mounted between two coverslips and pinned with the specimen), 26-29.IV.1970 (coll. T.W. & M.C. Davies).

Remarks : This species comes close to *Schizodiplatys hoogstraali* (Srivastava) from Philippines in having somewhat similar pronotum and penultimate sternite but differs by shape of parameres and details of virga and associated structures of distal lobes and forceps comparatively more elongated and slender.

Diplatys sp.

Material examined : India : Assam, Near Ledo, Barkflakes, 1♀,... X.61.

Remarks : In the absence of a ♂ it is not possible to determine it up to specific level.

Diplatys sp.

Material examined : India : Maharashtra, 3 mi W. Sakoli, 220 m, 1 ♀, 20.I.1962.

ECHINOSOMATINAE

Echinosoma parvulum Dohrn

1863. *Echinosoma parvulum* Dohrn, *Stettin ent. Ztg.*, 24 : 66 (♀; Ceylon).

Material examined : India : Andhra Pradesh : 5 mi SE Ashwaraopet, 100 m, 3♂♂ (genitalia of 1 ex. placed in the same vial as the specimen), 2 ♀♀, 9 nymphs, 6.II.62; Mysore : 12 mi E. Virajpet, 850 m, 3 ♂♂, 5 ♀♀, 8 nymphs, 24.II.63; Madhya Pradesh : 14 mi S Kanker, 450 m, 1♂, 7 nymphs, 31.I.1962.

Distribution : India and Sri Lanka.

Echinosoma trilineatum Borelli

1921. *Echinosoma trilineatum* Borelli, *Bull.Mus.Hist.nat.Paris*, 27 : 77 (♂, India, Shembaganur).

Material examined : India : Mysore : 8 mi NE Mercara, 1000 m, 1♂ (genitalia projecting beyond penultimate sternite), 1♀, 22.II.62; 4 mi SW Sidapur, 900 m, 2♂♂, 2♀♀, 3 nymphs (partly damaged); 12 mi E Virajpet, 850 m, 3 ♂♂, 1♀, 24.II.62.

Distribution : Distributed in the mountains of S. India only.

Echinosoma convolutum Hincks

1959. *Echinosoma convolutum* Hincks, *Syst. mono.Dermaptera*, 2 : 152 (♀; Ceylon).

Material examined : Thailand : E. Slope Doi Suthep, 1100-1275 m, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 15.VII.62; 20 mi NW Lee, 380 m, 1♀, 14.VII.1962. Nepal : 9 mi W Hitaura, 400 m, 1♂, 1 nymph, 23.X.1961.

Distribution : India, Nepal, Burma, Vietnam and Sumatra.

PARAPSALINAE

Paraspsalis infernalis (Burr)

1913. *Chaetospania infernalis* Burr, *Ent. Mitt.*, 2 : 6 (♂, ♀ ; Kosempo Formosa).

Material examined : India : Assam : 10 mi SW Kochugaon, 50 m, 1♂, 19.X.1961. Philippine Islands : Mindoro, San Jose, 1♂, IX.45 (*Ross and Skinner*); 1 ♂, X-45 (*E.S.Ross*).

Distribution : Widely distributed throughout the Oriental Region.

ANISOLABIOIDEA

ANISOLABIDIDAE

PLATYLABININAE

Platylabia sp.

Material examined : India : Mysore : 8 mi NE Mercara, 1000 m, 1 nymph, 22.II.62.

Platylabia major Dohrn

1867. *Platylabia major* Dohrn, *Stettin ent. Ztg.*, 28 : 347 (♀; Celebes).

Material examined : Thailand : Khao-Yi Nat. Pk., 750 m, 5 ♀♀, 26.VIII.62; E. Slope, Doi Suthep, 875-950 m, 1♀, 15.VII.1962; 1♀ (without locality data) (Dr. E. Mejoberg leg).

Distribution : Widely distributed throughout the Oriental Region.

Remarks : Out of the above material, 2 examples are macropterous.

TITANOLABIDINAE

Titanolabis maindroni (Borelli)

1911. *Homoeolabis maindroni* Borelli, *Boll. Musei Zool.Anant.comp.R. Univ. Torino*, 24(640) : 2 (♂; Pondicherry).

1982 *Titanolabis maindroni* : Srivastava, *Annali Mus.civ.Stor.nat. Giacomo Doria*, 84 : 99.

Material examined : India : Mysore : 15 mi NE, Somwarpet, 960 m, 1♂ (genitalia slightly pulled out but attached with the specimen), 1♀, 21.II.62; 12 mi E. Virajpet, 850 m, 1 nymph, 24.II.62; Tamil Nadu : 7 mi SW Avinashi, 390 m, 1♀, 7.III.62; Coimbatore, 430 m, 1♂ (genitalia slightly pulled out for examination but attached with the specimen), 8.III.62; 16 mi NE Coimbatore, 640 m, 1♂, 1♀, 1 nymph, 8.III.62; Rajapalayam, 150 m, 1♀, 28.III.1962; Andhra Pradesh : Tirumala grade, 780 m, 1♀, 19.IV.62.

Distribution : In India this species occurs in Deccan plateau. Besides it is reported from Sri Lanka as well.

CARCINOPHORINAE

Euborellia rajasthanensis Srivastava

1977. *Euborellia rajasthanensis* Srivastava, *Oriental Insect*, 11(2) : 184 (♂, ♀; India : Rajasthan, Phalodi).

Material examined : Pakistan : Taxilla, 550 m, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 22.XII.1961; Margala Pass nr. Taxilla, 62 m, 1♀, 17.XII.61; 10 mi SW Kohat, 650 m, 1♀, 19.XII.61.

Distribution : This species was hitherto known from the type locality. It is reported for the first time from Pakistan.

Euborellia stali (Dohrn)

1864. *Forcinella stali* Dohrn, *Stettin ent.Ztg* : 25 : 286 (♀; Java).

Material examined : India : Mysore : 2 mi NW Punjur, 850 m, 16 ♂♂, 22 ♀♀, 16 nymphs, 13.III.1962; Mysore, Sirsi, 600 m, 1♀, 7 nymph, 16.II.62; Tamil Nadu : Coimbatore, 16 mi NW, 640 m, 4 ♂♂ (genitalia of one specimen pulled out for examination but attached with the body), 8.III.62; Coimbatore, 430 m, 4♂♂, 4♀♀, 4 nymphs, 8.III.62; 7 m SE Avanashi, 390 m, 3♀♀, 7.III.62; Topslip, Anamalai Hills, 760 m, 1♂, 2♀♀, 18.III.62; Orissa : 3mi SE Pottangi, 3345 ft. 1♂, 1♀, 3.II.1962.

***Euborellia annulipes* (Lucas)**

1847. *Forficesila annulipes* Lucas, *Ann.Soc.ent.Fr.*, (2) 5 : 84 (sex ? "Jardin des Plantes" Paris (Introduced).

Material examined : India : Tamil Nadu : Sethumadai, nr Pollachi, 375 m, 2 ♂♂, 1 ♂, 1 nymph, 18.III.1962; M.P. : 9 mi N Paharasgaon, 850 m, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 1.III.62; Gujarat : 5 mi S Palanpur, 250 m, 3♀♀, 1.I.62.

Distribution : World wide.

Remarks : The identification of ♀♀ from Gujarat should be treated with reserve.

***Euborellia plebeja* (Dohrn)**

1863. *Labidura plebeja* Dohrn, *Stettin ent. Ztg.*, 24 : 322 (♀ ; Java).

Material examined : Bangladesh : Chicknagul, 10 mi N Sylhet, 10 m, 1♂ (genitalia pulled out for examination but attached with the body), 1 nymph, 30.IX.61.

Distribution : Widely distributed throughout the Oriental Region.

***Euborellia femoralis* (Dohrn)**

1863. *Labidura femoralis* Dohrn, *Stettin ent. Ztg.*, 24 : 321 (♀; Ceylon).

Material examined : Sri Lanka : Province of Uva Egodapitiya Nilgala, 1♀, 1-3.VII.1968 (P. B. Karunaratne and T F. Halstead coll).

Distribution : Widely distributed throughout the Oriental Region.

Remarks : In the absence of a ♂ the identification of above ♀ should be treated with some reserve.

***Euborellia philippinensis* Srivastava**

1979. *Euborellia philippinensis* Srivastava, *Bull.zool.Surv.India*, 2(1) : 49 (♂, ♀; Philippines, Laguna).

Material examined : Philippine Island : Mindoro, 2 ♂♂, 1♀, 1 nymph, ,... IX.44, (Ross & Skinner), 2 ♂♂ (genitalia of 1♂ pulled out for examination but attached with the body), X.45, (E. S. Ross).

Distribution : Philippine Islands.

Epilandex wagneri sp.n.

Figs. 6-11

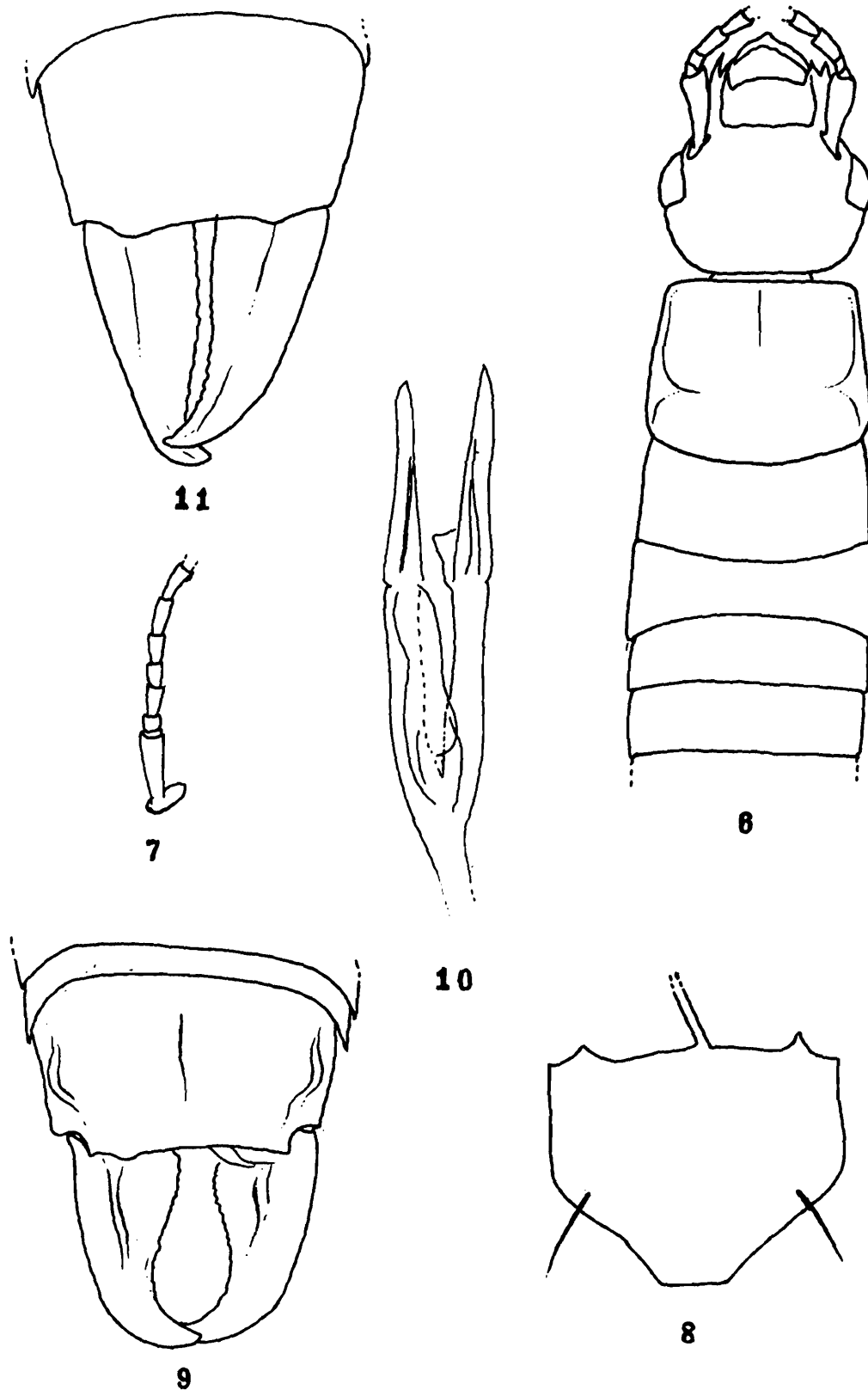
♂ : General colour blackish brown; antennae light brown; mouth parts and sides of pronotum pale; legs yellow, femora with a broad fuscus band and forceps reddish with margins blackish.

Head slightly longer than broad, smooth, frons convex, sutures obsolete, hind margin hardly emarginate in middle. Eyes moderately prominent, slightly shorter than the post-ocular area. Antennae partly broken (right side with 7 and left side with 4 segments remaining), 1st stout, gently expanded apically, about as long as the distance between antennal bases; 2nd short, about as long as broad; 3rd long and cylindrical, 4th slightly shorter than the 3rd, gently expanded apically; 5th about as long as 3rd but expanded apically, remaining gradually increasing in length and each gently expanded apically. Pronotum slightly broader than long, anteriorly and sides straight, gently expanded posteriorly, hind margin rounded, median sulcus faint; prozona feebly raised and metazona weakly depressed. Mesonotum transverse, hind margin truncate. Metanotum transverse, hind margin broadly emarginate. Elytra and wings absent. Legs typical for the genus, hind tarsi with 1st segment distinctly longer than the combined length of 2nd and 3rd segments. Sternal plates typical for the genus. Abdomen convex, obscurely punctulate, gradually enlarging posteriorly, sides of segments 5th to 9th acute angled posteriorly with a sharp longitudinal carina except 5th. Penultimate sternite narrowed posteriorly with hind margin truncate, manubrium a little over three times longer than the sternite, dilated apically. Ultimate tergite transverse, smooth in anterior half and obscurely striate in posterior half, convex above, sloping backwards, median sulcus short, discernible only in the middle, sublaterally with a sharp ridge, posterior margin trisinate, oblique laterally. Forceps with branches subcontiguous, trigonal in basal 1/3, afterwards depressed, tapering apically, incurved in apical 1/3 with tip gently hooked, inner margin finely serrated. Genitalia with parameters six times longer than broad, narrowed apically with tip pointed, a fine tubular virga discernible, distal lobes otherwise lacking any teeth or chitinous plates.

♂ : Agrees with males in most characters except that penultimate sternite obtuse posteriorly; ultimate tergite contracted posteriorly and forceps simple and straight, internal margin with serrations more prominent.

Measurements : (in mm)

	Holotype	Paratypes
	♂	2♀♀
Length of body	7.7	7.9 - 8.2
Length of forceps	1.3	1.4 - 1.5



Figs. 6-11. *Epilandex wagneri* sp.n., Holotype ♂; 6. Anterior portion of body, 7. A few basal antennal segments, 8. Penultimate sternite, 9. Hind portion of body showing a few abdominal tergites and forceps, 10. Genitalia; Paratype ♀; 11. Ultimate tergite and forceps.

Material examined : Indonesia : Moluccas : Ambon Island, 30 m, Holotype ♂ (genitalia mounted between two coverslips and pinned with the specimen), Paratype 1♀ and 1 nymph, 12.VI.1962, coll. on fungi; Paratype 1♀, 27.V.1962 (A. M. Wagner).

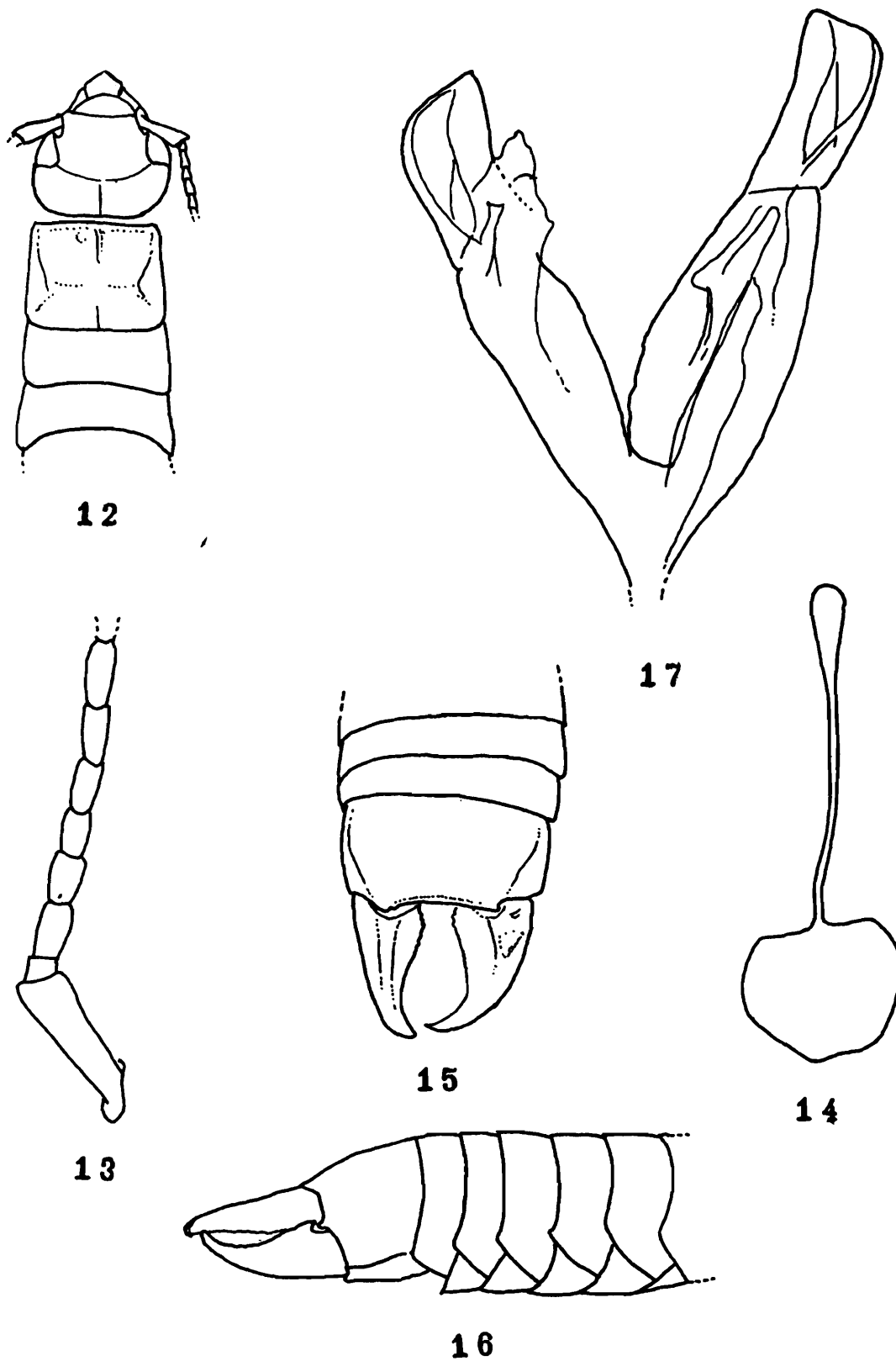
Remarks : The described species differs from all the known species of the genus by the shape of penultimate sternite in being narrowed posteriorly, produced into a sort of lobe with its hind margin truncate and ultimate tergite provided with a sharp crest or ridge sublaterally above.

***Gonolabis emarginata* sp.n.**

Figs. 12-17

♂ : General colour reddish black, antennae lighter, legs yellowish brown, femora with a broad fuscous band. Antennae with fine yellow pubescence and a few long hairs especially on the sides of abdominal segments present.

Head smooth, slightly longer than broad, frons raised, occiput feebly depressed, sutures marked by faint depression. Eyes prominent, slightly shorter than post-ocular area. Antennae partly broken (16 segments on the right and 19 on the left remaining), 1st stout, narrowed at base, expanded apically, about as long as the distance between the antennal bases; 2nd short, about as long as broad; 3rd long and cylindrical, gently expanded at extreme apex; 4th stouter and shorter than preceding; 5th longer than 4th but a trace shorter than 3rd; 6th almost equal to 3rd and afterwards gradually thinning and increasing in length except a few apical ones shorter. Pronotum slightly longer than broad, gently widened posteriorly with margin briefly convex, sides straight gently reflexed, median sulcus distinct, complete, prozona feebly convex and metazona depressed. Mesonotum twice as broad as long, feebly depressed in anterior half, obscurely punctate, hind margin truncate. Metanotum transverse, hind margin broadly emarginate, punctate. Elytra and wings absent. Legs typical for the genus. Abdomen convex, gradually enlarging from 9th tergite (not as in *G. electa* Burr, attaining maximum width on ultimate tergite), punctate, laterally above on each tergite with a pair of small smooth patches, side of segments 6th to 9th acute angled posteriorly (but not as acute as in *G. electa*). Penultimate sternite narrowed posteriorly with slight emargination in middle posteriorly, punctate, manubrium about three times longer than the sternite and dilated apically. Ultimate tergite smooth, transverse, sloping backwards and laterally, hind margin trisinate, laterally oblique. Forceps remote at base, trigonal above in basal one third, afterwards depressed, tapering apically, branches straight in basal half afterwards incurved with apices gently hooked, internal margin finely serrated. Genitalia with parameres distinctly longer than broad, inner tip obtuse, external angle rounded and margin straight, inner margin concave, distal lobes with a small chitinous pad and fine virga discernible.



Figs. 12-17. *Gonolabis emarginata* sp.n., Holotype ♂, 12. Anterior portion of body, 13. A few basal antennal segments, enlarged, 14. Penultimate sternite and manubrium, 15. Hind portion of body, 16. Hind portion of body, in profile, 17. Genitalia.

♀ : Unknown

Measurements : (in mm)

	Holotype ♂
Length of body	17.0
Length of forceps	2.2

Material examined : Malaya : Singapore, Bukit Timah, Alt. 100 ft., Holotype ♂ (genitalia mounted between two coverslips and penultimate sternite mounted on a card and both pinned with the specimen), 4.VI.1962.

Remarks : The described species comes close to *G. sumatrana* Bormans and *G. oblita* Burr but differs from both by its larger size. It can be further distinguished from *G. sumatrana* in having the posterior margin of penultimate sternite slightly emarginate (vs broadly rounded in *G. sumatrana*) and parameres with internal margin concave with external angle rounded (vs straight and obtuse). From *G. oblita* it can be separated in having the sides of abdominal segments 6th to 9th acute angled posteriorly (vs convex posteriorly in *G. oblita*) and parameres comparatively longer with apical margin and external angle convex (vs parameres shorter, apical margin straight and external angle obtuse).

The genus *Gonolabis* Burr, is mainly characterised by the shape of parameres longer than broad with external angle broadly rounded. The posterior dilation of body may not be taken very seriously when the distinction of various genera of Carcinophorinae is primarily based on parameres.

In the genus *Gelotolabis* Zacher, the parameres are slightly longer than broad but comparatively shorter than in *Gonolabis* and the tip is narrowed to form a sort of snout and external angle is distinctly projecting or obtuse. As regards the length of parameres in relation to its width the genus *Gelotolabis* comes in between *Euborellia* Burr and *Gonolabis* Burr.

Epilabis punctata Srivastava

1978. *Epilabis punctata* Srivastava, *Bull.zool.Surv.India*, 1(1) : 74, figs. 2, A-F (♂, ♀; India : Tamil Nadu, Yercaud, Shevroy Hills, 4500 ft.).

Material examined : India : Yercaud, 4000 ft., 1♂ (genitalia pulled out for examination but attached with the specimen), 4 ♀♀, 3 nymphs, 6.III.62.

Distribution : Known from the type locality only. The above specimens represent the Topotypes.

Epilabis penicillata (Borelli)

1911. *Euborellia penicillata* Borelli, *Boll. Musei Zool. Anat Comp. R. Univ., Torino*, 24(624) : 3 (♂, ♀; Coonoor).

Material examined : India : Ootacmund, 2330 m, 1♂ (genitalia pulled out for examination but attached with the specimen), 2♀♀, 10.II.62; NE slope Dodabetta Peak, 2475 m, 1♂ (genitalia pulled out for examination but attached with the specimen), 1♀, 11.III.62.

Distribution : India (Deccan Plateau).

***Epilabis* sp.**

Material examined : India : Munnar, 6200 ft., 4♀♀, 20.II.62.

Remarks : The elytra in the above material are identical to *Epilabis penicillata* (Borelli). Since there are several species in Western Ghats (South India) having similar elytra, it is not possible to assign above specimens to any species on females alone.

***Paralabis lefroyi* (Burr)**

Figs. 18 - 22

1910. *Psalis lefroyi* Burr, *Fauna Brit. India, Dermoptera* : 77, pl. 3, fig. 20 (♀♀ nec ♂), Bombay Mahim).

Material examined : India : Mysore, 12 mi E. Virajpet, 850 m, 2♀♀, 24.II.62.

Distribution : This species is known from various localities in South India only.

***Paralabis rossi* sp. n.**

Figs. 18 - 22

♂ : General colour dark brownish black; legs, antennae and mouth parts yellowish brown.

Head slightly longer than broad, smooth, frons convex, sutures fine, hind margin feebly emarginate in middle. Eyes whitish, slightly shorter than the post-ocular length. Antennae yellowish brown with one or two segments yellowish, 20-segmented, 1st segment shorter than the distance between antennal bases, expanded apically; 2nd short, about as long as broad; 3rd long and cylindrical; 4th stout, shorter than 3rd; 5th slightly longer than 4th; 6th slightly longer than preceding but slightly shorter than 3rd, comparatively less stout; 7th onwards segments gradually increasing in length and becoming thinner, a few apical ones rod shaped. Pronotum slightly broader than long, posteriorly gently expanded, anterior margin straight, hind margin subtruncate, median sulcus distinct, prozona feebly raised and differentiated from weakly depressed metazona. Mesonotum transverse, hind margin truncate and metazona transverse with hind margin broadly emarginate. Legs typical for the genus. Abdomen convex, finely punctulate, gradually expanding posteriorly, sides of segments 6th to 9th convex posteriorly, 8th and 9th rugosely punctate. Penultimate sternite with posterior margin almost straight with a very slight emargination in middle, covered with a few long hairs. Ultimate tergite smooth, transverse, sloping backwards, on sides with an oblique fold, hind margin trisinate, oblique laterally. Forceps with branches subcontiguous, broader at

base, tapering apically, right branch incurved in apical half and left one almost straight, gently incurved near apex, trigonal in basal one third, apices gently hooked and pointed, inner margin finely serrated. Genitalia with parameres broader at base, narrowed apically with tip obtuse, internal margin straight except for a slight emargination before apex, external margin oblique and straight, near base broadly convex, distal lobes without teeth.

♀ : Unknown.

Measurements : (in mm)

	Holotype ♂
Length of body	13.5
Length of forceps	2.7

Material examined : Philippine Islands : Mindoro, San Jose, Holotype ♂ (genitalia mounted between two coverslips and pinned with the specimen...), X.45 (E. S. Ross).

Remarks : This species comes close to *P. henriki* Srivastava, from Thailand in having weakly transverse pronotum and ecarinate abdominal segments but differs in having the sides of abdominal segments 6th to 9th convex and parameres with external margin less oblique, broadest about the middle and internal margin slightly emarginate a little before apex and distal lobes unarmed.

Aborolabis nepalensis (Brindle)

1974. *Anisolabis nepalensis* Brindle, *Senckenbergiana biol.*, 55(1/3) : 148 (♂, ♀ ; Nepal).

Material examined : Nepal : Aghore, 1050 m, 3 ♂♂, (2 ♂♂ with genitalia mounted between two coverslips and pinned with the respective specimens), 18.XI.61.

Distribution : Nepal.

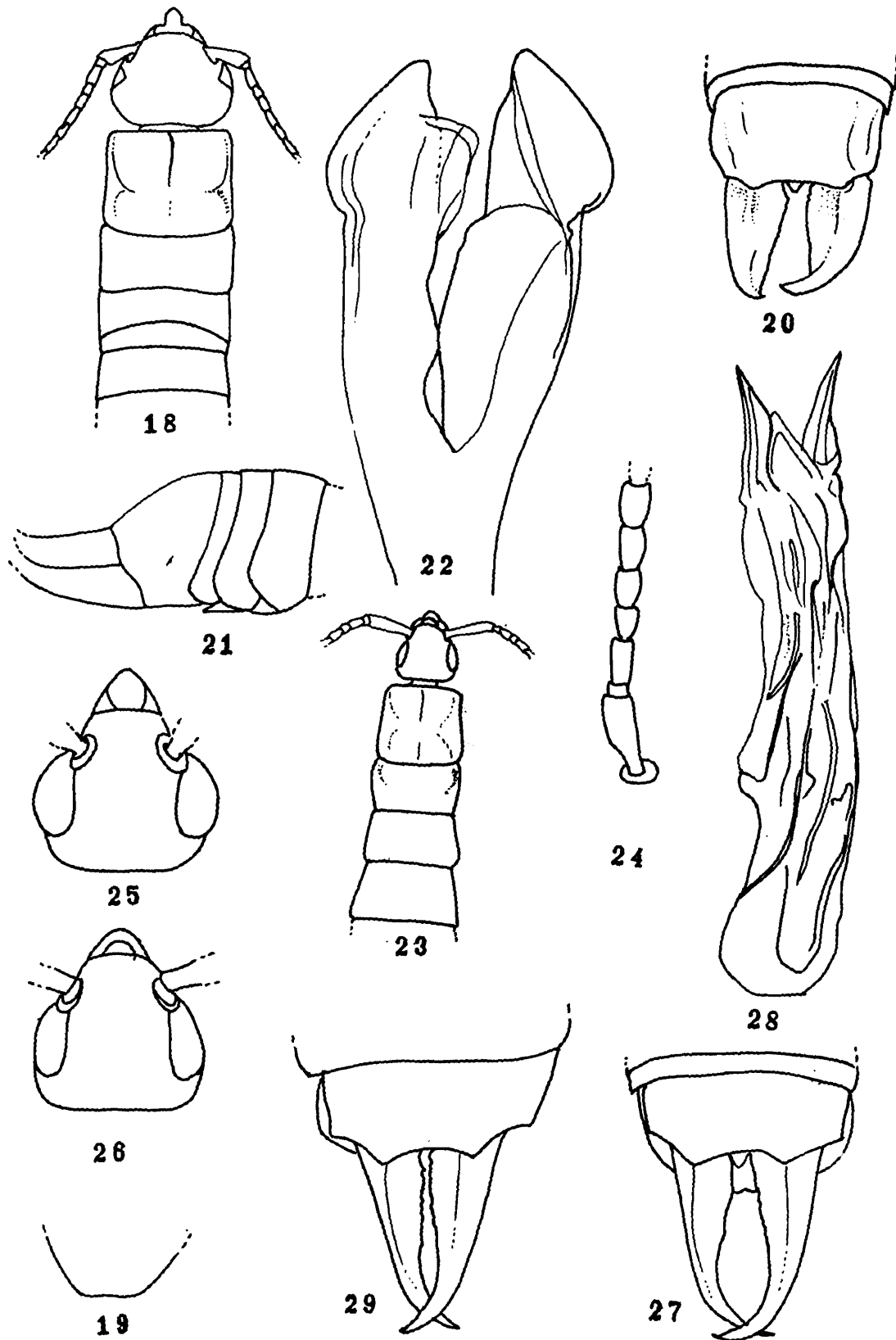
ISOLABIDINAE

Leptisolabis fletcheri (Burr) comb. n.

Figs. 23-29

1910. *Ctenisolabis fletcheri* Burr, *Fauna Brit. India, Dermaptera* : 110, fig. 79 9(♀; Ceylon, Madulsima).

Material examined : India : Mysore, 6 mi NE Ramnagaram, 750 m, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 25.II.62; Yercaud, 4000 ft., 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 1♀, 6.II.63; Kodaikanal grade, 1150 m, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 29.II.62.



Figs. 18-29. *Paralabis rossi* sp.n., Holotype ♂, 18. Anterior portion of body, 19. Posterior margin of penultimate sternite, 20. Hind portion of body, 21. Hind portion of body, in profile, 22. Genitalia; *Leptisolabis fletcheri* (Burr) comb. n., ♂, 23. Anterior portion of body, 24. A few basal antennal segments; 25 and 26. Head, 27. Ultimate tergite and forceps, 28. Genitalia; ♀, 29. Ultimate tergite and forceps.

Remarks : The above material agrees with original description of the species (Burr, 1910).

Since the mesonotum is having a distinct curved fold laterally, dying out posteriorly, it is referred to *Leptisolabis* Burr.

Hitherto this species was known by ♀ from Sri Lanka. The male sex is reported here for the first time and a brief description of the same is provided. Some variations in the size of eyes are noted in the present material. Eyes are distinctly longer than the post-ocular area but in the ♂ from Mysore, Ramanagaram possesses eyes somewhat more prominent.

Following is the description of ♂ not so far reported in the species : ♂ : General colour blackish brown; legs yellow with femora apically blackish brown. Covered with fine yellow pubescence and punctate all over the body.

Head longer than broad, frons strongly convex, hind margin almost straight. Eyes prominent, about twice as long as the post-ocular area. Antennae 13-segmented, 1st long, stout, expanded apically, longer than the distance between antennal bases; 2nd short, about as long as broad; 3rd long, slender, about twice as long as broad; 4th subclavate, stout, about as long as broad, remaining gradually increasing in length and thickness, except a few apical ones. Pronotum longer than broad, expanded posteriorly, median sulcus represented by a smooth line extending up to the middle, all margins straight, lateral margin gently reflexed. Meso- and metanotum transverse, former with a distinct curved fold laterally, dying out posteriorly. Legs long and slender, typical for the genus. Abdomen spindle shaped, laterally with long pubescence, lateral tubercle on 3rd and 4th tergites feebly marked. Penultimate sternite triangular, hind margin with a emargination in middle, manubrium slightly longer than the sternite, almost of uniform width. Ultimate tergite transverse, sloping backwards, hind margin trisinate, laterally oblique, above the bases of forceps produced into minute lobes. Forceps long and cylindrical, remote at base, tapering apically, almost straight in a little beyond basal half, afterwards incurved, apices pointed, branches crossing a little before apex.

Measurements : (in mm)

	♂♂	♀
Length of body	9.0-10.5	11.0
Length of forceps	1.0-1.5	1.5

***Isolabis rossi* sp. n.**

Figs. 30-33

♂ : General colour shining dark brown, shaded with black on some posterior abdominal tergites and forceps.

Head impunctate, longer than broad, convex and hind margin almost straight, sutures

faint. Eyes not prominent, slightly shorter than the post-ocular length. Antennae partly broken (eight segments on the right side and thirteen on the left remaining), 1st stout, strongly narrowed basally, longer than the distance between antennal bases; 2nd short, about as long as broad; 3rd three times longer than broad, cylindrical; 4th shorter than preceding, stouter; 5th stout, about as long as 3rd, remaining gradually increasing in length and each one gently expanded apically, a few apical ones short. Pronotum smooth, obscurely punctate in posterior half, about as long as broad, greatly enlarged posteriorly, sides reflexed, straight, hind margin briefly rounded, postero-lateral angle rounded, prozona raised and poorly differentiated from weakly depressed metazona, median sulcus distinct and complete. Mesonotum punctate, transverse, depressed in anterior half, weak lateral fold near shoulder, dying out posteriorly, hind margin truncate. Metanotum punctate, posterior margin broadly emarginate. Legs long and slender, typical for the genus.

Abdomen convex, punctate, punctations separated from each other by the space slightly more than their diameter, lateral tubercle on 3rd and 4th tergites weakly developed, sublaterally above with a pair of oblong smooth patches but 5th tergite with a broad somewhat dull patch of smooth area, spindle shaped. Penultimate sternite obscurely punctate, transverse, narrowed posteriorly with slight emargination in middle. Ultimate tergite with punctation faint, transverse, sloping backwards, hind margin trisinate, laterally oblique. Forceps cylindrical, remote and broad at base, tapering apically, almost straight in basal half, afterwards incurved, apices hooked and pointed, crossing near tip. Genitalia as seen in fig. 32.

♀: Agrees with males in most characters except that penultimate sternite obtuse in middle posteriorly; ultimate tergite narrowed posteriorly with hind margin almost straight in middle and laterally and forceps almost straight, only slightly incurved near apex.

Measurements : (in mm)

	Holotype	Paratypes
	♂	♀♀
Length of body	9.8	8.4–10.7
Length of body	1.2	1.8–1.9

Material examined : Malaya : G. Batu, Brinchang, Holotype ♂ (genitalia mounted between two coverslips and pinned with the specimen), Paratypes 2 ♀♀, 6500 ft., 19.IV.1962.

Remarks : This species comes close to *Isolabis punctata* (Dubrony) from Java and Sumatra but differs in having eyes smaller i.e., about as long as the post-ocular area and antennal segments elongate, especially 4th one which is about two and half times longer than broad.

***Isolabis ocellata* Srivastava**

Fig. 34

1978. *Isolabis ocellata* Srivastava, *Annali Mus.civ.Stor.nat.Giacomo Doria*, 82 : 325 (♂, Burma - Genova Museum); Srivastava, 1984, *Bull. zool.Surv. India*, 5(2 & 3) : 11 (♂; Java).

Material examined : Thailand : 10 mi N. Saramburi, 1 ♀, 100 m, 11.VII.1962.

Distribution : Burma, Thailand and Java.

Remarks : The above female agrees with the male in most characters except that the penultimate sternite is obtusely rounded posteriorly and ultimate tergite comparatively narrowed posteriorly.

Measurements : Length : body - 9.5 mm; forceps - 1.5 mm.

LABIDURIDAE

ALLOSTETHINAE

***Gonolabidura astruci* Burr**

1911. *Gonolabidura astruci* Burr, *J. Asiat.Soc.Beng. (N.S.)*, 7 : 776 (♂, ♀ ; South India, Madura Dist., Shembaganur).

Material examined : India : 8 mi NE, Munnar, 6200 ft., 2 ♂♂ (genitalia pulled out for examination but attached with the body), 1 ♀, 5 nymphs, 20.III.62.

Distribution : South India.

Remarks : This is the second subsequent record of the species after a lapse of about seven decades since its original description.

The ♀ is dark blackish whereas other two ♂♂ are reddish brown.

NALINAE

***Nala lividipes* (Dufour)**

1828. *Forficula lividipes* Dufour, *Ann.Sci.Nat.*, 13 : 340.

Material examined : Pakistan : 8 mi E Peshwar, 350 m, 1♀, 1 nymph, 18.XII.1961; Margala Pass, nr Taxilla, 1 nymph, 17.XII.61. India : U.P. : Kitham Lake nr. Agra, 200 m, 2 nymphs, 3.XII.1961; West Bengal : 12 mi NE Dumka, 200 m, 2 ♂♂ (1♂, with genitalia pulled out for examination but attached with the specimen), 2 ♀♀, 2 nymphs, 31.X.1961; Calcutta, 1♀, 5m, 12.V.62. Bangladesh Comilla, 50 ft, 1♂, 1♀, 23.IX.61. Thailand : 8 mi S. E. Saramburi, 100 m, 1♀, 28.VII.62. Philippine Islands : Tacloban, Leyte, 1♂, 1♀,XI.44; San Jose, Mindoro, 1♂,X.45 (*E. S. Ross*).

Distribution : World wide.

LABIDURINAE

Labidura riparia (Pallas)

1773. *Forficula riparia* Pallas, *Reise Russ. Reichs*, 2 : 727 (Sex ? Shores of Irtysh River, Western Siberia).

Material examined : India : W. Bengal, 12 mi NE Dumka, 200 m, 1 nymph, 31.X.1961. South Vietnam : Bien Hoa Prov., Long Binh Post nr Bien Hoa City, 1♂, 7.V.69 (Marshal F. Kirby). Philippine Islands : San Jose, Mindoro, 1♂, 1♀,X.45 (E. S. Ross).

Distribution : World wide.

FORFICULOIDEA

SPONGIPHORIDAE (= LIBIIDAE)

NESOGASTRINAE

Nesogaster apoensis Rehn

Figs. 35-36

1946. *Nesogaster apoensis* Rehn, *Proc. Acad.nat.Sci.Philad.*, 98 : 235 (♂, ♀; Philippine Islands, Mindanao).

1971. *Nesogaster apoensis* : Brindle, *Entomologist's mon. Mag.*, 107 : 121.

Material examined : Philippine Islands : San Jose, Mindoro, 4 ♂♂, 4 ♀♀, 1 nymph,X.45 (E. Ross); 1♂,IX.45, (Ross & Skinner).

Distribution : Philippine Islands; New Britain and New Ireland.

Nesogaster reditus Rehn

Figs. 37-38

1948. *Nesogaster reditus* Rehn, *Proc.Acad.nat.Sci.Philad.*, 98 : 226 (♂, ♀ ; Piti, Guam).

Material : Indonesia : Moluccas, Ambon Island, 70 m, 1♂, 16.II.1961, at light (A. M. R. Wegner).

Distribution : Hitherto known from Guam and the present record from Moluccas is of interest.

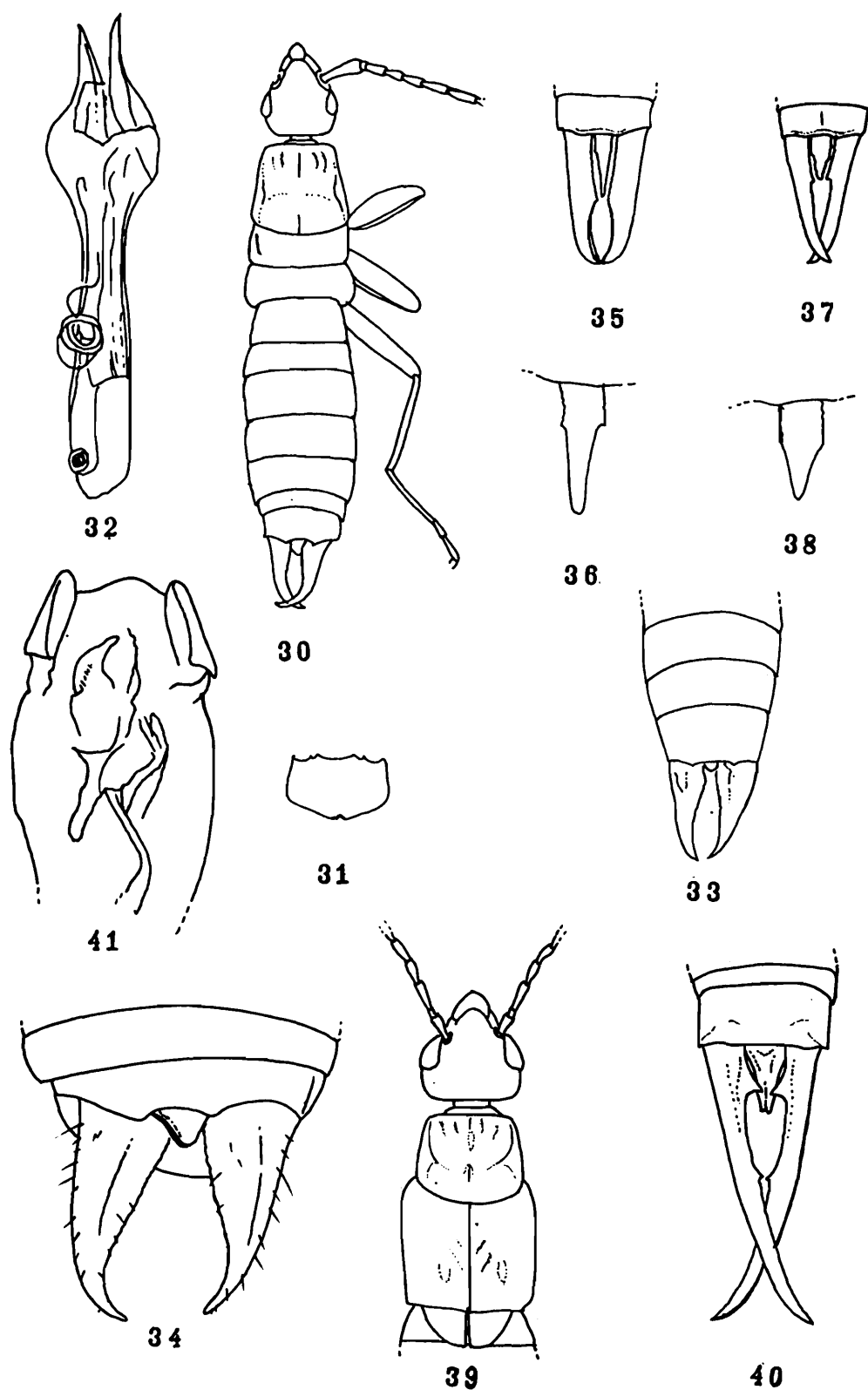
Remarks : Following are the measurements of the above specimen: Length : body - 4.5 mm; forceps - 2.3 mm and pygidium - 0.7 mm.

IRDEXINAE

Irdex nitidipennis (Bormans)

1894. *Spongophora nitidipennis* Bormans, *Annali Mus.civ.Stor.nat. Giacomo Doria*, (2) 14 : 382 (♂; Burma).

1985. *Irdex nitidipennis* : Srivastava, *Annali Mus.civ.Stor.nat. Giacomo Doria*, 85 : 203 (species redefined).



Figs. 30-41. *Isolabis rossi* sp.n., Holotype ♂, 30. Dorsal view without antennae and legs of left side, 31. Penultimate sternite, 32. Genitalia; Paratype ♀, 33. Hind portion of body; *Isolabis ocellata* Srivastava, ♀, 34. Hind portion of body; *Nesogaster apoensis* Rehn, ♂, 35. Ultimate tergite and forceps, 36. Pygidium, enlarged; *Nesogaster redivus* Rehn, ♂, 37. Ultimate tergite and forceps, 38. Pygidium, enlarged; *Spongovostox gracilis* Borelli, ♂, 39. Anterior portion of body, 40. Ultimate tergite and forceps, 41. Genitalia.

Material examined : Thailand : Khao - Yai Nat. PK, 750 m, 2 ♂♂, 2 ♀♀ (macropterous), 1 ♂, 1 ♀ (brachypterous), 26.VII.62.

Distribution : Widely distributed throughout the Oriental Region.

SPONGIPHORINAE

Spongovostox gracilis Borelli

Figs. 39-41

1916. *Spongovostox (Sci) gracilis* Borelli, *Boll. Musei zool.Anat.comp.R. Univ., Torino*, 31(715) : 2 (♂; ♀; Philippine Islands : Luzon & Mindanao).

Material examined : Philippine Islands : San Jose, Mindoro, 1 ♂ (genitalia mounted between two coverslips and attached with the specimen), 10 ♀♀,X-45 (*E. Ross*), 7 ♂♂, 3 ♀♀,IX-45 (*E. S. Ross & Skinner*).

Distribution : Philippine Islands.

Remarks : The pygidium in males is strongly projecting, triangular, narrowed posteriorly or broader with apex feebly bifid.

There appears to be some variation in the shape of ♂ pygidium since Brindle's (1971, fig. 27) figure shows it being comparatively broader.

Spongovostox anamalaiensis Srivastava

Figs. 42-46

1969. *Spongovostox anamalaiensis* Srivastava, *EOS, Madr.*, 44 : 425, figs. 1-4 (♂; Tamil Nadu, Anamalai Hills, Cinchona, 3500 ft.).

Material examined : India : Mysore, 4 km SW Sidapur, 900 m, 3 ♂♂ (1 ♂, without left branch of forceps and genitalia mounted between two coverslips and pinned with the specimen); 1 ♀, 3 nymphs, 22.II.62; 3 mi N. Yellapur, 550 m, 1 ♀, 16.II.62.

Distribution : India (Deccan Plateau).

Remarks : The species slightly less stout in build than *Spongovostox semiflavus* (Bormans).

The two males, out of the present material, possess two small distantly placed tubercles along the posterior margin of pygidium, which is, in the third specimen, distinctly emarginate between the tubercles. Besides the internal tooth situated at the middle of forceps in some specimens in weakly developed or obsolete.

Spongovostox mucronatus (Stål)

Figs. 47-49

1860. *Forficula mucronata* Stål, *Eug.Resa Ins.* : 300 (♂ nec. ♀; Java).

Material examined : Philippine Islands : Mindoro, San Jose, 1 ♂ (genitalia mounted between two coverslips and pinned with the specimen), 3 ♀♀,IV.45 (*E. S. Ross*).

Distribution : Widely distributed in the Oriental Region. Also recorded from Mauritius and New Guinea.

***Spongovostox semiflavus* (Bormans)**

Figs. 50-52

1894. *Spongophora semiflava* Bormans, *Annali Mus.civ.Stor.nat. Giacomo Doria*, (2) 14 : 385 (♂, ♀ ; Burma).

1967. *Spongovostox hakeni* Ramamurthi, *Ent. Medd.*, 35 : 242, figs. 19-20 (Holotype ♂; Philippines, Tawi Tawi in Zoologisk Museum, Copenhagen) Syn. n.

Material examined : India : Assam, 10 mi SW of Kochugaon, 50 m, 1♀; 19.X.1961; Mysore, 12 mi E. Virajpet, 850 m, 2♂♂, 2♀♀, 1 nymph, 24.II.62. Thailand : 20 mi NW Lee, 830 m, 1♂, 1♀ 14.VII.1962. Philippine Islands : San Jose, Mindoro, 2♂♂ (1♂ with genitalia mounted between two coverslips and pinned with the specimen), 4♀♀,IX.45 (*Ross and Skinner*).

Distribution : Widely distributed throughout the Oriental Region. Also known from Mauritius and New Guinea.

Remarks : The material from India, Thailand and Philippines are identical in most of the details. Some variations noted in the shape of pygidium are figured here.

Spongovostox hakeni Ramamurthi, is treated here as a synonym since it agrees with this species in most characters except those which show intraspecific variations.

***Marava arachidis* (Yersin)**

Fig. 53

1860. *Marava arachidis* Yersin, *Ann.Soc.ent.Fr.*, 8 : 509 (♂, ♀ ; Marseille, France).

Material examined : Indonesia : Moluccas, Ambon Islands, 6 m, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 28.II.1961, coll. at Light (*A.M.R. Wagner*).

Distribution : World wide.

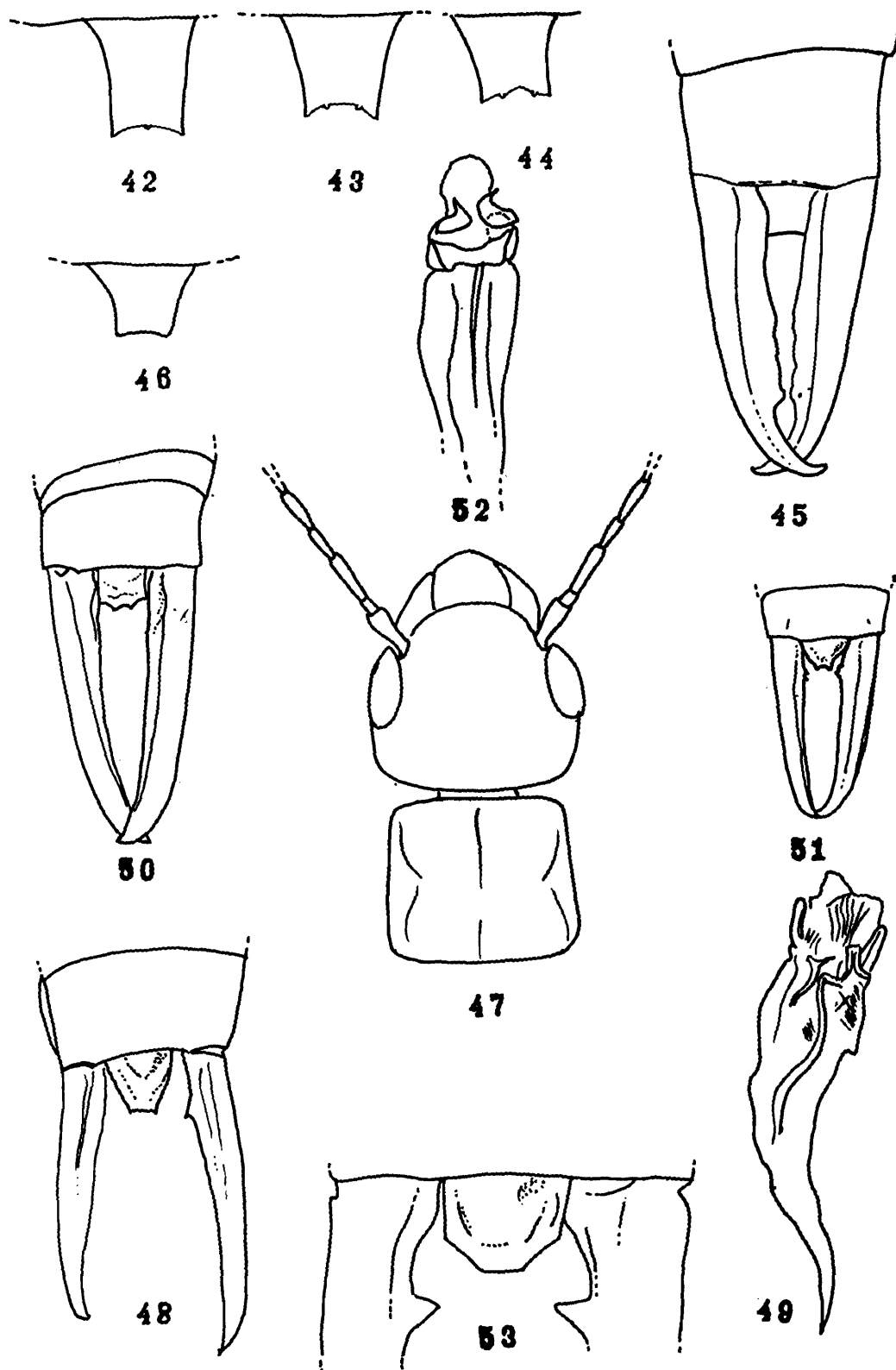
LABIINAE

***Apovostox serratus* (Kapoor)**

1967. *Labia serrata* Kapoor, *Bull.Ent.*, 8(2) : 1, 6 figs. (♂, ♀; Tamil Nadu, Madurai Dist., Perumalmalai).

Material examined : India Mysore, 8 mi NE, Mercara, 1000 m, 1♂ (genitalia in the vial with the specimen), 22.II.62.

Distribution : India (Tamil Nadu and Karnataka).



Figs. 42-53. *Spongovostox anamalaiensis* Srivastava, ♂ 42-44. Pygidium, enlarged, ♀, 45. Ultimate tergite and forceps, 46. Pygidium, enlarged; *Spongovostox mucronatus* (Stål), ♂, 47. Anterior portion of body, 48. Ultimate tergite and forceps, 49. Genitalia; *Spongovostox semiflavus* (Bormans), ♂, 50-51. Ultimate tergite and forceps, 52. Genitalia; *Marava arachidis* (Yersin), ♂, 53. A portion of forceps and pygidium (figs. 50 and 52 from the same specimen).

Apovostox jupiter (Burr)

Figs. 54-55

1900. *Chaetospania jupiter* Burr, *Ann.Mag.nat.Hist.*, (7) 6 : 95 (♂, ♀; Borneo).

1985. *Apovostox jupiter* : Srivastava, *Annali Mus.civ.Stor.nat.Giacomo Doria*, 85 : 208.

Material examined : Borneo : Sabah, Kinabalu National Park H.Q., 1♂, 25.III.1970 (*T W. Bavies*).

Distribution : Borneo.

Remarks : This species was treated as synonym of *Irdex nitidipennis* (Bormans) by Burr (1910). Srivastava (1985) reinstated it.

The present material was compared with the coloured transparencies of Syntypes ♂ of this species and were found to be identical.

Labia curvicauda (Motschulsky)

1863. *Forficesila curvicauda* Motschulsky, *Bull.Soc.Imp.Moscou*, 36 : 2, pl. 2, fig. 1 (♂, ♀; Nura Eliya Mountains, Ceylon).

Material examined : India : Mysore, 4 mi SW Sidapur, 900 m, 11♂♂, 5♀♀, 1 broken nymph, 22.II.1962; Yercaud, 4000 ft., 1♂, 1♀, 1 nymph, 6.II.62. Sri Lanka : Colombo Dist., Ratmalana, 1♀, 12.III.1986 (*T F. Halstead*). Bangladesh : Chiknagul, 10 m, 10 mi N Sylhet, 2♂♂, 3♀♀, 2 nymphs, 30.IX.61. Thailand : Khao - Yai Nat. Park, 750 m, 2♂♂, 2♀♀, 26.VII.62; 20 mi ES Chantaburi, 75 m, 2♀♀, I.VII.1962. Philippine Islands : Tacloban, Leyte, 1♂, 2♀♀, ...XI.44; San Jose, Mindoro, 23♂♂, 30♀♀ (*Ross & Skinner*).

Distribution : World wide.

Labia emarginata Srivastava

Fig. 56

1978. *Labia emarginata* Srivastava, *EOS, Madr.*, 52 : 278 (♂, Philippine Isls, Culion).

Material examined : Philippine Isls : San Jose, Mindoro, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 5♀♀, ...IV.45 (*E. S. Ross*).

Remarks : This species was hitherto known by its Holotype ♂ and the ♀ is described below for the first time.

♀ : Agrees with ♂ in most characters except that penultimate sternite obtusely rounded posteriorly; ultimate tergite slightly narrowed posteriorly with hind margin thickened, slightly raised and provided with a pair of small tubercles in middle; pygidium subvertical, transverse, slightly emarginate in middle and forceps, almost straight, tapering apically, gently incurved near apex, trigonal in basal 2/3, internal margin below dentate in basal half. Measurements : Length body - 4.5 - 5.0 mm; forceps 0.9 - 1.0 mm.

The ♂ measures : Length : body - 5.2 mm; forceps - 1.2 mm.

Labia minor (L.)

1758. *Forficula minor* Linnaeus, *Syst. Nat.*, (10th ed.) : 423 (Europe).

Material examined : Java : Garoet, 1♂ (*G. Linsley* collector). Sri Lanka : Colombo Dist., Ratmalana, 3 ♀♀, 26.III.1968 (*T F. Halstead*).

Distribution : Almost World wide. Amongst the South Asian countries it is recorded from India, Sri Lanka, Burma and Philippine Islands.

Remarks : The ♂ from Java lacks ultimate tergite but the penultimate sternite with ♂ genitalia are sufficient for determining the species.

Chaetospania lanceolata Borelli

Figs. 57-59

1926. *Chaetospania lanceolata* Borelli, *Res. Biologicae*, 1 : 72 (♂, ♀; Philippine Isls : Mindanao, Luzon and Palawan).

Material examined : Malaya : 16 mi NE Kuala Lumpur, 1000 ft., 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 8.VI.1962. Philippine Islands : Mindoro, San Jose, 1♀, ...IX.45 (*Ross & Skinner*); 2 ♂♂ (genitalia mounted between two coverslips and pinned with respective specimens), 2 ♀♀,X.45 (*E. S. Ross*).

Distribution : Philippine Islands and Malaya (new record).

Remarks : In the present material wings are either well developed or present as narrow, lateral lobes.

Male pygidium is lanceolated and provided with two minute tubercles at the apex.

Chaetospania nigriceps (Kirby)

Figs. 60-65

1891. *Platylabia nigriceps* Kirby, *J. Linn.Soc.(Zool.)*, 23 : 518 (♀; Dorey).

1982. *Chaetospania nigriceps* : Srivastava, *Rec.zool.Surv.India*, 79 : 477, 478.

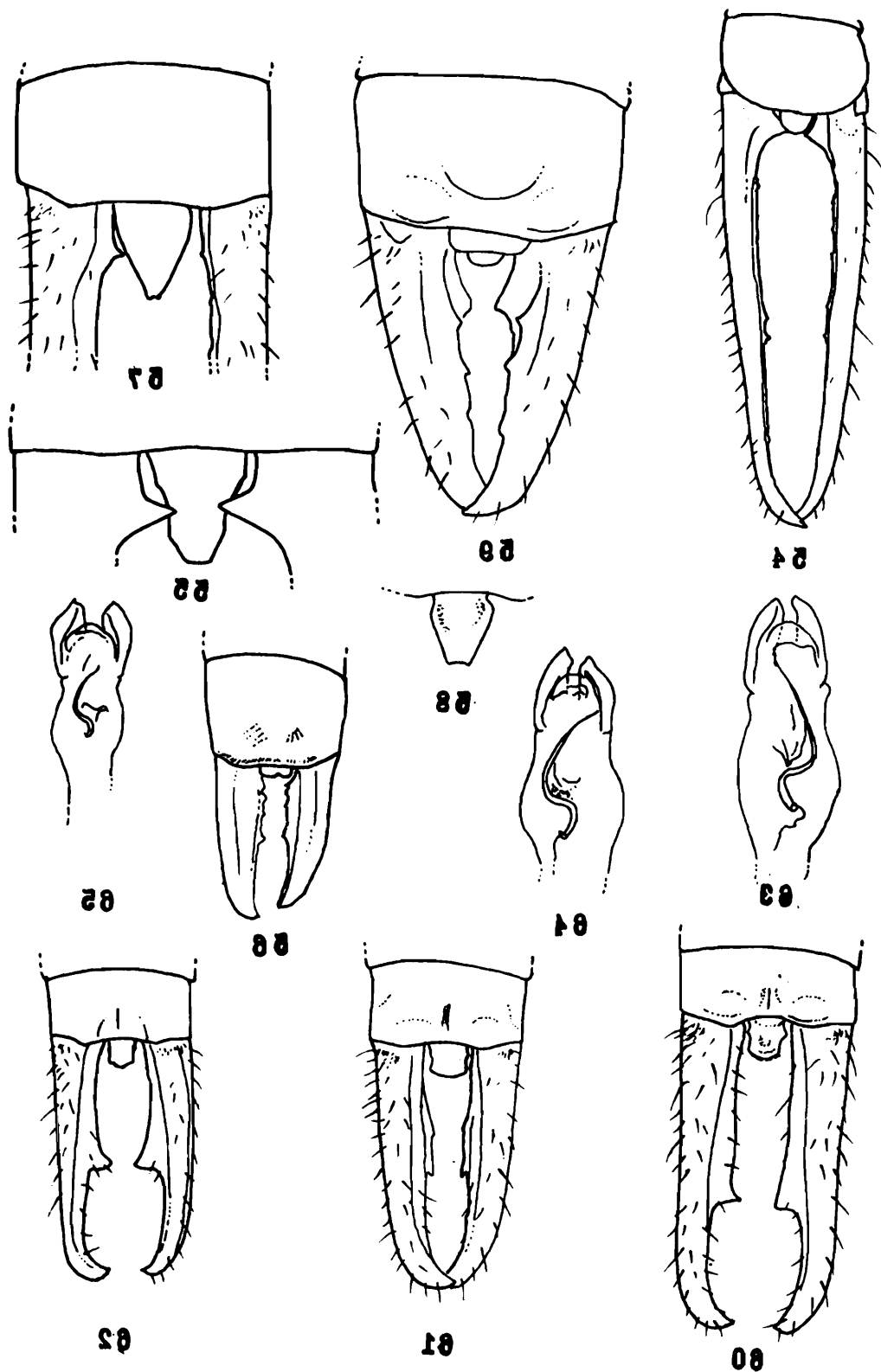
Material examined : India : Mysore, 3 mi N. Yallapur, 550 m, 4♂♂, 2 ♀♀, 16.II.62; 12 mi W of Munnar, 840 m, 1♂, 1♀, 21.III.62; Coimbatore, 430 m, 5 ♂♂, 8.III.62. Philippine Islands : Mindoro, San Jose, 38 ♂♂ (3♂♂ with genitalia mounted between two coverslips and pinned with respective specimens), 54 ♀♀,X.45 (*E. S. Ross*).

Distribution : Widely distributed in the Oriental Region.

Chaetospania thoracica (Dohrn)

1867 *Platylabia thoracica* Dohrn, *Stettin ent. Ztg.*, 28 : 348 (♂, ♀; Penang [Island, Straits Settlement] Ceylon).

1911 *Chetospania thoracica* : Burr, *Gen.Insect.*, 122 : 54.



Figs. 54-65. *Apovostox jupiter* (Burr), Syntype ♂, 54. Penultimate sternite and forceps; 55. A portion of forceps and pygidium; *Labia emarginata* Srivastava, ♀, 56. Ultimate tergite and forceps; *Chaetospania lanceolata* Borelli, ♂, 57. Ultimate tergite and a portion of forceps, 58. Pygidium; ♀, 59. Ultimate tergite and forceps; *Chaetospania nigriceps* (Kirby), ♂, 60-62. Ultimate tergite and forceps, 63-65. Genitalia (figs. 60, 63; 61, 64 and 62, 65 from the same specimens).

Material examined : India : Kerala, Thekkady Dist., Periyar Lake, 900 m, 1♂, 23.III.1962.

Distribution : Widely distributed throughout the Oriental Region. Also known from Bismark Isl. and Seychelles.

***Chaetospania acuminata* sp.n.**

Figs. 66-70

♂ : General colour brownish black; antennae with a few preapical segments yellow; legs brownish with fore femora black; abdominal tergites somewhat brownish with shades of black; ultimate tergite blackish posteriorly and forceps blackish brown. Form weakly depressed. Long and short pubescence present all over the body.

Head cordiform, depressed, sutures obsolete, obscurely punctured, about as long as broad, hind margin emarginate. Eyes not prominent, shorter than post-ocular length. Antennae 12-segmented, stout, 1st gently expanded apically, almost equal to distance between antennal bases, stout; 2nd short about as long as broad; 3rd long and slender; 4th about as long as preceding but a shade stouter; 5th slightly longer than 3rd, gently narrowed at base, remaining gently increasing in length distally excepting a few preapical ones shorter. Pronotum slightly longer than broad, smooth, gently narrowed posteriorly, anteriorly convex, sides depressed and straight, hind margin subtruncate, prozona weakly raised and metazona depressed, median sulcus obsolete, except for a short faint groove anteriorly. Legs typical for the genus, hind tarsi with 1st segment about as long as the 3rd; 2nd short, broader than long. Elytra and wings well developed, sparsely and shallowly punctured. Abdomen depressed, parallel sided obscurely punctulate. Penultimate sternite broadly rounded posteriorly with slight emargination in middle. Ultimate tergite transverse, depressed above, sides straight, hind margin faintly emarginate in middle, on sides oblique and emarginate, feebly raised above the bases of forceps and depressed in middle with a pair of distantly placed tubercles. Pygidium roughly triangular, at base declivious, apically produced into a sharp point. Forceps long and slender, gently curved apically, trigonal in basal 1/3, close to external margin with a faint convexity, internally forming a sharp flange with a triangular teeth at apical 1/3, clad with long pubescence. Genitalia with parameres elongated, tapering apically, virga tubular, broadly curved at base with reniform vesicle.

♀ : Agrees with males in most characters except that ultimate tergite lacks tubercles on the posterior median depression; pygidium longer than broad, at base broader, declivious, apically narrower, parallel sided, hind margin faintly concave in middle and forceps comparatively more depressed, internal flange more prominent, wavy and gradually merging with the inner margin a little before apex.

Measurements : (in mm)

	Holotype	Paratype
	♂	♀
Length of body	7.5	6.5
Length of forceps	2.0	1.75

Material examined : India : Mysore (now Karnataka) 4 mi SW of Sidapur, 900 m, Holotype ♂ (genitalia mounted between two coverslips and pinned with the specimen), Paratype 1♀, 22.II.1962.

Remarks : With Srivastava's (1982) key to Indian species of *Chaetospania* Karsch, the described species comes close to *C. stilleta* Burr, from South India but differs in ♂, in having the pronotum slightly longer than broad, gently narrowed posteriorly (vs clearly longer than broad, parallel sided in *C. stilleta*); pygidium drawn out posteriorly into an acuminate point (vs pygidium lanceolate); and inner flange of forceps with its free margin entire, terminating into a short, acute tooth at apical 1/3 (vs wavy with a small teeth near base and another larger one at apical 1/3 triangular and sharp); and in ♀ ultimate tergite lacking compressed tubercles in the posterior median depression of ultimate tergite (vs present); pygidium longer than broad (vs broader than long) and inner flange of forceps with a shallow emargination near base, gradually dying out at apical 1/3 (vs with broad and more pronounced emargination in basal 1/3).

The above comparisons are made with the Syntypes 1♂, 1♀ of *Chaetospania stilleta* Burr, which was placed at my disposal through the courtesy of Shri B. N. Ramamurthi who received it from the British Museum (Natural History), London, probably in exchange.

Chaetospania minuta Borelli

Fig. 71

1921. *Chaetospania minuta* Borelli, *Boll. Musei Zool. Anat. comp. R. Univ. Torino*, 35 (736) : 4 (♂, ♀ ; Sandakan, Borneo); Srivastava, 1983, *Boll. Mus. Reg. Sci. Nat. Torino*, 1(2) : 233 (Type reexamined and figured).

Material examined : Malaya : Cameron Highlands, 4 mi NE Jor camp, 800 m, 4 ♂♂ (1♂ with genitalia mounted between two coverslips and pinned with the specimen), 4 ♀♀, 3 exs. (hind portion of body missing), 20.VI.62.

Distribution : Borneo and Malaya.

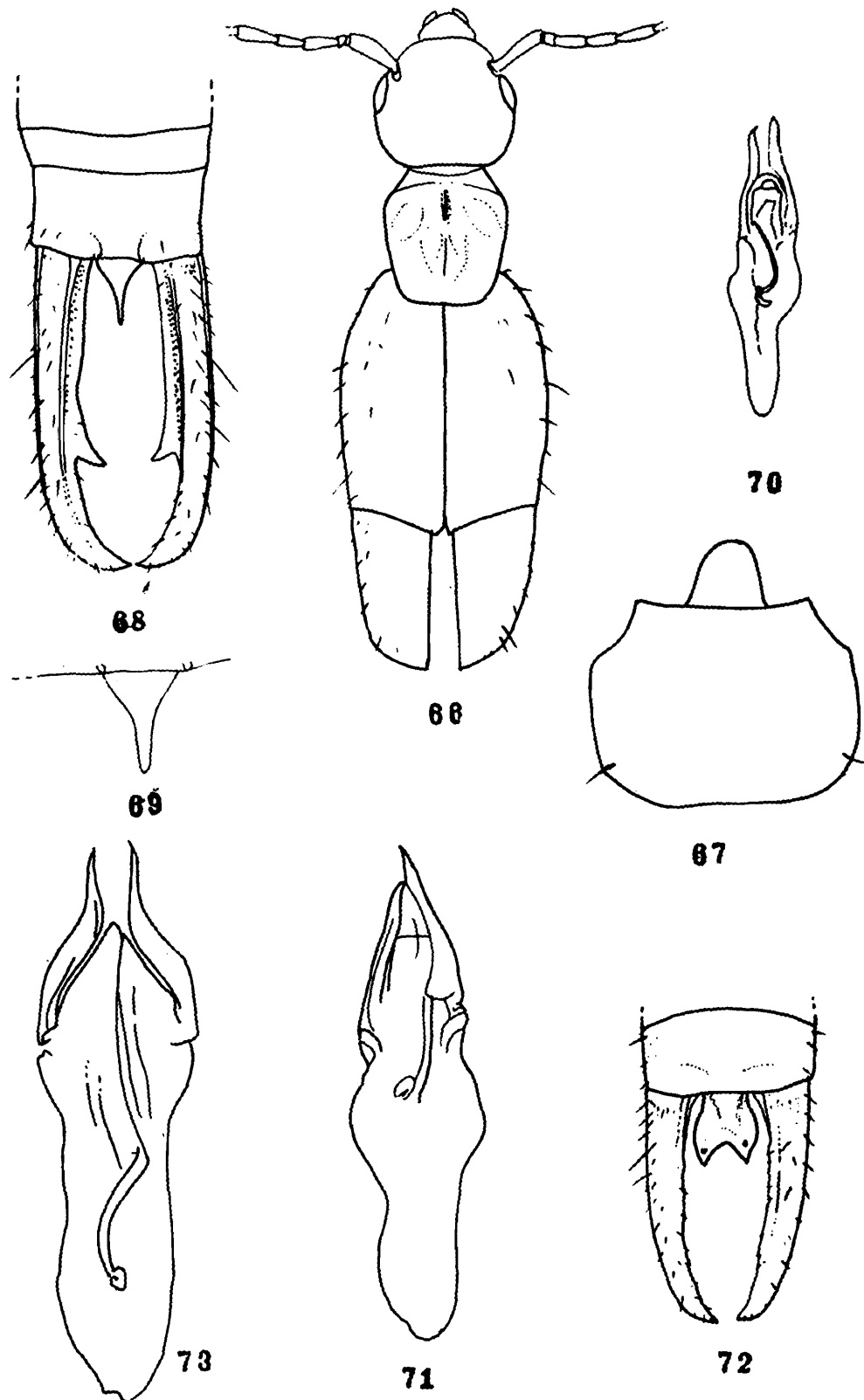
Remarks : The ♂ genitalia is figured here for the first time.

Chaetolabia bihastata (Börg)

Figs. 72-73

1904. *Platylabia bihastata* Börg, *Ark. Zool.*, 1 : 572 (♂ ; Cameroon).

1948. *Labia bihastata* : Hincks, *Entomologist's mon. mag.*, 84 : 95 (Redescription of the type).



Figs. 66-73. *Chaetospania acuminata* sp.n., Holotype ♂, 66. Anterior portion of body, 67. Penultimate sternite, 68. Hind portion of body, 69. Pygidium, enlarged, 70. Genitalia; *Chaetospania minuta* Borelli, ♂, 71. Genitalia; *Chaetolabia bihastata* (Borg), ♂, 72. Ultimate tergite and forceps, 73. Genitalia.

1973. *Chaetolabia bihastata*: Brindle, *The Dermaptera of Africa*, Pt.I : 160, figs.201, 228.

Material examined : India : West Bengal, Darjeeling Dist., Tista Bridge, Tista River Valley, 350 m, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 1♀, 28.X.61.

Distribution : Africa; the present record from India is of interest.

Remarks : The above material agrees well with the redescription of the species by Hincks (1948).

CHELISOCHIDAE

CHELISOCHINAE

Proreus simulans (Stål)

1860. *Forficula simulans* Stål, *Eug. Resa .Ins.*, : 302 (♂, Java).

Material examined : Philippine Islands : Tacloban, Leyte, 1♀,XI.44 (*E. S. Ross*); Los Baños, 2♀♀, 1914 (*Ledyard*); Laguna, 3 ♂♂, 1♀, 1.V.32, ex Sugar cane (without and any further data).

Distribution : Oriental Region.

Proreus ledyardi sp. n.

Figs. 74-77

♂ : Head and pronotum orange, latter yellow on sides; antennae and legs yellow; elytra and wings yellow, shaded with black; abdomen, ultimate tergite and pygidium black and forceps reddish black.

Head longer than broad, weakly convex, smooth, sutures faint, hind margin emarginate. Eyes about half as long as the post-ocular length. Antennae partly broken, right side with basal segment and on the left 8 segments present, basal stout, gently narrowed basally, slightly longer than the antennal bases; 2nd short, about as long as broad; 3rd cylindrical, about as long as 5th; 4th slightly shorter than 3rd, 5th onwards segments gradually increasing in length and thinning. Pronotum smooth, slightly longer than broad, anteriorly as broad as head, convex, sides straight, gently reflexed, slightly widened posteriorly with hind margin rounded, prozona weakly raised and metazona feebly depressed, median sulcus faint, but complete. Legs typical for the genus. Elytra and wings well developed. Abdomen gently narrowed at base, weakly depressed, obscurely punctulate, lateral tubercles on 3rd weakly and on 4th strongly developed, hind margin of some posterior tergites with a row of distantly placed faint compressed tubercles. Penultimate sternite transverse, obscurely punctulate, hind margin broadly rounded in middle, scarcely emarginate. Ultimate tergite smooth, transverse, depressed, posteriorly in middle with a depression, two pairs of compressed tubercles, inner pair closely placed, on either side of middle line, posterior margin trisinate,

oblique laterally and feebly raised above bases of forceps. Pygidium subvertical, about as broad as long, narrowed posteriorly, hind margin subtruncate. Forceps subcontiguous, stout, depressed tapering apically, almost straight in basal half, afterwards gently incurved with apices hooked and pointed, internal margin at base with a bifid tooth, followed by another minute triangular tooth, afterwards margin unarmed. Genitalia as seen in fig. 77.

♀ : Unknown.

Measurements : (in mm)

	Holotype
	♂
Length of body	10.5
Length of forceps	4.0

Material examined : Philippine Islands : Los Banos, Holotype ♂ (genitalia mounted between two coverslips and pinned with the specimen), 1913 (*Ledyard*) - no further data.

Remarks : This species comes close to *Proreus ludekingi* (Dohrn), widely distributed in the Oriental Region, but differs by the shape of penultimate sternite broadly rounded and hardly emarginate in middle (vs comparatively narrowed posteriorly with median emargination of hind margin more pronounced in *P. ludekingi*) and forceps with inner margin armed at base with a bifid tooth followed by another tooth, a little distance apart, afterwards unarmed (vs internally armed with several teeth spread throughout the length).

Proreus laetior (Dohrn)

1865. *Lobophora laetior* Dohrn, *Stettin ent.Ztg.*, 27 : 73 (♀; Batchian).

Material examined : Indonesia : Moluccas, Ambon Island, at light, 70 m, 1♀, 3.V.1960; 60 m, 1♀, 6.II.1961; 1♀, 8.II.1961; 70 m, 1 nymph, 24.III.1961, All coll. at ligh (*A.M.R. Wagner*).

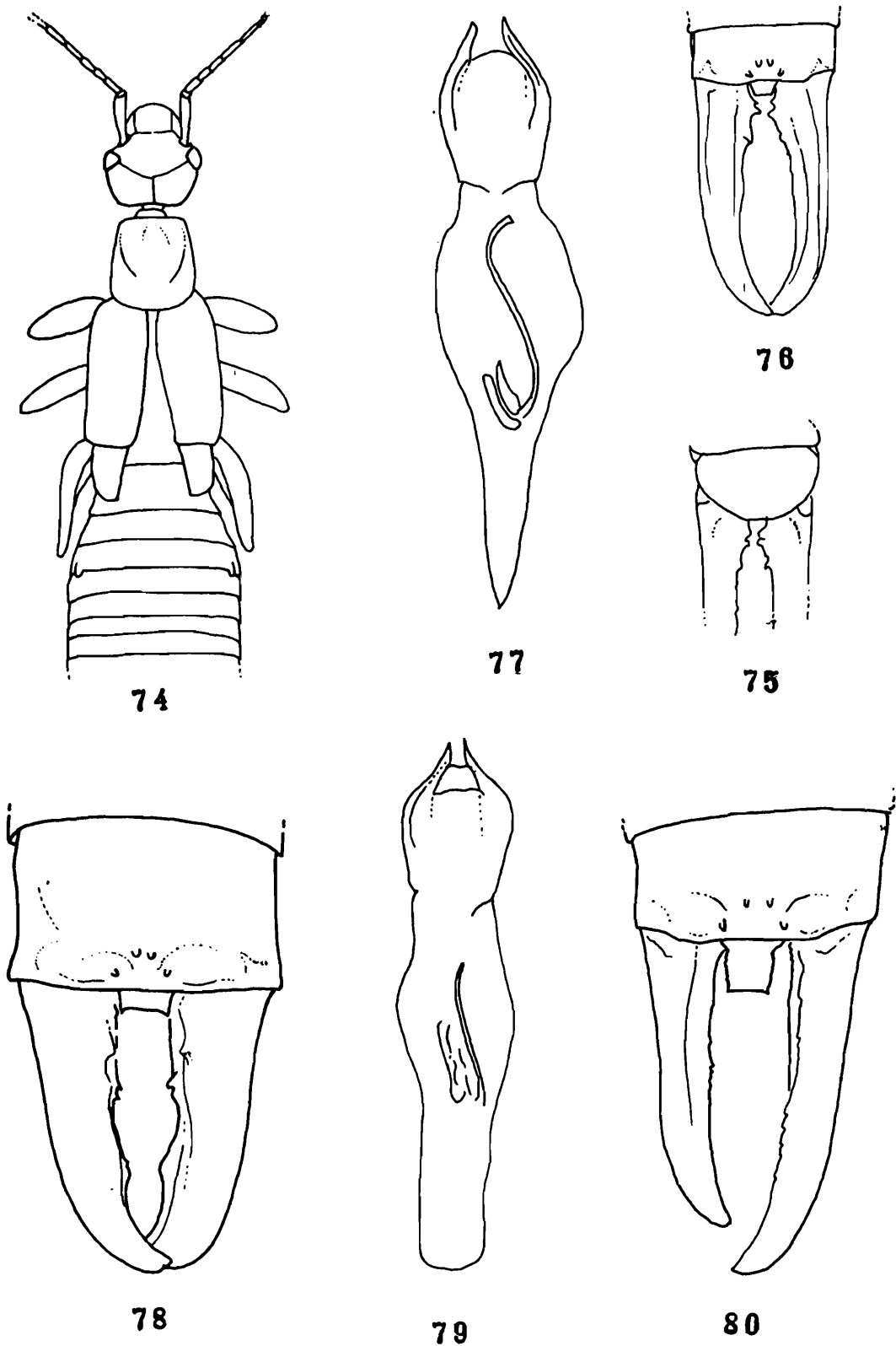
Distribution : Known from Indonesia (Moluccas) and Soloman Islands.

Chelisoches semirufus Borelli

Figs. 78-80

1926. *Chelisoches semirufus* Borelli, *Res.Biologicae*, 1(1) : 7, figs. 7, 7a and 8 (♂, ♀; Sipora et Siberoet (Isole Mentawai).

Material examined : 1♂ (genitalia mounted between two coverslips and pinned the specimen), 1♀ labelled as i) W. W. Funge Bequest; ii) Mjoberg collection - No further data.



Figs. 74-80. *Proreus ledyardi* sp.n., Holotype ♂, 74. Anterior portion of body, 75. Penultimate sternite and a portion of forceps, 76. Ultimate tergite and forceps, 77. Genitalia; *Chelisoche semirufus* Borelli, ♂, 78. Ultimate tergite and forceps, 79. Genitalia, ♀, 80. Ultimate tergite and forceps.

Remarks : The present material agrees well the original description of the species except for some minor variation in the inner armature of male forceps. Following are the measurements of the present material : Length : ♂; body- 10.3 mm; forceps- 2.2; ♀; body-9.7, forceps-3.0 and Pygidium- 0.4 mm.

***Chelisoches rubriceps* (Burr)**

Figs. 81-82

1900. *Spongiphora rubriceps* Burr, *Ann. Mag. nat. Hist.*, (7) 6 : 89 (♂, ♀; Sarawak, Kuching).

1926. *Chelisoches rubriceps*: Borelli, *Res. Biologicae*, 1(1): 3, figs. 2,2a, 3,3a, 4 and 5, 5a.

Material examined : 1♂ labelled as : i) W.W. Funge Bequest; ii) Mjoberg collection - no further data; ♂ genitalia mounted between two coverslips and pinned with the specimen.

Remarks : The above specimen agrees well with the detailed information provided by Borelli (1926) except that size is slightly shorter (length : body - 8.0 mm and forceps - 1.6 mm).

***Hamaxas crassus* Borelli**

Figs. 83-85

1926. *Hamaxas crassus* Borelli, *Res. Biologicae*, 1(5) : 77 (♂, ♀; Mindoro).

Material examined : Philippine Islands : San Jose, 1♂ (genitalia mounted between two coverslips and pinned with the specimen), 1♀,IX.45 (*Ross & Skinner*).

Distribution : Philippine Islands.

***Adiathetus tenebrator* (Kirby)**

1891. *Chelisoches tenebrator* Kirby, *J. Linn. Soc. (Zool.)*, 23 : 521, pl.12, fig. 5 (♀, India).

Material examined : India : Karnataka, 12 mi W Munnar, 840 m, 1♂, 21.III.62; Mysore, 4 mi SW Sidapur, 900 m, 1♀, 22.III.62.

Distribution : India (Deccan Plateau).

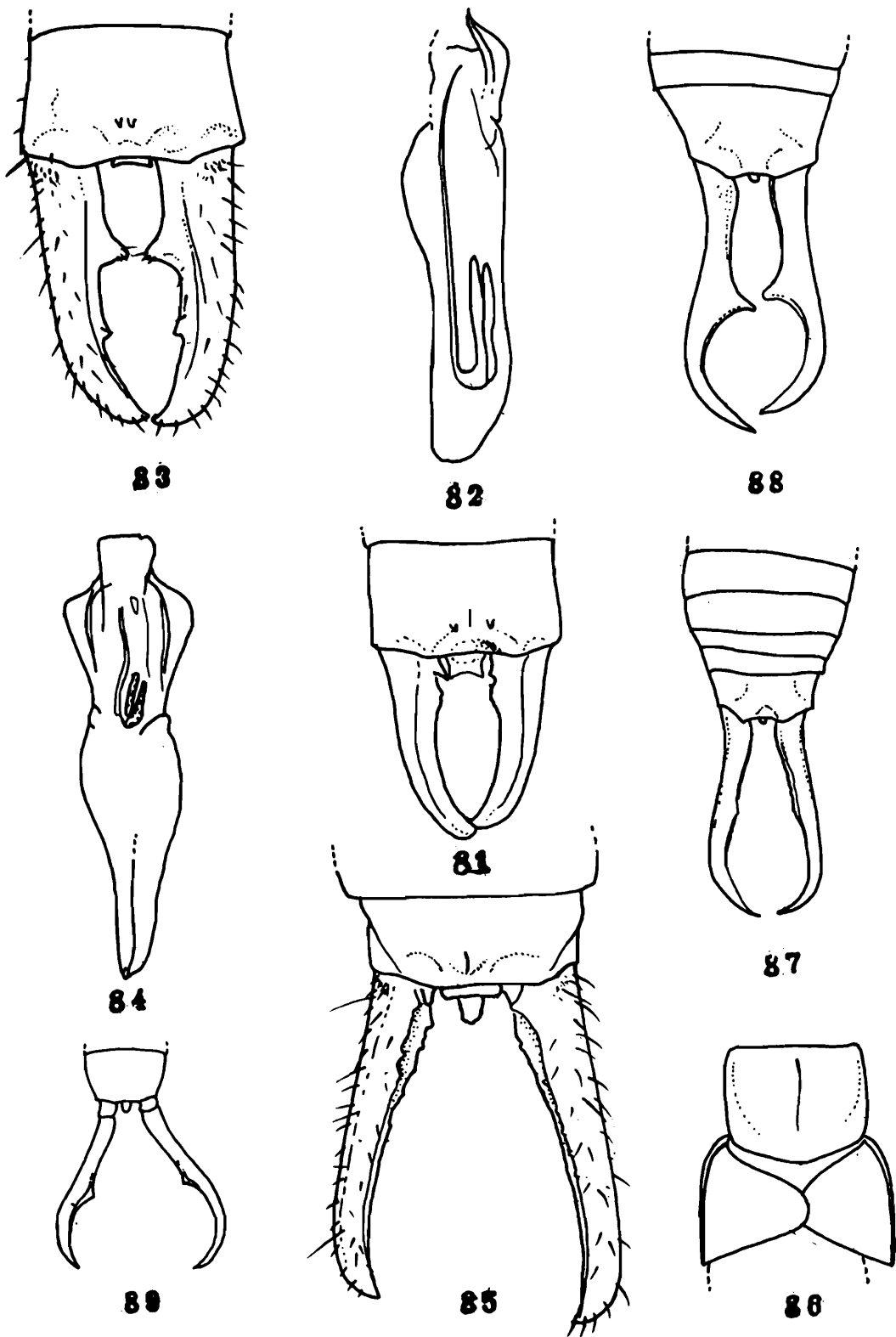
FORFICULIDAE

FORFICULINAE

***Hypurgus* sp.**

Material examined : 1♂ labelled as : *E. S. Ross* collection - no further data; genitalia mounted between two coverslips and pinned with the specimen.

Remarks : An undescribed species is represented but it is left unnamed in the absence of any locality data.



Figs. 81-89. *Chelisoches rubriceps* (Burr), ♂, 81. Ultimate tergite, 82. Genitalia; *Hamaxas crassus* Borelli, ♂, 83. Ultimate tergite and forceps, 84. Genitalia, ♀, 85. Ultimate tergite and forceps; *Liparura debrepaniensis* (Kapoor, Bharadwaj & Banerjee), Comb. n., ♂, 86. Pronotum and elytra, 87-89. Hind portion of body (fig. 89 from the Holotype ♂).

Hypurgus fulvus Burr

1911. *Hypurgus fulvus* Burr, *Stettin ent.Ztg.*, : 341 (1 ♂, 2♀♀; Sumatra).

Material examined : Philippine Islands : San Jose, 1♂,IX.45 (Ross & Skinner), 1♂,X.45 (Ross).

Distribution : Burma, Sumatra and Philippines Islands.

Remarks : A yellow stripe along the internal margin of wings present.

OPISTHOCOSMIINAE

Liparura debrepaniensis (Kapoor, Bharadwaj & Banerjee) comb.n.

Figs. 86-89

1971. *Eparchus debrepaniensis* Kapoor, Bharadwaj & Banerjee. *Bull.Ent.*, 12(1) : 38, figs. 13-15 (Holotype ♂, Paratype 1♀; India : W. B. : Darjeeling. Debrepani, 6000 ft.; Paratype 1♀, Rangirun, 6000 ft).

Material examined : India : W. B., Darjeeling Dist., Debrepani, 10 mi, W Ghum, 2010 m, 9♂♂, 7♀♀, '22.X.1961.

Remarks : The type material of the species preserved in the Entomology Division, Forest Research Institute, Dehra Dun was examined. Since the elytra possesses a sharp ridge on the costal margin it can be referred to *Liparura* Burr.

In the present material some minor variations are noted in the internal tooth of forceps; it may be either well developed or weakly represented. The figure (89) from the Holotype ♂ shows intermediate stage.

This species comes very close to *L. punctata* (Burr) but can be easily separated by the shape of forceps in being remote at base lacking the vertical ridge close to inner margin.

Eparchus insignis (Haan)

1842. *Forficula insignis* Haan, *Verh.nat.Ges.nederl. Overz.Bezitt.* : 243, pl. 23, fig 15 (not fig. 14 as mentioned in the text) (♂, ♀; Java).

Material examined : Bangladesh : Baraiyadhala, Forest Res., 150 m, 1♂ (genitalia taken out kept in a vial alongwith the specimen), 21.IX.61; Lawa Chera For. Srimangal, 110 m, 2♂♂, 2♀♀, 27.IX.61.

Distribution : Widely distributed in the Oriental Region.

Opisthocosmia longipes (Haan)

1842. *Forficula longipes* Haan, *Verh.nat.Ges.Nederl.Overz.Bezitt.* : 242, pl.23, fig. 14 (not fig. 13 as mentioned in the text) (♂, Sumatra).

Material examined : Philippine Islands : Mt. Makiling, Laguna, 1♀, 11.V.1931 (F. C. Hadden collection).

Remarks : In the absence of a male this identification should be treated with some reserve.

***Cordax armatus* (Haan)**

1842. *Forficula armatus* Haan, *Verh.nat.Ges.Nederl.Overz.Bezitt.*, : 243, pl. 23, fig. 13 (not Fig. 12 as mentioned in the text) (♂; Sumatra, Batang Singlang).

Material examined : China : Lung - Tan-Shan, N. Kwangtung, 1000-2000 ft., 1♂, 11.VI.47 (L. Gressitt).

Remarks : Hitherto this species was known from Burma and Vietnam and the present record is new to China.

Srivastava 1987 has redescribed this species.

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