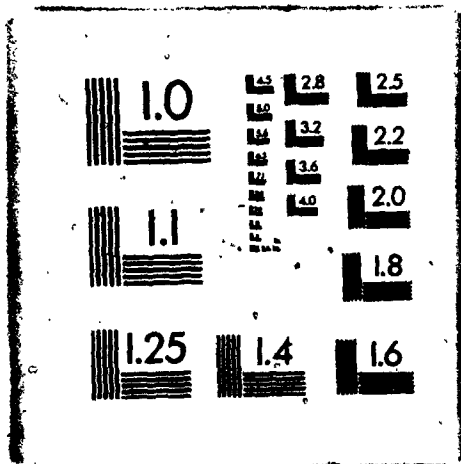


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A REVIEW OF THE NEW WORLD GENERA OF THE MYRMECOPHILOUS  
AND TERMITOPHILOUS SUBFAMILY HETAERIINAE  
(COLEOPTERA: HISTERIDAE)

by

JUSSI VILHO TAPIO HELAVA, A.B., M.Sc.

A thesis submitted to the Faculty of  
Graduate Studies and Research in partial fulfilment  
of the requirements for the degree of  
Doctor of Philosophy

Department of Biology, Carleton University

Ottawa, Ontario

1982 April 23






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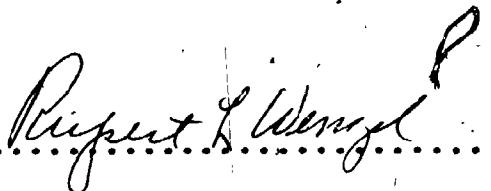


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Carleton University, 1982 May 21

## ABSTRACT

Currently ninety-nine genera from the New World are assigned to the subfamily Hetaerinae. Of these seventy-seven have been examined for this study. Fifteen genera (Inquilinister, Kleptisister, Glyptosister, Ulkeopsis, Opadosister, Reninoides, Reninopsis, Oudaimosister, Fistulaster, Leptosister, Eurysister, Oaristes, Gallaster, Daptisister, Daitrosister) are described as new. Three subgenera (Alloiodites Reichensperger, Metasynodites Reichensperger, Monotonodites Reichensperger) are elevated to generic status. Four genera (Brachylister Bickhardt, Hetaeriosoma Schmidt, Neolister Bruch, Pfnaxister Reichensperger) are considered synonyms. Diagnoses are presented for sixty-two additional genera. The subfamily Hetaerinae is subdivided into five groups on the basis of a preliminary phylogenetic analysis. Information concerning the behavior of ant- and termite-associated histerids is summarized. The morphological specializations of these histerids and the evolutionary trends within this subfamily are discussed. A key to the genera is provided for the identification of adults. One species of each genus studied is illustrated with scanning electron micrographs and where available outline drawings of the male genitalia.

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## CONTENTS

Abstract. . . . .	i
Acknowledgments. . . . .	ii
Contents. . . . .	iii
List of Tables. . . . .	iv
List of Figures. . . . .	iv
Introduction. . . . .	1
Methods. . . . .	5
Systematic Section. . . . .	9
-- Key to Genera. . . . .	11
-- Phylogenetic Analysis. . . . .	21
Review of Hosts. . . . .	404
Morphological Specializations. . . . .	413
Behavior. . . . .	416
Evolutionary Considerations. . . . .	420
Literature Cited. . . . .	426

LISTS

LIST OF TABLES

Table 1 List of Characters

LIST OF FIGURES

Figs. 1-2	Terminology of male genitalia, p. 7-8
Figs. 3-10	Phylogenies, p. 24-36
Figs. 11-13	<u>Tarsilister loretoensis</u> Bruch, p. 48
Figs. 14-17	<u>Synoditulus separatus</u> Reichensp. p. 52
Figs. 18-21	<u>Thaumataerius emersoni</u> Mann, p. 56
Figs. 22-25	<u>Homalopygus latipes</u> Boheman, p. 61
Figs. 26-29	<u>Inquillinister reburkus</u> n.g., n.sp., p. 67
Figs. 30-33	<u>Termitolister koehleri</u> Bruch, p. 71
Figs. 34-36	<u>Trichoreninus</u> n.sp. 1., p. 75
Figs. 37-40	<u>Scapicoellis tibialis</u> Marseul, p. 79
Figs. 41-43	<u>Tylois trilunatus</u> Marseul, p. 83
Figs. 44-46	<u>Enicosoma</u> n.sp. 1, p. 87
Figs. 47-50	<u>Terapus scaphipes</u> Reichensperger, p. 92
Figs. 51-54	<u>Kleptisister hirsuta</u> n.g., n.sp., p. 98
Figs. 55-57	<u>Hesperodromus</u> n.sp. 1, p. 102
Figs. 58-61	<u>Chelyocephalus varicolor</u> Schmidt, p. 106
Figs. 62-65	<u>Cossyphodister schwarzmaieri</u> Reich. p. 110
Figs. 66-69	<u>Scapolister sternalis</u> Borgmeier, p. 114
Figs. 70-73	<u>Termitoxenus strigicollis</u> Lewis, p. 118
Figs. 74-77	<u>Paroecister zikani</u> Reichensperger, p. 122
Figs. 78-81	<u>Procolonides bruchi</u> Reichensperger, p. 126
Figs. 82-85	<u>Hemicolonides</u> n.sp. 1, p. 130
Figs. 86-89	<u>Colonides hubrichi</u> Bruch, p. 135
Figs. 90-93	<u>Xylostega collegi</u> Reichensperger, p. 139
Fig. 94	<u>Euxenister caroli</u> Reichensperger, p. 143
Figs. 95-97	<u>Euxenister wheeleri</u> Mann, p. 143
Figs. 98-100	<u>Bastactister fernandi</u> Reichensperger, p. 147
Figs. 101-104	<u>Synetister pilosus</u> Reichensperger, p. 151
Figs. 105-108	<u>Glyptosister cornutus</u> n.g., n.sp., p. 157
Figs. 109-111	<u>Teratosoma longipes</u> Lewis, p. 161
Figs. 112-115	<u>Pterotister schwarzmaieri</u> Borgmeier, p. 165
Figs. 116-119	<u>Ulkeopsis bullatus</u> n.g., n.sp., p. 171
Figs. 120-123	<u>Convivister nevermanni</u> Reichensp. p. 175
Figs. 124-126	<u>Opadosister longipes</u> n.g., n.sp., p. 181
Figs. 127-130	<u>Ulkeus intricatus</u> Horn, p. 187
Figs. 131-134	<u>Hetaeriomorphus perplexus</u> Schmidt, p. 191
Figs. 135-137	<u>Pselaphister mirandus</u> Bruch, p. 195
Figs. 138-140	<u>Teratolister daguerri</u> Bruch, p. 199
Figs. 141-144	<u>Hetaerius brunneipennis</u> Randall, p. 207
Fig. 145	<u>Echinodes setiger</u> LeConte, p. 211
Figs. 146-148	<u>Echinodes peninsularis</u> Mann, p. 211
Figs. 149-152	<u>Iugulister clarissae</u> Reichensp. p. 215
Figs. 153-156	<u>Plaumannister volitans</u> Reichensp. p. 219
Figs. 157-160	<u>Parodites wasmanni</u> Reichensperger, p. 223

LISTS

- Figs. 161-163 Reninoides declinatus n.g., n.sp., p. 229  
 Figs. 164-167 Reninopsis reichenspergeri n.g., n.sp., p. 235  
 Figs. 168-171 Reninus meticulosus Lewis, p. 240  
 Figs. 172-174 Euclasea n.sp. 1, p. 244  
 Figs. 175-178 Hetaerobius bucki Reichensperger, p. 248  
 Figs. 179-182 Nevermannister anomoiopus Reichensp. p. 252  
 Figs. 183-186 Troglosternus ecitonis Mann, p. 256  
 Figs. 187-190 Oudaimosister (n.g.) verruculosus Reich. p. 260  
 Figs. 191-193 Ponerolister n.sp. 1, p. 264  
 Figs. 194-197 Hippeutister plaumanni Reichensp. p. 268  
 Figs. 198-200 Tubulister curvipilosus Borgmeier, p. 272  
 Figs. 201-203 Fistulaster hamata n.g., n.sp., p. 279  
 Figs. 204-207 Leptosister patulus n.g., n.sp., p. 286  
 Figs. 208-210 Eurysister carinatus n.g., n.sp., p. 292  
 Figs. 211-214 Metasynodites minor Reichensp. p. 297  
 Figs. 215-218 Ecitonister sericeus Borgmeier, p. 302  
 Fig. 219 Monotonodites nitidus Reichensp. p. 307  
 Figs. 220-222 Monotonodites levis Reichensp. p. 307  
 Fig. 223 Symphylister hamati Reichensp. p. 311  
 Figs. 224-226 Symphylister collegianus Reichensp. 311  
 Figs. 227-229 Panoplitellus comes Reichensperger, p. 315  
 Figs. 230-233 Oaristes (n.g.) subglabricollis Bruch, p. 319  
 Figs. 234-237 Gallaster hirsuta n.g., n.sp., p. 326  
 Figs. 238-241 Daptosister pilosus n.g., n.sp., p. 333  
 Fig. 242 Latronister n.sp. 1, p. 337  
 Figs. 243-246 Latronister rugosus Reichensp. p. 337  
 Figs. 247-250 Nymphister simplicissimus Reichensp. p. 341  
 Figs. 251-254 Paratropinus n.sp. 1, p. 345  
 Figs. 255-258 Psolidister burchelli Reichensp. p. 350  
 Figs. 259-261 Anasynodites striatus Reichensp. p. 354  
 Figs. 262-265 Alloiodites plaumanni Reichensp. p. 358  
 Figs. 266-269 Sternocoelopsis nevermanni Reichensp. p. 362  
 Figs. 270-273 Aphanister fungifer Reichensp. p. 367  
 Figs. 274-277 Daitrosister (n.g.) confirmatus Reich. p. 372  
 Figs. 278-281 Cheillister lucidulus Reichensp. p. 376  
 Figs. 282-285 Ecclisister bigghardti Reichensp. p. 380  
 Figs. 286-289 Clientister henrici Reichensp. p. 384  
 Figs. 290-293 Pulvinister nevermanni Reichensp. p. 388  
 Figs. 294-297 Chrysetaerius iheringi Reichensp. p. 392  
 Fig. 298 Mesynodites geminus Reichensperger, p. 398  
 Fig. 299 Mesynodites elegantulus Reichensp. p. 398  
 Fig. 300 Mesynodites novaeleutoniae Reichensp. p. 399  
 Fig. 301 Mesynodites virgatus Reichensperger, p. 399  
 Figs. 302-303 Phylogenies with hosts superimposed. p. 424-425

## INTRODUCTION

Most adults and larvae of the distinctive beetle family Histeridae are predators of other arthropods in a wide variety of habitats. The most primitive histerids (Niponiinae, Trypanaeinae, Trypeticinae and Abraeinae), are usually associated with trees, probably preying on wood-boring beetles (Crowson, 1955). The more derived histerids are found on carrion, dung, decaying plant material, sap flows and similar substances that attract insects. Many histerids find food in the nests of birds and mammals; some are apparently restricted to these habitats. Another large and diverse, but poorly known, group of histerids has successfully adapted to the specialized conditions within ant and termite colonies. These are predominantly scavengers and predators at the periphery of or inside colonies, but a few are more closely integrated into their host's society and at least approach the status of "true guests". Their success in adapting to this life-style of association with ants and termites is indicated by their greater generic diversity as compared to other groups of histerids.

My purpose in this paper is to explore the phylogeny and evolution of the subfamily Hetaerinae, the members of which are all associated with ants or termites. The systematics of this group has been poorly studied.



Therefore, the largest section of this paper, which was essential as a basis for the intended synthesis, deals with a generic review of the ninety-nine New World genera of this subfamily. For two reasons this review is a preliminary step towards elucidating the classification of the Hetaerinae. First, there is an inherent dilemma in the procedure of classification. I could not determine the generic limits without knowing the included species but at the same time I could not know if species should be included in a genus without knowing at least the approximate limits of the genus. One solution to this dilemma is to adopt an iterative procedure. In this paper I have tried to understand the characters that can usefully delimit genera and what the approximate limits of the genera are. The next iteration will be to revise each genus on the basis of these approximate limits and to adjust and refine these limits. While my initial approximations may err in some details, I feel that these are not egregious mistakes and that the broader outlines are reasonable and will be useful. Second, I have not yet seen specimens representing all the species or twenty-two genera. I hasten to add that twenty-one of these genera are monobasic and one includes only two species.

Most of the literature concerning the subfamily Hetaerinae is devoted to descriptions of new species and

new genera. Virtually no attention has been given to problems of classification and evolution, beyond the mere mention that one genus may be related to another. Bickhardt (1917), in the most recent publication to consider the entire subfamily, included 39 genera. Of these, four (Scapomegas Marsuel, Sitalia Lewis, Paratropus Gerstaecker and probably Discoscelis Schmidt) do not belong to the Hetaeriinae. An additional three (Sternocoelis Lewis, Eretmotus Lacordaire and Satrapes Schmidt) are restricted to the Old World. Since then, 55 New World genera have been added: Reichensperger (1923-55) described 38; Bruch (1926-37) 9; Borgmeier (1930-48) 4; and Mann (1923), Hedicke (1923), Wenzel (1939) and Mazur (1972) each described one. In this paper I describe 15 new genera and have elevated three subgenera (Alloiodites Reichensperger; Metasynodites Reichensperger and Monotonodites Reichensperger) to generic status. In addition, I consider four genera (Brachylister Bickhardt, Hetaeriosoma Schmidt, Neolister Bruch and Pinaxister Reichensperger) to be synonyms and two genera (Kaszabister Mazur and Yarmister Wenzel) to belong outside the Hetaeriinae.

The Hetaeriinae have been subdivided into two tribes (Hetaeriomorphini and Hetaeriini) depending on whether the antennal club is oval or cylindrical. However, I find that this character is not only difficult to use, but

also results in polyphyletic groupings. Tribes are not used in my classification, which relies heavily on the structures of the male genitalia, but genera<sup>are</sup> grouped into units that are not intended to have any taxonomic status. Because the male genitalia of those genera that I have not seen are not illustrated in the original descriptions, the placement of these genera is best deferred until I have had an opportunity to dissect them.

**Terminology:** The nomenclature used in this paper to describe external features follows that of Wenzel and Dybas (1941) and Wenzel (1962). Note that the terms "ascending" and "descending" in the descriptions of prosternal structures are used in their true morphological sense. Since the specimens are usually viewed upside down "ascending" striae appear to be "descending" and vice versa. The term "proepisternum" is applied to the anterior-lateral area of the ventral surface of the prothorax. Similarly, the term "proepimeron" is applied to the posterior-lateral area of the ventral surface of the prothorax. In contrast, Ferris (1935) considered the sclerites of the propleuron to be fused with the trochantins and the ventral surface of the prothorax to be primarily lateral extensions of the prosternum. However, because these ideas remain to be confirmed for the Histeridae, Ferris' terminology was not used in this paper. The male genitalia are considered to consist of the terminalia (the telescoped 8th, 9th and 10th abdominal segments) and of the aedeagus. The special terminology used to describe these structures is defined in Figs. 1-2. The body length is measured along the midline from the front margin of the pronotum to the hind margin of the elytra. The body width is taken at the widest point.

**Illustrations:** One species of each genus is

illustrated by scanning electron micrographs of the dorsal view, ventral view of the prosternum and anterior view of the head and where available line drawings of male genitalia. The scanning electron micrographs are of uncoated specimens and were taken using a JEOL JSM-U3. Magnifications did not exceed 100 X. Male genitalia were prepared for drawing by the method outlined in Helava (1978). The bar in each outline drawing is equal to 1 mm. The broken lines in the phylogenies indicate groups that are not based on synapomorphies, but on synplesiomorphies.

Key: The key to the genera was designed to be as unambiguous as possible. In order to achieve this objective many of the genera are keyed out one at a time on the basis of their unique apomorphies. As a consequence, there is a concomitant reduction in the efficiency of the key.

Diagnosis. In the catalogue of species for each genus, those species that I have seen are indicated by an "\*" in the left margin.

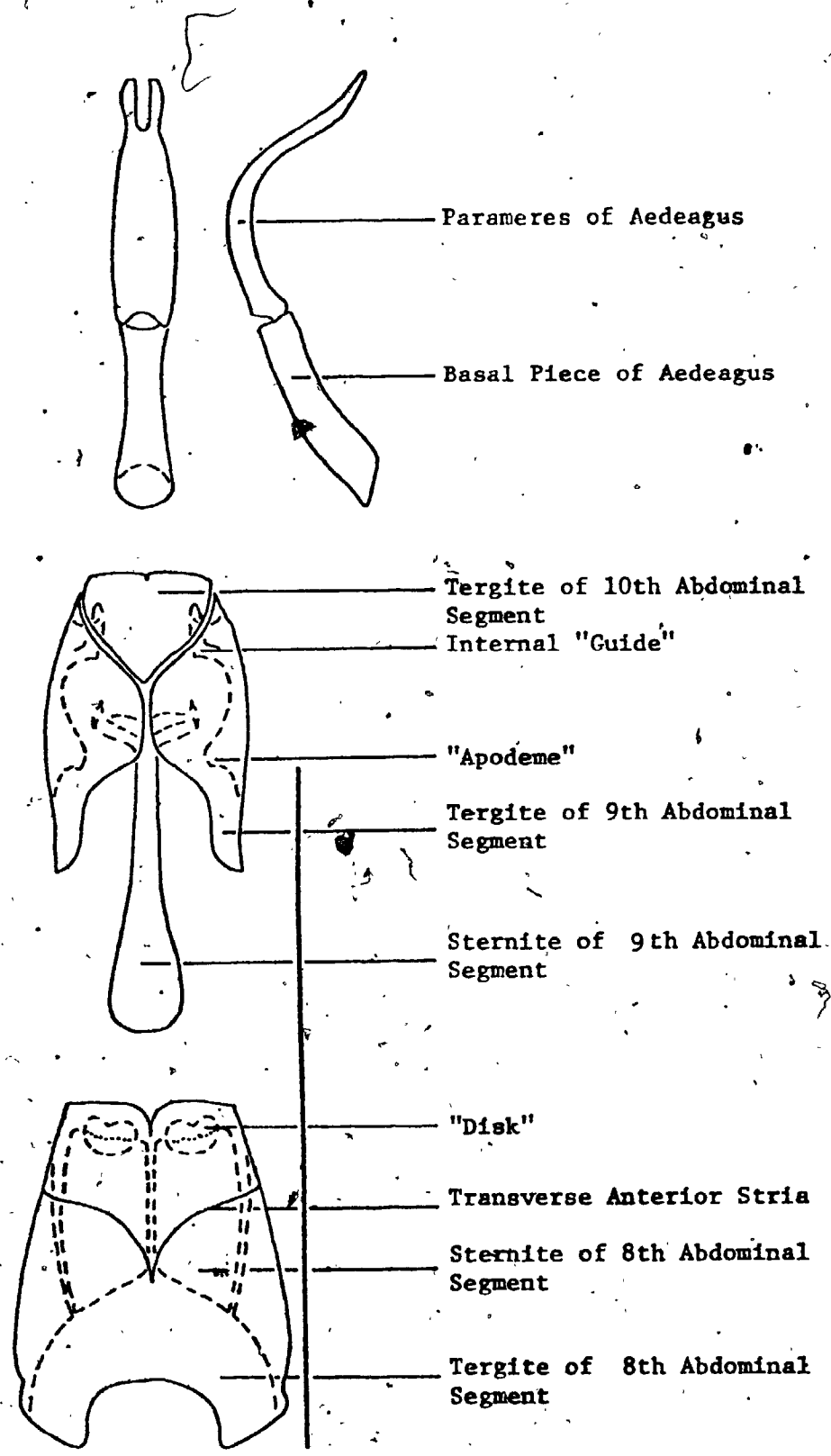


Fig. 1. Terminology of male genitalia.

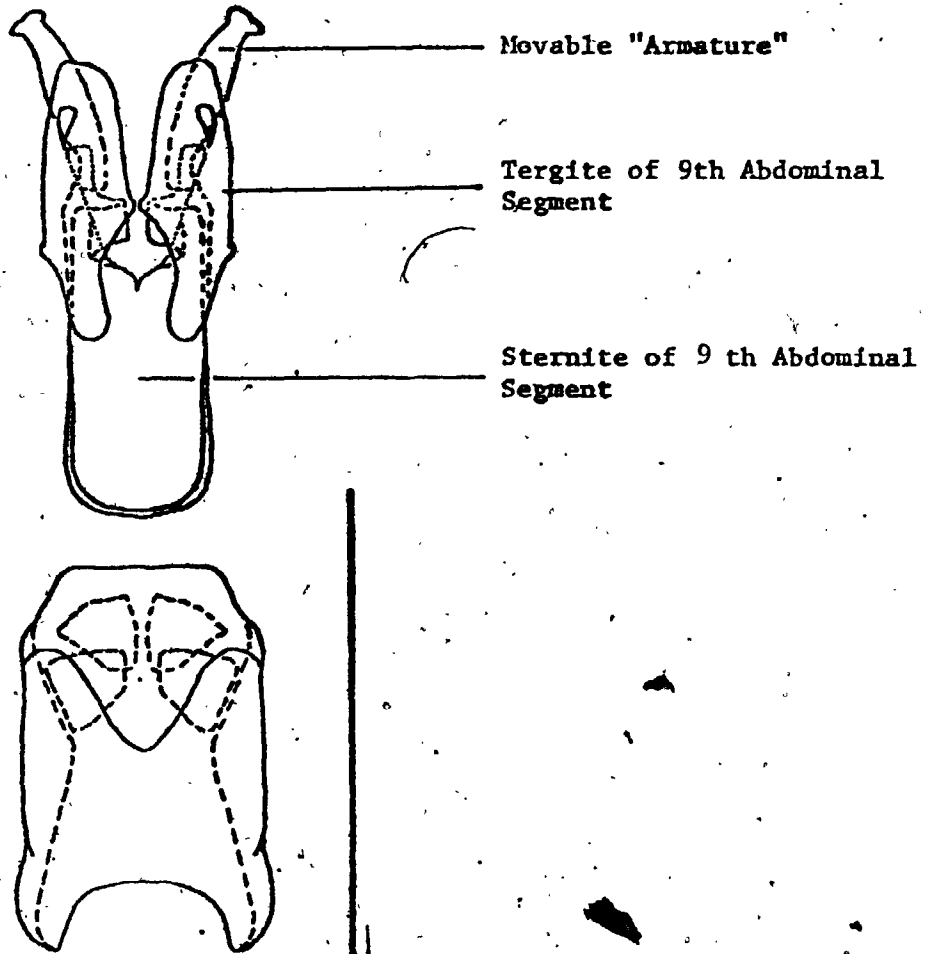
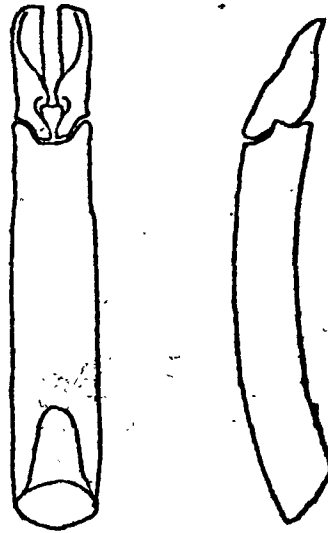


Fig. 2. Terminology of male genitalia.

## Subfamily Hetaeriinae

Heteriens Marseul 1857: 496.

Hetaeriini Schmidt 1885: 281, 283. -- Reitter 1909:  
279, 289.

Hetaeriinae Bickhardt 1916-17: 11, 19, 227. -- Wenzel  
1944: 53; 1962: 378, 382.

PROVISIONAL DEFINITION. Head deflexed; labrum and clypeus fused, their juncture with or without suture, but never membranous; labrum with or without setiferous punctures; antennal scape enlarged except in Tarsilister Bruch; antennal club without annular rings, sclerotized on at least part of surface except in Tarsilister; antennal cavities under front angles of pronotum. Pronotum usually margined; with or without lateral striae. Elytron with or without dorsal striae; external subhumeral stria usually strongly angulate. Prosternum with lobe; hind margin emarginate except truncate in Thaumataerius Mann and overlapped by mesosternum in Tarsilister. Metasternum with two or secondarily with one or no lateral metaternal striae. First abdominal sternum with two or secondarily with one or no postcoxal striae. Legs with tibiae expanded or cylindrical and elongate; tibial spurs absent except reduced in Tarsilister. Eighth abdominal sternites with or secondarily without "disks". Aedeagus with short basal piece and long parameres or with long basal piece and



long parameres or with long basal piece and short parameres.

## KEY TO THE GENERA OF HETAERIINAE

1. Antennal scape not expanded (Fig. 13); tibiae with reduced spurs; mesosternum convex and its front margin overlapping prosternum (Fig. 12). . . . .  
 . . . . . Genus Tarsilister Bruch p. 45.
- Antennal scape expanded (Fig. 17); tibiae without spurs; mesosternum not as above. . . . . 2.
2. Proepisternum with setose patch or fossa (Fig. 99). . . . . 3.
- Proepisternum without setose patch or fossa. . . 10.
3. Dorsal surface densely punctate (Fig. 106); pronotum divided by fossae into five areas (Fig. 106). . . . .  
 . . . . . Genus Glyptosister new genus p. 152.
- Dorsal surface not densely punctate; pronotum not as above. . . . . 4.
4. Head with carinae on lateral margins joined at level of antennal sockets, thence nearly parallel to front margin of clypeus (Fig. 226). . . . . 5.
- Head not as above. . . . . 6.
5. Pronotum with lateral 0.25 strongly elevated, this elevated portion extending from front to hind margin, has vertical sides and flat dorsum (Fig. 224). . . . .  
 . . . . . Genus Symphilister Reichensperger p. 308.
- Pronotum with lateral 0.25 broadly, roundly elevated, these elevations highest at middle (Fig. 227). . . . . Genus Panoplitellus Hedicke p. 312.
6. Pronotum with large, lateral bulla before each hind angle, this bulla with setose patch on inner surface (Fig. 117). . . . .  
 . . . . . Genus Ulkeopsis new genus p. 166.
- Pronotum without such bullae. . . . . 7.
7. Prosternal keel without carinal striae (Fig. 110). . . . . 8.
- Prosternal keel with carinal striae (Fig. 114). . . . . 9.
8. Pronotum divided into two lateral and bilobed median area by H-shaped fossa (Fig. 109). . . . .  
 . . . . . Genus Teratosoma Lewis p. 158.
- Pronotum divided into two lateral and median area by inverted U-shaped stria (Fig. 102). . . . .  
 . . . . . Genus Synetister Reichensperger p. 148.

9. Pronotum with deep, median, bilobed depression behind (Fig. 98) . . . . . Genus Bastactister Reichensperger p. 144.  
 - Pronotum without median depression (Fig. 113); with double row of setae between prosternal carinal striae (Fig. 114) . . . . . Genus Pterotister Reichensperger p. 162.
10. Frons with two striae forming inverted V (Fig. 134); pronotum either with a network of more or less concentric striae (Fig. 128) or with surface strongly elevated before hind margin and strongly depressed at hind angles (Fig. 135) . . . . . 11.  
 - Frons and pronotum not as above. . . . . 13.
11. Pronotum with a network of more or less concentric striae (Fig. 128) . . . . . 12.  
 - Pronotum with surface strongly elevated before hind margin and strongly depressed at hind angles (Fig. 135) . . . . . Genus Pselaphister Bruch p. 192.
12. Elytron with four dorsal striae and sutural stria entire (Fig. 128) . . . . . Genus Ulkeus Horn p. 182.  
 - Elytron with three dorsal striae and sutural stria entire (Fig. 132) . . . . . Genus Heteriomorphus Schmidt p. 188.
13. Mandibles either with distinct fovea near base (Fig. 210) or with surface transversely incised near base (Fig. 222) and prosternal lobe tripartite with median portion forming continuation of the keel (Figs. 209, 221) . . . . . 14.  
 - Mandibles without foveae near their base and if surface is transversely incised then prosternal lobe not tripartite. . . . . 18.
14. Mandibles with surface transversely incised near base (Fig. 222) . . . . . Genus Monptonodites Reichensperger p. 303.  
 - Mandibles with distinct fovea near base (Fig. 210) . . . . . 15.
15. Body form truncate oval, depressed (Fig. 205) . . 16.  
 - Body form oval, not depressed (Fig. 212) . . . . 17.
16. Elytron costate (Fig. 208); meso-metasterna depressed (Fig. 209) . . . . . Genus Leptosister new genus p. 280.  
 - Elytron not costate (Fig. 205); meso-metasterna not depressed (Fig. 206) . . . . . Genus Eurysister new genus p. 287.

17. Pronotum with large, shallow, oval punctures occurring over most of its surface and without inner lateral stria (Fig. 212). . . . .  
 . . . . . Genus Metasynodites Reichensperger p. 293.  
 - Pronotum without large, shallow, oval punctures and inner lateral stria sinuous and widely separated from lateral margin (Fig. 216). . . . .  
 . . . . . Genus Ecitonister Reichensperger p. 298.
18. Elytron with longitudinal costae and without striae and pronotum with either five longitudinal costae or numerous subparallel striae (Figs. 79, 75). . . 19.  
 - Elytron not costate if pronotum has numerous subparallel striae and if elytron appears costate then pronotum is without numerous striae. . . . 23.
19. Pronotum with numerous, subparallel striae (Fig. 75); femora very stout (Fig. 76). . . . .  
 . . . . . Genus Paroecister Reichensperger p. 119.  
 - Pronotum with five longitudinal costae (Fig. 79); femora not very stout. . . . . 20.
20. Meso-metasternal suture with two small foveae (Fig. 80). . . . . 21.  
 - Meso-metasternal suture without foveae (Fig. 92). . . . . 22.
21. Pronotum with lateral margins deeply incised behind front angles and body form elongate and parallel-sided (Fig. 79). . . . .  
 . . . . . Genus Procolonides Reichensperger p. 123.  
 - Pronotum with lateral margins broadly reflexed and body form oval and depressed (Fig. 83). . . . .  
 . . . . . Genus Hemicolonides Reichensperger p. 127.
22. Elytron with median costa strongly elevated (Fig. 87); prosternal keel with carinal striae narrowly separated (Fig. 88). . . . .  
 . . . . . Genus Colonides Schmidt p. 131.  
 - Elytron with median costa not elevated (Fig. 91); prosternal keel with carinal striae widely separated (Fig. 92). . . . .  
 . . . . . Genus Xylostega Reichensperger p. 136.
23. Mesosternum with foveae (Fig. 39, 143, 185). . . 24.  
 - Mesosternum without foveae. . . . . 26.
24. Elytron with many parallel striae between dorsal striae and pronotum with fovea mesad of each hind angle (Fig. 184). . . . .  
 . . . . . Genus Troglosternus Bickhardt p. 253.  
 - Elytron and pronotum not as above. . . . . 25.

25. Elytron with at least four entire dorsal striae and dorsal stria four arched in front and joined to sutural stria (Fig. 38) . . . . . Genus Scapicoelis Marseul p. 76.  
 - Elytron with three entire dorsal striae and dorsal stria four not joined to sutural stria (Fig. 142) . . . . . Genus Hetaerius Erichson p. 200.
26. Elytron with dorsal stria four arched in front and joined to sutural stria (Fig. 15) . . . . . 27.  
 - Elytron with dorsal stria four if present straight, not joined to sutural stria. . . . . 30.
27. Pronotum with arcuate stria before scutellum (Fig. 15) and middle and hind tibiae narrow proximally and gradually expanded distally. . . . . Genus Synoditulus Reichensperger p. 49.  
 - Pronotum without arcuate stria before scutellum and middle and hind tibiae expanded and either nearly parallel-sided or with outer edge arcuate. . . . . 28.
28. Pronotum without lateral striae (Fig. 23); labrum triangular (Fig. 25); middle and hind tibiae nearly parallel-sided. . . . . Genus Homalopygus Boheman p. 57.  
 - Pronotum with lateral striae (Fig. 31); labrum more or less quadrate (Fig. 33); middle and hind tibiae with outer edges arcuate. . . . . 29.
29. Pronotum with costiform elevations along lateral striae (Fig. 34); prosternal keel with carinal striae narrowly separated (Fig. 35) . . . . . Genus Trichorenius Lewis p. 72.  
 - Pronotum without costiform elevations along lateral striae (Fig. 31); prosternal keel with carinal striae widely separated (Fig. 32) . . . . . Genus Termitolister Bruch p. 68.
30. Prosternal keel with front margin produced forward and forming an acute process that is at least half as long as prosternal lobe (Figs. 199, 202) . . . . . 31.  
 - Prosternal keel with front margin not produced forward into acute process. . . . . 32.
31. Pronotum with medium to large, shallow, drop-shaped punctures over most of its surface and propygidium with very prominent, acute tubercles on each side (Fig. 198) . . . . . Genus Tubulister Borgmeier p. 271.  
 - Pronotum without medium to large, shallow, drop-shaped punctures and propygidium without tubercles (Fig. 201) . . . . . Genus Fistulaster new genus p. 273.

32. Pronotum with one to two large, deep foveae on each side just before hind margin (Figs. 41, 44). . . 33.  
 - Pronotum without large, deep foveae before hind margin. . . . . 34.
33. Mesosternum and anterior metasternum covered by three large, impunctate, low tubercles (Fig. 42); pronotum with one deep fovea on each side just before hind margin (Fig. 41); propygidium without transverse ridge. . . Genus Tylis Marseul p. 80.  
 - Mesosternum and metaternum without large tubercles (Fig. 45); pronotum with two deep foveae on each side just before hind margin (Fig. 44); propygidium with transverse ridge which rises to sharp, tooth-like process at each side (Fig. 44). . . . .  
 . . . . . Genus Enicosoma Lewis p. 84.
34. Pronotum with a prominent, median, triangular elevations on lateral area (Fig. 55). . . . .  
 . . . . . Genus Hesperodromus Schmidt p. 99.  
 - Pronotum without such an elevation. . . . . 35.
35. Pronotum with lateral areas roundly or narrowly, strongly, longitudinally elevated (Figs. 48, 95, 124, 138, 235, 291). . . . . 36.  
 - Pronotum with lateral areas not strongly elevated. . . . . 41.
36. Pronotum with lateral elevations incised at middle and divided into two parts (Fig. 48, 138). . . 37.  
 - Pronotum with lateral elevations continuous. . . 38.
37. Dorsal surface densely punctate and elytron more or less continuous in outline with pronotum, with at least subhumeral striae present (Fig. 48). . . . .  
 . . . . . Genus Terapus Marseul p. 88.  
 - Dorsal surface very sparsely punctate and elytron not continuous in outline with pronotum, without subhumeral or dorsal striae present (Fig. 138). . . . .  
 . . . . . Genus Teratolister Bruch p. 196.
38. Prosternal keel with carinal striae present (Fig. 125, 236); pronotum without dense punctures (Fig. 124, 235). . . . . 39.  
 - Prosternal keel without carinal striae (Fig. 96, 292); pronotum with at least part densely, closely punctate (Fig. 95, 291). . . . . 40.

39. Elytron impunctate, with three well-impressed dorsal striae (Fig. 124); mesosternum with transverse fossa and marginal stria not bifid (Fig. 125) . . . . .  
 . . . . . Genus Opadosister new genus p. 176.
- Elytron densely, closely punctate, dorsal striae marked by crescentiform punctures (Fig. 235); mesosternum without fossa, marginal stria bifid (Fig. 236) . . . . Genus Gallaster new genus p. 320.
40. Elytron with lateral margin raised into narrow, prominent ridge or with cushion-like elevations at humeral angles (Fig. 95) . . . . .  
 . . . . . Genus Euxenister Reichensperger p. 140.
- Elytron with lateral margins not elevated (Fig. 291) . . . . .  
 . . . . . Genus Pulvinister Reichensperger p. 385.
41. Pronotum with front margin produced forward and head deeply set beneath this overhang (Fig. 61) . . . . .  
 . . . . . Genus Chelyocephalus Schmidt p. 103.
- Pronotum with front margin not as above. . . . . 42.
42. Body form very strongly depressed (Fig. 65); head very broad (Fig. 65) . . . . .  
 . . . . . Genus Cossyphodister Reichensperger p. 107.
- Body form and head not as above. . . . . 43.
43. Body form elongate, cylindrical (Fig. 19); hind margin of prosternum truncate and overlapping mesosternum (Fig. 20) . . . . .  
 . . . . . Genus Thaumataerius Mann p. 53.
- Body form and hind margin of prosternum not as above. . . . . 44.
44. Pronotum divided just behind front margin by transverse fossa from which arise tufts of setae (Fig. 121); head with acute tubercle on vertex (Fig. 123) . . . Genus Convivister Reichensperger p. 172.
- Pronotum and head not as above. . . . . 45.
45. Pronotum with numerous parallel, longitudinal striae (Figs. 71, 191) . . . . . 46.
- Pronotum without such striae. . . . . 47.
46. Elytron with dorsal striae present, convex except depressed along suture, this depression with row of large punctures (Fig. 71) . . . . .  
 . . . . . Genus Termitoxenus Schmidt p. 115.
- Elytron without inner dorsal striae, convex, with dense round punctures, these punctures larger near suture and gradually smaller towards sides and behind (Fig. 191) . . . . .  
 . . . . . Genus Ponerolister Bruch p. 261.

47. Pronotum with expanded lobe on lateral margins in front 0.3 (Fig. 180); pygidium with median keel. . . . . Genus Nevermannister Reichensperger p. 249.  
- Pronotum without lobe on lateral margins; pygidium without median keel. . . . . 48.
48. Dorsal surface strongly convex and pronotum with medium to large, round, deep punctures (Fig. 67); metasternum with inner lateral striae fossa-like and angulate (Fig. 68). . . . . Genus Scapolister Borgmeier p. 111.  
- Dorsal surface, pronotum and metasternum not as above. . . . . 49.
49. Elytron with 12-14 dorsal striae (Fig. 263); head, pronotum, meso-metasterna with large, shallow, elongate oval to drop-shaped punctures (Fig. 264, 265). . . . . Genus Alloiodites Reichensperger p. 355.  
- Elytron, head, pronotum and meso-metasterna not as above. . . . . 50.
50. Meso-metasternal suture and inner lateral stria marked by row of deep, round punctures (Fig. 189). . . . . Genus Oudaimosister new genus p. 257.  
- Meso-metasterna without such rows of punctures. . . . . 51.
51. Elytron with dorsal striae strongly, inwardly, transversely hooked in front and pronotum usually with two oblique, convergent carinae (Fig. 169). . . . . Genus Reninus Lewis p. 236.  
- Elytron and pronotum not as above. . . . . 52.
52. Prosternal keel flat and broad (Figs. 146, 196). . . . . 53.  
- Prosternal keel not as above. . . . . 54.
53. Head with two longitudinal, lateral sulci on frons (Fig. 148); prosternal lobe long, strongly deflexed, with lower surface depressed (Fig. 146). . . . . Genus Echinodes Zimmermann p. 208.  
- Head with carinae on lateral margins interrupted above antennal sockets; surface there longitudinally depressed (Fig. 197); prosternal lobe very short (Fig. 196). . . . . Genus Hippeutister Reichensperger p. 265.
54. Head with bulbous clypeus that is separated from each gena by fossa (Fig. 160); femora stout. . . . . Genus Parodites Reichensperger p. 220.  
- Head and femora not as above. . . . . 55.



55. Head with clypeus strongly declivous and labrum with apical margin angulate and apical surface very broad (Fig. 29); prosternal lobe with front margin truncate to feebly arcuate (Fig. 28). . . . .  
 . . . . . Genus Inquillinister new genus p. 62.  
 - Head and prosternal lobe not as above. . . . . 56.
56. Elytron with five dorsal striae, their interstices longitudinally striolate (Fig. 259). . . . .  
 . . . . . Genus Anasynodites Reichensperger p. 351.  
 - Elytron with interstices of dorsal striae not striolate. . . . . 57.
57. Mandibles unusually long (Fig. 246). . . . .  
 . . . . . Genus Latronister Reichensperger p. 334.  
 - Mandibles not unusually long. . . . . 58.
58. Pronotum and elytra with sparse, small to medium, oval rimmed punctures each bearing a tuft of setae (Fig. 239). . . . . Genus Daptesister new genus p. 327.  
 - Pronotum and elytra without such punctures. . . . . 59.
59. Metasternum with front ends of inner lateral striae widely separated from outer lateral striae and close to midline (Fig. 53, 162, 166, 280). . . . . 60.  
 - Metasternum with inner lateral striae not as above. . . . . 63.
60. Mesosternum and anterior metasternum strongly depressed (Fig. 166). . . . .  
 . . . . . Genus Reninopsis new genus p. 230.  
 - Mesosternum and anterior metasternum not strongly depressed. . . . . 61.
61. Prosternal keel with row of setae between carinal and lateral striae (Fig. 53); dorsal surface densely punctate (Fig. 52). . . . .  
 . . . . . Genus Kleptisister new genus p. 93.  
 - Prosternal keel without a row of setae between carinal and lateral striae; dorsal surface not densely punctate. . . . . 62.
62. Elytron with rows of setiferous punctures (Fig. 161); clypeus strongly declivous (Fig. 163). . . . .  
 . . . . . Genus Reninoides new genus p. 224.  
 - Elytron with dorsal striae fine, feebly cariniform (Fig. 279); clypeus not strongly declivous (Fig. 281). . . . . Genus Cheilister Reichensperger p. 373.

63. Propygidium with tubercle on each side near hind margin; dorsal surface densely, closely punctate (Fig. 283, 287). . . . . 64.  
 - Propygidium without tubercles; dorsal surface not uniformly densely punctate. . . . . 65.
64. Pronotum with impunctate bulla on each hind angle (Fig. 287); prosternal keel with carinal striae widely separated (Fig. 288). . . . .  
 . . . . . Genus Clientister Reichensperger p. 381.  
 - Pronotum without impunctate bulla on each hind angle (Fig. 283); prosternal keel with carinal striae not widely separated, joined in rounded arch in front (Fig. 284). . . . .  
 . . . . . Genus Ecclisister Reichensperger p. 376.
65. Prosternal keel with carinal striae joined in front (Fig. 177, 232, 253, 272, 277). . . . . 66.  
 - Prosternal keel with carinal striae not joined in front or absent. . . . . 71.
66. Pronotum with median, transverse, somewhat H-shaped depression (Fig. 271). . . . .  
 . . . . . Genus Aphanister Reichensperger p. 363.  
 - Pronotum without median, transverse depression. . . . . 67.
67. Elytron without dorsal striae (Fig. 269); prosternal keel with surface deeply depressed between carinal striae (Fig. 268). . . . .  
 . . . . . Genus Sternocoelopsis Reichensperger p. 359.  
 - Elytron with dorsal striae; prosternal keel with surface not depressed. . . . . 68.
68. Pronotum with inverted U-shaped stria that is widely separated from margins (Fig. 231); elytron with inner dorsal striae evanescent (Fig. 231). . . . .  
 . . . . . Genus Oaristes new genus p. 316.  
 - Pronotum without such stria; elytron with five well-impressed dorsal striae. . . . . 69.
69. Elytron with dorsal striae marked by medium to large, oval to crescentiform punctures (Fig. 252, 275); body form oval. . . . . 70.  
 - Elytron with dorsal striae marked by elongate oval punctures (Fig. 176); body form elongate oval. . . . .  
 . . . . . Genus Hetaerobus Reichensperger p. 345.

70. Prosternal lobe with medium to large, oval punctures (Fig. 276); metasternum with front end of inner lateral striae inwardly hooked. . . . . Genus Daitrosister new genus p. 368.
- Prosternal lobe without medium to large punctures (Fig. 253); metasternum with inner lateral stria broad, shallow, sinuate. . . . . Genus Paratropinus Reichensperger p. 342.
71. Pronotum with lateral margins inwardly arcuate, narrowest at middle, narrower than elytra, surface densely punctate (Figs. 150, 154, 295); legs with tibiae cylindrical. . . . . 72.
- Pronotum with lateral margins arcuate, narrowest in front, more or less continuous in outline with elytra (Fig. 172, 248, 256); legs with tibiae expanded. . . . . 74.
72. Head with either two parallel carinae or large Y-shaped carina on frons and clypeus (Figs. 152, 156); prosternal lobe long (Figs. 151, 155). . . 73.
- Head with lateral margin carinate from occiput to front margin of clypeus (Fig. 297); prosternal lobe short (Fig. 296). . . . . Genus Chrysetaerius Reichensperger p. 389.
73. Head with two parallel carinae on frons and clypeus (Fig. 152); prosternal lobe with flat, bilobed bulla at apex (Fig. 151). . . . . Genus Iugulister Reichensperger p. 312.
- Head with large Y-shaped carina on frons and clypeus (Fig. 156); prosternal lobe long, declivous (Fig. 155). . . . . Genus Plaumannister Reichensperger p. 316.
74. Elytron with dorsal striae marked by crescentiform punctures (Fig. 248). . . . . Genus Nymphister Reichensperger p. 338.
- Elytron with dorsal striae not marked by crescentiform punctures (Figs. 172, 256). . . . 75.
75. Pronotum with row of large, shallow, oval to crescentiform punctures just before hind margin (Fig. 256); elytron with five dorsal striae (Fig. 256). . . . . Genus Psalidister Reichensperger p. 346.
- Pronotum impunctate (Fig. 172); elytron with at most three poorly-impressed, outer dorsal striae (Fig. 172). . . . . Genus Euclasea Lewis p. 241.

## PRELIMINARY PHYLOGENETIC ANALYSIS

One principal task of systematics is to determine the relationships among organisms. Ideally these relationships should reflect the evolutionary history (phylogeny) of these organisms. This endeavor rests on three critical assumptions. First, that organisms do evolve and have a unique evolutionary history. Second, that our theories concerning organic evolution are reasonably accurate. Third, that we can infer events that occurred in the past from available information. The most fruitful methodology for making these inferences is that of phylogenetic systematics (cladistics) expounded by Hennig (1966) and since then extensively discussed in systematic literature (see for example, Kavanaugh (1972), Ross (1974), Ball (1975), Smith (1976), Hull (1979), Eldredge and Cracraft (1980), Wiley (1980) and references in these).

The subfamily Hetaeriinae is provisionally defined to include those genera that have the labrum and clypeus fused (Fig. 13, 17). Although a suture may separate them their juncture is not membranous. Except for the genus Tarsilister, all the other included genera are further defined by the antennal scape being enlarged and angulate (Fig. 17, 24); the antennal club having no annular rings and being sclerotized on part of its surface (Fig. 123);

and by the tibiae lacking spurs. Approximately seventy-five characters were analyzed for each genus and form the basis of the generic diagnoses. Thirty-one (Table 1) of these characters were chosen as a data base for the phylogenetic analysis. These characters, while by no means comprising an exhaustive set, were chosen for two reasons. First, these characters are expressed in different, homologous states within the Hetaeriinae. Second, hypotheses could be derived concerning the transformation series of character states for each character. These hypotheses (Table 1) are of the form:

Hypothesis: 0  $\rightarrow$  1-4,

where 0 is the plesiomorphic (primitive) condition, 1-4 are the apomorphic (derived) conditions and the arrow indicates the direction of change. Transformation series were derived by either out-group or in-group comparisons.

I considered the operational out-group, defined by overall similarity to the Hetaeriinae, to be the subfamily Histerinae, especially the tribe Exosternini which is the most probable sister group to the Hetaeriinae. Most of the genera that were originally placed in the Hetaeriinae but are no longer considered to belong in this subfamily probably belong near the Exosternini. It seems best to defer decisions concerning these taxa that appear to be intermediate between the Exosternini and the Hetaeriinae until I have had an

opportunity to examine in greater detail more genera belonging to the Exoster<sup>n</sup>ini. The implications that arise concerning the classification of these groups of Histeridae are far reaching and beyond the scope of the present study.

The results of the phylogenetic analysis indicate that the Hetaeriinae may be divided into five monophyletic groups identified as Group A, B, C, D and E. These results are presented in Figs. 3-10 and follow the graphical method of Smith (1976). The main intent of this analysis was to explore larger groupings within the Hetaeriinae and therefore, many of the genera are left in small genus-groups. The autapomorphic characters that separate the genera in these genus-groups are not included in this analysis but are mentioned in the "Remarks" section of each generic diagnosis.

## LIST OF CHARACTERS

1. Legs: Tibial spurs.  
 0 Tibial spurs present but reduced.  
 1 Tibial spurs absent.  
 Hypothesis: 0 → 1
2. Head: Antennal scape.  
 0 Antennal scape narrow.  
 1 Antennal scape angulate and enlarged.  
 Hypothesis: 0 → 1
3. Head: Antennal club.  
 0 Antennal club without annular rings, pubescent over entire surface.  
 1 Antennal club without annular rings, sclerotized on part of surface.  
 Hypothesis: 0 → 1
4. Head: Labrum.  
 0 Labrum free from clypeus.  
 1 Labrum connate with clypeus.  
 Hypothesis: 0 → 1
5. Head: Labrum.  
 0 Labrum more or less quadrate, front margin truncate, emarginate or arcuate.  
 1 Labrum triangular (eg. Homalopygus).  
 2 Labrum nearly obsolete (eg. Cossyphodister).  
 Hypothesis: 0 → 1  
                     ↘  
                           2
6. Head: Mandibles.  
 0 Mandibles with outer surface near base unmodified or feebly depressed.  
 1 Mandibles with outer surface near base transversely incised (eg. Monotonodites).  
 2 Mandibles with outer surface near base with distinct fovea (eg. Metasynodites).  
 Hypothesis: 0 → 1 → 2
7. Head: Lateral margins.  
 0 Head with lateral margins carinate.  
 1 Head with lateral margins feebly or not carinate (eg. Homalopygus, Bastactister).  
 Hypothesis: 0 → 1
8. Head: Vertex and frons.  
 0 Vertex and frons not broadened.  
 1 Vertex and frons broadened.  
 Hypothesis: 0 → 1

9. Head: Vertex.  
0 Vertex without divergent striae.  
1 Vertex with divergent striae eg. Ulkeus).  
Hypothesis: 0 → 1
10. Pronotum:  
0 Pronotum without network of striae.  
1 Pronotum with network of striae (eg. Ulkeus).  
Hypothesis: 0 → 1
11. Pronotum:  
0 Pronotum without large pits.  
1 Pronotum with large pits (eg. Tylois).  
Hypothesis: 0 → 1
12. Elytron:  
0 Stria 4, if present, straight.  
1 Stria 4 arched in front, joined to sutural  
  stria (eg. Synoditulus).  
Hypothesis: 0 → 1
13. Elytron:  
0 Elytron without long costae.  
1 Elytron with long costae (eg. Xylostega).  
Hypothesis: 0 → 1
14. Prosternum: Prosternal lobe.  
0 Lobe not divided.  
1 Lobe tripartite (eg. Monotonodites).  
2 Lobe tripartite, median portion narrowly inflated  
  (eg. Metasynodites).  
3 Lobe tripartite, median portion broadly inflated  
  (eg. Hetaerius).  
Hypothesis: 0 → 1 → 2  
                            ↘  
                                  3
15. Prosternum: Prosternal keel.  
0 Keel without row of setae between carinal and  
  lateral striae.  
1 Keel with row of setae between carinal and  
  lateral striae (eg. Latronister, Terapus).  
Hypothesis: 0 → 1
16. Prosternum: Prosternal keel.  
0 Keel without anterior process.  
1 Keel with anterior process (eg. Tubulister).  
Hypothesis: 0 → 1



17. Prosternum: Hind margin.  
 0 Hind margin broadly emarginate.  
 1 Hind margin not emarginate (eg. Thaumataerius).  
 2 Hind margin deeply, narrowly emarginate  
 (eg. Homalopygus, Xylostega).  
 3 Hind margin deeply, roundly emarginate  
 (eg. Glyptosister).  
 4 Hind margin with deep, oval emargination  
 (eg. Bastactister).  
 Hypothesis: 0 → 1  
                   ↘  
                   ↘ 2  
                   ↘ 3 → 4
18. Prosternum: Proepisternum.  
 0 Proepisternum without setose patch.  
 1 Proepisternum with setose patch or fossa  
 (eg. Symphilister, Bastactister).  
 Hypothesis: 0 → 1
19. Prosternum: Proepimeron.  
 0 Proepimeron without setose patch.  
 1 Proepimeron with setose patch (eg. Symphilister).  
 Hypothesis: 0 → 1
20. Mesosternum.  
 0 Mesosternum without foveae.  
 1 Mesosternum with large lateral foveae (eg. Hetaerius).  
 2 Mesosternum with small median foveae  
 (eg. Procolonides).  
 3 Mesosternum with large median foveae  
 (eg. Troglosternus).  
 Hypothesis: 0 → 1  
                   ↘  
                   ↘ 2  
                   ↘ 3
21. Metasternum.  
 0 Metasternum with 1 lateral stria.  
 1 Metasternum with 2 lateral striae.  
 2 Metasternum without lateral striae.  
 Hypothesis: 0 → 1  
                   ↘  
                   ↘ 2
22. Genitalia: 8th tergite.  
 0 8th tergite with transverse anterior stria.  
 1 8th tergite without transverse anterior stria.  
 Hypothesis: 0 → 1

23. Genitalia: 8th tergite.  
 0 8th tergite without inward extensions along ventral hind margin.  
 1 8th tergite with inward extensions along ventral hind margin.  
 2 8th tergite with inward extensions along ventral hind margin joined to 8th sternites.  
 3 8th tergite and 8th sternites fused, forming tube.  
 Hypothesis: 0 → 1 → 2  
                   ↘  
                   3
24. Genitalia: 8th sternites.  
 0 8th sternites separate.  
 1 8th sternites nearly fused.  
 2 8th sternites fused.  
 Hypothesis: 0 → 1 → 2
25. Genitalia: 8th sternites.  
 0 8th sternites with "disks".  
 1 8th sternites without "disks".  
 2 8th sternites with each "disks" subdivided into 2.  
 3 8th sternites with "disks" together subdivided into 3.  
 4 8th sternites with "disks" fused.  
 Hypothesis: 0 → 1  
                   ↘  
                   2  
                   ↘  
                   3  
                   ↘  
                   4
26. Genitalia: 8th sternites.  
 0 8th sternites without setae along apical margin.  
 1 8th sternites with setae along apical margin.  
 Hypothesis: 0 → 1
27. Genitalia: 9th tergites.  
 0 9th tergites with ventral "apodemes".  
 1 9th tergites without ventral "apodemes".  
 Hypothesis: 0 → 1
28. Genitalia: 9th tergites.  
 0 9th tergites with internal "guides" for aedeagus.  
 1 9th tergites without internal "guides" for aedeagus.  
 2 9th tergites with movable "armature".  
 3 9th tergites with internal "guides" for aedeagus produced forward.  
 Hypothesis: 0 → 1  
                   ↘  
                   2  
                   ↘  
                   3

29. Genitalia: 9th tergite.  
0 9th tergite with apical margin not produced to form  
"hooked" structure.  
1 9th tergite with apical margin produced to form  
"hooked" structure.  
Hypothesis: 0 → 1
30. Genitalia: 10th tergite.  
0 10th tergite present.  
1 10th tergite absent.  
Hypothesis: 0 → 1
31. Genitalia: Aedeagus.  
0 Basal piece long, parameres long.  
1 Basal piece short, parameres long.  
2 Basal piece long, parameres short.  
Hypothesis: Not defined.

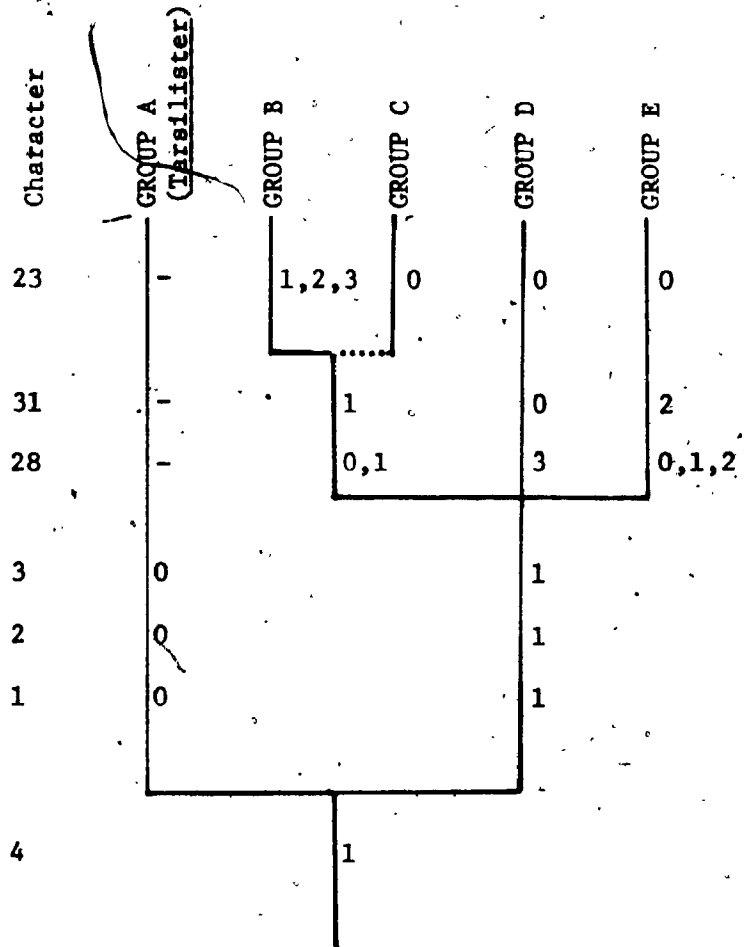


Fig. 3. Phylogeny.

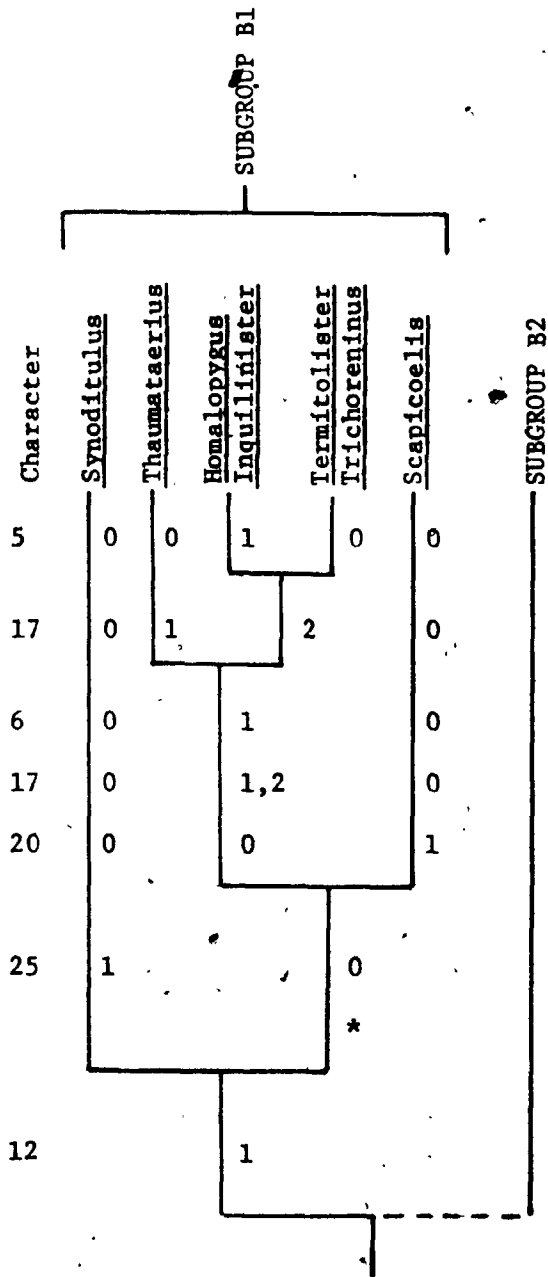


Fig. 4. Phylogeny.

\* Apomorphic character state for character not analyzed.

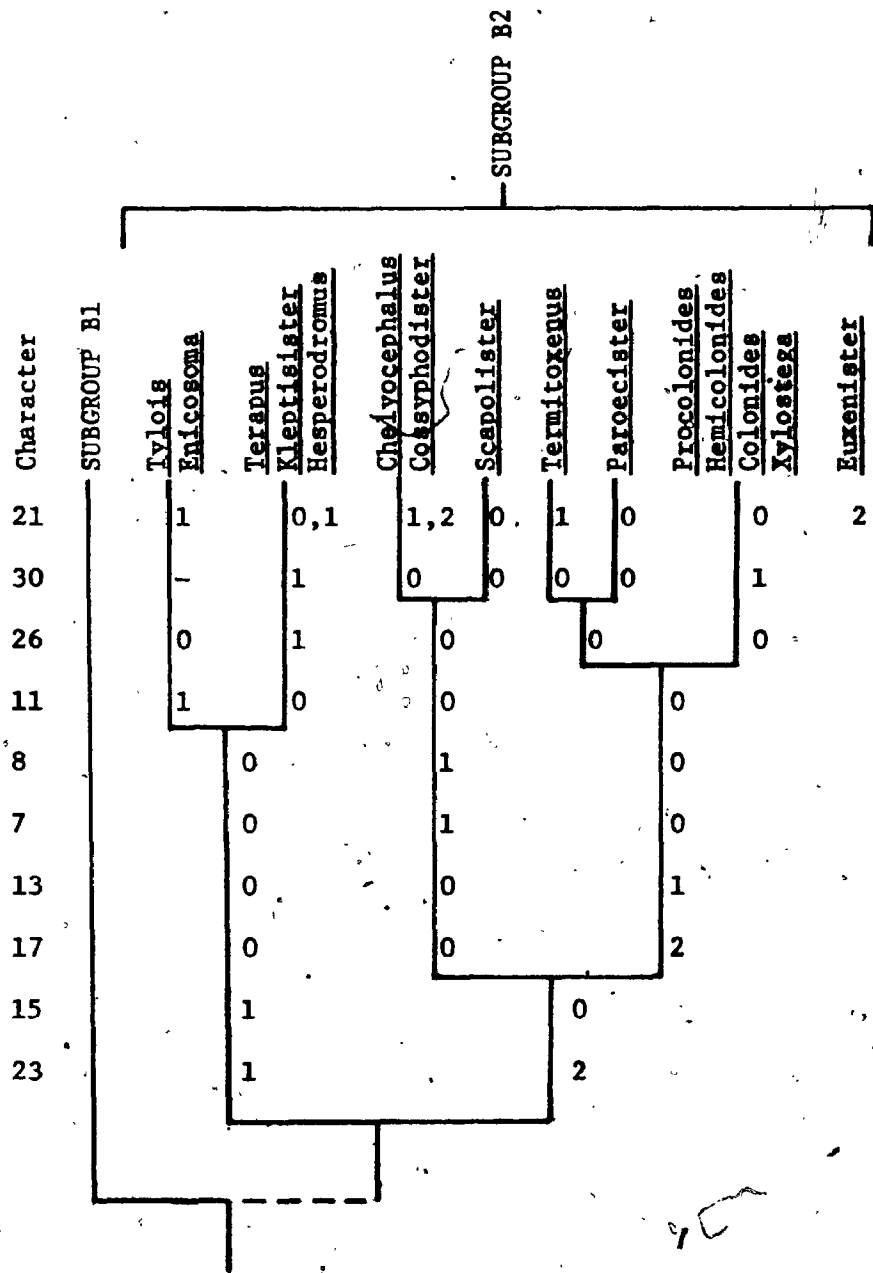


Fig. 5. Phylogeny.

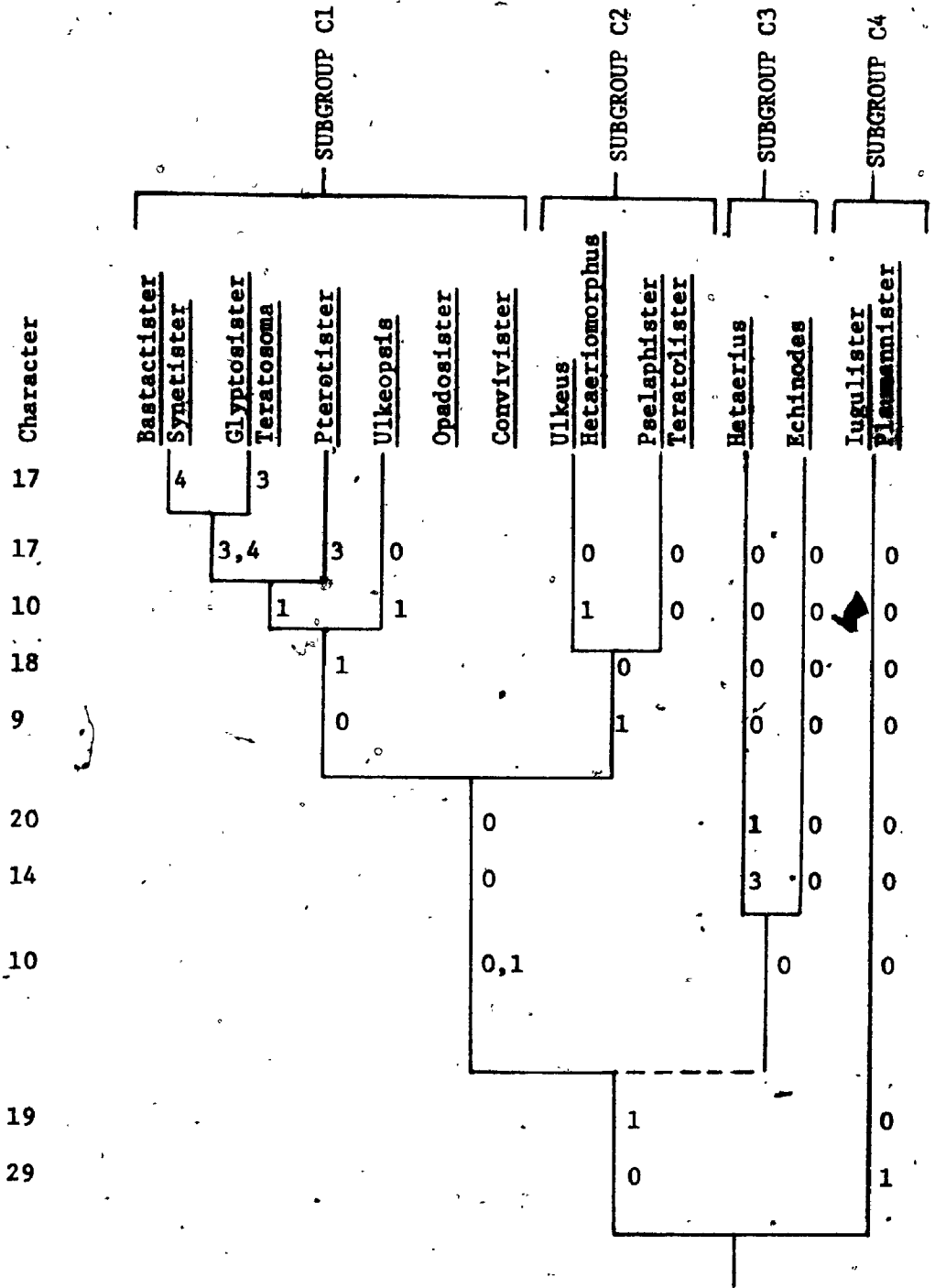


Fig. 6. Phylogeny.

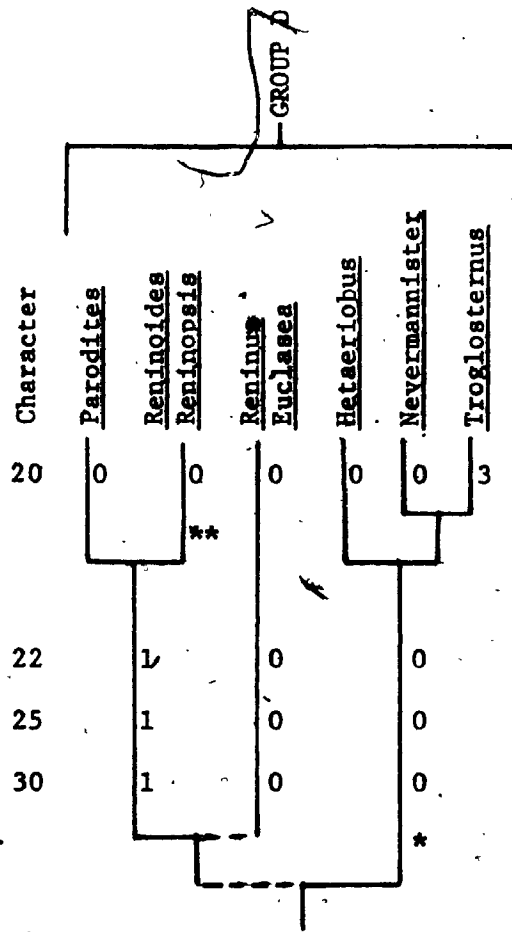


Fig. 7. Phylogeny.

\* Synapomorphy discussed in text.

\*\* Apomorphic character state for character not analyzed.



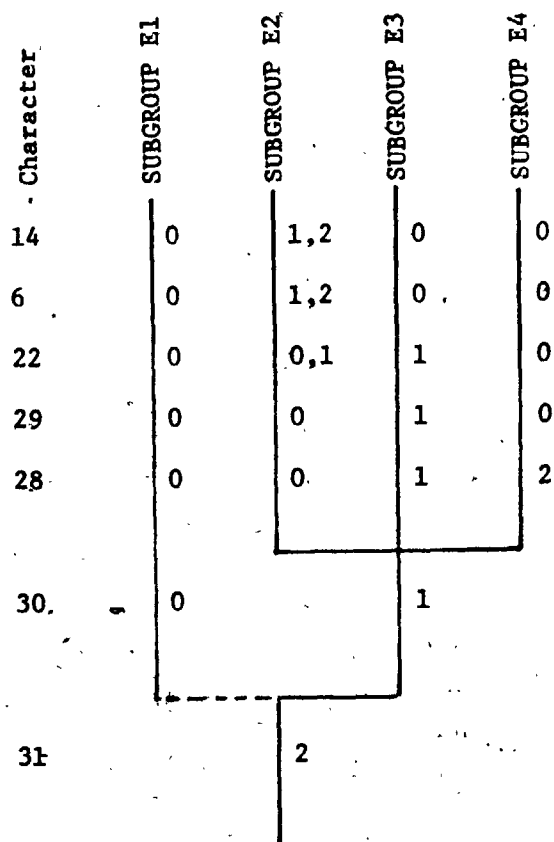


Fig. 8. Phylogeny.

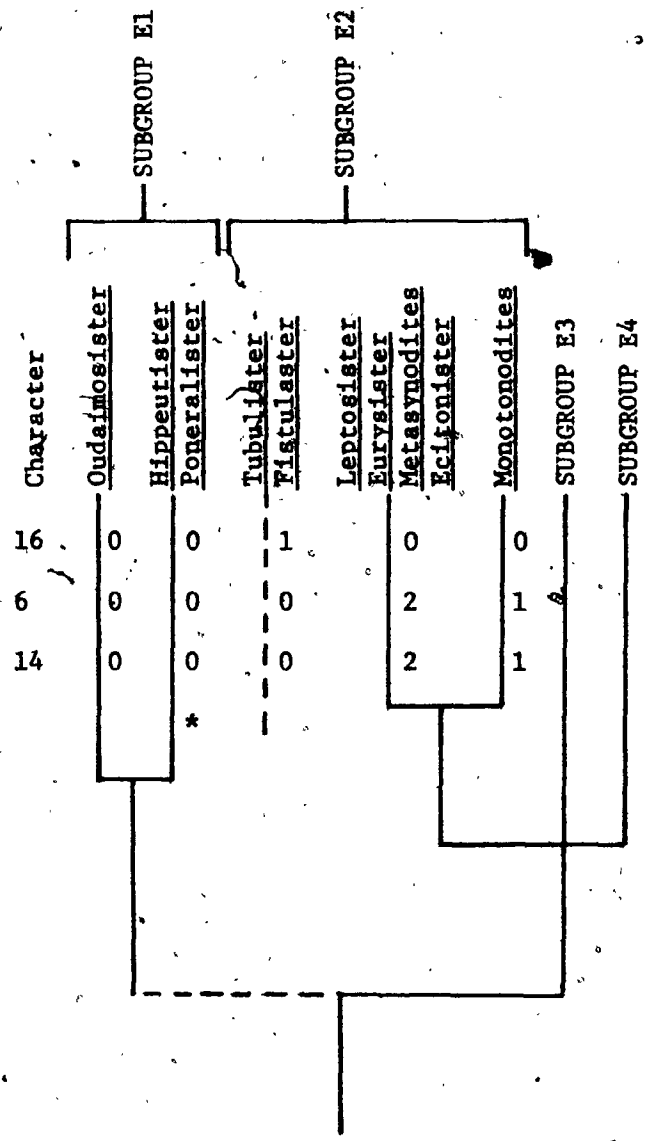


Fig. 9. Phylogeny.

\* Apomorphic character state for character not analyzed.

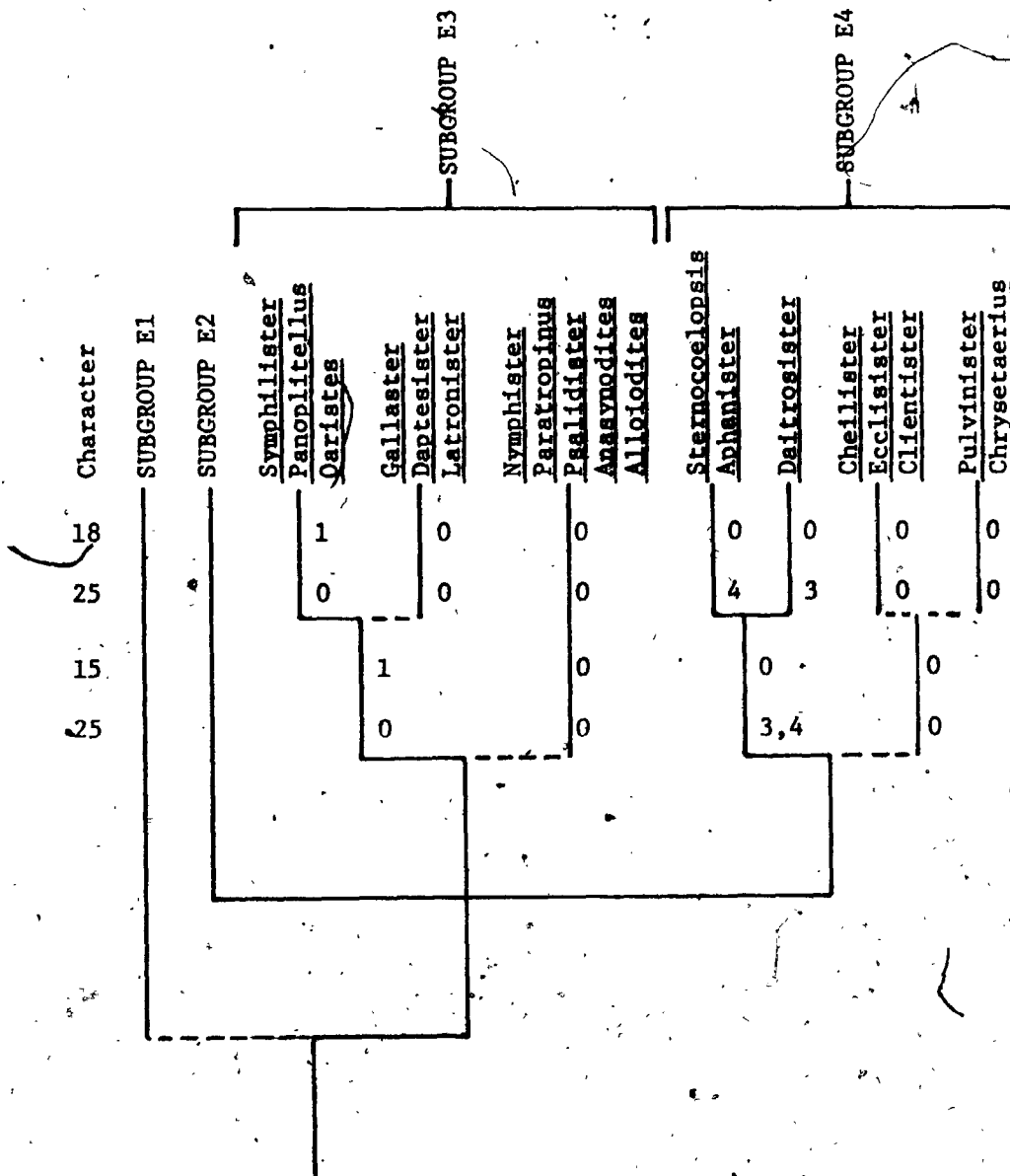


Fig. 10. Phylogeny.

## GROUP A (Fig. 3)

Included Genera: Tarsilister.

Remarks. This group is provisionally characterized by the narrow antennal scape; the antennal club which is without annular rings and is pubescent over its entire surface; and the presence of reduced tibial spurs. In the context of the present study these character states are all plesiomorphic. Although the genus Tarsilister has many autapomorphic character states, I cannot confidently define Group A on the basis of any apomorphic character states until I have seen the genitalia of this genus and the genus Mecistostethus Marseul which I suspect from the descriptions in literature to belong to Group A.

## GROUP B (Figs. 4-5)

Included Genera: Subgroup B1: Synoditulus, Thaumataerius, Homalopygus, Inquillinister, Termitolister, Trichoreninus, Scapicoelis; Subgroup B2: Tylois, Enicosoma, Terapus, Kleptisister, Hesperodromus, Chelyocephalus, Cossyphodister, Scapolister, Termitoxenus, Paroecister, Procolonides, Hemicolonides, Colonides, Xylostega, Euxehister.

Remarks. Group B includes all those genera in which the aedeagus has a short basal piece and long parameres, and is synapomorphic in that the 8th tergite has inward

extensions along the ventral hind margin or the 8th tergite is fused with the 8th sternites to form a tube (Thaumataerius). The phylogenetic analysis of Group B indicates that it is composed of two subgroups.

Subgroup B1 is synapomorphic in that the dorsal elytral stria 4 is arched in front and joined to the sutural stria. Within this subgroup Synoditulus is plesiomorphic in many character states and apomorphic in that the 8th sternites are without "disks". The rest of the genera form a diverse, but potentially monophyletic group that is defined by the oblique, subparallel lateral marginal striae of the pronotum.

Subgroup B2 is an assemblage of autapomorphic genera that I have grouped mainly on the basis of the similarity of their male genitalia. I have been unable to identify any synapomorphies and my hypothesis that these genera belong together must be re-evaluated when new evidence becomes available. The phylogenetic analysis indicates that there are three genus-groups. The Terapus group (Tylois, Enicosoma, Terapus, Kleptisister, Hesperodromus) is synapomorphic in that the prosternal keel has a row of setae between the carinal and lateral striae. The Scapolister group (Chelyocephalus, Cossyphodister, Scapolister) is synapomorphic in that the 8th tergite has inward extensions along the ventral hind margin that are joined to the 8th sternites, the lateral margins of the

head are not carinate, and the vertex and frons are broadened. The Colonides group (Termitoxenus, Paroecister, Procolonides, Hemicolonides, Colonides, Xylostega) are synapomorphic in that the 8th tergite has inward extensions along the ventral hind margin that are joined to the 8th sternites and the elytra have strong, longitudinal costae.

The very autapomorphic genus Euxenister is tentatively included in Subgroup B2 because of the similarity of the male genitalia, but its position must be re-evaluated when new evidence comes to light.

#### GROUP C (Fig. 6)

Included Genera: Subgroup C1: Bastactister, Synetister, Glyptosister, Teratosoma, Pterotister, Ulkeopsis, Opadosister, Convivister; Subgroup C2: Ulkeus, Hetaeriomorphus, Pselaphister, Teratolister; Subgroup C3: Hetaerius, Echinodes; Subgroup C4: Iugulister, Plaumannister.

Remarks. Group C includes those genera in which the aedeagus has a short basal piece and long parameres and the 8th tergite does not have inward extensions along the ventral hind margin, a plesiomorphic character state. Most of the genera (except Subgroup C4 and Ulkeopsis) are apomorphic in that the 8th sternites are without "disks" or are fused or both. The phylogenetic analysis

indicates that Group C is composed of <sup>6</sup>four subgroups.

Subgroups C1-C3 are synapomorphic in that the proepisternum has a setose patch. Subgroup C1-C2 are synapomorphic in that the pronotum has a network of striae. Subgroup C1 is synapomorphic in that the proepisternum has a setose patch or fossa and the hind margin of the prosternum is either deeply and roundly or deeply and ovally emarginate. The genera Opadosister and Convivister are tentatively placed in this subgroup and their placement must be reevaluated when new evidence becomes available.

Subgroup C2 is synapomorphic in that the vertex has two divergent striae. The genus Teratolister does not have these divergent striae on its vertex and its male genitalia are unavailable for study. I have, however, placed it near Pselaphister because of the similarity of their body forms and their association with Pheidole.

Subgroup C3 is not defined by a synapomorphy. I have placed Hetaerius and Echinodes together because they both share apomorphic character states with the Palearctic genus Satrapes. However, a more detailed phylogenetic analysis of the Palearctic taxa has not been possible within the scope of the present study.

Subgroup C4 is synapomorphic in that the 9th tergites have their apical margin produced to form "hooked" structures. This group is pleisiomorphic for

all other characters that were used for the phylogenetic analysis of Group C. They have been included in Group C mainly on the basis of overall similarity.

GROUP D (Fig. 7)

Included Genera: Parodites, Reninoides, Reninopsis, Reninus, Euclasea, Hetaeriobus, Nevermannister, Troglosternus.

Remarks. Group D includes those genera in which the aedeagus has a long basal piece and long parameres, and is synapomorphic in that the 9th tergites have the internal "guides" for the aedeagus produced forward. While the included genera are autapomorphic and easily diagnosed, they are plesiomorphic for most of the characters used in this phylogenetic analysis. I suspect that there are many, as yet undiscovered, genera that belong in this group, and my initial hypothesis must be re-evaluated as new material, especially the guests of Labidus and Atta, accumulates.

GROUP E (Figs. 8-10)

Included Genera: Mesynodites; Subgroup E1: Oudaimosister, Hippeutister, Ponerallister; Subgroup E2: Tubulister, Fistulaster, Leptosister, Eurysister, Metasynodites, Ecitonister, Monotonodites; Subgroup E3: Symphilister, Panoplitellus, Oaristes, Gallaster,



Daptesister, Latronister, Nymphister, Paratropinus,  
Psalidister, Anasynodites, Alloiodites; Subgroup E4:  
Sternocoelopsis, Aphanister, Daitrosister, Cheilister,  
Ecclisister, Clientister, Pulvinister, Chrysetaerius.

Remarks. Group E includes those genera in which the aedeagus has a long basal piece and short parameres. The phylogenetic analysis indicates that it is composed of four subgroups. Subgroups E2-E4 are synapomorphic in that the 10th tergite is absent, but I have been unable to resolve the interrelationships of these subgroups. Because I am unable at this time to define the genus Mesynodites, it is not included in the phylogenetic analysis. It is clearly composed of several genera that I am unable to characterize on the basis of the limited material that I have seen.

Subgroup E1 is defined by pleisiomorphic character states and is undoubtedly polyphyletic. Within this subgroup, Poneraster and Hippeutister are synapomorphic in that the carinae on the lateral margins of the head are interrupted above the antennal sockets.

Subgroup E2 is synapomorphic in that the outer surface of the mandibles is transversely incised or has distinct foveae near their base, and the prosternal lobe is tripartite. The genera Tubulister and Fistulaster are synapomorphic in that the prosternal keel has an anterior process. Their placement in Subgroup E2 is tentative and

based on overall similarity because their male genitalia are not available, and they do not share the apomorphies listed above for Subgroup E2.

Subgroup E3 is synapomorphic in that the 9th tergites are without internal "guides" for the aedeagus and have the apical margin produced to form "hooked" structures. The phylogenetic analysis indicates three genus-groups. The Symphilister group (Symphilister, Panoplitellus, Oaristes) and the Latronister group (Gallaster, Daptisister, Latronister) are synapomorphic in that the prosternal keel has a row of setae between the carinal and lateral striae. The Symphilister group is synapomorphic in that the proepisternum has a setose patch or fossa. The Latronister group and Psalidister group (Nymphister, Paratropinus, Psalidister, Anasynodites, Alloiodites) are defined by plesiomorphic character states. While all the genera are easily diagnosed, I have been unable to define these groups by apomorphic character states.

Subgroup E4 is synapomorphic in that the 9th tergites have movable "armature". The phylogenetic analysis indicates that there are three genus-groups. The Sternocoelopsis group (Sternocoelopsis, Aphanister, Daitrosister) is synapomorphic in that the 8th sternites have the "disks" either together, divided into three, or fused together. The Ecclisister group (Cheilister,

Ecclisister, Clientister) and Pulvinister group  
(Pulvinister, Chrysetaerius) are defined by  
pleisiomorphic character states. Again, although these  
genera are easily diagnosed, I have been unable to  
define them by apomorphic character states.

## GROUP A

Genus Tarsilister Bruch

Figs. 11-13.

Tarsilister Bruch 1932: 278.

TYPE-SPECIES: Tarsilister loretoensis Bruch (by original designation and monotypy).

DIAGNOSIS. Form oval; sparsely setose above (Fig. 11). Head 1.3 times as wide as long (Fig. 13); frons and vertex broad; frontal stria transverse in front; mandibles unmodified near base; labrum 3 times as wide as long, fused to but separated from clypeus by distinct suture, apical margin feebly arcuate; antennal club oval, unsclerotized, without annuli; antennal scape not expanded. Pronotum (Fig. 11) 2 times as wide as long; lateral margins strongly arcuate, convergent forward; front angles not expanded; surface evenly convex; with one lateral stria, close to and parallel to marginal stria; with one additional, transverse, arcuate stria just behind front margin; hind margin obtusely V-shaped. Elytron (Fig. 11) rather longer than normal; convex, except feebly depressed along suture; outer dorsal striae present, inner dorsal striae indicated by rows of setae; internal subhumeral stria long, cariniform; external subhumeral stria long, straight, costiform, forming rather strong lateral margin which is continuous with

lateral margin of pronotum. Propygidium 5 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 12) with keel convex; carinal striae parallel, joined in front in rounded arch; lateral striae absent; lateral marginal striae cariniform, subparallel; lobe separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin truncate, overlapped by front margin of mesosternum. Mesosternum rather long, front margin produced forward and overlapping hind margin of prosternum, marginal stria present. without lateral foveae. Metasternum rather longer than normal; without postcoxal or lateral striae; with transverse, cariniform stria just behind meso-metasternal suture; hind margin arcuate, produced backward. First abdominal sternum without postcoxal striae; front margin broadly, roundly emarginate. Legs normal length; tibiae narrow proximally, expanded distally, with reduced spurs present; middle and hind tarsi laterally compressed. Male genitalia not available.

Remarks. The genus Tarsilister may be separated from all other genera by a combination of its narrow antennal scape; unsclerotized antennal club; the front margin of its mesosternum being produced forward and overlapping the hind margin of its prosternal keel; the hind margin of its metasternum being produced backward; and its

tibiae which are narrow proximally and expanded distally.

Species of Tarsilister

- \* Tarsilister loretoensis Bruch 1932: 278. ARGENTINA.  
Santiago del Estero: Loreto. BRAZIL. Santa Catarina:  
Nova Teutonia. HOST: Pachycondyla striata.



Figs. 11-13. Tarsilister loretoensis Burch.

## GROUP B

## SUBGROUP B1

Genus Synoditulus Reichensperger

Figs. 14-17

Synoditulus Reichensperger 1924: 212.

TYPE-SPECIES: Synoditulus separatus Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; not setose above (Fig. 15). Head as wide as long (Fig. 17); lateral margins carinate from occiput to front margin of clypeus, these carinae quite narrowly separated in front; clypeus with front margin declivous; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin nearly truncate, apical surface not broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 15) 1.6 times as wide as long; lateral margins nearly straight, convergent forward; front angles obliquely truncate; surface evenly convex; with two lateral striae both convergent from in front and behind to point on lateral margin at hind 0.3; with two additional striae across front margin and one additional, arcuate stria in front of scutellum; hind margin obtusely V-shaped. Elytron (Fig. 15) convex; with five dorsal striae, fifth arched in front and joined to sutural



stria; internal subhumeral stria long; external subhumeral stria cariniform, sinuate. Propygidium 2 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 16) with keel convex; carinal striae absent; lateral striae widely separated, divergent in front and behind; lateral marginal striae cariniform, widely divergent in front; lobe separated from rest of prosternum by indistinct suture, marginal stria present, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; meso-metasternal suture with crenate stria; without lateral foveae. Metasternum without postcoxal stria; outer lateral stria joined in front to meso-metasternal stria, reaching to hind coxa, its recurrent arm present; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs normal length; front tibia expanded, outer edge broadly emarginate; middle and hind tibiae narrow proximally, gradually expanded and truncate distally. Male genitalia as in Fig. 14; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin; 8th sternites separate, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to

form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Synoditulus may be separated from all other genera by the short, arcuate, antescutellar stria on its pronotum; and by its middle and hind tibiae which are narrow proximally and expanded distally. This genus is unusual and difficult to place. I have tentatively included it in this group because it has inward extensions along the ventral hind margin of its 8th genitalic tergite. In general conspectus, this genus is reminiscent of many Exosternini.

Species of Synoditulus

Synoditulus debilis Reichensperger 1938: 92. COSTA RICA.

HOST:

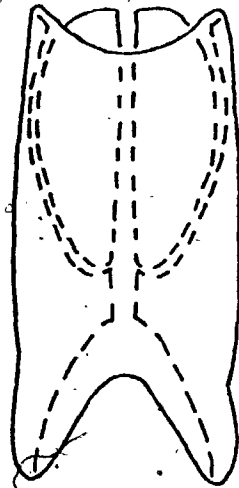
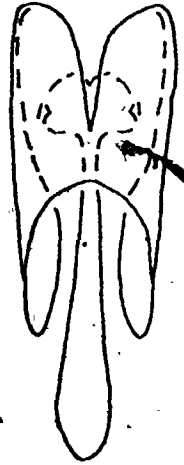
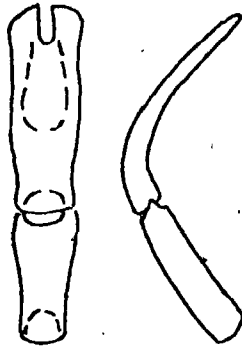
Synoditulus separatus Reichensperger 1924: 212. BRAZIL.

HOST:

\* Synoditulus separatus praedator Reichensperger 1939: 128.

BRAZIL. Santa Catarina: Nova Teutonia. HOST: Labidus

praedator.



14



15



16



17

Figs. 14-17. *Synoditulus separatus praedator* Reichensperger.

Genus Thaumataerius Mann

Figs. 18-21

Thaumataerius Mann 1923: 364.

TYPE-SPECIES: Thaumataerius emersoni Mann (by original designation and monotypy).

DIAGNOSIS. Form elongate, cylindrical; not setose above (Fig. 19). Head 0.8 times as wide as long (Fig. 21); frons and vertex long; lateral margins not carinate; without frontal stria; clypeus not declivous; mandibles with outer surface feebly depressed near base; labrum 4 times as wide as long, apical margin arcuate, apical surface broad; antennal club subcylindrical, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 19) as wide as long; lateral margins subparallel, declivous in hind 0.5; front angles very obliquely truncate; surface convex; with two divergent striae reaching forward from hind margin just mesad of each hind angle; hind margin acutely rounded to lateral striae, thence arcuate. Elytron (Fig. 19) convex; dorsal striae present; internal subhumeral stria absent; external subhumeral stria cariniform, arcuate. Propygidium 2 times as wide as long. Pygidium as wide as long; surface convex. Prosternum (Fig. 20) with keel flat behind, broadly convex in front; with carinal striae; lateral striae evanescent; lateral marginal striae evanescent, widely divergent in front; lobe not separated from rest

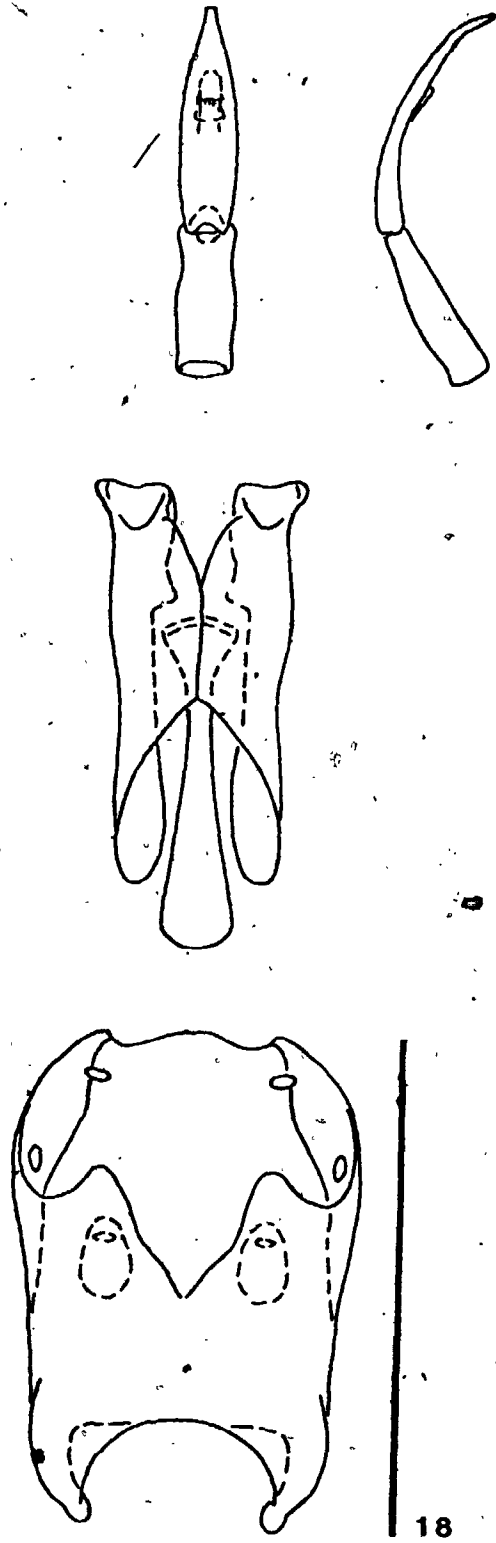
of prosternum by suture, without marginal stria; proepisternum and proepimeron without setose patches; hind margin truncate, overlapping mesosternum. Mesosternum with front margin hidden beneath prosternum; without marginal stria; without lateral foveae. Metasternum with postcoxal stria present; inner and outer lateral striae absent; hind margin arcuate. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. Male genitalia as in Fig. 18; 8th tergite without transverse anterior stria, fused with 8th sternites to form tube, this tube with remnants of "disks"; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Thaumataerius may be separated from all other genera by the truncate hind margin of its prosternal keel which overlaps the mesosternum; and by its elongate, cylindrical body form. This genus is very unusual in many respects, for example, its 8th genitalic tergite and sternites are fused to form a tube. I have tentatively placed it in a group with Termitolister etc. because it shares with them the two oblique lateral pronotal striae and the similarity of the male genitalia.

Species of Thaumataerius

\* Thaumataerius emersoni Mann 1923: 365. GUIANA. BRAZIL.

Para: Belem. HOST: jmc 70-21 70-29



Figs. 18-21. *Thaumataerius emersoni* Mann.

Genus Homalopygus Boheman

Figs. 22-25

Homalopygus Boheman 1858: 36.

TYPE-SPECIES: Homalopygus latipes Boheman (by monotypy). -- Bickhardt 1917: 242 (generic diagnosis).

DIAGNOSIS. Form elongate oval, parallel-sides; very sparsely setose above (Fig. 23). Head 1.5 times as wide as long (Fig. 25); frons and vertex broad; frontal stria nearly transverse; clypeus strongly declivous; labrum 4 times as wide as long; apical margin obtusely angulate, apical surface very broad; mandibles with outer surface depressed near base; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 23) 1.5 times as wide as long; lateral margins arcuate; front angles rounded; surface convex at middle, reflexed along sides; hind margin arcuate. Elytron (Fig. 23) feebly convex; dorsal striae cariniform, interstices often with supernumerary, carinulate striae; dorsal stria four arch in front sometimes joined to sutural stria; internal and external subhumeral striae cariniform, subparallel. Propygidium (Fig. 23) 2 times as wide as long; surface flat to feebly depressed. Pygidium (Fig. 23) as wide as long; of males low, rounded, obtuse tetrahedron; of females with two distinct surfaces, these two surfaces separated by strong ridge, upper surface semicircular and



in same plane as propygidium, lower surface convex and arch shaped. Prosternum (Fig. 24) with keel convex; carinal striae subparallel, divergent in front and behind; lateral striae absent; lateral marginal striae widely divergent in front, feebly cariniform; lobe separated from rest of prosternum by suture, front margin truncate to feebly arcuate, marginal stria present; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly, quite deeply emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria reaching hind coxa, without recurrent arm; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs normal length; middle and hind femora stout; tibiae expanded, with outer edge arcuate; front tibia oligodentate. Male genitalia as in Fig. 22; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Homalopygus may be separated from other genera in this group by the absence of lateral

striae on its pronotum. From Termitolister, Homalopygus may be separated by its triangular labrum. From Inquilinister, Homalopygus may be separated by the presence of dorsal elytral striae. From Thaumataerius, Homalopygus may be separated by its elongate, oval, parallel-sided body form; and its broader head. From Scapicoelis and Trichorenius, Homalopygus may be separated by its elongate, oval body form; and by its triangular labrum. According to Lewis' description of Homalopygus cavifrons this species does not have an emarginate prosternal keel, and should possibly be placed in Thaumataerius. Similarly, Lewis' description of Homalopygus remex mentions that this species has lateral pronotal striae and should possibly be placed in Termitolister.

Species of Homalopygus

Homalopygus aequatus Lewis 1888: 236. PANAMA. Chiriqui; Bugaba. HOST: no data.

Homalopygus amnicola Lewis 1898: 177. BRAZIL. HOST:

Homalopygus cavifrons Lewis 1893: 421. BRAZIL. Rio de Janeiro; Rio de Janeiro. HOST: no data.

Homalopygus commensalis Lewis 1885: 421. BRAZIL. Santa Catarina; Blumenau. HOST: "termites".

Homalopygus fidelis Reichensperger 1931: 266. BRAZIL.

HOST:

Homalopygus geminatus Lewis 1901: 379. BRAZIL. HOST:

Homalopygus iniquus Bickhardt 1914: 315. BRAZIL. HOST:

\* Homalopygus latipes Boheman 1858: 37. BELIZE. Rio Hondo.  
PANAMA. Islas de Perlas: San Jose. ?: Bananas. BRAZIL.  
Para: Belem. HOST: jmc 70-23 70-24.

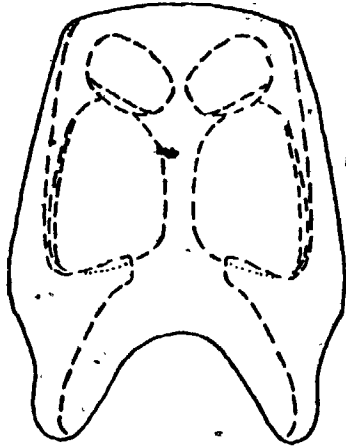
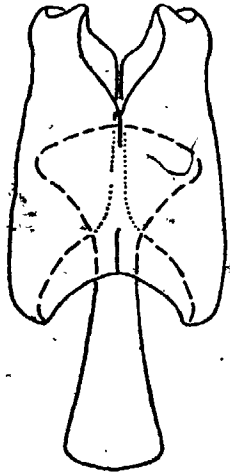
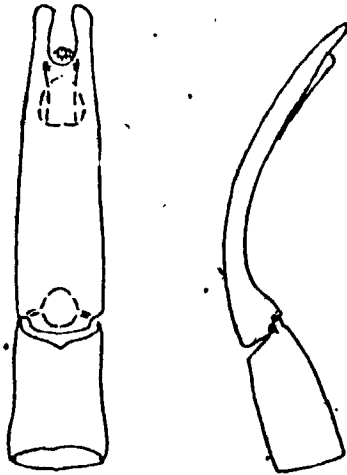
Homalopygus latisternus Lewis 1907: 349. BRAZIL. HOST:

Homalopygus longipes Marseul 1870: 122. BRAZIL. HOST:

Homalopygus pluristriatus Reichensperger 1929: 264.  
FRENCH GUIANA. TRINIDAD. Rio Claro. HOST: Nasutitermes  
ephratae.

Homalopygus remex Lewis 1900: 285. PARAGUAY. HOST:

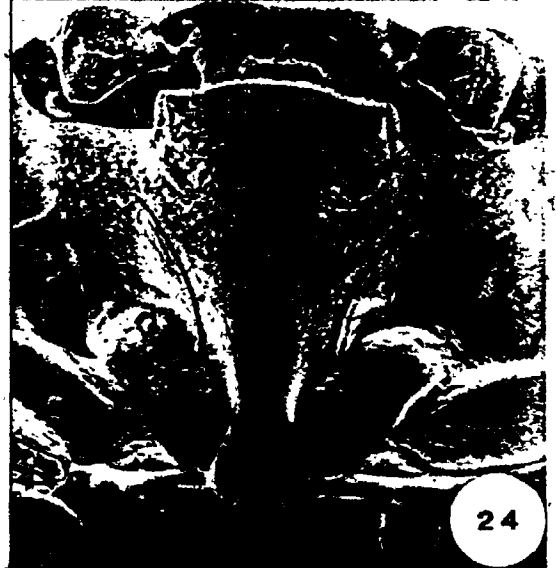
"termites".



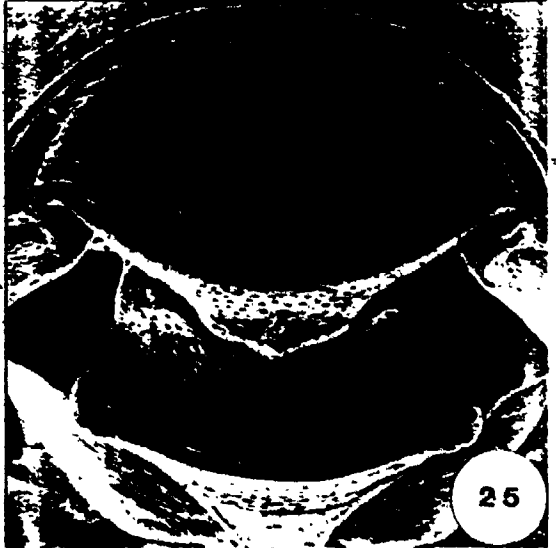
22



23



24



25

Figs. 22-25. Homalopygus latipes Boheman.

Genus Inquilinister new genus

Figs. 26-29

Inquilinister new genus.TYPE-SPECIES: Inquilinister reburus new species.

DIAGNOSIS. Form elongate oval, somewhat parallel-sided; setose above (Fig. 27). Head 1.3 times as wide as long (Fig. 29); lateral margins not carinate; frontal stria present; clypeus strongly declivous; vertex and frons not unusually broad; mandibles with outer surface depressed near base; labrum 4 times as wide as long, apical margin angulate, apical surface very broad; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 27) 1.8 times as wide as long; lateral margins arcuate; front angles rounded; surface convex at middle, inflated along lateral margins, strongly depressed just mesad of each hind angle; with three, oblique, divergent lateral striae reaching forward from near hind angle, contralateral inner striae sometimes joined in rounded arch behind front margin; hind margin straight to mesal edge of depression, thence arcuate. Elytron (Fig. 27) feebly convex; dorsal striae absent; internal subhumeral stria absent; external subhumeral stria cariniform. Propygidium 2 times as wide as long. Pygidium as wide as long; surface somewhat conical. Prosternum (Fig. 28) with keel convex; carinal striae feebly impressed, parallel, joined in front in

rounded arch; lateral striae absent; lateral marginal striae cariniform, narrowly divergent in front; lobe separated from rest of prosternum by suture, front margin truncate to feebly arcuate, marginal stria present; proepisternum and proepimeron without setose patches; hind margin narrowly, deeply emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria reaching hind coxa, its recurrent arm present; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded, with outer edges angulate at midpoint. Male genitalia as in Fig. 26; 8th tergite without transverse anterior-stria, with inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, apical margin not produced forward to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

**Etymology.** "Inquilinus" meaning "temporary inhabitant" and "-ister" suffix meaning "having the nature of".

**Remarks.** The genus Inquillinister may be separated from other genera in this group by the following

combination of characters: its clypeus is strongly declivous; its labrum is triangular; its pronotum has lateral striae, but the surface is not costate along these striae; its elytra have no dorsal striae; its prosternal carinal striae are joined in a rounded arch in front; its mesosternum is without lateral foveae; and its body form is elongate, oval, somewhat parallel-sided.

Inquillinister reburrus new species

Figs. 26-29

Inquillinister reburrus new species.

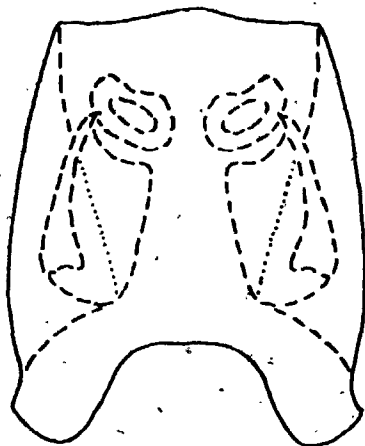
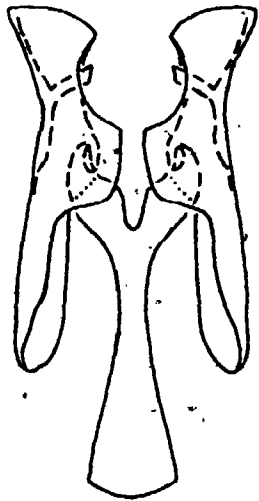
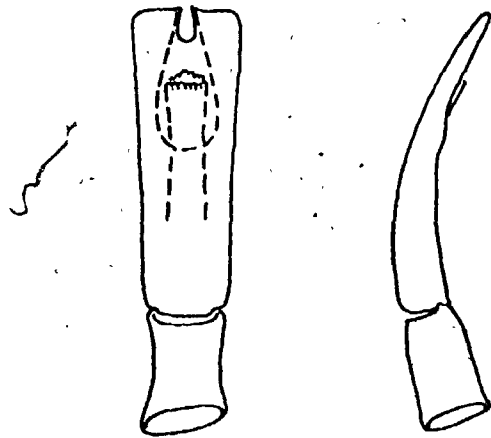
TYPE. Holotype, male, Colombia, (Valle), Anchicaya, 24.vii.1970, 1000', J.M. Campbell, HOST: JMC 70-138 (CNC). Allotype, female, same data as holotype (CNC). Paratypes, 17, sexes undetermined, same data as holotype; 1 female, Panama, (Panama), Cerro Campana, 1.viii.1970, 2900', J.M. Campbell, HOST: no data.

Description. Length: 2.1-2.3 mm; width: 1.8-1.9 mm. Dorsal surface with fine, dense punctures from which arise short setae. Head (Fig. 29) with frontal stria present at sides only; labrum without setae. Pronotum (Fig. 27) with marginal stria entire; with one additional stria around front angles that is mesad of and approximate to marginal stria; inner lateral striae long; middle lateral striae reaching nearly to front margin; outer lateral striae reaching to middle. Elytron (Fig. 27) with external subhumeral stria feebly sinuate, reaching from front margin to hind 0.4; marginal elytral and marginal epipleural striae absent. Propygidium with surface feebly convex; punctures similar to those on elytra and pronotum. Pygidium punctate in front, impunctate behind. Prosternum (Fig. 28) with carinal striae reaching from hind margin to front 0.2; lateral

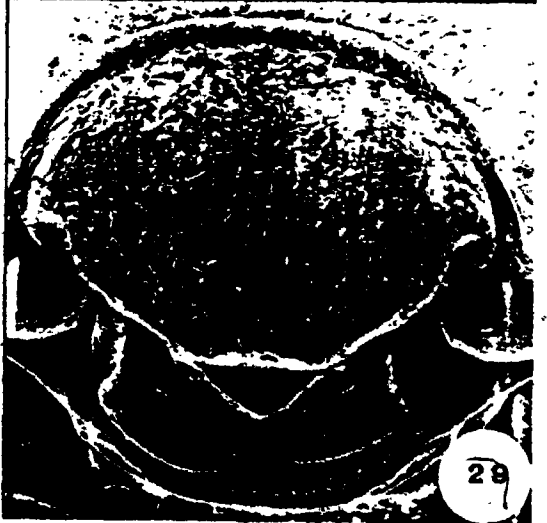
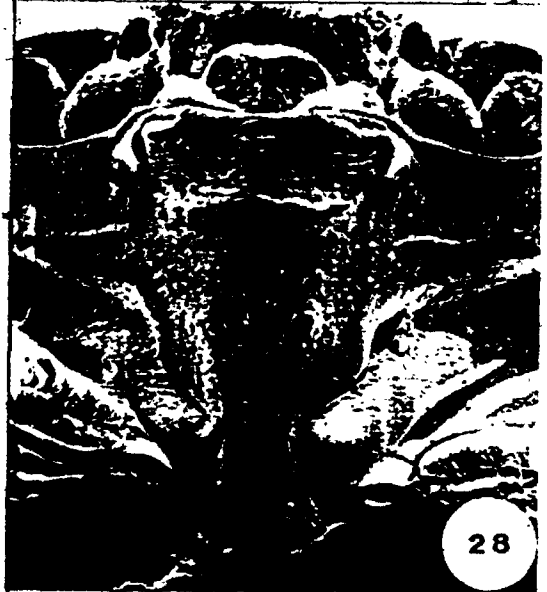
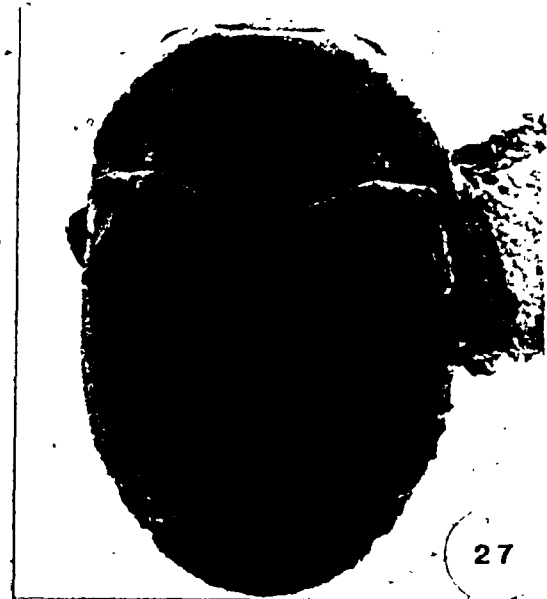


marginal striae continued along hind margin of alae; lobe with surface depressed at sides, somewhat wrinkled. Mesosternum with marginal stria entire, joined to outer lateral metasternal striae. Metasternum with postcoxal stria short, not recurved forward; outer lateral stria reaching to hind coxa, its recurrent arm short, arcuate, reaching metasternal-metepisternal suture behind middle. First abdominal sternum with postcoxal striae joined near hind margin, continued laterally along hind margin nearly to sides. Legs as in generic diagnosis. Male genitalia as in Fig. 26.

Etymology. "Reburrus" meaning "with bristling hair".



26



Figs. 26-29. Inquilinister reburus (new genus, new species).

Genus Termitolister Bruch

Figs. 30-33

Termitolister Bruch 1930: 39.

TYPE-SPECIES: Termitolister koehleri Bruch (by original designation and monotypy).

DIAGNOSIS. Form elongate oval, parallel-sided; minutely setose above (Fig. 31). Head 1.3 times as wide as long (Fig. 33); frons and vertex broad; frontal stria feebly impressed, present at sides; clypeus declivous; labrum 3.5 times as wide as long, apical margin truncate, apical surface broad; mandibles with outer surface depressed near base; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 31) 2 times as wide as long; lateral margins arcuate; front angles rounded; surface convex at middle, feebly inflated along lateral margins, feebly depressed just mesad of hind angles; with two oblique lateral striae reaching forward from each depression, contralateral inner striae joined in rounded arch behind front margin; hind margin straight to mesal edge of depression, thence arcuate. Elytron (Fig. 31) feebly convex; with dorsal striae well-impressed; dorsal stria four arched in front, sometimes joined to sutural stria in front; internal subhumeral stria long, feebly sinuate behind; external subhumeral stria long, feebly cariniform, not sinuate. Propygidium 2 times as wide as long. Pygidium as wide as

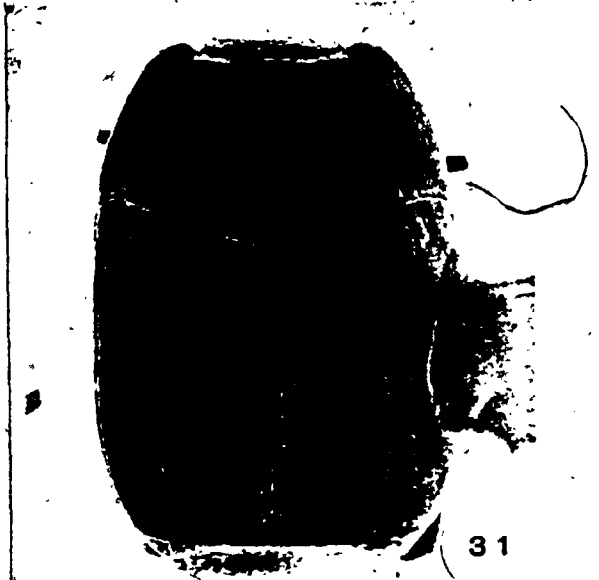
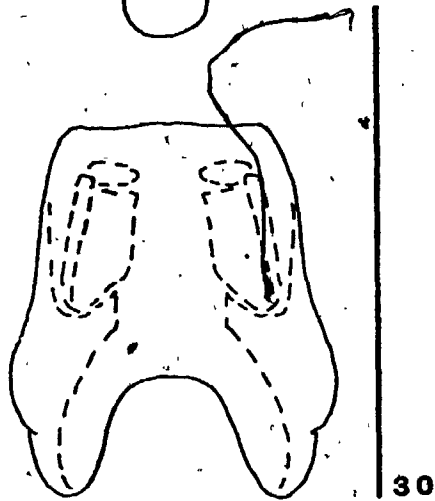
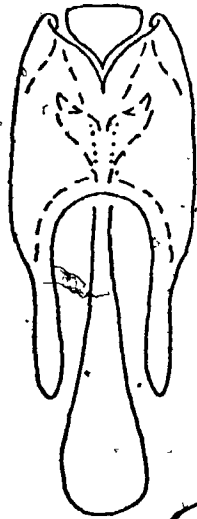
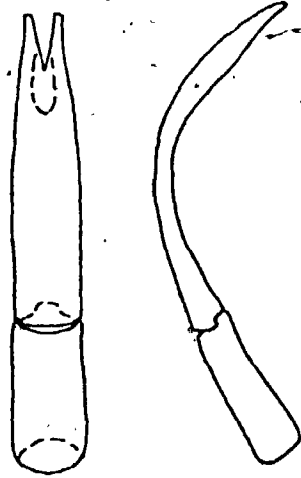
long; surface somewhat conical. Prosternum (Fig. 32) with keel convex; carinal striae widely separated, subparallel; lateral striae absent; lateral marginal striae cariniform, widely divergent in front; lobe separated from rest of prosternum by suture, front margin truncate, marginal stria present; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly, not deeply emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria reaching hind coxa, its recurrent arm present; inner lateral stria absent; First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia with outer edge arcuate; middle and hind tibiae nearly parallel-sided. Male genitalia as in Fig. 30; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

Remarks. the genus Termitolister may be separated from Homalopygus and Inquilinister by its widely separated prosternal carinal striae; by the arcuate front

margin of its prosternal lobe; and by the truncate apical margin of its labrum. From Thaumataerius, Termitolister may be separated by its elongate, oval, parallel-sided body form; by the presence of carinal striae on its prosternal keel; and by the emarginate hind margin of its prosternal keel. From Scapicoelis and Trichorenius, Termitolister may be separated by the absence of costiform elevations along its lateral pronotal striae.

Species of Termitolister

- \* Termitolister koehleri Bruch 1930: 41. ARGENTINA.  
URUGUAY. Canelones: Montevideo. HOST:



Figs. 30-33. Termitolister koehleri Bruch.

Genus Trichoreninus Lewis

Figs. 34-36

Trichoreninus Lewis 1891: 106.

TYPE-SPECIES: Trichoreninus flohri Lewis (by monotypy). -- Bickhardt 1917: 242 (generic diagnosis).

DIAGNOSIS. Form oval; sparsely setose above (Fig. 34). Head as wide as long (Fig. 36); frons and vertex somewhat broad; lateral margin very feebly carinate from occiput to front margin of clypeus, these carinae broad, rounded and low; clypeus not declivous; labrum 3 times as wide as long, surface transversely convex, apical margin obtusely V-shaped, apical surface broad; mandibles with outer surface depressed near base; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 34) 1.7 times as wide as long; lateral margins arcuate, convergent forward to rounded front angles; with three oblique striae reaching forward from each hind angle to behind head; surface convex at middle, costiform along course of striae; hind margin obtusely V-shaped. Elytron (Fig. 34) convex; dorsal striae present, outer striae somewhat cariniform, inner striae inwardly hooked in front; dorsal stria four joined to sutural stria in front; internal subhumeral stria cariniform, anterior; external subhumeral stria cariniform, feebly sinuate. Propygidium 1.5 times as

wide as long. Pygidium as wide as long. Prosternum (Fig. 35) narrowly convex; carinal striae narrowly separated, parallel, joined in rounded arch in front; lateral striae evanescent, approximate to carinal striae; lateral marginal striae cariniform, very widely divergent forward; lobe separated from rest of prosternum by suture, front margin truncate and thickened, marginal stria present; proepisternum and proepimeron without setose patches; hind margin roundly, quite shallowly emarginate. Mesosternum produced in front to fit prosternal emargination; front margin somewhat emarginate to fit prosternal keel; marginal stria present; without lateral foveae. Metasternum without postcoxal stria; inner and outer lateral striae feebly cariniform, latter with recurrent arm. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia quadrate; middle and hind tibia with outer edge arcuate. Male genitalia not available.

Remarks. The genus Trichoreninus may be separated from Scapicoelis by the absence of carinae on the lateral margins of its head; by its narrowly separated prosternal carinal striae; and by the absence of lateral foveae on its mesosternum. From Termitolister, Homalopygus and Inguilinister, Trichoreninus may be separated by its narrower head; and the costate surface along the lateral striae of its pronotum. From Thaumataerius,



Trichoreninus may be separated by its oval body form; and by the emarginate hind margin of its prosternal keel. According to Lewis's description of Trichoreninus imbricatus, it is possible that this species does not belong in the genus Trichoreninus, but somewhere closer to Leptosister and Eurysister. However, I cannot determine where it should be placed with any certainty until I have seen Lewis' specimens.

Species of Trichoreninus

Trichoreninus flohri Lewis 1891: 107. MEXICO. HOST:

Trichoreninus imbricatus Lewis 1893: 422. BRAZIL. Bahia  
? HOST: no data.

Trichoreninus viani Bruch 1939: 259. ARGENTINA. HOST:

\* Trichoreninus n.sp. 1. BRAZIL. Para: Caninde. HOST: no  
data (forest sweep).



Figs. 34-36. Trichorenius n.sp. 1.

Genus Scapicoelis Marseul

Figs. 37-40

Scapicoelis Marseul 1862: 38.

TYPE-SPECIES: Scapicoelis tibialis Marseul (by monotypy). -- Bickhardt 1917: 240 (generic diagnosis).

DIAGNOSIS. Form oval; not setose above (Fig. 38). Head as wide as long (Fig. 40); lateral margins carinate, these carinae approximate at fronto-clypeal margin, divergent on clypeus; clypeus not declivous; labrum 2 times as wide as long, apical margin arcuate, apical surface not broad; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 38) 2 times as wide as long; lateral margins arcuate, convergent forward to rounded front angles; with two oblique, subparallel striae reaching forward from each hind angle to behind head; surface convex at middle, somewhat elevated along courses of oblique striae; hind margin obtusely V-shaped. Elytron (Fig. 38) convex; humerus prominent; dorsal striae present, hooked inwardly in front; dorsal stria four joined to sutural stria; internal subhumeral stria cariniform; external subhumeral stria cariniform, sinuate. Propygidium, 2 times as wide as long. Pygidium 1.5 times as wide as long. Prosternum (Fig. 39) with keel convex; carinal striae very widely separated, parallel, reaching from hind margin to lobe,

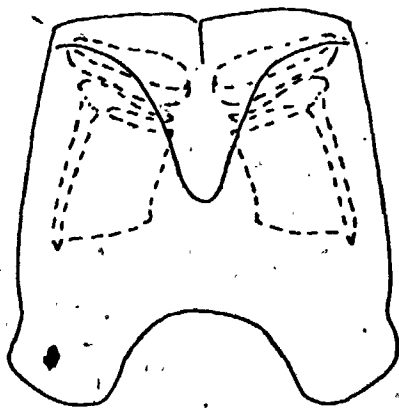
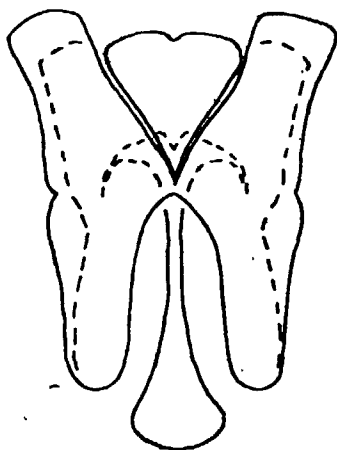
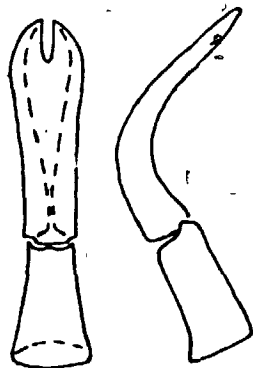
cariniform; lateral striae approximate to carinal striae, divergent in front and joined to lateral marginal striae in front; surface between carinal striae flat; lateral marginal striae cariniform, straight, parallel, joined in front to lateral striae; lobe separated from rest of prosternum by suture, front margin strongly arcuate, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, quite deeply, obtusely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; lateral foveae present. Metasternum without postcoxal stria; outer lateral stria reaching hind coxa, without recurrent arm; inner lateral stria approximate to and parallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia arcuately incised at middle of outer edge; middle and hind tibiae with outer edge arcuate. Male genitalia as in Fig. 37; 8th tergite with transverse anterior stria, with inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

Remarks. The genus Scapicoelis may be separated

from other genera in this group by the following combination of characters: its mesosternum has lateral foveae; its prosternal carinal striae are cariniform, parallel and widely separated; and the lateral margins of its head are carinate, these carinae are approximate at the fronto-clypeal margin and divergent on clypeus.

Species of Scapicoelis

- \* Scapicoelis tibialis Marseul 1862: 40. BRAZIL. Mato Grosso: Cuiaba. ? : Taperinha. FRENCH GUIANA, RN2, P.K. 21. HOST: no data.



37



38



39

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Figs. 37-40. Scapicoelis tibialis Marseul.

## SUBGROUP B2

Genus Tylois Marseul

Figs. 41-43

Tylois Marseul 1864: 336.

TYPE-SPECIES: Tylois trilunatus Marseul (by monotypy). -- Bickhardt 1917: 248. (generic diagnosis).

DIAGNOSIS. Form broadly oval; setose above (Fig. 41). Head as wide as long (Fig. 43); lateral margins carinate from eyes to front margin of clypeus; labrum 2 times as wide as long, apical margin broadly, quite deeply emarginate; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 41) 2 times as wide as long; lateral margins not continuous in outline with elytra, strongly expanded at hind angles, arcuate, strongly convergent forward to truncate front angles; surface convex at middle; with two large, deep foveae just before hind margin; short longitudinal stria between fovea and lateral margin; hind margin arcuate. Elytron (Fig. 42) depressed in front, convex behind; humerus very prominent; dorsal striae absent; with two strong, short costae in front; internal subhumeral stria costiform; external subhumeral stria short, anterior, strongly costiform. Propygidium 2 times as wide as long; surface inflated before hind margin. Pygidium as wide as

long; surface rather convex. Prosternum (Fig. 42) with keel convex, strongly ascending in front, large central, oval, impunctate area; carinal striae widely separated, present in hind 0.5; lateral striae absent; lateral marginal striae cariniform, divergent forward; lobe strongly declivous, separated from rest of prosternum by suture, with marginal stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria absent; with one median and two lateral large, impunctate, low tubercles, the lateral tubercles extending to metasternum; without lateral foveae. Metasternum with one postcoxal stria; outer lateral stria represented by recurrent arm only; inner lateral stria absent. First abdominal sternum with one postcoxal stria. Legs long; tibiae expanded, robust; front tibia quadrate, outer edge denticulate; middle and hind tibiae with outer edge angulate at point where tarsal groove ends; hind tibia concave on inner surface. Male genitalia not available.

Remarks. The genus Tylois may be separated from Enicosoma by the three large, impunctate, low tubercles which cover much of its mesosternum and anterior metasternum; by the large foveae which are not connected by a transverse fossa, just before the hind margin of its pronotum; and by the feebly inflated surface of its



propygidium.

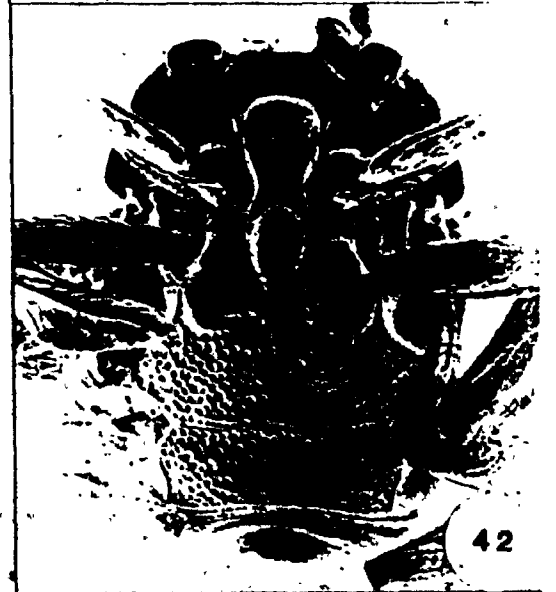
Species of Tylois

Tylois barberi Mann 1925: 176. GUATEMALA. HOST:

Tylois mirabilis Schmidt 1893: 172. BOLIVIA. HOST:

Tylois mirificus Lewis 1901: 378. BRAZIL. HOST:

\* Tylois trilunatus Marseul 1864: 336. GUIANA. PANAMA.  
Canal Zone: Barto Colorado Island. HOST: no data.



Figs. 41-43. Tylois trilunatus Marseul.

Genus Enicosoma Lewis

Figs. 44-46

Enicosoma Lewis 1904: 149.

TYPE-SPECIES: Enicosoma vespertinum Lewis (by monotypy). -- Bickhardt, 1917: 247 (generic diagnosis).

DIAGNOSIS. Form elongate, parallel-sided; setose above (Fig. 44). Head as wide as long (Fig. 46); lateral margins carinate from occiput to front margin of clypeus; these carinae confluent on clypeus; labrum 2.5 times as wide as long, apical margin broadly emarginate, thickened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 44) 2 times as wide as long; lateral margins not continuous in outline with elytra, strongly expanded at hind angles, arcuate, convergent forward; front angles rounded; surface convex at middle, reflexed along sides; with two foveae on each side just before hind margin, the inner two joined by deep, transverse fossa just before hind margin; hind margin arcuate. Elytron (Fig. 44) depressed in front, feebly convex behind; humerus prominent; course of dorsal striae indicated by discontinuous setose patches, two of these patches longer, cariniform in front; internal subhumeral stria cariniform; external subhumeral stria short, anterior, cariniform. Propygidium 2 times as wide as long; surface inflated

before hind margin, this elevation forming rounded, low, transverse ridge which rises to sharp, tooth-like process at each side. Pygidium as wide as long. Prosternum (Fig. 45) with keel convex, sharply ascending in front; carinal striae setose, widely separated, divergent forward; surface between carinal striae impunctate; lateral striae approximate with carinal striae behind, divergent in front; lateral marginal striae very short, posterior; lobe strongly declivous, separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria displaced backward to meso-metasternal suture, bifid at middle; without lateral foveae. Metasternum with one postcoxal stria; outer lateral stria represented by its recurrent arm; inner lateral stria absent. First abdominal sternum with one postcoxal stria. Legs long; tibiae expanded, robust, angulate at middle of outer edge. Male genitalia not available.

Remarks. The genus Enicosoma may be separated from Tylois by the deep, transverse fossa just before the hind margin of its pronotum; by the low, transverse ridge which rises to a sharp, tooth-like process at each side, just before the hind margin of its propygidium; and by the absence of three, large, impunctate, low tubercles.

which cover much of its mesosternum and anterior metasternum. This genus and Tylois may in fact be congeneric but in the absence of additional material and male genitalia, I have decided to retain their separate generic status.

Species of Enicosoma.

Enicosoma vespertinum Lewis 1904: 149. BRAZIL. HOST:

- \* Enicosoma n.sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: no data.



44

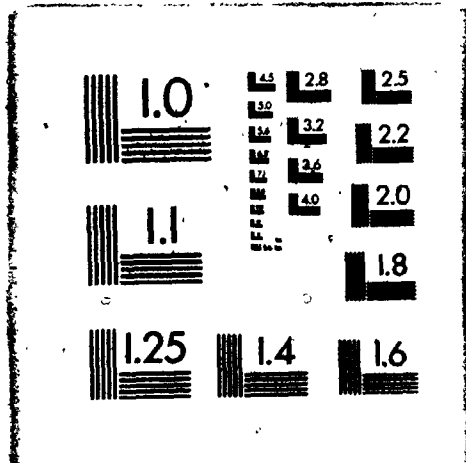


45

46

Figs. 44-46. Enicosoma n.sp. 1.

2



Genus Terapus Marseul

Figs. 47-50

Terapus Marseul 1862: 680.

TYPE-SPECIES: Terapus mniszehi Marseul (by monotypy). -- Bickhardt 1917: 247 (generic diagnosis). -- Hinton 1934 (key to species north of SA).

Melanetaerius, Fall 1907: 69.

TYPE-SPECIES: Terapus infernalis Fall (by original designation).

DIAGNOSIS. Form truncate oval; sparsely setose above (Fig. 48). Head as wide as long (Fig. 50); lateral margins carinate from occiput to front margin of clypeus, these carinae somewhat indistinct behind; mandibles with outer surface unmodified near base; labrum 2.5 times as wide as long, apical margin truncate and thickened; antennal club oval, sclerotized on dorsal, ventral, inner and part of outer surfaces. Pronotum (Fig. 48) 1.5 times as wide as long; lateral margins feebly convergent forward, shallowly incised at middle; front angles obliquely truncate to somewhat rounded; surface convex at middle, strongly elevated along lateral margin forming longitudinal V-shaped ridge that is incised at its apex which lies at the middle of the lateral margin; with or without setose tubercle medial to apex of ridge; Elytron



(Fig. 48) convex; humerus prominent; dorsal and external subhumeral striae absent; internal subhumeral stria long, cariniform. Propygidium 1.5 times as wide as long; with prominent ridge or tubercles along hind margin. Pygidium as wide as long. Prosternum (Fig. 49) with keel broad, convex; carinal striae widely separated, joined or not joined in rounded arch in front; surface between carinal striae flat; lateral striae approximate to carinal striae; without row of setae between carinal and lateral striae; lateral marginal striae lobe separated from rest of prosternum by suture, from alae by indistinct marginal stria; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced forward to fit prosternal emargination; with marginal stria present; without lateral foveae. Metasternum with only outer lateral stria present. First abdominal sternum with one, indistinct postcoxal stria. Legs long; hind femora robust; tibiae expanded, strongly angulate on outer edge at point where tarsal groove ends; hind tibia more strongly expanded, feebly to very strongly concave on inner surface. Male genitalia as in Fig. 44; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", with setae along apical margin; 9th tergites without ventral "apodemes", with internal

"guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Terapus may be separated from Hesperodromus and Kleptisister by the strongly elevated, longitudinal, V-shaped ridge along the lateral margin of its pronotum; by the absence of a row of setae between the carinal and lateral striae on its prosternal keel; and by its strongly expanded, very angulate hind tibia which are feebly to very strongly concave on their inner surfaces.

#### Species of Terapus

Terapus arizonensis Ross 1938: 48. USA. Arizona: Patagonia. HOST: no data.

Terapus balloui Hinton 1934: 270. MEXICO. Temascaltepec: Real de Arriba. HOST: Pheidole kingi.

Terapus bicarinatus Bruch 1922: 178. BRAZIL. HOST:

Terapus bickhardti Bruch 1930: 5. ARGENTINA. Cordoba: HOST: Pheidole triconstricta ambulans.

\* Terapus infernalis Fall 1907: 67. USA. California: Pasadena. HOST: Pheidole sp.

Terapus manni Hinton 1945: 42. MEXICO. Jalisco: Sayula.

HOST: Pheidole kingi.

Terapus marseuli Westwood 1874: 67. BRAZIL. HOST:

Terapus mexicanus Mann 1926: 448. MEXICO. HOST:

Terapus mirificus Reichensperger 1925: 188. BRAZIL.  
ARGENTINA. Misiones: Loreto. HOST: Pheidole flavens  
rudigenis.

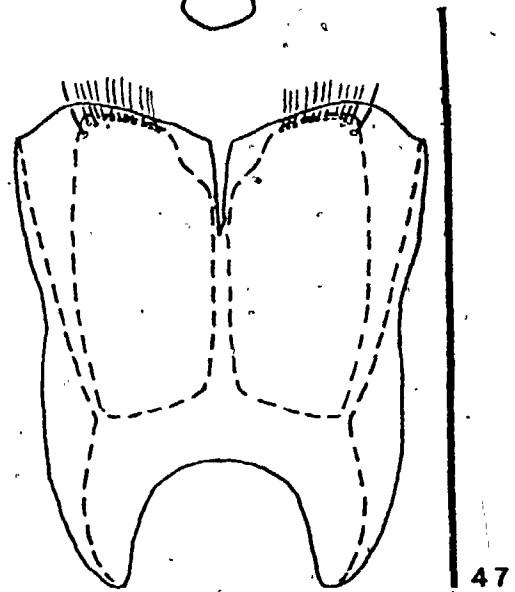
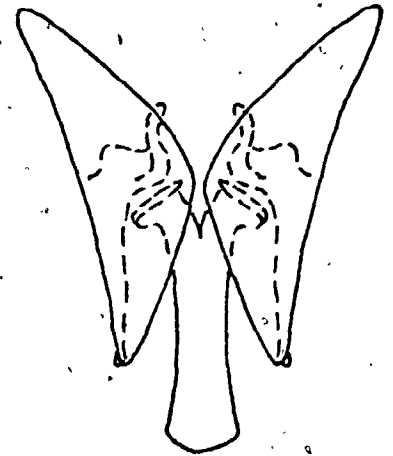
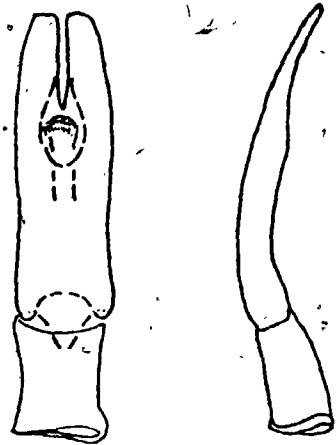
Terapus miszechi Marseul 1862: 682. BRAZIL. MEXICO.  
Hidalgo: San Miguel. HOST:

Terapus nigritus Hinton 1934: 271. MEXICO.  
Temascaltepec: Real de Arriba. HOST: Pheidole kingi.

Terapus rufosetosus Bruch 1930: 5. ARGENTINA. Buenos  
Aires: Las Rosas. HOST: Pheidole cordiceps.

\* Terapus scaphipes Reichensperger 1933: 307. BRAZIL.  
ECUADOR. Pichincha: Rio Palenque. HOST:

Terapus wagneri Desbordes 1914: 238. ARGENTINA. HOST:



Figs. 47-50. Terapus scaphipes Reichensperger.

Genus Kleptisister new genus

Figs. 51-54

Kleptisister new genus.TYPE-SPECIES: Kleptisister hirsuta new species.

DIAGNOSIS. Form truncate oval; setose above (Fig. 52). Head as wide as long (Fig. 54); lateral margins carinate from occiput to front margin of clypeus, these carinae poorly developed from antennal sockets to front margin of clypeus; mandibles with fine carinae along outer edge; labrum 2.5 times as wide as long, apical margin deeply, roundly emarginate, only feebly beaded; antennal club oval, sclerotized on ventral surface only. Pronotum (Fig. 52) 2 times as wide as long; lateral margins nearly straight; feebly convergent forward to obliquely truncate front angles; surface convex at middle, feebly reflexed along sides, without median elevations at sides. Elytron (Fig. 52) strongly convex; humerus prominent; dorsal striae absent; internal and external subhumeral striae nearly parallel, cariniform. Propygidium 1.7 times as wide as long; with small, setose tubercle at middle of each lateral margin. Pygidium as wide as long. Prosternum (Fig. 53) with keel broad; carinal striae widely separated, divergent in front and behind front coxae; surface between carinal striae nearly flat; lateral striae present in apical half only, widely divergent in front; row of setae present between carinal

and lateral striae; lateral marginal striae cariniform, widely divergent forward; lobe short and broad, separated from rest of prosternum by indistinct suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin shallowly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria represented by recurrent arm; inner lateral stria with front end close to midline. First abdominal sternum with only outer postcoxal stria present. Legs normal length; with tibiae expanded; front tibiae quadrate; middle and hind tibiae with outer edge arcuate. Male genitalia as in Fig. 51; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", with setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

**Etymology.** "Kleptis" meaning "thief" and "-ister" suffix meaning "having the nature of".

**Remarks.** The Kleptisister may be separated from Hesperodromus and Terapus by the absence of elevations on

the lateral margins of its pronotum; by its inner lateral metasternal striae which are close to the midline in front; by its hind femora which are not unusually robust; and by the very small tubercles at the lateral margins of its propygidium.

Kleptisister hirsuta new species

Figs. 51-54

Kleptisister hirsuta new species.

TYPE: Holotype, male, Brazil, Parana, Bocaiuva, 25°08'-49°04', 1000 m, F. Plaumann, (FMNH). HOST: no data.

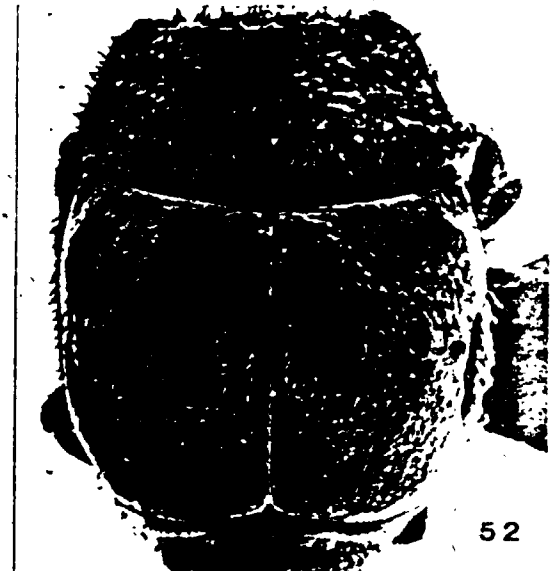
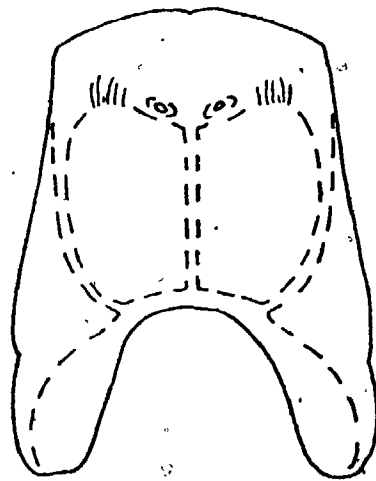
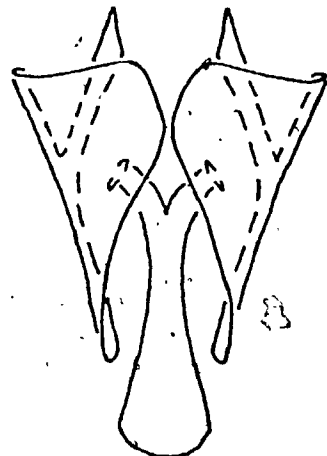
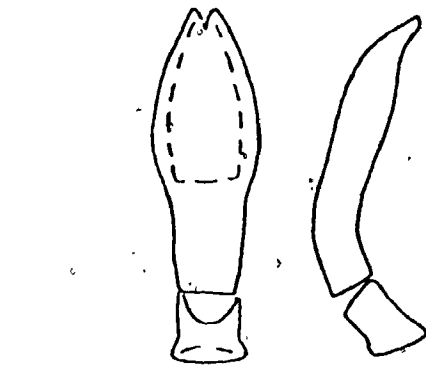
Description. Length: 2.5 mm; width: 1.8 mm. Head (Fig. 54) densely, somewhat irregularly punctate, punctures small to medium; labrum densely punctate, plurisetose. Pronotum (Fig. 52) with marginal stria very fine, broadly interrupted behind head; without lateral striae; surface densely punctate, punctures medium to small intermixed, many bearing long, erect setae, except on small, semicircular, impunctate area just before scutellum. Elytron (Fig. 52) densely, contiguously punctate except on large, semicircular area on inner front half and on humerus, these punctures-bearing erect setae; external subhumeral stria long, reaching from front to hind margin, strongly cariniform; marginal elytral stria and marginal epipleural stria feebly cariniform, approximate in front, more widely separated behind. Propygidium and pygidium with sparse, crescentiform punctures, each bearing erect seta. Prosternum (Fig. 53) with carinal striae reaching from front to hind margin; lateral striae poorly impressed, parallel to carinal striae; lobe sparsely setose.



Mesosternum with marginal stria well impressed, briefly interrupted at sides, not joined to outer lateral metasternal striae; surface sparsely punctate. Metasternum with postcoxal stria widely separated from coxa in front; recurrent arm of outer lateral stria poorly impressed; inner lateral stria broad, reaching to near hind coxa; surface very sparsely punctate on disk, punctures denser at sides. First abdominal sternum with outer postcoxal stria arcuate, reaching to middle of lateral margin.

Legs as in generic diagnosis. Male genitalia as in Fig. 51.

Etymology. "Hirsuta" meaning "hairy".



Figs. 51-54. Kleptisister hirsuta (new genus, new species).

Genus Hesperodromus Schmidt

Figs. 55-57

Hesperodromus Schmidt 1889: 317.

TYPE-SPECIES: Hesperodromus sodalis Schmidt (by monotypy). -- Bickhardt 1917: 246 (generic diagnosis).

DIAGNOSIS. Form truncate oval; setose above (Fig. 55). Head as wide as long (Fig. 57); lateral margins carinate from occiput to front margin of clypeus, these carinae indistinct from antennal sockets to front margin of clypeus; mandibles without carinae on outer edge; labrum 3 times as wide as long, apical margin bisinuate and feebly beaded; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 55) 2 times as wide as long; lateral areas with prominent, median, triangular elevation; lateral margins feebly convergent, deeply incised before and after triangular elevations; front angles obtusely truncate; disk moderately strongly convex. Elytron (Fig. 55) moderately strongly convex; humerus prominent; without dorsal striae; internal subhumeral and external subhumeral striae cariniform. Propygidium 1.7 times as wide as long; with prominent tubercle bearing setae at its apex at middle of each lateral margin. Pygidium as wide as long. Prosternum (Fig. 56) with keel broad, flat; carinal striae widely separate, divergent before and

behind front coxae, reaching from near hind margin to near front margin; lateral striae approximate to carinal striae, present in front half; surface between carinal and lateral striae with row of setae; lateral marginal striae widely divergent in front; lobe short, broad, its marginal stria entire; proepisternum and proepimeron without setose patches; hind margin shallowly, roundly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria present, without lateral foveae. Metasternum with only outer lateral stria, its recurrent arm near hind margin. First abdominal sternum with outer postcoxal stria present. Legs long; tibiae expanded; front tibia quadrate; middle and hind tibiae angularly expanded at middle of outer edge; middle and hind femora robust at distal ends. Male genitalia not available.

Remarks. The genus Hesperodromus may be separated from Kleptisister and Terapus by the prominent, median, triangular elevations at the sides of its pronotum. From Terapus, Hesperodromus may be separated by the row of setae between the carinal and lateral striae on its prosternum. From Kleptisister, Hesperodromus may be separated by the absence of inner lateral metasternal striae; and by the absence of carinae on the outer edge of its mandibles. The one specimen of this genus that I have seen was collected in litter. This is probably

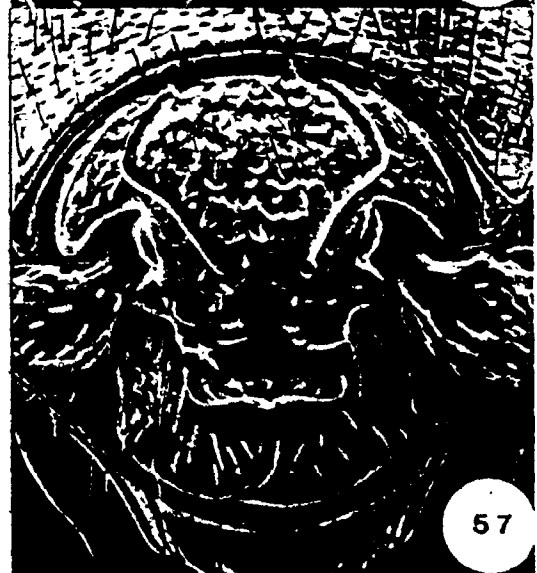
indicative of its relationship with a predominantly subterranean genus of ants. This genus of ants may be, as it is for Terapus, Pheidole.

Species of Hesperodromus

Hesperodromus sodalis Schmidt 1889: 318. PARAGUAY.

HOST:

\* Hesperodromus n. sp. 1. BRAZIL. Parana: Palmeira. HOST:  
no data.



Figs. 55-57. Hesperodromus n.sp. 1.

Genus Chelyocephalus Schmidt

Figs. 58-61

Chelyocephalus Schmidt 1893: 182.

TYPE-SPECIES: Chelyocephalus varicolor Schmidt (by monotypy). -- Bickhardt 1917: 238 (generic diagnosis).

DIAGNOSIS. Form oval; not setose above (Fig. 59). Head as wide as long (Fig. 61); deeply set beneath front margin of pronotum; frontal stria present; frons and vertex flat, not broad; clypeus not declivous; labrum 3 times as wide as long, apical margin arcuate; antennal club oval, sclerotized on part of ventral surface. Pronotum (Fig. 59) 1.5 times as wide as long; front margin not emarginate, produced forward, overhanging head; lateral margins arcuate, feebly convergent forward; surface evenly, not strongly convex; hind margin arcuate. Elytron (Fig. 59) evenly, not strongly convex; dorsal striae absent; internal subhumeral stria fine, cariniform; external subhumeral stria cariniform, strongly sinuate at middle. Propygidium 2 times as wide as long; surface convex. Pygidium 1.6 times as wide as long. Prosternum (Fig. 60) with keel broad; without carinal or lateral striae; with two broad, deep fossae reaching from front coxae to lobe; surface between fossae convex; lateral marginal striae evanescent, straight, subparallel; lobe long, not separated from rest of

prosternum by suture, not separated from alae at sides, apical margin sinuate, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, obtusely, rather deeply emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria absent; with two lateral depressions behind front coxae, these depressions continuous with fossae on prosternal keel and continued onto metasternum; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria represented by its recurrent arm; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs normal length; femora very stout; tibiae expanded; front tibia quadrate; middle and hind tibia much narrower in proximal 0.5, outer edge arcuate. Male genitalia as in Fig. 58; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

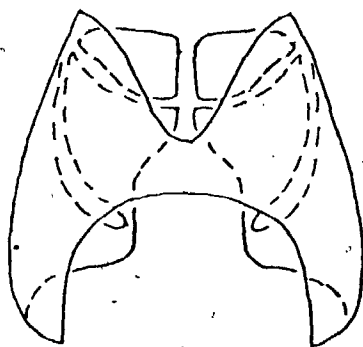
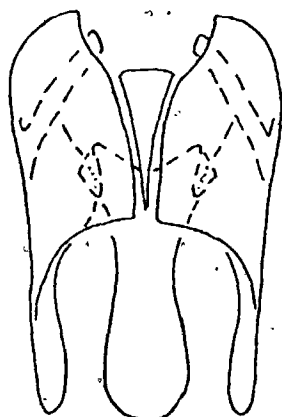
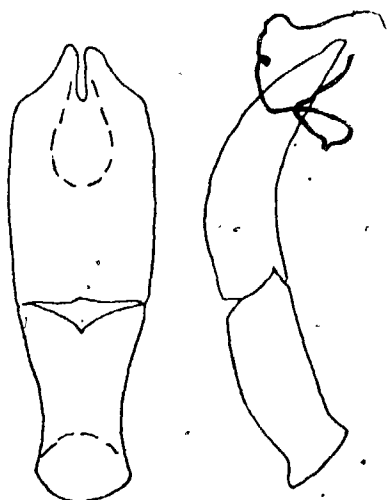
Remarks. The genus Chelyocephalus may be separated from all other genera by the following characters: the front margin of its pronotum is produced forward and its



head is deeply set beneath this overhang; its prosternum has two, longitudinal fossae that extend from its prosternal lobe onto its metasternum.

Species of Chelyocephalus

- \* Chelyocephalus varicolor Schmidt 1893: 182. BRAZIL. Sao Paulo: Pirassununga. HOST: "termites".



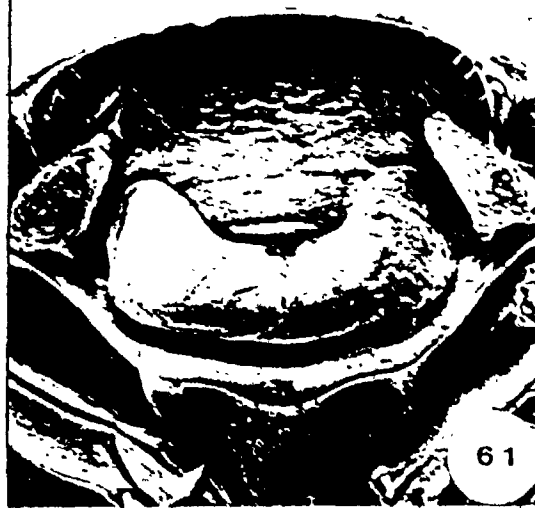
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59



60



61

Figs. 58-61. Chelyocephalus varicolor Schmidt.

Genus Cossyphodister Reichensperger

Figs. 62-65

Cossyphodister Reichensperger 1936: 227.

TYPE-SPECIES: Cossyphodister schwarzmaieri  
Reichensperger (by original designation and  
monotypy).

DIAGNOSIS. Form oval, strongly depressed; not setose above. (Fig. 63). Head 3 times as wide as long (Fig. 65); frons and vertex very broad; frontal stria transverse; clypeus very strongly declivous; labrum nearly obsolete; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 63) 2 times as wide as long; lateral margins arcuate, convergent forward; front angles acute; surface evenly convex, nearly flat; hind margin nearly straight. Elytron (Fig. 63) evenly convex, nearly flat; without dorsal striae; internal subhumeral stria absent; external subhumeral stria fine, placed on crest of distinct margin between disk and epipleuron. Propygidium 1.5 times as wide as long; surface feebly convex. Pygidium 2.5 times as wide as long; strongly deflexed. Prosternum (Fig. 64) with keel broad, feebly convex; carinal striae absent; lateral striae fine, widely separated, long, strongly divergent forward; lateral marginal striae straight, very widely divergent forward; lobe long, separated from rest of prosternum by very fine suture, not separated from

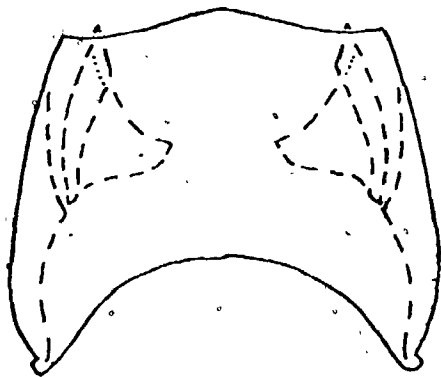
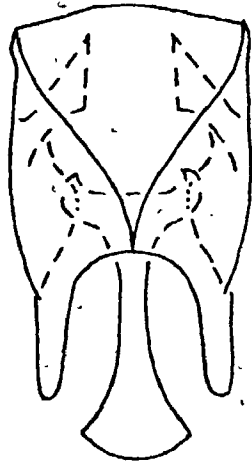
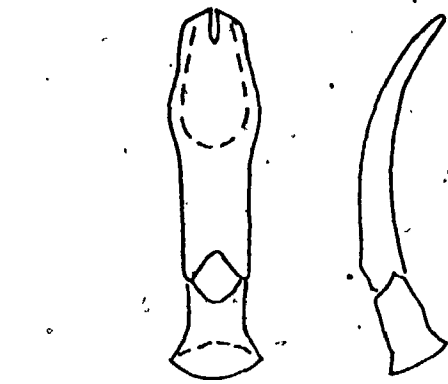
alae at sides, marginal stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; with additional stria approximate to marginal stria; without lateral foveae. Metasternum with only postcoxal stria. First abdominal sternum with two postcoxal striae. Legs short; middle and hind femora stout, ovate; front tibia expanded, outer edge arcuate; middle and hind tibiae feebly expanded, nearly parallel-sided. Male genitalia as in Fig. 62; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

Remarks. The genus Cossyphodister may be separated from all other genera by its very depressed body form; by its very broad head with a transverse frontal stria; by its broad, feebly convex prosternal keel that is without carinal striae and with widely separated, strongly divergent lateral striae and lateral marginal striae; and by the complete absence of dorsal striae or punctation on its elytra.

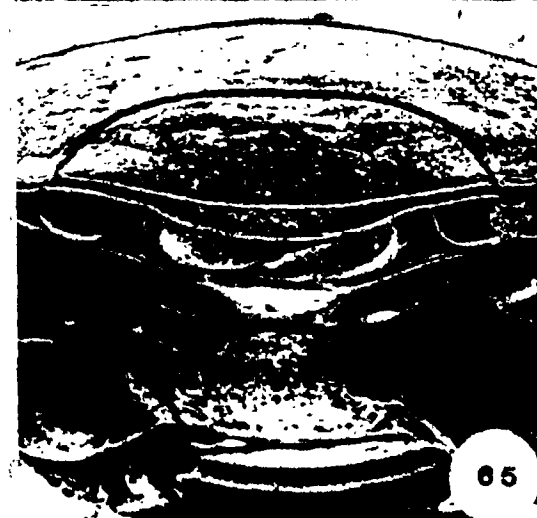
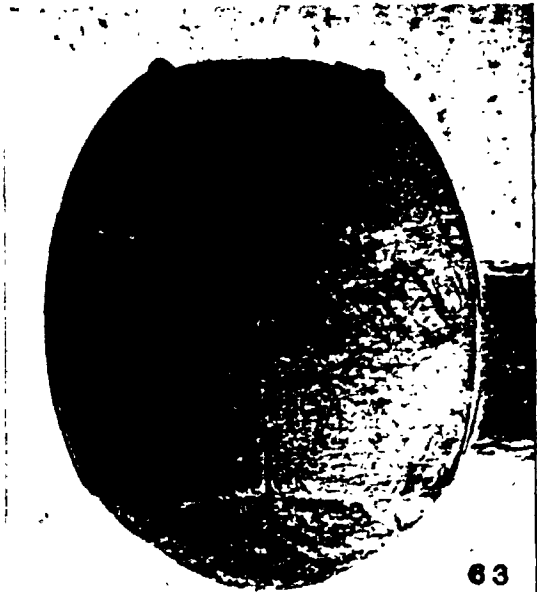
Species of Cossyphodister

\* Cossyphodister schwarzmaieri Reichensperger 1936: 228.

BRAZIL. Goias: Campinas. HOST: Syntermes sp.



62



Figs. 62-65. Cossyphodister schwarzaiferi Reichensperger.

Genus Scapolister Borgmeier

Figs. 66-69

Scapolister Borgmeier 1930: 34.

TYPE-SPECIES: Scapolister sternalis Borgmeier (by original designation and monotypy).

DIAGNOSIS. Form elongate oval; not setose above (Fig. 67). Head as wide as long (Fig. 69); vertex, frons and clypeus flat, broad, with medium to large, round, deep punctures; frontal stria broad, well-impressed, very close to front margin of clypeus; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin broadly emarginate and somewhat thickened, apical surface not broadened; antennal club elongate oval, sclerotized on parts of dorsal, ventral and inner surfaces. Pronotum (Fig. 67) 2 times as wide as long; lateral margins arcuate, convergent forward; front angles narrowly truncate; surface strongly convex at middle, reflexed along sides; with two lateral striae, narrowly separated behind and convergent forward, nearly united, inner lateral stria very close to marginal stria and continued around front angles; with medium to large, deep, round punctures over most of surface; hind margin nearly straight. Elytron (Fig. 67) strongly convex, unusually long; dorsal stria one long, feebly cariniform; courses of inner dorsal striae may be marked by crescentiform punctures; internal subhumeral stria short,

anterior; external subhumeral stria cariniform, strongly sinuate. Propygidium 2 times as wide as long; surface evenly convex, without tubercles. Pygidium as wide as long; surface evenly convex. Prosternum (Fig. 68) with keel convex; carinal striae cariniform, feebly divergent in front, nearly parallel at middle, divergent and joined by transverse stria behind; surface between carinal striae flat; lateral striae evanescent; lateral marginal striae short, cariniform, anterior; lobe short, separated from rest of prosternum by suture, not separated from alae, marginal stria not present; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform, strongly so at sides; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria angulate in front, its recurrent arm present; inner lateral stria represented by deep fossa that is angulate in front and transversely, inwardly hooked just in front of hind coxa. First abdominal sternum with two postcoxal striae. Legs normal length; femora very stout; tibiae strongly expanded on inner and outer edges; front tibia with outer edge feebly emarginate and inner edge arcuate; middle and hind tibiae with both edges arcuate; hind tibia with two rows of spinules along outer edge. Male genitalia as in Fig. 66; 8th tergite without transverse

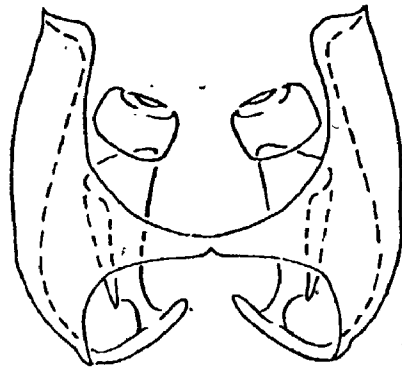
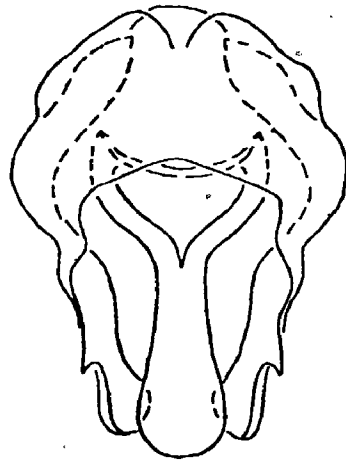
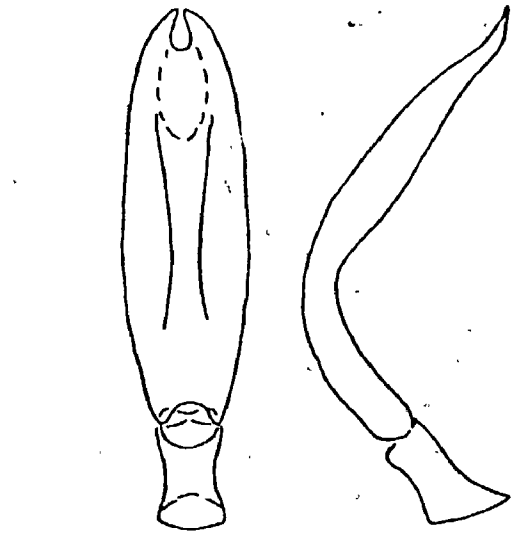


anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

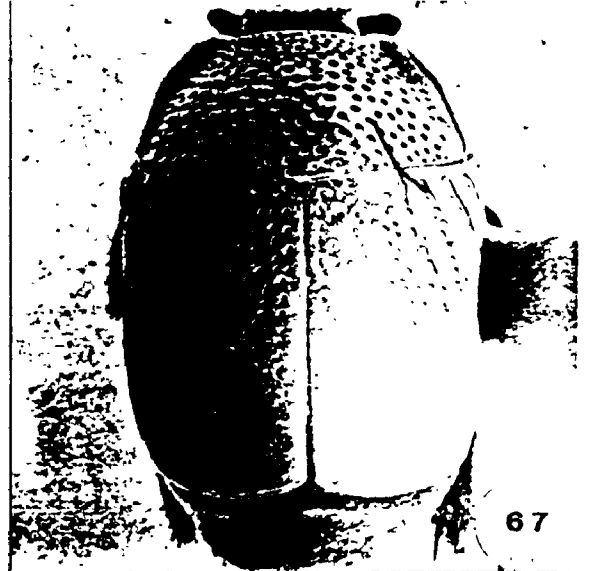
Remarks. the genus Scapolister may be separated from all other genera by the following combination of characters: its frons and vertex are flat and broad, with medium to large, deep, round punctures; its dorsal surface is strongly convex; its pronotum is covered with medium to large, deep, round punctures; and its inner lateral metasternal stria is fossa-like and angulate.

Species of Scapolister

- \* Scapolister sternalis Borgmeier 1930: 34. BRAZIL. Goias: Campinas. HOST: Syntermes brasiliensis.



66



67



68



69

Figs. 66-69. Scapolister sternalis Borgmeier.

Genus Termitoxenus Schmidt

Figs. 70-73

Termitoxenus Schmidt 1889: 321.

TYPE-SPECIES: Termitoxenus setaceus Schmidt (by monotypy). -- Bickhardt 1917: 244 (generic diagnosis).

DIAGNOSIS. Form truncate oval, sides nearly parallel; setose above (Fig. 71). Head as wide as long (Fig. 73); lateral margins carinate from occiput to front margin of clypeus, these carinae somewhat lower in front; mandibles unmodified; labrum 3.5 times as wide as long, apical margin arcuately emarginate, apical surface broad; antennal club oval, sclerotized on part of dorsal and on ventral surfaces. Pronotum (Fig. 71) 1.8 times as wide as long; lateral margins arcuate, nearly parallel; front angles truncate; surface convex at middle, reflexed along sides; with many parallel, longitudinal striae; hind margin obtusely V-shaped. Elytron (Fig. 71) convex except depressed at middle along suture, depression with row of large punctures; dorsal striae present, outer striae costiform; internal subhumeral and external subhumeral striae cariniform, joined at middle. Propygidium 2 times as wide as long; with two impunctate, median tubercles near front margin. Pygidium as wide as long. Prosternum (Fig. 72) with keel convex; carinal striae cariniform, widely separated, parallel, joined in

rounded arch in front; surface depressed between carinal striae; lateral striae poorly impressed, approximate to carinal striae, joined to lateral marginal striae in front; lateral marginal striae cariniform, straight, parallel, joined in front to lateral striae; lobe separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, obtusely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria reaching hind coxa, its recurrent arm present; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs somewhat longer than normal; tibiae expanded; front tibia arcuate along outer edge, denticulate; middle and hind tibiae angulate at middle of outer edge. Male genitalia as in Fig. 70; 8th tergite with transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

Remarks. The genus Termitoxenus may be separated

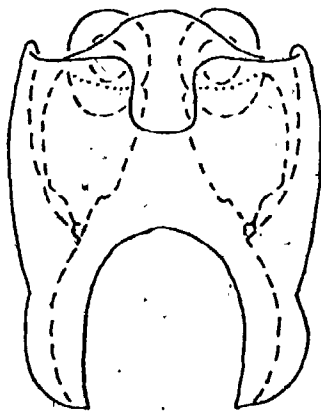
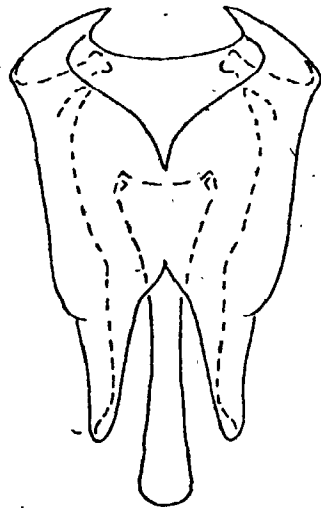
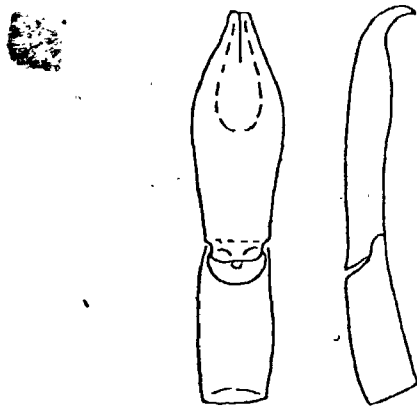
- from all other genera by the following combination of characters: its pronotum has many parallel, longitudinal striae; and its elytra are depressed at the middle along the suture, with a row of large punctures in this depression.

Species of Termitoxenus

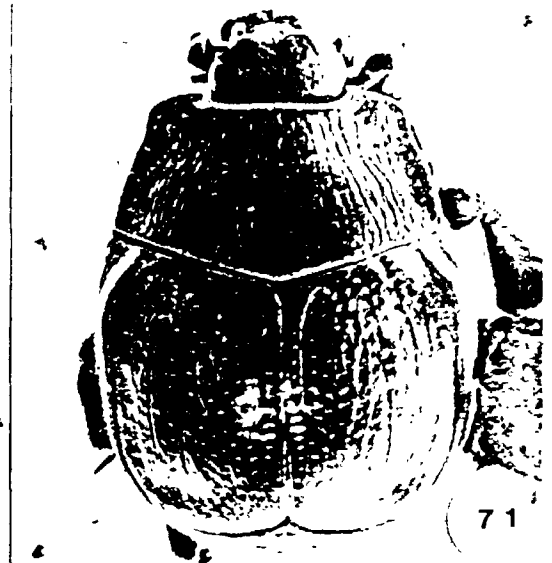
Termitoxenus setaceus Schmidt 1889: 321. PARAGUAY.

HOST:

- \* Termitoxenus strigicollis Lewis 1898: 175. BRAZIL. Mato Grosso: Cuiada. HOST: no data.



70



71



72

73

Figs. 70-73. Termitoxenus strigicollis Lewis.

Genus Paroecister Reichensperger

Figs. 74-77

Paroecister Reichensperger 1923: 314.

TYPE-SPECIES: Paroecister zikani Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form elongate oval; not setose above (Fig. 75). Head 1.2 times as wide as long (Fig. 77); frons and vertex broad; frontal stria obtusely V-shaped, nearly transverse in front; with additional stria near lateral margin; mandibles unmodified; labrum 3 times as wide as long; apical margin broadly emarginate; antennal club elongate oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 75) 1.7 times as wide as long; lateral margins deflexed, feebly arcuate, convergent forward to nearly truncate front angles; surface convex, except strongly depressed before scutellum and along sides; with numerous subparallel striae reaching forward from hind margin; hind margin arcuate. Elytron (Fig. 75) convex, except strongly depressed along suture; humerus prominent; dorsal striae costate; internal and external subhumeral striae costiform. Propygidium 1.5 times as wide as long. Pygidium 1.3 times as wide as long. Prosternum (Fig. 76) with keel convex; carinal striae parallel, joined in rounded arch in front; lateral striae fine, parallel to carinal striae; lateral marginal striae divergent in

front; lobe separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin roundly, deeply emarginate. Mesosternum produced in front to fit prosternal emargination; front margin emarginate at sides to receive prosternal keel; marginal stria present. Surface transversely depressed. Metasternum with postcoxal stria present; inner and outer lateral striae cariniform, parallel, both recurved forward. First abdominal sternum with one postcoxal stria. Legs short; femora very stout; tibiae very broadly expanded, inner and outer edges arcuate. Male genitalia as in Fig. 74; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, without "disks", without setae along apical margin; 9th tergite without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece short, parameres long.

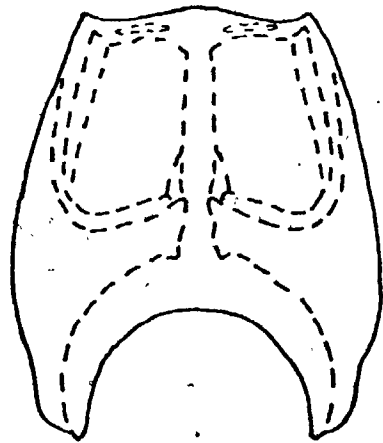
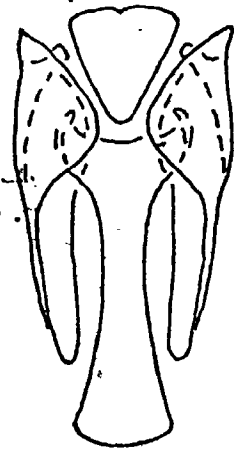
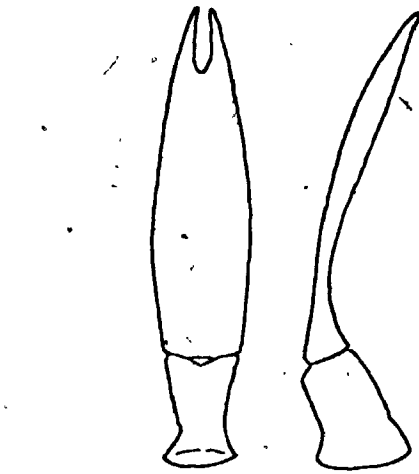
Remarks. The genus Paroecister may be separated from other genera in this group by the following combination of characters: its pronotum has numerous subparallel striae and is without five, longitudinal costae or lateral elevations; its mesosternum is transversely depressed but is without foveae; and its femora are very



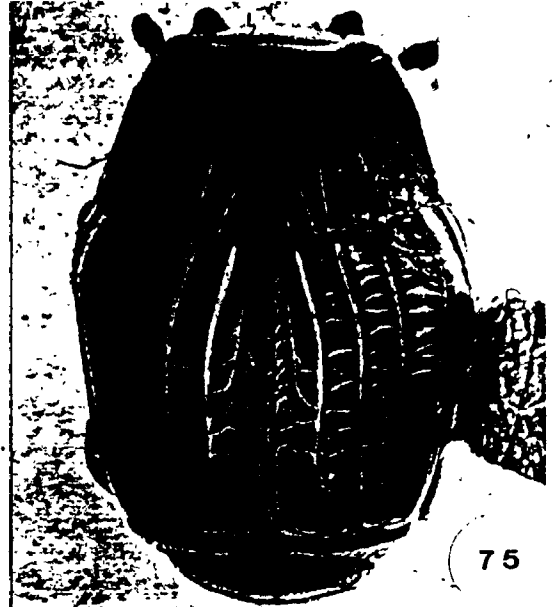
stout.

Species of Paroecister,

- \* Paroecister zikani Reichensperger 1923: 316. BRAZIL. Sao Paulo: Morumbi, Ibirapuera. HOST: Cornitermes similis.



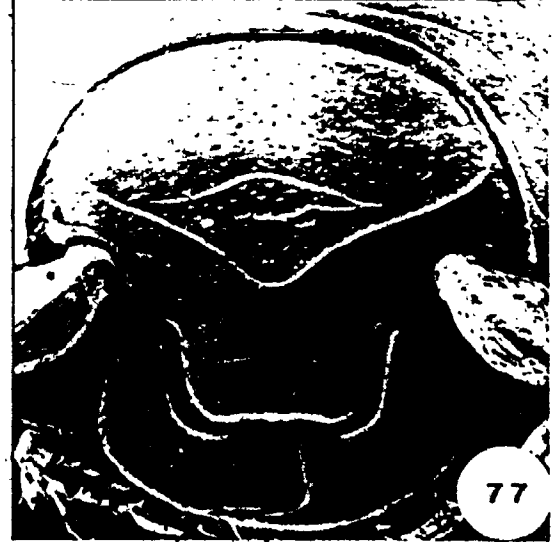
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Figs. 74-77. Paroecister zikani Reichensperger.

Genus Procolonides Reichensperger

Figs. 78-81

Procolonides Reichensperger 1935: 205.

TYPE-SPECIES: Procolonides bruchi Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form elongate, parallel-sided; not setose above (Fig. 79). Head 1.2 times as wide as long (Fig. 81); lateral margins carinate from eyes to front margin of clypeus, these carinae joined by transverse carina just behind front margin of clypeus; frons and vertex broad, vertex with one median and two lateral, longitudinal carinae; mandible with outer surface depressed near base; labrum 3 times as wide as long, demidiate, surface concave; antennal club oval, sclerotized on dorsal, ventral, and part of inner surfaces. Pronotum (Fig. 79) 1.5 times as wide as long; lateral margins deeply incised behind front angles, thence arcuate to hind margin; surface convex at middle, nearly flat along sides; with deep fovea just mesad of each front and hind angle; with five longitudinal costae, median three long, outer two shorter, posterior; hind margin arcuate. Elytron (Fig. 79) feebly convex; humerus prominent; dorsal striae indistinct, interstices broadly costate; internal and external subhumeral striae cariniform. Propygidium 1.8 times as wide as long; inflated along hind margin. Pygidium as wide as long;

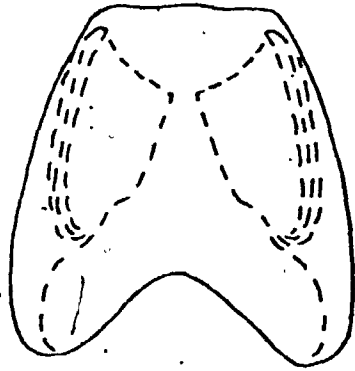
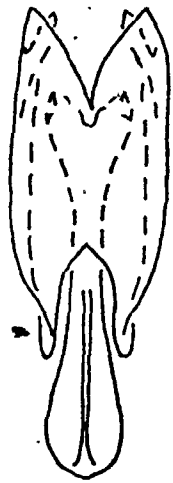
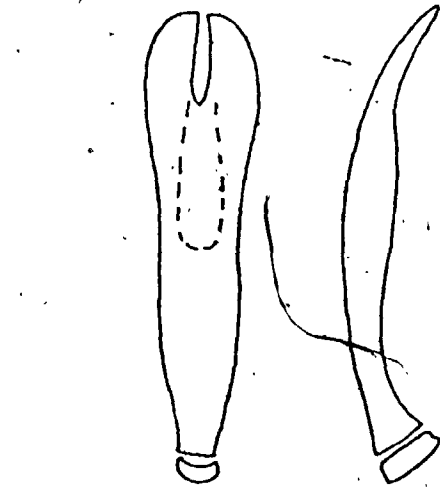
with median, longitudinal carina. Prosternum (Fig. 80) with keel convex, very narrow in front; carinal striae convergent forward, joined in narrow arch in front; lateral striae poorly impressed, subparallel; lateral marginal striae feebly divergent in front, cariniform; lobe long, separated from rest of prosternum by suture, marginal stria absent; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; with two foveae just before meso-metasternal suture, equidistant from each other and lateral margins; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria cariniform, reaching hind coxa, its recurrent arm present; inner lateral stria reaching from fovea to hind coxa. First abdominal sternum with one postcoxal stria. Legs short; femora stout; tibiae expanded; front tibia with three teeth on outer edge; middle and hind tibiae angulate at middle of outer edge. Male genitalia as in Fig. 78; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite

absent; basal piece short, parameres long.

Remarks. The genus Procolonides may be separated from other genera in this group by the lateral margins of its pronotum being deeply incised behind the front angles; by the fovea just mesad of each front angle; and by its elongate, parallel-sided body form.

Species of Procolônides

- \* Procolonides bruchi Reichensperger 1935: 205. BRAZIL.  
Santa Catarina: Nova Teutonia. HOST: Solenopsis sp.



78



79



80



81

Figs. 78-81. Procolonides bruchi Reichensperger.

Genus Hemicolonides Reichensperger

Figs. 82-85

Hemicolonides Reichensperger 1939: 278.

TYPE-SPECIES: Hemicolonides plaumanni Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval, depressed; not setose above (Fig. 83). Head 1.2 times as wide as long (Fig. 85); lateral margins carinate from occiput to front margin of clypeus, these carinae not joined in front by transverse carina; frons and vertex not notably broad, vertex with one median and two lateral longitudinal carinae; mandibles with outer surface depressed near base; labrum 3 times as wide as long, apical margin bisinuate, apical surface somewhat broadened; antennal club oval, sclerotized on dorsal, ventral and part of inner surfaces. Pronotum (Fig. 83) 1.7 times as wide as long; lateral margin arcuate, feebly convergent forward to rounded front angles; surface convex at middle, broadly reflexed at sides; with fovea at each lateral 0.2 just before hind margin; with five longitudinal costae, mesal three long, outer two short; hind margin arcuate. Elytron (Fig. 83) feebly convex; without dorsal striae, but strongly costate; internal subhumeral stria strongly costiform, forming strong margin to elytron; external subhumeral stria cariniform, strongly sinuate. Propygidium 1.5 times as wide as long; strongly ridged at

sides, feebly so behind. Pygidium as wide as long; with median longitudinal costa. Prosternum (Fig. 84) with keel convex; carinal striae parallel, rather widely separated; lateral striae short, posterior; lateral marginal striae straight, feebly divergent forward; lobe long, separated from rest of prosternum by suture, marginal stria absent; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; with two foveae just before meso-metasternal suture, equidistant from each other and lateral margins; without lateral foveae. Metasternum with postcoxal stria cariniform; outer lateral stria cariniform, reaching to hind coxa, its recurrent arm present; inner lateral stria cariniform, subparallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia oligodentate; middle and hind tibiae angulate at middle of outer edge. Male genitalia as in Fig. 82; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal



piece short, parameres long.

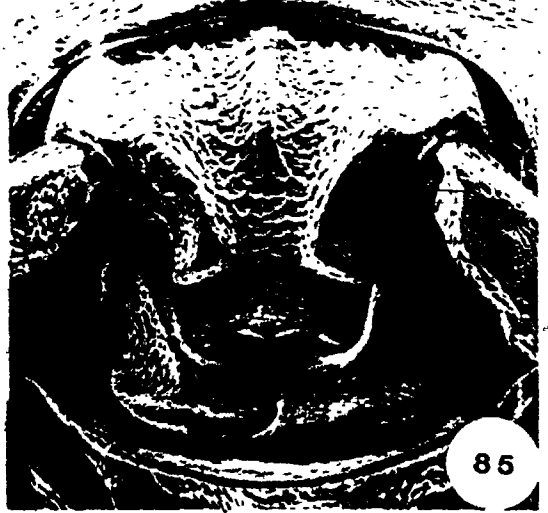
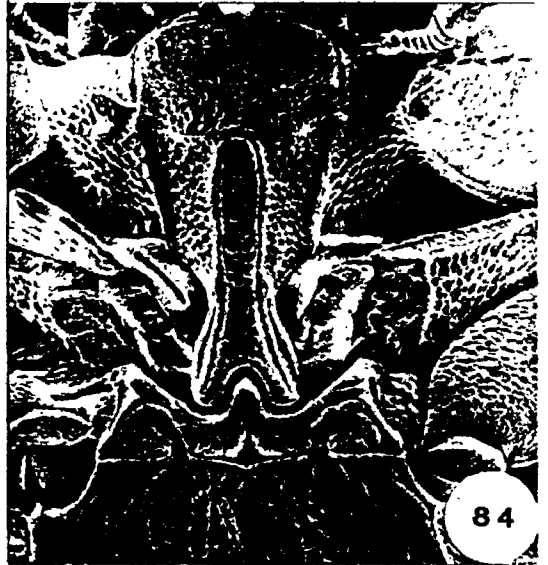
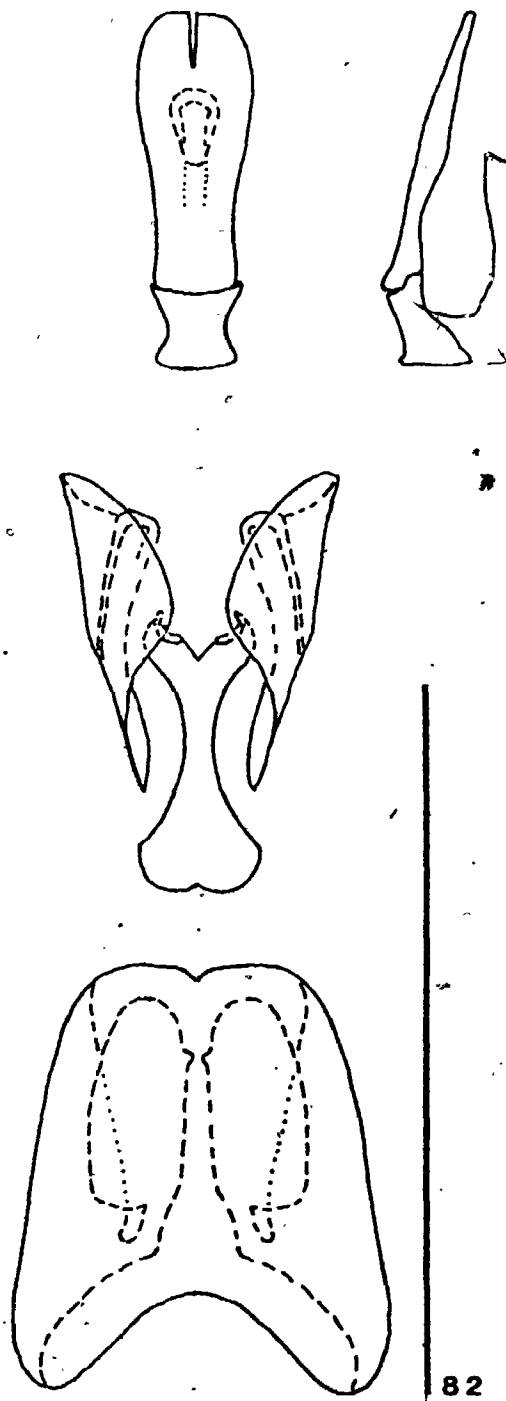
Remarks. the genus Hemicolonides may be separated from Xylostega and Colonides by the mesal three long and outer two short costae of its pronotum; by the foveae at its meso-metasternal suture; and by its rather widely separated prosternal "carinal striae. From Procolonides, Hemicolonides may be separated by its oval, depressed body form; by the broadly reflexed lateral margins of its pronotum and elytra; and by its strongly margined elytra.

Species' of Hemicolonides

Hemicolonides plaumanni Reichensperger 1939: 280.

BRAZIL. HOST:

\* Hemicolonides n.sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: Neivamyrmex pilosus.



Figs. 82-85. Hemicolonides n.sp. 1.

Genus Colonides Schmidt

Figs. 86-89

Colonides Schmidt 1889: 320.

TYPE-SPECIES: Colonides drakei Schmidt (by monotypy). -- Bickhardt 1917: 238 (generic diagnosis).

DIAGNOSIS. Form oval, depressed; not setose above (Fig. 87). Head as wide as long (Fig. 89); lateral margins carinate from occiput to front margin of clypeus, these carinae not joined in front by transverse carina; frons and vertex not notably broad, vertex with one median and two lateral, longitudinal carinae; mandibles with outer surface depressed near base; labrum 3 times as wide as long, apical margin broadly emarginate and with transverse ridge; antennal club oval, sclerotized on dorsal, ventral and part of inner surfaces. Pronotum (Fig. 87) 1.5 times as wide as long; lateral margins nearly straight, convergent forward; front angles truncate; surface convex at middle, reflexed along sides; disk with five longitudinal costae, median and outer costae entire, two costae between these, short, posterior; with short, transverse carina mesad of each hind angle, mesal end of each carina ending in small fovea; hind margin strongly arcuate. Elytron (Fig. 87) feebly convex, quite strongly margined at sides; without dorsal striae, but with five strong costae; internal

subhumeral stria costiform, forming quite strong lateral margin; external subhumeral stria cariniform, strongly sinuate. Propygidium 1.8 times as wide as long; with strong, transverse, submarginal ridge behind; surface before ridge nearly flat, behind ridge strongly declivous. Pygidium as wide as long; with median, longitudinal costa. Prosternum (Fig. 88) with keel convex; carinal striae parallel, narrowly separated, joined in rounded arch in front, feebly divergent behind; lateral striae posterior, divergent in front and behind; lateral marginal striae cariniform, nearly straight, divergent forward; lobe long, separated from rest of prosternum by suture, without marginal stria; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; with one additional, sinuate stria just before meso-metasternal suture; without lateral foveae. Metasternum with postcoxal stria cariniform; outer lateral stria cariniform, reaching hind coxa, its recurrent arm present; inner lateral stria parallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs normal length; hind femur stout; tibiae expanded; front tibia with inner edge arcuate, outer edge with three subequal teeth; middle and hind tibiae angulate at middle of outer edge. Male

genitalia as in Fig. 86; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Colonides may be separated from Xylostega which it resembles very closely by the strongly elevated median costa of its elytra; by its less strongly reflexed pronotal and elytral lateral margins; by its narrowly separated prosternal carinal striae; and by the additional, sinuate stria before its meso-metasternal suture. From Procolonides and Hemicolonides, Colonides may be separated by the long outer and median costae that have two short, posterior costae between them on its pronotum; and by the absence of foveae on its meso-metasternal suture. From Procolonides, Colonides may be separated by its oval, depressed body form; and by the absence of foveae mesad of its pronotal front angles. From Hemicolonides, Colonides may be separated by its less strongly reflexed pronotal and elytral lateral margins; and by its narrowly separated prosternal carinal striae.

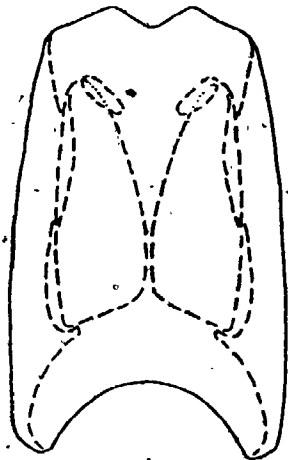
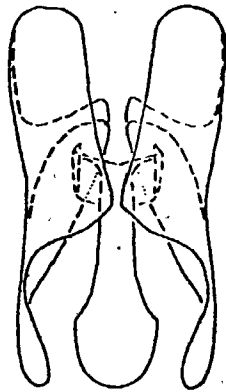
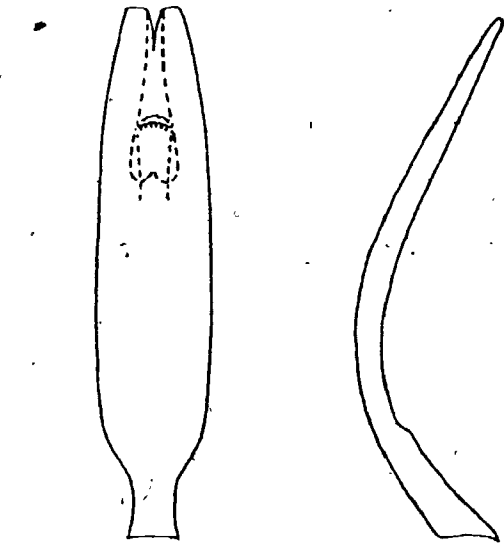
Species of Colonides

Colonides drakei Schmidt 1889: 320. PARAGUAY. HOST:

\* Colonides hubrichi Bruch 1923: 187. ARGENTINA. BRAZIL.

Goiás: Campinas. HOST:

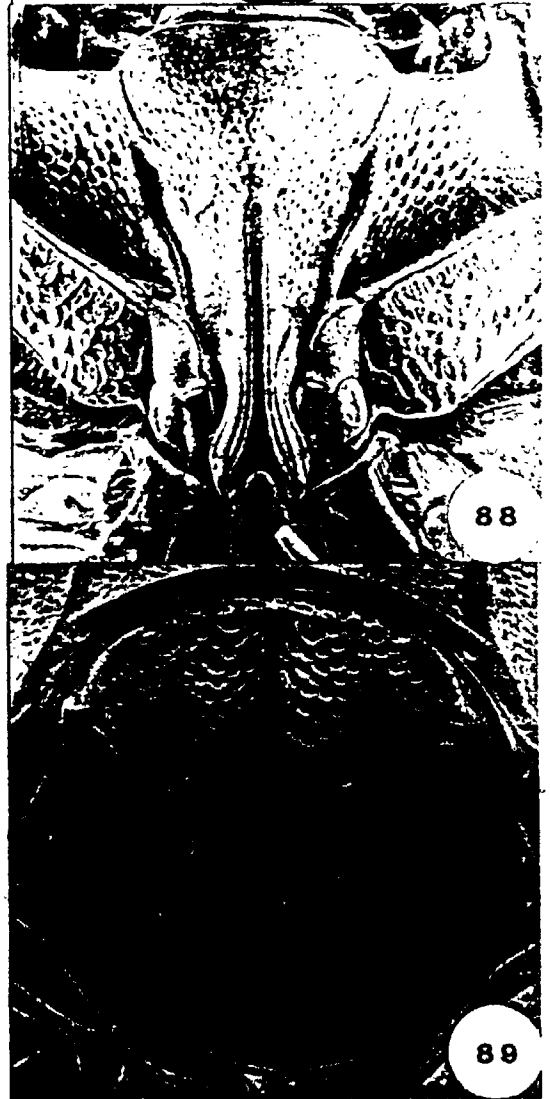
Colonides parvulus Lewis 1891: 404. MEXICO. HOST:



86



87



88

89

Figs. 86-89. *Colonides hubrichi* Bruch.

Genus Xylostega Reichensperger

Figs. 90-93

Xylostega Reichensperger 1923: 319.

TYPE-SPECIES: Xylostega collegii Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form broadly oval; not setose above (Fig. 91). Head as wide as long (Fig. 93); lateral margins carinate from occiput to front margin of clypeus, these carinae not joined in front by transverse carina; frons and vertex not notably broad, vertex with one median and two lateral, longitudinal carinae; mandibles with outer surface depressed near base; labrum 2.5 times as wide as long, apical margin broadly emarginate and without transverse ridge; antennal club oval, sclerotized on dorsal, ventral and part of inner surfaces. Pronotum (Fig. 91) 1.5 times as wide as long; lateral margins nearly straight, convergent forward; front angles broad, obliquely truncate; surface convex at middle, broadly reflexed at sides; disk with five, longitudinal costae, median and outer costae entire, two costae between them short and posterior; with short, transverse carina mesad of each hind angle, mesal end of these carinae ending in small fovea; hind margin strongly arcuate. Elytron (Fig. 91) feebly, convex at middle, strongly margined and reflexed along sides; without dorsal striae, but strongly costate; internal subhumeral stria costiform, forming



strong lateral margin; external subhumeral stria cariniform, strongly sinuate. Propygidium 2 times as wide as long; with median longitudinal carina; with strong, transverse, submarginal ridge behind; surface before ridge flat, behind ridge strongly declivous. Pygidium as wide as long; with median, longitudinal costa. Prosternum (Fig. 92) with keel convex; carinal striae cariniform, widely separated, feebly convergent forward; lateral striae posterior, divergent in front and behind; lateral marginal striae cariniform, divergent in front; lobe long, separated from rest of prosternum by suture, without marginal stria; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly emarginate. Mesbsternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria and its recurrent arm present; inner lateral stria parallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia with outer edge oligodenticulate; middle and hind tibiae with outer edge arcuate. Male genitalia as in Fig. 90; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin joined to 8th sternites; 8th sternite separate, with "disks", without setae along apical margin; 9th tergite without ventral

"apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Xylostega may be separated from Colonides which it very closely resembles by the equally elevated costae of its elytra; by its strongly reflexed pronotal and elytral lateral margins; by its widely separated prosternal carinal striae; and by the absence of an additional stria before its meso-metasternal suture. From Procolonides and Hemicolonides, Xylostega may be separated by the long outer and median costae that have two, short, posterior costae between them on its pronotum; and by the absence of foveae on its meso-metasternal suture. From Procolonides, Xylostega may be separated by its oval, depressed body form; and by the absence of foveae mesad of its pronotal front angles.

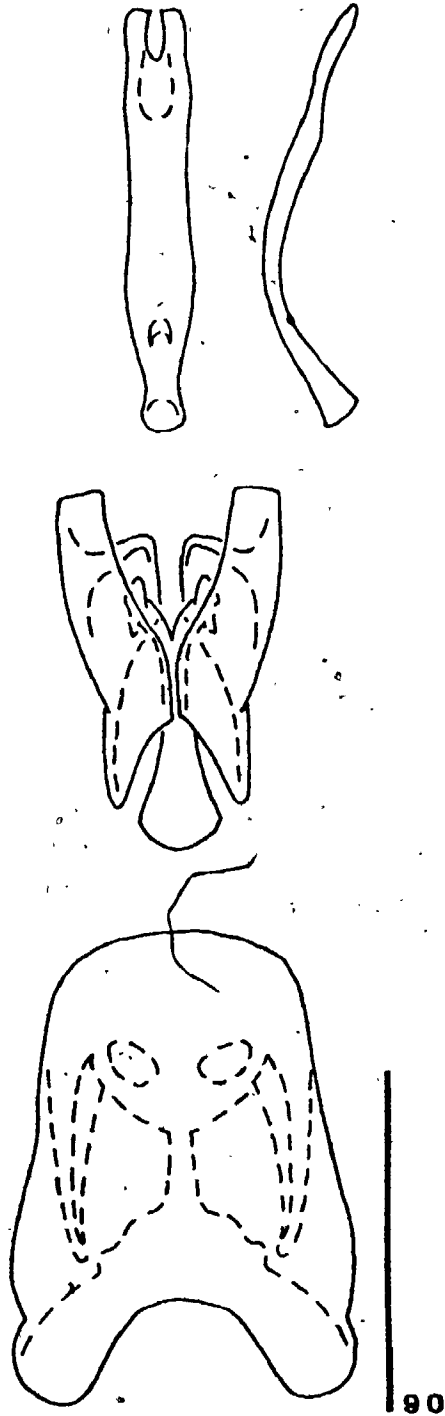
Species of Xylostega

\* Xylostega collegii Reichensperger 1923: 319. BRAZIL.

HOST:

Xylostega quadriglumis Reichensperger 1923: 251. BRAZIL.

HOST:



Figs. 90-93. Xylostega collegi Reichensperger:

Genus Euxenister Reichensperger

Figs. 94-97

Euxenister Reichensperger 1923: 333.

TYPE-SPECIES: Euxenister caroli Reichensperger (by original designation).

DIAGNOSIS. Form elongate; setose above (Fig. 95). Head as wide as long (Fig. 97); lateral margins carinate from top or middle of eyes to front margin of clypeus, these carinae broad and rounded in front; mandibles unmodified; labrum 4 times as wide as long, apical margin broadly emarginate; antennal club subcylindrical, sclerotized on dorsal, ventral, inner and sometimes part of outer surfaces. Pronotum (Fig. 95) as wide as long; lateral margin sinuous, divergent in front 0.3 to broadly expanded, truncate front angles; front margin deeply emarginate; disk without striae; lateral areas strongly inflated in front 0.7, cushion-like or ridge-like; hind margin arcuate. Elytron (Fig. 95) with lateral margin raised into narrow, prominent ridge or with cushion-like elevations at humeral angles; without dorsal striae, but with several feeble carinae or with course of striae indicated by row of setae; internal subhumeral stria external subhumeral stria Propygidium and pygidium 1.3 times as wide as long. Prosternum (Fig. 96) V-shaped in cross-section; with keel convex; carinal striae absent; lateral striae barely indicated, their course defined by

setae; lateral marginal striae absent; lobe not separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly, quite deeply emarginate. Mesosternum produced in front to fit prosternal emargination; without marginal stria; with surface depressed at sides, depression continuous on metasternum; without lateral foveae. Metasternum without striae; surface moderately elevated along midline. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. Male genitalia as in Fig. 94; 8th tergite without transverse anterior stria, with inward extensions along ventral hind margin; 8th sternites separate, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Euxenister may be separated from all other genera by the cushion-like or ridge-like elevations along the lateral margins of its pronotum and elytra. Euxenister is in general conspectus very different from the other genera in this group, but I have tentatively placed it in this group because of the similarities that its male genitalia share with the male genitalia of the other genera in this group.

Species of Euxenister

Euxenister aspertus Reichensperger 1923: 333. BRAZIL.

HOST:

Euxenister breyeri Bruch 1931: 392. ARGENTINA. HOST:

\* Euxenister caroli Reichensperger 1923: 335. BRAZIL.

PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton

burchelli.

\* Euxenister wheeleri Mann 1925: 173. PANAMA. Canal Zone:

Barro Colorado Island. HOST: Eciton hamatum.



94



95

96

97

Fig. 94. Euxenister caroli Reichensperger. Figs. 95-97.  
Euxenister wheeleri Mann.

## GROUP C

## SUBGROUP C1

Genus Bastactister Reichensperger

Figs. 98-100

Bastactister Reichensperger 1939: 264.

TYPE-SPECIES: Bastactister fernandi Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form truncate oval; ~~setose~~ above (Fig. 98). Head as wide as long (Fig. 100); lateral margins carinate from occiput to level with lower edge of antennal sockets; labrum 1.5 times as wide as long, demidiate, apical margin broadly rounded; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 98) 2 times as wide as long; front angles obtusely truncate; disk with deep, medium, bilobed depression in hind 0.6; lateral areas steeply elevated at middle where lateral margin is incised; lateral stria reaching from middle of side to tubercle at middle of front margin, widely displaced from margin at front angles. Elytron (Fig. 98) nearly flat in front except depressed at middle, this depression confluent with depression on pronotum, moderately convex behind; without dorsal striae although the courses of the striae are indicated by long, moderately dense setae; internal and



external subhumeral striae parallel, feebly impressed, their courses indicated by setae. Propygidium and pygidium as wide as long. Prosternum (Fig. 99) with keel convex; carinal striae short, reaching from hind margin to between front coxae, joined in front in rounded arch; surface in front of carinal striae with few setae; lateral striae long, reaching from between front coxae to near front margin, divergent in front; lateral marginal striae evanescent; lobe separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron with very large, transverse, setose fossa, these setae very long; hind margin deeply, roundly emarginate. Mesosternum produced in front to fit prosternal emargination, this projection large, orbicular; marginal stria present; surface depressed behind marginal stria; lateral foveae absent. Metasternum with postcoxal stria present; outer lateral stria not reaching hind coxa; inner lateral stria absent. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. Male genitalia not available.

Remarks. The genus Bastactister may be separated from other genera in this group by the following combination of characters: the pronotum has a deep, bilobed median depression in hind 0.6; the pronotum has the lateral areas steeply elevated at middle where the

lateral margin is incised; the prosternum has short carinal striae that are joined in rounded arch in front; the proepisternum and proepimeron have a very large, transverse, setose fossa; and the elytra are without any well-impressed dorsal striae.

Species of Bastactister

- \* Bastactister fernandi Reichensperger 1939: 266. COSTA RICA. San Jose: San Jose. PANAMA. Canal Zone: Barro Colorado Island. HOST: Neivamyrmex pilosus.



Figs. 98-100. Bastactister fernandi Reichensperger.

Genus Synetister Reichensperger

Figs. 101-104

Synetister Reichensperger 1924: 142.TYPE-SPECIES: Synetister pilosus Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form elongate oval; setose above (Fig. 102). Head as wide as long (Fig. 104); lateral margins carinate from occiput to level with lower edge of antennal sockets; labrum 2 times as wide as long, demidiate, apical margin broadly rounded; antennal club oval, sclerotized on ventral and inner surfaces. Pronotum (Fig. 102) 1.5 times as wide as long; lateral margins obtusely angulate, parallel in hind 0.7, thence strongly convergent to front angles which are obliquely truncate; disk separated from lateral 0.2 by arched stria which begins at hind margin opposite elytral groove, reaches nearly to front margin behind head and continues to hind margin opposite contralateral elytral groove; surface convex at middle, markedly depressed before hind margin; lateral area strongly inflated, surface highest at middle, hind 0.5 divided by fossa that begins at middle, extends obliquely to discal stria and continues to hind angle, area between fossa and lateral margin forming triangular bulla. Elytron (Fig. 102) nearly flat in front, moderately convex behind; with two divergent grooves that begin at middle of front margin; without

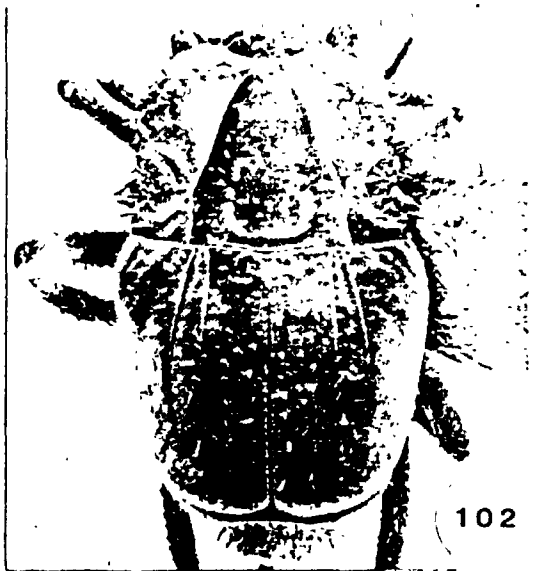
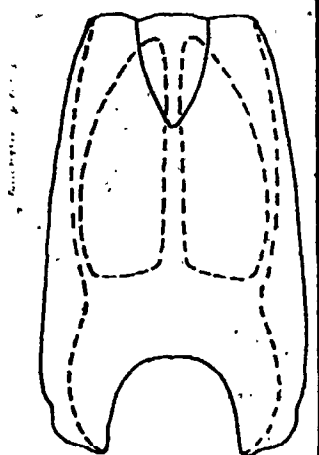
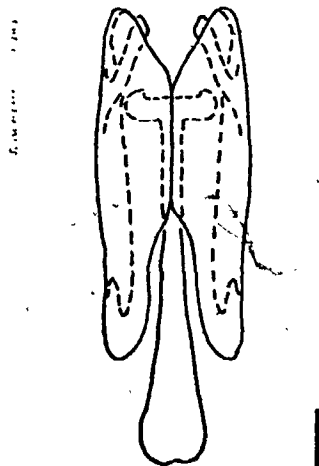
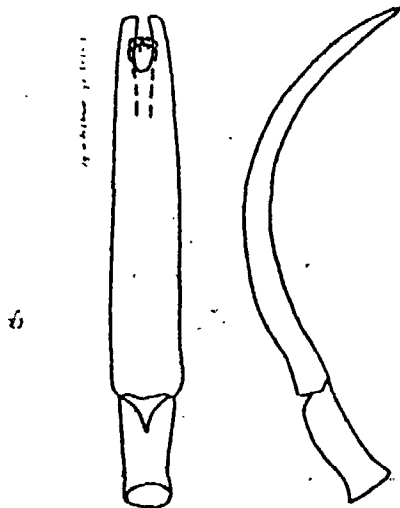
dorsal striae although their courses are represented by rows of sparse setae; internal and external subhumeral striae not impressed, their courses feebly indicated by sparse setae. Propygidium and pygidium as wide as long. Prosternum (Fig. 103) V-shaped in cross-section; with keel convex; carinal striae absent; lateral striae widely separated, reaching from front coxae to near front margin; surface depressed between lateral striae; proepisternum with large, prominent setose patch in middle; proepimeron with setose patch; hind margin deeply, roundly emarginate. Mesosternum produced in front to fit prosternal emargination, this projection orbicular; marginal stria entire; without lateral foveae. Metasternum without striae. First abdominal sternum without striae. Legs very long; tibiae cylindrical. Male genitalia as in Fig. 101; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Synetister may be separated from other genera in this group by the following combination of characters: pronotum with a strong, inverted U-shaped

stria; pronotum with lateral areas not steeply elevated, with triangular bulla just before hind angles; prosternum without carinal striae; proepisternum with prominent setose patch at middle; elytra with two divergent, median grooves just behind front margin.

Species of Synetister

- \* Synetister pilosus Reichensperger 1924: 142. BRAZIL. Sao Paulo: Pindamonhangaba. HOST:



Figs. 101-104. Synetister pilosus Reichensperger.

Genus Glyptosister new genus

Figs. 105-108

Glyptosister new genus.TYPE-SPECIES: Glyptosister cornutus new species.

DIAGNOSIS. Form truncate oval; densely, closely punctate; setose above (Fig. 106). Head as wide as long (Fig. 108); lateral margins carinate from occiput to level with lower edge of antennal sockets; labrum 2 times as wide as long, apical margin broadly rounded; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 106) 1.5 times as wide as long; lateral margins sinuate, divergent in front 0.5 to broadly expanded, obliquely truncate front angles; surface divided by fossae into five areas, two on each side and quadrate central one; hind fossa U-shaped, beginning at middle of lateral margin, extending obliquely to lateral 0.2 of hind margin, along hind margin to contralateral 0.2 of hind margin, thence to middle of opposite lateral margin; front fossa inverted U-shaped, beginning at middle of oblique arm of hind fossa, extending to just behind front margin, along front margin for width of head, thence backward to contralateral oblique arm of hind fossa. Elytron (Fig. 106) without dorsal or subhumeral striae; with two divergent grooves that begin at middle of front margin; surface between grooves and suture flat, inflated between



grooves and humerus, moderately convex behind. Propygidium and pygidium as wide as long. Prosternum (Fig. 107) V-shaped in cross-section; keel convex; carinal striae absent; lateral striae widely separated, close to lateral margin of keel, divergent in front; surface strongly ascending before front coxae to two large foveae just behind hind angles of lobe; lobe large, not separated from rest of prosternum by suture, marginal stria present; proepisternum with longitudinal fossa that is setose behind; proepimeron with setose patch; hind margin deeply, roundly emarginate. Mesosternum produced in front to fit prosternal emargination, this projection orbicular; marginal stria present; surface with foveae near lateral margin at meso-metasternal suture, these foveae connected by shallow, transverse fossa. Metasternum with rudimentary postcoxal and outer lateral striae near front margin. First abdominal sternum without striae. Legs extremely long; tibiae cylindrical. Male genitalia as in Fig. 105; 8th tergites without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Etymology. "Glyptos" meaning "carved" and "-ister" suffix meaning "having the nature of".

Remarks. The genus Glyptosister may be separated from other genera in this group by the following combination of characters: pronotum divided into five areas by fossae; most surfaces densely, closely punctate; prosternum without carinal striae and with large lobe; proepisternum with longitudinal fossa that is setose behind; elytra without well impressed dorsal striae, but with two divergent, median grooves that begin at front margin.

Glyptosister cornutus new species

Figs. 105-108

Glyptosister cornutus new species.

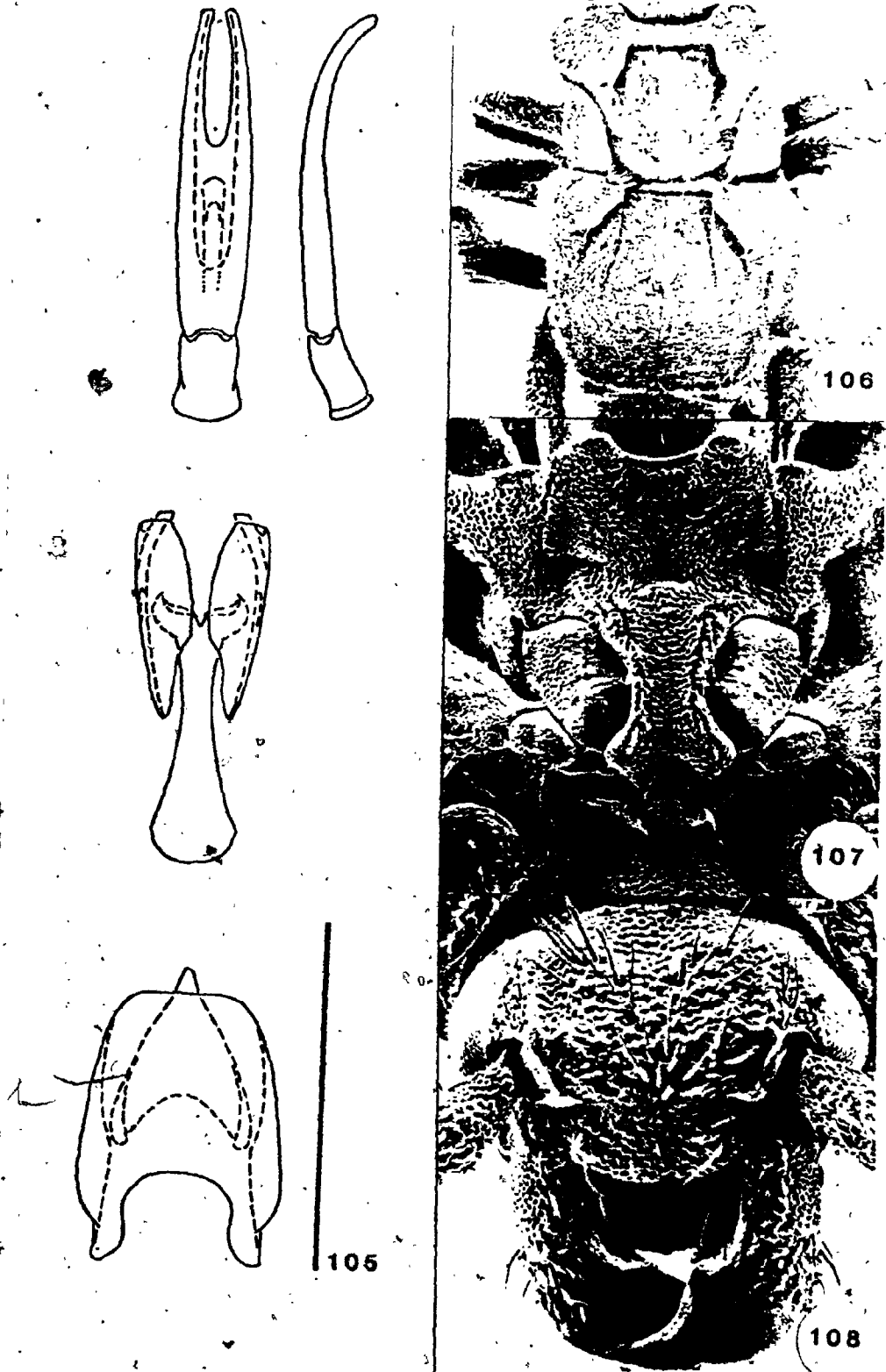
TYPE: Holotype, male, Panama, Canal Zone, Barro Colorado Island, 18.v.1956, No. 1826, C.W. & M.E. Rettenmeyer. Paratype, male, same data as holotype.

HOST: Nomamymex esenbecki.

Description. Length: 2.4-2.6 mm; width: 1.6-1.9 mm. Surface densely, closely punctate; sparsely, but conspicuously setose. Head (Fig. 108) with carinae on lateral margins confused by punctures; frons and vertex with stout, erect setae; labrum with several setae along lateral margins. Pronotum (Fig. 106) deeply excavated; bottoms of fossae impunctate; central quadrate area tripartite, lower in center than at sides, with prominent corniculus at middle of front edge. Elytron (Fig. 106) with grooves deep, impunctate, reaching from front margin to middle; setae denser between grooves and suture; humeral area inflated into large, triangular bulla with prominent setose patch on front inner corner. Prosternum (Fig. 107) with lateral striae setose, reaching from near hind margin to just behind lobe, divergent behind front coxae and in front; lobe with front margin deeply, roundly emarginate, marginal stria reaching from lateral foveae to emargination. Mesosternum with lateral foveae deep, entire surface rather depressed; with small, setose

patch between each lateral foveae and front margin. Metasternum with postcoxal and outer lateral striae nearly confluent, impunctate, reaching to middle. Legs as in generic diagnosis; tarsal grooves very deep. Male genitalia as in Fig. 105.

Etymology. "Cornutus" meaning "horned".



Figs. 105-108. *Glyptosister cornutus* (new genus, new species).

Genus Teratosoma Lewis

Figs. 109-111

Teratosoma Lewis 1885: 471.

TYPE-SPECIES: Teratosoma longipes Lewis (by monotypy). -- Bickhardt 1917: 251 (generic diagnosis).

Neolister Bruch 1926: 28.

TYPE-SPECIES: Neolister amphiphilus Bruch (by monotypy) NEW SYNONYMY.

DIAGNOSIS. Form elongate oval; setose above (Fig. 109). Head as wide as long (Fig. 111); lateral margins carinate from occiput to front margin of clypeus, these carinae briefly interrupted in front of antennal sockets; surface between carinae and antennal sockets broadly elevated; labrum 2 times as wide as long, apical margin shallowly emarginate or produced into prominent point; antennal club oval, sclerotized on ventral surface only or on dorsal, ventral and inner surfaces. Pronotum (Fig. 109) 1.3 times as wide as long; front angles obliquely truncate; lateral margin deeply emarginate at middle, emargination corresponding to dorsal margin of fossa on proepisternum; surface divided into two lateral areas and bilobed median area by H-shaped depression; lateral area steeply elevated, highest at middle; H-shaped depression deeply undercut at sides above proepisternal fossa.

Elytron (Fig. 109) nearly flat in front, moderately convex behind; inner 0.2 depressed in front, this depression confluent with median area of pronotum; without dorsal striae, although courses of striae represented by rows of short, sparse setae; internal subhumeral stria external subhumeral stria Propygidium 1.4-1.5 times as wide as long; surface inflated, more convex behind. Pygidium as wide as long. Prosternum (Fig. 110) with keel flat behind, saddle-shaped in front; carinal striae absent; lateral striae widely separated, reaching from hind margin to near front margin; lateral marginal striae lobe separated from rest of prosternum by suture, with marginal stria entire and widely spaced from margin at sides; proepisternum with large, transverse, setose fossa; proepimeron with sparse setose patch; hind margin roundly, quite deeply emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria entire, distant from margin; surface behind marginal stria depressed, depression extending to metasternum; without lateral foveae. Metasternum without striae. First abdominal sternum without striae. Legs very long to extremely long; tibiae feebly expanded to cylindrical. Male genitalia not available.

Remarks. The genus Teratosoma may be separated from other genera in this group by a combination of the following characters: pronotum divided by H-shaped

depression into three areas; pronotum with lateral areas steeply elevated, highest at middle, where lateral margin is incised; prosternum without carinal striae; proepisternum with large, transverse, setose fossa; elytra without well-impressed striae.

Species of Teratosoma

- \* Teratosoma amphiphilus Bruch 1926: 29. NEW COMBINATION.  
ARGENTINA. Cordoba: Alta Gracia. HOST: Solenopsis  
saevissima macdonaghi.
  
- \* Teratosoma longipes Lewis 1885: 471. BRAZIL. Minas  
Gerais: Passa Quatro. HOST: Neivamyrmex legionis.





Figs. 109-111. Teratosoma longipes Lewis.

Genus Pterotister Reichensperger

Figs. 112-115

Pterotister Reichensperger 1939: 270.

TYPE-SPECIES: Pterotister nevermanni Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form hastate; setose above (Fig. 113). Head as wide as long (Fig. 115); lateral margins carinate from occiput to level with lower edge of antennal sockets; labrum 1.5 times as wide as long, demidiate, apical margin broadly rounded; antennal club oval, sclerotized on dorsal, ventral, and part of inner surfaces. Pronotum (Fig. 113) 2 times as wide as long; lateral margins feebly arcuate; front angles broad, obliquely truncate; hind angles with ovate bulla, its inner margin shared with shallow or deep, bilobed fovea, this fovea connected to contralateral fovea by transverse, shallow fossa along hind margin; disk on each side with fine, oblique stria that begins at hind margin mesad of bulla or in fovea and ends behind eyes at front margin; surface between striae feebly convex, with mesal, transverse patch of setae. Elytron (Fig. 113) nearly flat in front, moderately convex behind; humeral angles acute, prominent; without dorsal striae although their courses indicated by long, sparse setae; internal subhumeral stria, if present, long; external subhumeral stria short, anterior, cariniform; Propygidium 1.5 times

as wide as long. Pygidium as wide as long. Prosternum (Fig. 114) with keel strongly convex; carinal striae reaching from hind margin to before front coxae, joined in front in rounded arch; surface between carinal striae with double row of long setae; lateral striae, if present, very fine, short, impressed just before carinal striae; lateral marginal striae cariniform, divergent forward; lobe short, not separated from rest of prosternum by suture, with marginal stria present; proepisternum and proepimeron with setose patches; hind margin deeply, roundly emarginate. Mesosternum with front margin produced forward to fit prosternal emargination, this projection large, orbicular; marginal stria evanescent; surface strongly depressed behind front margin, this depression extending to metasternum; without lateral foveae. Metasternum with postcoxal stria present; inner lateral stria absent; outer lateral stria or at least its recurrent arm present; surface with small, setose patch on each side between midline and middle coxa. First abdominal sternum with one postcoxal stria. Legs very long; front and middle tibiae feebly expanded, with outer edge nearly straight; hind tibia more strongly expanded, with outer edge arcuate. Male genitalia as in Fig. 112; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, without "disks", without setae along

apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Pterotister may be separated from other genera in this group by the following combination of characters: prosternal keel with double row of setae between the carinal striae; pronotum with lateral areas not steeply elevated, and with feebly to strongly developed bullae at the hind angles; proepisternum with setose patch; elytra without dorsal striae. This genus is rather variable as might be expected from its very extensive range. The major difference among the species is the degree of development of the bullae on the hind angles of the pronotum.

#### Species of Pterotister

Pterotister nevermanni Reichensperger 1939: 271. COSTA RICA. HOST:

\* Pterotister schwarzmaieri Bergmeier 1948: 385. BRAZIL. Goias: Campinas. HOST: Neivamyrmex pilosus.

\* Pterotister n. sp. 1. COSTA RICA. Osa Peninsula: Rincon. HOST: Neivamyrmex pilosus.



Figs. 112-115. *Pterotister schwarzaieri* Borgmeier.

Genus Ulkeopsis new genus

Figs. 116-119

Ulkeopsis new genus.TYPE-SPECIES: Ulkeopsis bullatus new species.

DIAGNOSIS. Form truncate oval; setose above (Fig. 117). Head as wide as long (Fig. 119); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; labrum 1.5 times as wide as long, apical margin truncate; antennal club oval, sclerotized on dorsal and ventral surfaces; Pronotum (Fig. 117) 2 times as wide as long; lateral margins sinuate, nearly parallel; front angles expanded, truncate; disk separated from lateral 0.2 of pronotum by inverted U-shaped stria which begins near hind angles, runs obliquely to near front margin, along front margin behind head, thence to contralateral hind angle; middle portion with surface convex at middle, depressed along lateral stria, with two diffuse, concentric bands of setae that begin at hind margin and extend to contralateral side; lateral area with large bulla in hind 0.5, bulla with oval, setose patch on inner surface. Elytron (Fig. 117) nearly flat in front, moderately convex behind; with five dorsal striae, four outer striae carinate along inner edge, fifth stria represented by row of diffuse setose punctures, sutural stria carinate along outer edge; internal subhumeral stria long, cariniform;

external subhumeral stria strongly sinuate, cariniform. Propygidium 1.3 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 118) with keel knife-like in front 0.3; carinal striae narrowly separated, subparallel, joined in rounded arch in front and straight behind; lateral striae feebly indicated, divergent behind, convergent between front coxae, divergent to middle, thence convergent forward; lateral marginal striae cariniform, subparallel; lobe separated from rest of prosternum by fine suture, from alae by marginal stria which is well-impressed at sides and short distance along dorsal edge of front margin; proepisternum with longitudinal, setose fossa; proepimeron with small, setose patch; hind margin broadly, roundly emarginate. Mesosternum short; front margin produced forward to fit prosternal emargination; marginal stria distant from front margin; surface between marginal stria and front margin convex. Metasternum without postcoxal and inner lateral striae; outer lateral stria and its recurrent arm present. First abdominal sternum with one postcoxal stria. Legs very long; tibiae feebly expanded. Male genitalia as in Fig. 116; 8th tergite without transverse anterior stria, with "disks", without setae along apical margin; 8th sternites separate, without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures;

10th tergite absent; basal piece short, parameres long.

Etymology. "Ulkeus" and "-opsis" meaning "like".

Remarks. The genus Ulkeopsis may be separated from other genera in this group by the following combination of characters: its prosternal keel is knife-like in front; the hind angles of its pronotum have large bullae that have an oval, setose patch on their inner surfaces; and its elytra have four dorsal and sutural stria entire; and its proepisternum has a longitudinal, setose fossa.



Ulkeopsis bullatus new species

Figs. 116-119

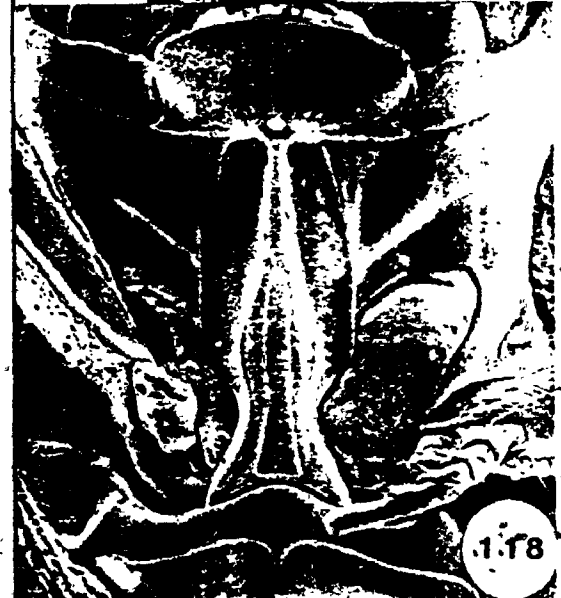
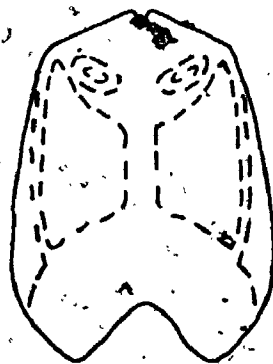
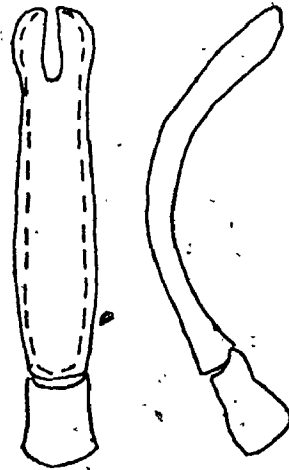
Ulkeopsis bullatus new species.

TYPE: Holotype, male, Costa Rica, Monteverde, 10 29'N. 84 50'W., 1400 m. 19.ii.1963, D. Akre, P24 #31, Colony E-294 (FNMH). HOST: Neivamyrmex sumichrasti. Allotype, female, same data as holotype. Paratypes, four, sex undetermined: (2) same data as holotype; (1) type locality, 20.ii.1963, # 2651, C.W. & M.E. Rettenmeyer; (1) type locality, 22.ii.1963, # 2656, C.W. & M.E. Rettenmeyer. HOST: Neivamyrmex sumichrasti.

Description. Length: 1.6-1.9 mm; width: 1.4-1.5 mm. Head (Fig. 119) with spatulate setae on vertex and frons, setae on antennal scape plumose; labrum with row of setae behind front margin. Pronotum (Fig. 117) with marginal stria entire long front margin; two short striae in lateral 0.3, outer stria reaching from hind margin to just behind middle, inner stria shorter; disk with concentric bands of setae rather diffuse, setae spatulate. Elytron (Fig. 117) with setae along five dorsal striae spatulate; external subhumeral stria strongly sinuate, joined briefly to internal subhumeral stria at middle. Pygidia smooth, impunctate. Prosternum (Fig. 118) with carinal striae reaching to just before middle; lateral striae reaching to front margin of keel;

surface impunctate; proepisternum with very prominent setose fossa. Mesosternum with marginal stria bifid at middle, not joined to lateral metasternal stria. Metasternum with lateral metasternal stria and its recurrent arm well-impressed, cariniform. First abdominal sternum with postcoxal stria long, continuous to front angles in oblique arc. Front femur and tibia rugose, front tibia quadrate; middle and hind femora rugose and conspicuously setose on distal 0.3, middle and hind tibiae rugose and conspicuously setose. Male genitalia as in Fig. 116.

Etymology. "Bulla" meaning "knob".



Figs. 116-119. Ulkeopsis bullatus (new genus, new species).

Genus Convivister Reichensperger

Figs. 120-123

Convivister Reichensperger 1936: 224.

TYPE-SPECIES: Convivister nevermanni Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form elongate; setose above (Fig. 121). Head as wide as long (Fig. 123); lateral margins carinate from occiput to level with lower edge of antennal sockets; vertex with short, acute tubercle that fits into an emargination on the front margin of pronotum; labrum 2 times as wide as long, apical margin broadly rounded; antennal club subcylindrical, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 121) as wide as long; lateral margins sinuate, divergent in front 0.3 to feebly expanded, front angles; divided just behind front margin by transverse fossa from which arise tufts of setae, this fossa begins in a deep fovea on the hypomeron and ends in a fovea near the midline, these median foveae are contiguous; surface behind fossa divided into three areas by lateral striae; central shield-shaped area with two subparallel striae, its front edge cusp-like; lateral areas lobe-like in front, flat behind; hind margin obtusely V-shaped. Elytron (Fig. 121) very convex; with dorsal striae vaguely indicated, their courses marked by sparse setae; internal subhumeral stria poorly indicated, its course marked by setae;

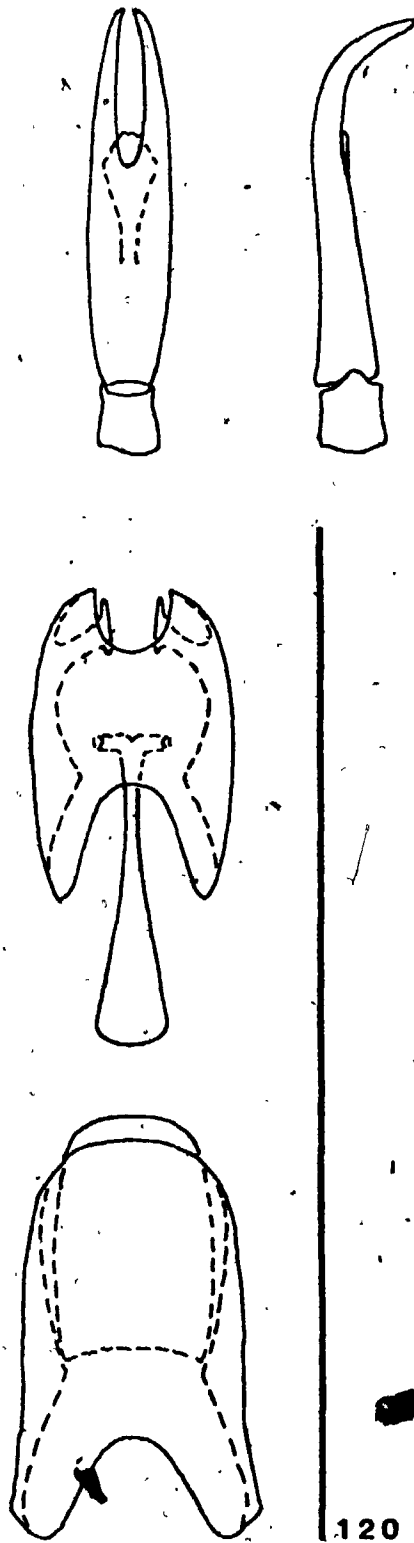
external subhumeral stria absent. Propygidium as wide as long; surface somewhat convex. Pygidium as wide as long. Prosternum (Fig. 122) V-shaped in cross-section; keel very broad; carinal striae absent; lateral striae widely separated; continuous to front margin; lobe separated from rest of prosternum by suture, marginal stria absent; alae as long as lobe; proepisternum and proepimeron without setose patches; hind margin deeply, acutely emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria entire; surface with large, median, setose tubercle. Metasternum without striae. First abdominal sternum without postcoxal striae. Legs extremely long; tibiae cylindrical. Male genitalia as in Fig. 120; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, without "disks", without setae along apical margin; 9th tergites with reduced ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Convivister may be separated from other genera in this group and from all other genera by the unique structure of its pronotum. No other genus shares the transverse fossa from which arise tufts of setae and originates in foveae on the hypomeron and runs

across the front margin of its pronotum. This genus is so apomorphic that it is only tentatively included in this group with Bastactister and the others. While the male genitalia of Convivister share many similarities with those of Glyptosister, Convivister lacks many of the external characters that unite the other genera in this group. I feel that the pomerol foveae of Convivister may be homologous with the proepisternal fossae of Bastactister, Synetister and Teratosoma, but I hesitate to formalize this possibility because they are so different. In body plan Convivister is rather similar to Euxenister, but because their genitalia are so different I have concluded that this similarity is the result of convergence.

Species of Convivister

- \* Convivister nevermanni Reichensperger 1936: 225. COSTA RICA. Osa Peninsula: Rincon. HOST: Labidus praedator.



Figs. 120-123. Convivister nevermanni Reichensperger.

Genus Opadosister new genus

Figs. 124-126

Opadosister new genus.TYPE-SPECIES: Opadosister longipes new species.

DIAGNOSIS. Form elongate oval; setose above (Fig. 124). Head as wide as long (Fig. 126); lateral margins without carinae; labrum 2 times as wide as long, apical margin truncate; antennal club subcylindrical, sclerotized on all surfaces except truncate tip. Pronotum (Fig. 124) as wide as long, narrowest just before hind margin; lateral margins arcuate, divergent forward; front angles rounded; surface divided into three portions by narrow, inverted U-shaped stria that begins at hind margin, reaches forward to front margin thence continuous to contralateral side; with middle portion flat in front, strongly convex behind; with lateral portions broadly, roundly, strongly inflated, wider in front than behind; hind angles acute; hind margin feebly sinuate. Elytron (Fig. 124) strongly convex, not continuous in outline with pronotum; dorsal striae represented by three, well-impressed striae; internal and external subhumeral striae absent. Propygidium 1.7 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 125) with keel convex, rather narrow, ascending in front; carinal striae approximate, parallel, not joined in front; lateral striae fine, divergent in front;



lateral marginal striae widely divergent in front; lobe not separated from rest of prosternum by suture, with marginal stria ending in foveae at sides; proepisternum and proepimeron without setose patches; hind margin narrowly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; surface with deep, transverse fossa that extends laterally to metasternum and ends just behind middle coxae; with marginal stria present; lateral foveae absent. Metasternum with postcoxal stria and one lateral stria present; lateral stria joined to postcoxal stria in front. First abdominal sternum with one postcoxal stria. Legs very long; tibiae cylindrical. Male genitalia not available.

Etymology. "Opados" meaning "accompanying" and "-ister" suffix meaning "having the nature of".

Remarks. The genus Opadosister may be separated from other genera in this group by the deep, transverse fossa on its mesosternum; by its prosternal carinal striae which are approximate and parallel; by the shape of its pronotum which is narrowest behind and has broadly, roundly inflated lateral areas; and by the well-impressed dorsal elytral stria which are reduced in number. The genus Opadosister is very apomorphic and in the absence of male genitalia, my placement of it in this group must be regarded as very tentative. The only

specimen of this species was collected with a Berlese of forest litter. This is most likely an indication of the association of this genus with a genus of ants that is predominantly subterranean in habit.

Opadosister longipes new species

Figs. 124-126

Opadosister longipes new species.

TYPE: Holotype, female, Mexico, Veracruz, 4.viii.1969, S. Peck, FMNH(HD) #69-58 tropical evergreen forest Berlese 173, (FMNH). HOST: no data.

Description. Length: 1.9 mm; width: 1.3 mm. Surface impunctate above, sparsely punctate beneath. Head (Fig. 126) feebly concave on vertex; feebly convex on frons and clypeus; with long, sparse setae on occipital margin and in front of eyes; labrum with two setiferous punctures. Pronotum (Fig. 124) with lateral areas smoothly rounded to hypomeron; marginal stria setose, impressed on sides of lateral inflations, more strongly impressed across front margin, continuous with marginal stria of prosternal alae; with two, parallel rows of long setae on median portion; with confused row of long setae on crest of lateral inflations. Elytron (Fig. 124) with three, long, setose, well-impressed dorsal striae; inner row striae outwardly, transversely hooked behind; sutural stria represented by row of long setae; epipleural fold somewhat depressed. Propygidium and pygidium with very sparse, setiferous punctures. Prosternum (Fig. 125) with carinal striae long, reaching from hind margin to near front margin, setose; lateral striae well-impressed in hind 0.5, widely divergent

behind; surface between carinal and lateral striae with row of setiferous punctures; lateral marginal striae cariniform, continued in front just before front coxae; lobe with sparse, setiferous punctures; alae with distinct marginal stria. Mesosternum with marginal stria poorly impressed; transverse fossa with straight median section and two widely divergent posterior arms; with fairly dense setae on median projection. Metasternum with postcoxal stria cariniform, long, reaching to front margin; outer lateral stria beginning behind middle coxa, reaching to hind margin mesad of hind coxa; surface with sparse, setiferous punctures. First abdominal sternum with postcoxal stria short, not reaching to front or lateral margins. Legs as in generic diagnosis; middle and hind tibia with row of very long setae on inner surface, along entire length of tibia. Male genitalia not available.

Etymology. "Longipes" meaning "long legs".



Figs. 124-126. Opadosister longipes (new genus, new species).

## SUBGROUP C2

Genus Ulkeus Horn

Figs. 127-130

Ulkeus Horn 1885: 143.TYPE-SPECIES: Ulkeus intricatus Horn (by monotypy).

-- Bickhardt 1917: 250 (generic diagnosis).

Hetaeriosoma Schmidt 1893: 185.TYPE-SPECIES: Hetaeriosoma sahlbergi Schmidt (by monotypy). NEW SYNONYMY.

DIAGNOSIS. Form truncate oval; setose above (Fig. 128). Head as wide as long (Fig. 130); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; frons with inverted V-shaped, median striae; labrum 2 times as wide as long, apical margin sinuate to broadly emarginate; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 128) 2 times as wide as long; lateral margins feebly to moderately strongly sinuate, convergent forward; front angles rather broad, obliquely truncate; disk convex, separated from lateral 0.2 by fine, inverted U-shaped stria which nearly reaches to front margin, with two to four confused, more or less concentric striae which begin at the hind margin opposite an elytral stria, curve forward and end opposite the

contralateral elytral stria, these striae may be nearly obsolete or may form a confused network at the middle; lateral areas with either longitudinal elevation along mesal margin or distinct bulla behind; hind margin obtusely V-shaped. Elytron (Fig. 128) nearly flat in front, moderately convex behind; four dorsal stria and sutural stria entire, setose; dorsal striae cariniform along both edges; internal subhumeral stria long, cariniform; external subhumeral stria strongly sinuate, confluent with internal subhumeral stria at middle. Propygidium 1.5 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 129) with keel convex; carinal striae either convergent forward, joined to nearly joined in rounded arch in front or entirely absent; lateral striae fine, widely separated, either parallel or joined in rounded arch in front; lateral marginal striae cariniform, either subparallel or divergent in front; lobe separated from rest of prosternum by fine suture; marginal stria present, pre-apical stria sometimes present; proepisternum without setose patch; proepimeron with or without small setose patch; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination, marginal stria entire or bifid at middle, joined or not joined to outer lateral metasternal stria; lateral foveae not present. Metasternum with postcoxal stria present; outer lateral

stria present, its recurrent arm fused to postcoxal stria in front; inner lateral stria present or absent. First abdominal sternum with two postcoxal striae. Legs long; tibiae expanded; front tibia quadrate; middle tibia obtusely angulate at middle; hind tibia arcuate. Male genitalia as in Fig. 127; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced forward to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Ulkeus is quite variable and is distributed throughout the range of its host Neivamyrmex. I consider Ulkeus to be congeneric with Hetaeriosoma, because the variation within the genus Ulkeus, with the inclusion of Ulkeus n.spp. 1-6, appears to encompass the species of Hetaeriosoma. Ulkeus may be separated from other genera in this group by the following combination of characters: its prosternal keel is convex; its proepisternum is without a longitudinal setose fossa; its elytra have four dorsal and the sutural stria entire; and the lateral areas of its pronotum are without very large bullae, or are not strongly depressed at the hind angles, or are without two, longitudinal bullae.



of its prosternal lobe. For further comments, refer to the "Remarks" sections of Iugulister

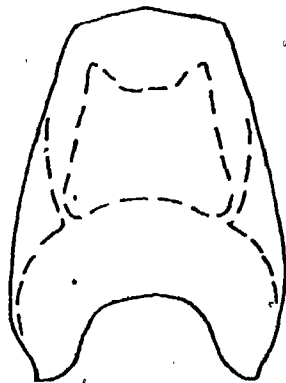
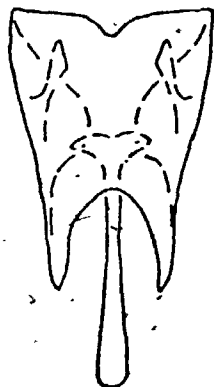
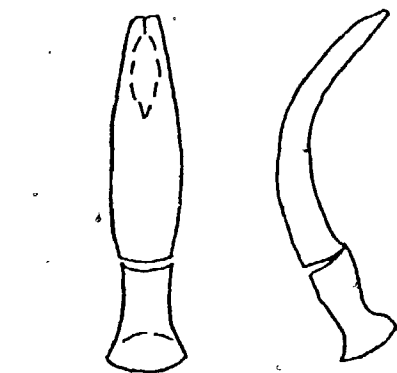
Species of Plaumannister

- \* Plaumannister volitans Reichensperger 1958: 279. BRAZIL.  
Parana: Bocaiuva. Santa Catharina: Nova Teutonia. Rio Grande do Sul: Barros-Cassal. HOST: Neivamyrmex sp.

Species of Ulkeus

- Ulkeus discrepans Reichensperger 1939: 276. NEW COMBINATION. COSTA RICA. HOST:
- \* Ulkeus gratiana Bruch 1926: 12. NEW COMBINATION. ARGENTINA. Córdoba. BRAZIL. Goiás: Campinas. HOST: Neivamyrmex pseudops.
- \* Ulkeus henrici Reichensperger 1939: 274. NEW COMBINATION. COSTA RICA. San Jose: San Jose. HOST: Neivamyrmex delfaroi.
- \* Ulkeus intricatus Horn 1885: 143. USA. Kansas. Texas: Austin. HOST:
- Ulkeus pheidolephila Bruch 1930: 10. NEW COMBINATION. ARGENTINA. Buenos Aires: Las Rosas. HOST: Pheidole strobili.
- Ulkeus sahlbergi Schmidt 1893: 185. NEW COMBINATION. BRAZIL. HOST:
- \* Ulkeus n.sp. 1. USA. Arizona: Portal. HOST: no data.
- \* Ulkeus n.sp. 2. USA. Alabama: Jasper. HOST: no data.
- \* Ulkeus n.sp. 3. USA. Arizona: Portal. HOST: no data.
- \* Ulkeus n.sp. 4. MEXICO. Baja California: San Bartolo. HOST: no data.

- \* Ulkeus n.sp. 5. USA. Arizona: Tucson. HOST: no data.
- \* Ulkeus n.sp. 6. USA. Tennessee: Burrville. HOST: no data.



127



128



129



130

Figs. 127-130. *Ulkeus intricatus* Horn.

Genus Hetaeriomorphus Schmidt

Figs. 131-134

Hetaeriomorphus Schmidt 1893: 186.

TYPE-SPECIES: Hetaeriomorphus perplexus Schmidt (by monotypy). -- Bickhardt 1917: 251 (generic diagnosis).

DIAGNOSIS. Form truncate oval; setose above (Fig. 132). Head as wide as long (Fig. 134); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; frons with inverted V-shaped, median striae. Labrum 3 times as wide as long, apical margin broadly emarginate; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 132) 2 times as wide as long; lateral margins feebly arcuate, moderately convergent forward; front angles narrow, obliquely truncate. Disks convex, finely striate, separated from lateral 0.2 of pronotum by fine, inverted U-shaped stria; lateral areas with broad, longitudinal elevation. Elytron (Fig. 132) nearly flat in front, moderately convex behind; three dorsal striae entire, carinate along both edges; sutural stria entire; internal subhumeral stria long, straight, feebly cariniform; external subhumeral stria cariniform, strongly sinuate in front. Propygidium 1.5 times as wide as long. Pygidium 1.2 times as wide as long. Prosternum (Fig. 133) with keel strongly convex; carinal striae

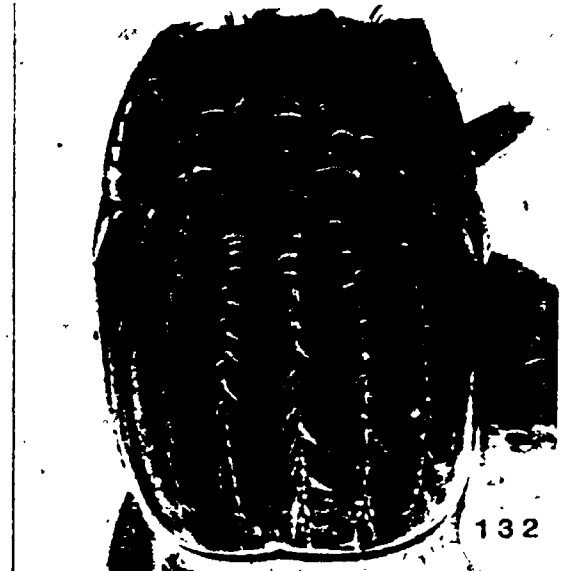
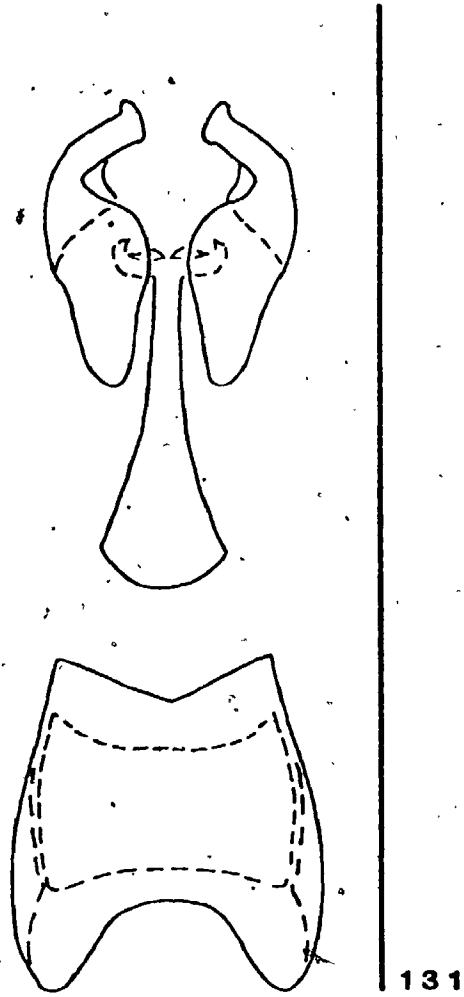
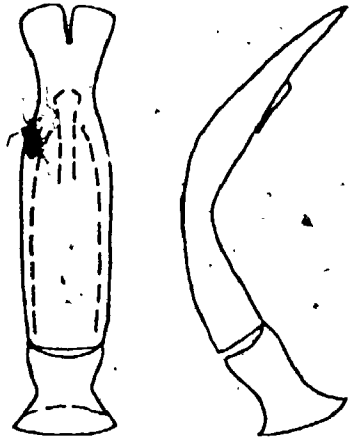
feebly impressed, widely separated behind, strongly convergent forward, joined in rounded arch in front; lateral striae feebly divergent forward; lateral marginal striae lobe separated from rest of prosternum by fine suture, marginal stria present and separating lobe from alae, front margin broadly emarginate; proepisternum without setose patch; proepimeron with setose patch; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria bifid at middle, joined behind to lateral metasternal stria; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria and its recurrent arm present; inner lateral stria absent. First abdominal sternum with one postcoxal stria. Legs long; tibiae expanded with outer edge arcuate. Male genitalia as in Fig. 131; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Hetaeriomorphus may be separated from other genera in this group by the following combination of characters: its elytra have three dorsal and sutural stria present; its prosternal keel is convex,

not knife-like; the lateral area of its pronotum has a broad, longitudinal elevation; and its proepisternum is without a setose fossa.

Species of Hetaeriomorphus

- \* Hetaeriomorphus perplexus Schmidt 1893: 186. MEXICO.  
COSTA RICA. ? : Santa Clara. HOST: Neivamyrmex sp.



Figs. 131-134. Hetaeriomorphus perplexus Schmidt.



Genus Pselaphister Bruch

Figs. 135-137

Pselaphister Bruch 1926: 30.

TYPE-SPECIES: Pselaphister mirandus Bruch (by original designation and monotypy).

DIAGNOSIS. Form elongate, subcylindrical; setose above (Fig. 135). Head 0.8 times as wide as long (Fig. 137); lateral margins carinate from occiput to level with lower edge of antennal sockets, these carinae low, parallel; vertex and frons very narrow, with inverted V-shaped, median striae; clypeus declivous; labrum 4 times as wide as long, apical margin broadly, deeply emarginate, apical surface very broad; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 135) as wide as long, narrowest in hind 0.3; lateral margins inwardly arcuate, divergent in front and behind; front angles broad, obliquely truncate; surface behind with strong, longitudinal elevation at middle that is bordered at sides by deep, short fossae; surface behind with distinct depressions at sides; surface in front feebly convex, middle 0.3 separated from sides by inverted U-shaped stria; hind margin feebly arcuate. Elytron (Fig. 135) wider in front than pronotum is behind, evenly convex; dorsal striae represented by two, fine striae; internal and external subhumeral striae absent; Propygidium 1.5 times as wide as long. Pygidium

as wide as long. Prosternum (Fig. 136) with keel convex; ascending in front of front coxae; carinal striae absent; lateral stripe present between front coxae, divergent in front and behind; lateral marginal striae short, poorly impressed, divergent forward; lobe separated from rest of prosternum by suture, surface concave, marginal stria present; proepisternum without setose patch; proepimeron with small, setose patch; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; very narrow; without marginal stria; without lateral foveae. Metasternum without postcoxal or lateral striae. First abdominal sternum without postcoxal striae. Legs very long; tibiae more or less cylindrical. Male genitalia not available.

Remarks. The genus Pselaphister may be separated from other genera in this group by the following combination of characters: its pronotum has the surface behind distinctly depressed at the sides and with a strong, longitudinal elevation at the middle; its pronotum is narrowest at the middle; its prosternal keel is convex and strongly ascending in front; and its elytra have two, fine dorsal striae.

Species of Pselaphister

- \* Pselaphister mirandus Bruch 1926: 32. ARGENTINA. Chaco: Rio Saenz Pena Est. Experimental. Cordoba: Alta Gracia.

HOST: Neivamyrmex strobeli.

5



Figs. 135-137. Pselaphister mirandus Bruch.

Genus Teratolister Bruch

Figs. 138-140

Teratolister Bruch 1930: 1.

TYPE-SPECIES: Teratolister daguerrei Bruch (by monotypy).

DIAGNOSIS. Form elongate oval; setose above (Fig. 138). Head as wide as long (Fig. 140); lateral margins not carinate; labrum 2.5 times as wide as long, apical margin truncate, apical surface not broadened; antennal club subcylindrical, sclerotized on all surfaces except obliquely truncate tip. Pronotum (Fig. 138) as wide as long; narrowest at middle; lateral margins feebly, inwardly arcuate, divergent behind and in front; front angles obliquely truncate; surface divided into three portions, median portion saddle-shaped, lateral portions strongly inflated, these elevations composed of two, longitudinal, rounded bullae; lateral edge of pronotum not clearly separated from proepisternum; marginal striae absent; hind margin obtusely V-shaped. Elytra (Fig. 138) evenly convex, not continuous in outline with pronotum; dorsal, sutural, internal and external subhumeral striae absent. Propygidium 1.5 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 139) with keel convex; carinal striae approximate, parallel; lateral striae fine, posterior; lateral marginal striae absent; hind margin broadly, roundly

emarginate. proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; surface transversely depressed just behind front margin; marginal stria absent; without lateral foveae. Metasternum without striae. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. hind femora inflated, knob-like at distal end; hind tibiae similarly inflated at proximal end. Male genitalia not available.

Remarks. The genus Teratolister may be separated from other genera in this group by the following combination of characters: its pronotum is narrowest at the middle and is not continuous in outline with its elytra; the lateral areas of its pronotum are strongly inflated, these elevations are composed of two, longitudinal bullae; its elytra are without dorsal, sutural, and internal and external subhumeral striae; its prosternal keel is convex, not knife-like; and the lateral margins of its head are not carinate. I have tentatively place Teratolister in this group. It is possible that it is more closely allied with Terapus, but its final placement must await until I have seen the male genitalia.

Species of Teratolister

- \* Teratolister daquerre Bruch 1930: 4. ARGENTINA. Santa Fe: Las Flores. Buenos Aires; Las Rosas. HOST: Pheidole strobili.



Figs. 138-140. Teratolister daguerrei Bruch.



## GROUP C3

Genus Hetaerius Erichson

Figs. 141-144

Hetaerius Erichson 1834: 156.

TYPE-SPECIES: Hister ferrugineus Olivier (by monotypy). -- Bickhardt 1917: 255 (generic diagnosis). -- Martin 1922 (key to NA species).

DIAGNOSIS. Form oval; setose above (Fig. 142). Head as wide as long (Fig. 144); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; frons without longitudinal sulci; labrum 2 times as wide as long, apical margin arcuate; antennal club cylindrical, strongly sclerotized except at truncate apex. Pronotum (Fig. 142) 1.3 to 2 times as wide as long; lateral margins feebly arcuate to sinuate, convergent forward; front angles rather broadly, obliquely truncate; disk convex, separated from lateral 0.2 by inverted, U-shaped stria which reaches nearly to front margin; lateral areas with or without oval bulla in each hind angle; hind margin obtusely V-shaped. Elytron (Fig. 142) nearly flat in front, convex behind; dorsal striae 1-3 present, cariniform; striae 4-5 and sutural stria sometimes indicated by row of setae; internal subhumeral stria long, cariniform; external subhumeral stria sinuate, sometimes joined to internal subhumeral

stria at middle. Propygidium 2 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 143) with keel either convex or strongly cylindrical; carinal striae present, joined or not joined in front; lateral striae absent to evanescent; lateral marginal striae cariniform, subparallel to divergent forward; lobe separated from rest of prosternum by feebly impressed suture, divided into three portions by marginal stria, median portion inflated forming extension of keel and depressed at apex; proepisternum without setose patch; proepimeron with or without small, setose patch; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; with deep, lateral foveae. Metasternum with postcoxal stria present; outer lateral stria and its recurrent arm present; inner lateral stria reaching to near hind coxa. First abdominal sternum with two postcoxal striae. Male genitalia as in Fig. 141; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate to fused, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced forward to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Hetaerius may be separated from

other genera by the combination of lateral foveae on its mesosternum and the three, cariniform dorsal striae on its elytra. The genus Hetaerius is a large and rather variable genus. Its species form three distinct groups: the first group is distinguished by the lack of bullae in the hind angles of the pronotum and contains only Hetaerius ferrugineus Olivier; the second is distinguished by the convex prosternal keel; and the third is distinguished by the cylindrical prosternal keel. I conservatively consider these groups to be congeneric.

#### Species of Hetaerius

\* Hetaerius blanchardi LeConte 1878:609. -- carinistriatus Lewis 1913: 85. -- orbiculatus Casey 1924: 199. USA. Connecticut: Cornwall. Massachusetts: Arlington; Bedford; Berkeley; Berlin; Billerica; Brookline; Dover; Dracut; Forest Hills; Framingham; Melrose; Natick; Newton; Sherborn; Tyngsboro. New Jersey: Montclair. Virginia: Fredericksburg; Skyland. HOST: Formica pallidefulva, Aphaenogaster fulva.

\* Hetaerius brunneipennis Randall 1839: 40. USA. Connecticut: Cornwall; Hartford. Illinois: Iowa: Iowa City. Massachusetts: Billerica; Blue Hills; Boston Stony Brook Resr.; Brookline; Cambridge; Dorchester; Dover; Fall River; Forest Hills; Framingham; Hopkinton;

Lexington; Lincoln; Low; Natick; Newton; Sherborn; Springfield; South Sudbury; Sunderland; Tyngsboro; West Roxbury. New Hampshire: Rumney. New Jersey: Alpine; Fort Lee; Hewitt; Hopatcong; Montclair; Newark; Newfoundland; Palisades; Rutherford. New York: Bear Mt.; Bronxville; Catskill; Ft. Montgomery; Ithaca; New York; Ronkonkoma; Southfield; Staten Island. Ohio: Cincinnati; Clermont. Pennsylvania: Frankford; Lehigh Gap; Mt. Airy; Philadelphia; St. Vincent. Virginia: Falls Church; Skyland. Texas: HOST: Formica exsectoides, Formica fusca.

- \* Hetaerius californicus Horn 1870: 137. USA. California: Alamo; Corte Madera Cr.; Danville; Napo Co.; Oakland; Pasadena; Santa Cruz Co.; Sobre Vista; Sonoma Co.; Stanford. HOST: Formica rufibarbis.
- \* Hetaerius carri Hatch 1926: 276. USA. Colorado: Trujillo. CANADA. Alberta: Medicine Hat. British Columbia: Cawston. Manitoba: Aweme. HOST: Formica sp.
- \* Hetaerius dietrichi Martin 1922: 291. USA. California: Dalton Creek; Nevada Co.; Tuolumne Co. HOST: Formica subterranea occidentalis, Formica fusca.
- \* Hetaerius exiguus Manh 1911: 108. USA. Arizona: Williams. California: Alameda Co.; Contra Costa Co.; San Francisco. Colorado: Glenwood. Idaho: Kendrick. New

Mexico: Provenir. South Dakota: Custer Hill City.  
Washington: CANADA. British Columbia: Salmon Arm.  
Manitoba: Assiniboine. HOST: Formica fusca.

\* Hetaerius helenae Mann 1914: 178. MEXICO. Hidalgo:  
Guerrereo Mill. HOST: Formica sp.

\* Hetaerius hirsutus Martin 1920: 246. USA. California:  
Cypress Ridge; Fort Baker; Oakland, HOST: Aphaenogaster  
subterranea occidentalis, Formica subpolita.

\* Hetaerius horni Wickham 1892: 322. CANADA. Manitoba:  
Aweme. HOST: Formica sp.

Hetaerius hubbardi Mann 1924: 93. USA. Arizona: Oracle.  
HOST: Formica sp.

\* Hetaerius loripes Casey 1916: 236. USA. California:  
Dalton Creek; Tulare Co.; Yosemite Valley. HOST: Formica  
fusca, Formica sibylla.

\* Hetaerius minimus Fall 1907: 68. USA. Colorado: Boulder.  
HOST: no data.

\* Hetaerius morsus LeConte 1859: 70. USA. California:  
Alameda Co.; Coalinga; Santa Clara Co.; Sequoia Nat.  
Park. HOST: Formica pilicornis.

\* Hetaerius nudus Martin 1922: 290. USA. California:  
Northfork. HOST: no data.

Hetaerius pilosus Martin 1922: 276. USA. California:

HOST:

Hetaerius schwarzi Mann 1924: 94. USA. Arizona: Oracle.

HOST: Formica rufibarbis gnava.

\* Hetaerius setosus Martin 1922: 289. USA. California: Northfork; Sequoia Nat. Park. HOST: Formica fusca.

\* Hetaerius sternuus Fall 1917: 167. -- nitidus Martin 1920: 224. USA. California: Pasadena; Santa Cruz Mts. HOST: Formica rufibarbis.

\* Hetaerius tristriatus Hörn 1874: 21. USA. Colorado: Boulder; Denver. California: Big Pine; Brockway; Dalton Creek; Facht; Marin Co.; Olancha; Summerdale; Tahoe City; Ventura Co.; Yosemite Valley. Utah: Pintura Canyon; Provo. Washington: Pullman; Wawawai. Wyoming: Jennie's Lake. CANADA. Alberta: Medicine Hat. British Columbia: Nicola; Salmon Arm; Vernon. Manitoba: Aweme. HOST: Formica fusca, Formica pilicornis, Formica sanguinea, Formica dakotensis?, Formica sibulla, Lasius subumratus.

Hetaerius vandykei Martin 1922: 275. USA. California:

HOST:

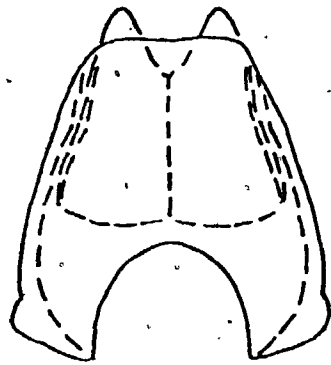
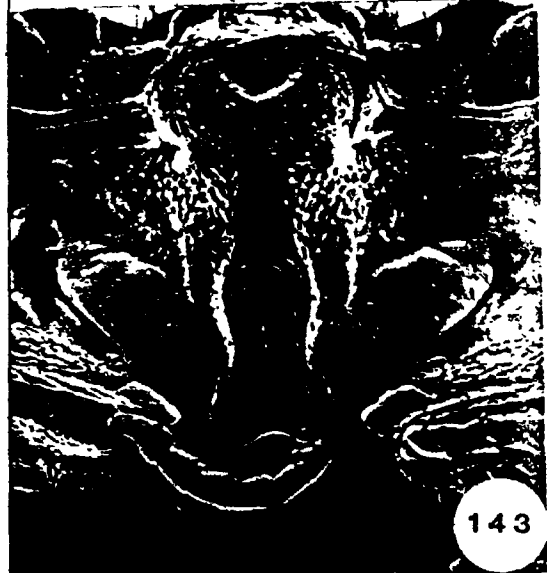
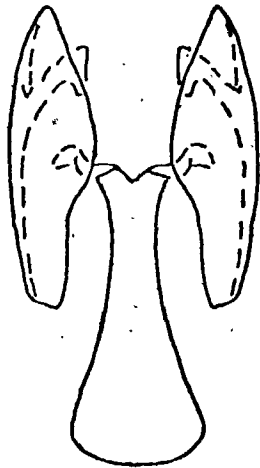
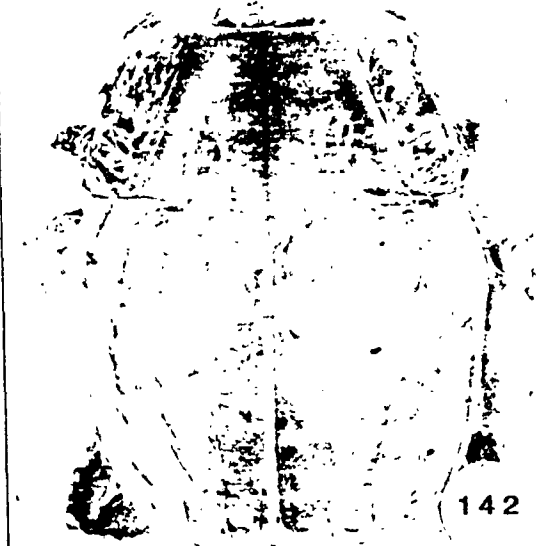
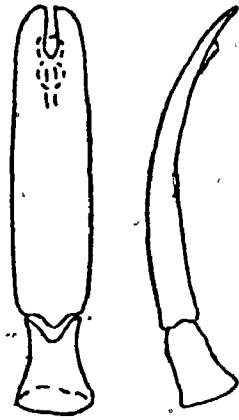
\* Hetaerius wagneri Ross 1938: 49. USA. California: Bass Lake; Los Angeles. HOST: no data.

\* Hetaerius wheeleri Mann 1911: 301. USA. California:

Berkeley; Brentwood; Mt. Diablo; Oakland; Sequoia Nat. Park. HOST: Formica rufibarbis, Lasius niger.

\* Hetaerius williamsi Martin 1920: 246. USA: California: San Francisco. HOST: Formica rufibarbis.

\* Hetaerius zelus Fall 1917: 165. USA: California: La Canada; Los Angeles; Pasadena; Tujunga. HOST: Formica pilicornis, Pogonomyrmex sp.?



141

Figs. 141-144. Hetaerius brunneipennis Randall.



Genus Echinodes Zimmermann

Figs. 145-148

Echinodes Zimmermann 1869: 253.TYPE-SPECIES: Hister setiger LeConte (by monotypy).

-- Bickhardt 1917: 254 (generic diagnosis).

Pinaxister Reichensperger 1939: 129.TYPE-SPECIES: Pinaxister henricischmidti  
Reichensperger (by original designation and  
monotypy). NEW SYNONYMY.

DIAGNOSIS. Form oval; setose above (Fig. 146). Head as wide as long (Fig. 148); lateral margins carinulate from occiput to front margin of clypeus, these carinae widely separated in front; frons with two, longitudinal, lateral sulci, with surface between sulci broadly convex; labrum as wide as long, sides strongly arcuate, surface depressed; antennal club cylindrical, sclerotized everywhere except truncate apex. Pronotum (Fig. 146) 2.1 times as wide as long; lateral margins feebly arcuate, strongly convergent forward; front angles narrowly, very obliquely truncate; with surface strongly convex on disk, reflexed along sides. Elytron (Fig. 146) with surface strongly convex; dorsal striae feebly carinate; internal subhumeral stria long, cariniform; external subhumeral striae cariniform in front, sinuate. Propygidium 2 times as wide as long. Pygidium as wide as

long. Prosternum (Fig. 147) with keel flat, broad; carinal striae carinulate, widely separated, contiguous to front coxae behind, strongly convergent to front margin of keel, not joined; lateral striae absent; lateral marginal striae widely separated, strongly divergent forward; lobe separated from rest of prosternum by suture, strongly deflexed, apex densely setose, with lower surface markedly concave; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; without marginal stria; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria with recurrent arm feebly indicated, otherwise absent; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs short; femora broadly expanded, edges arcuate; tibiae expanded; front tibia with outer edge arcuate; middle and hind tibiae with outer edge obtusely, somewhat roundly, angulate at middle. Male genitalia as in Fig. 145; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Echinodes may be separated from all other genera by the two, longitudinal, lateral sulci on its frons; by its flat, broad prosternal keel; and by its strongly deflexed prosternal lobe the lower surface of which is depressed. I have included Echinodes in a group with Hetaerius in spite of the absence of foveae on its mesosternum because Echinodes shares a number of characters, such as the form of its prosternal keel, with the European genus Satrapes which appears to be an intermediate form between Echinodes and Hetaerius.

Species of Echinodes

- \* Echinodes decipiens Horn 1883: 286. USA. Arizona. Texas: Austin. HOST: Pheidole instabilis.
- \* Echinodes henrici-schmidti Reichensperger 1939: 130. NEW COMBINATION. COSTA RICA. Heredia: Vara Blanca. Puntarenas: Guacimal. HOST: Pheidole sp.
- \* Echinodes peninsularis Mann 1924: 92. MEXICO. Baja California: Las Palmas. USA. California: Sta. Catalina Mts. HOST: Pheidole hyatti.
- \* Echinodes setiger LeConte 1859: 316. USA. Georgia. South Carolina. Texas: Sarita. HOST: Pheidole sp., Dorymyrmex pyramicus.

Remarks. Reichensperger (1935) in describing the genus Pinaxister considered the possibility that it might be a synonym of Echinodes. The genus Pinaxister is very similar to Echinodes and shares with it those characters on the head and prosternum that separate the latter from all other genera. For this reason I consider Pinaxister to be a synonym of Echinodes.

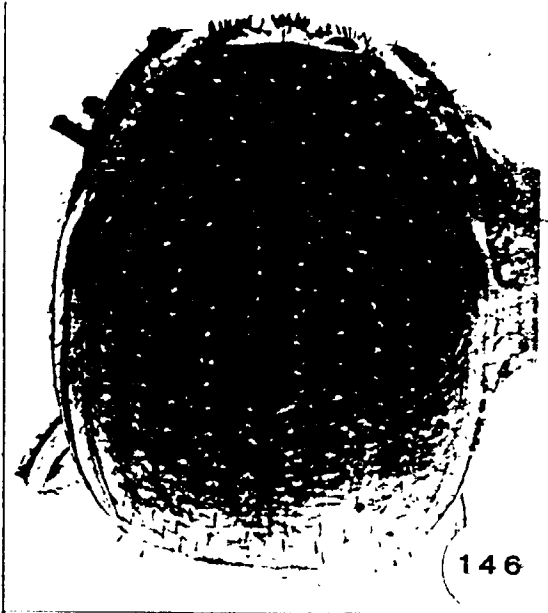
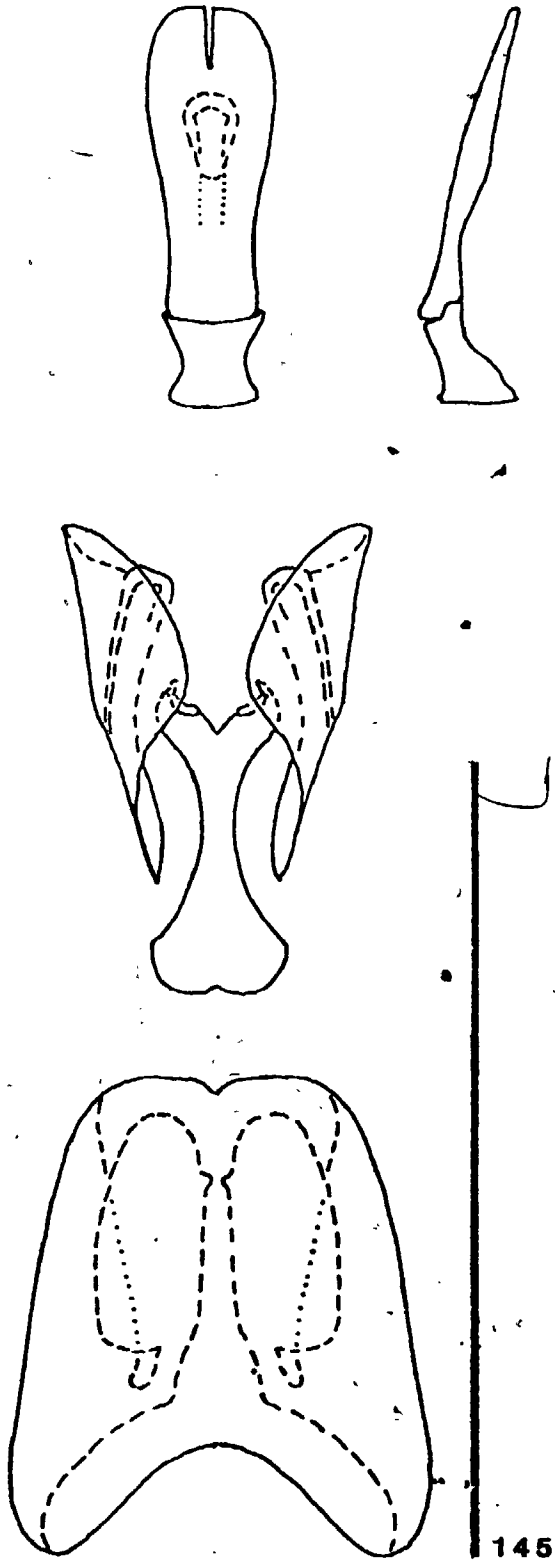


Fig. 145. *Echinodes setiger* LeConte. Figs. 146-148. *Echinodes peninsularis* Mann.

## SUBGROUP C4

Genus Iugulister Reichensperger

Figs. 149-152

Iugulister Reichensperger 1958: 282.TYPE-SPECIES: Iugulister clarissae Reichensperger  
(by monotypy).

DIAGNOSIS. Form oval; setose above (Fig. 150). Head as wide as long (Fig. 152); lateral margins carinate from occiput to level with antennal sockets; frons and clypeus with two parallel carinae that reach from front margin of clypeus nearly to vertex; labrum 1.7 times as wide as long, surface strongly inflated, apical margin arcuate, apical surface broad; antennal club oval, sclerotized on ventral surface only. Pronotum (Fig. 150) 2 times as wide as long; lateral margins divergent behind, divergent in front; front angles obliquely truncate; surface convex at middle, reflexed at sides; hind angles acute; hind margin obtusely V-shaped. Elytron (Fig. 150) convex; much wider in front than pronotum is behind; humerus prominent; dorsal striae represented by broad rows of punctures; internal subhumeral stria short, anterior; external subhumeral stria cariniform, sinuate. Propygidium 1.6 times as wide as long; surface inflated behind. Pygidium 1.3 times as wide as long. Prosternum (Fig. 151) with keel strongly

ascending in front; carinal striae absent; lateral striae widely separated, parallel, long; surface between lateral striae strongly depressed; lateral marginal striae poorly impressed, widely divergent in front; lobe separated from rest of prosternum by suture, very long, declivous, greatly thickened at middle, apex with flat bilobed bulla, marginal stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, shallowly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with only outer lateral stria, this not reaching hind coxa, recurved forward. First abdominal sternum with one postcoxal stria. Legs very long; tibiae not expanded; front tibia with outer edge denticulate. Male genitalia as in Fig. 149; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

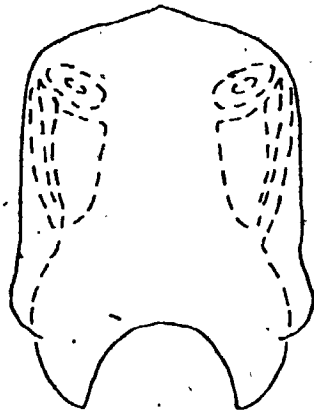
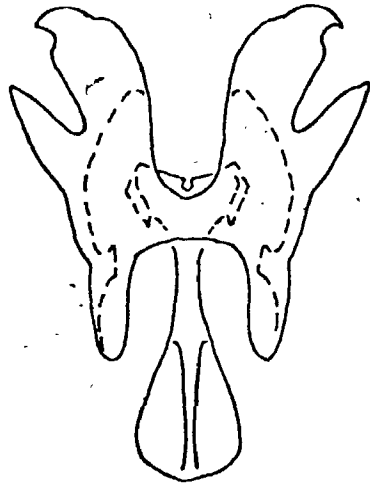
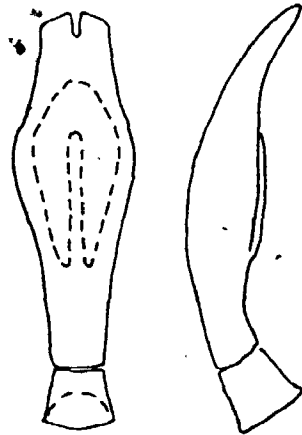
Remarks. The genus Iugulister may be separated from Plaumannister by the two parallel carinae on its frons and clypeus; by its strongly inflated labrum; and by the flat, bilobed bulla on the apex of its prosternal lobe.

These two genera together form a very distinctive subgroup. It is possible that they are in fact congeneric, but in the absence of intervening material, I have decided to retain their separate generic status. The fact that Plaumannister has been collected in forest litter, is probably indicative that this group is associated with one of the subterranean genera of ants.

Species of Iugulister

- \* Iugulister clarissae Reichensperger 1958: 282. BRAZIL.  
Santa Catharina: Nova Teutonia. HOST: Neivamyrmex sp.





148



150



151



152

Figs. 148-152. Iugulister clarissae Reichensperger.

Genus Plaumannister Reichensperger

Figs. 153-156

Plaumannister Reichensperger 1958: 279.

TYPE-SPECIES: Plaumannister volitans Reichensperger  
(by monotypy).

DIAGNOSIS. Form oval; setose above (Fig. 154). Head as wide as long (Fig. 156); lateral margins carinate from eyes to antennal sockets; frons and clypeus with large Y-shaped carina; clypeus triangular in cross-section, abruptly declivous along sides and front margin; labrum 4 times as wide as long, triangular in cross-section, apical margin arcuate, apical surface broad; antennal club oval, sclerotized on ventral surface only. Pronotum (Fig. 154) 2 times as wide as long; lateral margins divergent behind, parallel in front; front angles obliquely truncate; surface convex at middle, reflexed along sides; hind angles acute; hind margin obtusely V-shaped. Elytron (Fig. 154) convex; much wider in front than pronotum is behind; humerus prominent; dorsal striae represented by broad rows of punctures; internal subhumeral stria short, anterior; external subhumeral stria cariniform, sinuate. Propygidium 1.6 times as wide as long; surface inflated behind. Pygidium 1.3 times as wide as long. Prosternum (Fig. 155) with keel strongly ascending in front; carinal striae absent; lateral striae widely separated, parallel,

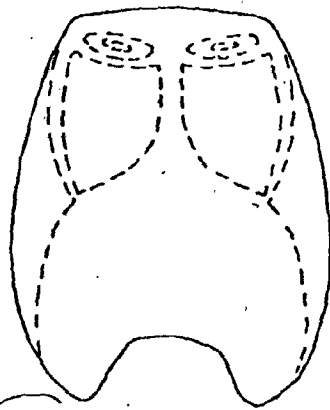
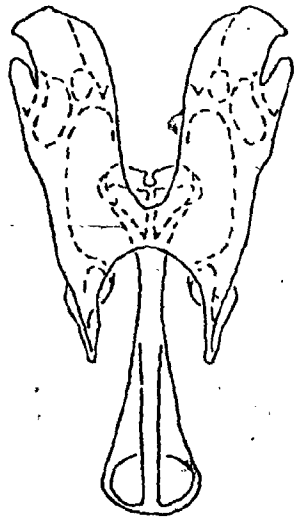
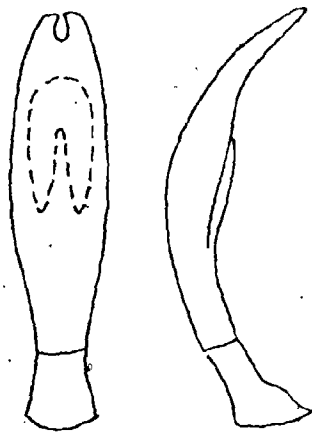
long; surface between lateral striae strongly depressed; lateral marginal striae poorly impressed, widely divergent in front; lobe very long, declivous, separated from rest of prosternum by suture, with apical margin feebly reflexed, with marginal and preapical striae absent; proepisternum and proepimeron without setose patches; hind margin broadly, shallowly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria confused by punctures; without lateral foveae. Metasternum with only outer lateral stria, this not reaching to hind coxa, recurved forward. First abdominal sternum with one postcoxal stria. Legs very long; tibiae feebly expanded, with outer edge angulate at middle; front tibia with outer edge denticulate. Male genitalia, as in Fig. 153; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece short, parameres long.

Remarks. The genus Plaumannister may be separated from Iugulister by the Y-shaped carina on its frons and clypeus; by its labrum which is triangular in cross-section; and by the feebly reflexed apical margin

of its prosternal lobe. For further comments, refer to the "Remarks" sections of Iugulister

Species of Plaumannister

- \* Plaumannister volitans Reichensperger 1958: 279. BRAZIL.  
Parana: Bocaiuva. Santa Catharina: Nova Teutonia. Rio Grande do Sul: Barros-Cassal. HOST: Neivamyrmex sp.



153



154



155



156

Figs. 153-156. Plaumannister volitans Reichensperger.

## GROUP D

Genus Parodites Reichensperger

Figs. 157-160

Parodites Reichensperger 1923: 246.

TYPE-SPECIES: Parodites wasmanni Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form oval; minutely setose above (Fig. 158). Head as wide as long (Fig. 160); lateral margins carinulate from eyes to level with lower edge of antennal sockets; clypeus bulbous, separated laterally from each gena by fossa, these fossae continuous to frons; mandibles unmodified near base; labrum 4 times as wide as long, apical margin truncate; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 158) 2 times as wide as long; lateral margins arcuate, strongly convergent forward; front angles not expanded; surface strongly, evenly convex; hind margin arcuate. Elytron (Fig. 158) strongly, evenly convex; dorsal striae present, strongly arcuate, confined to outer half of elytron; internal and external subhumeral striae subparallel, cariniform. Propygidium 1.5 times as wide as long; surface declivous along hind margin. Pygidium as wide as long. Prosternum (Fig. 159) with keel narrowly convex; carinal striae divergent behind front coxae, narrowly separated, parallel before

front coxae, joined in narrow arch in front; lateral striae long, parallel to carinal striae; lateral marginal striae cariniform, divergent in front; lobe separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with two postcoxal striae; outer lateral stria not reaching hind coxa, its recurrent arm present; inner lateral stria reaching hind. First abdominal sternum with two postcoxal striae. Legs short; femora stout; tibiae strongly expanded, with inner and outer edges arcuate. Male genitalia as in Fig. 157; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternite separate, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus produced forward, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres long.

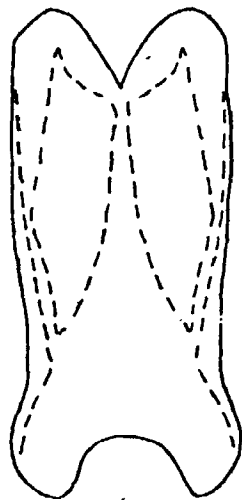
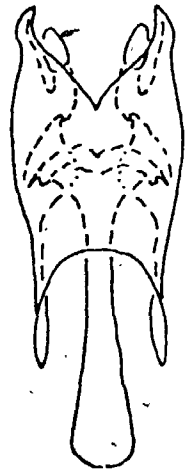
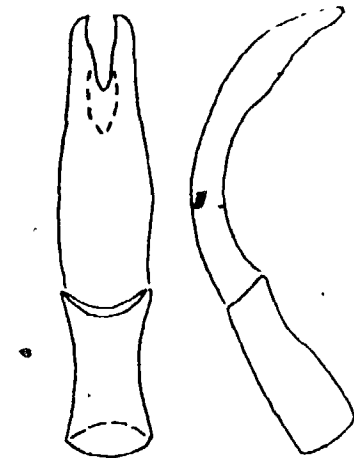
Remarks. The genus Parodites may be separated from other genera in this group by its bulbous clypeus that is separated laterally from each gena by a fossa; by the front angles of its pronotum being not expanded; and by its very narrowly separated prosternal carinal striae

that are parallel before the front coxae and joined in a narrow arch in front.

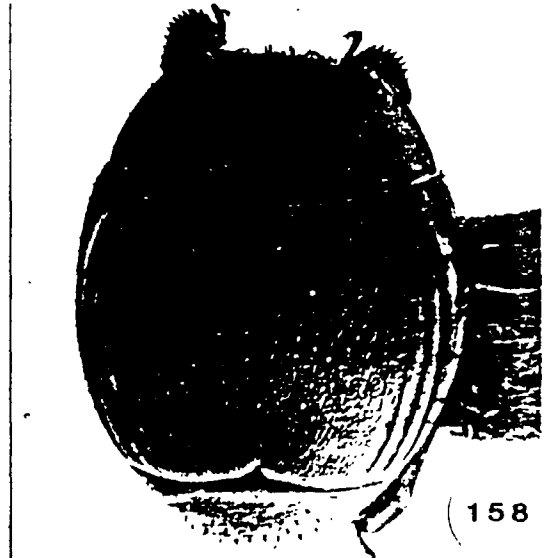
Species of Parodites

- \* Parodites wasmanni Reichensperger 1924: 247. BRAZIL.  
Santa Catarina: Nova Teutonia. HOST:

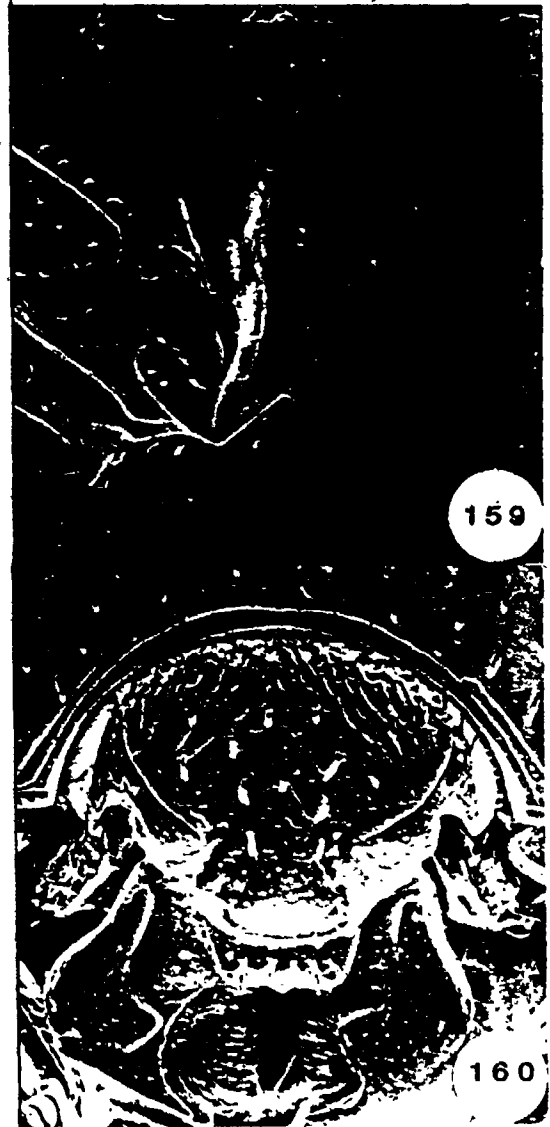




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159

160

Figs. 157-160. Parodites wasmanni Reichensperger.

## Genus Reninoides new genus

Figs. 161-163

Reninoides new genus.TYPE-SPECIES: Reninoides declinatus new species.

DIAGNOSIS: Form truncate oval; setose above (Fig. 161). Head as wide as long (Fig. 163); lateral margins carinate from occiput to level with lower edge of antennal sockets, these carinae low; epistoma strongly declivous; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin feebly emarginate; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 161) 2 times as wide as long; lateral margins nearly straight, feebly convergent forward to broadly rounded front angles; surface convex, slightly reflexed behind front angles; hind margin arcuate. Elytron (Fig. 161) strongly convex; humerus prominent; dorsal striae absent but with rows of setiferous punctures; internal subhumeral stria long, cariniform; external subhumeral stria cariniform, sinuate. Propygidium 1.6 times as wide as long; without tubercles. Pygidium as wide as long. Prosternum (Fig. 162) with keel feebly convex, nearly flat behind; carinal striae evanescent; lateral striae feebly impressed, posterior, divergent before and behind front coxae; without row of setae between carinal and lateral striae; lateral marginal striae cariniform, feebly divergent in

front; lobe short, separated from rest of prosternum by indistinct suture, marginal stria present, preapical stria present; proepisternum and proepimeron without setose patches; hind margin shallowly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria close and parallel to postcoxal stria; inner lateral stria with its front end close to midline, First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia quadrate; middle and hind tibiae with outer edge arcuate. Male genitalia not available.

Etiymology. This name is a combination of "Reninus" and the suffix "-oides" meaning "likeness" to indicate the similarity of this new genus to the genus Reninus Lewis.

Remarks. The genus Reninoides may be separated from other genera in this group by the following combination of characters: its epistoma is strongly declivous; its pronotum is evenly convex and without large punctures; its elytra have rows of setiferous punctures; its meso-metasterna are not depressed; its prosternal carinal striae are evanescent; and its inner lateral metasternal striae have their front ends close to the midline. The

genus Reninoides is tentatively placed in this group because of the similarities it shares with the genus Reninopsis but its final placement must await an examination of its male genitalia.

Reninoides declinatus new species

Figs. 161-163

Reninoides declinatus new species.

TYPE: Holotype, female, Brazil, Santa Catarina, Nova Teutonia, iii.1975, F. Plaumann (FMNH).

Description. Length: 2.3 mm; width: 1.6 mm. Head (Fig. 163) with small, sparse punctures on frons and vertex; with carina along lateral margins angulate at level of antennal sockets; epistoma strongly declivous; labrum without setiferous punctures. Pronotum (Fig. 161) with marginal stria well-impressed along sides, less strongly along front margin; surface with minute punctures. Elytron (Fig. 161) with dorsal stria one feebly impressed behind; internal and external subhumeral striae with row of setiferous punctures between them; marginal elytral stria present at middle; marginal epipleural stria short, anterior. Propygidium and pygidium feebly inflated; with small, irregularly placed, shallow punctures over most of surface. Prosternum (Fig. 162) with lateral striae present in hind 0.5; lobe with marginal stria and preapical stria very well-impressed, not separated from alae. Mesosternum with marginal stria entire, not joined to lateral metasternal striae; surface with scattered, rather long setae. Metasternum with scattered setae; with postcoxal stria reaching metasternal-metepisternal suture near middle; outer

lateral stria close and parallel to postcoxal stria, its front end inwardly hooked; inner lateral stria with its front end inwardly hooked, reaching near hind coxa. First abdominal sternum with outer postcoxal stria short, extending short distance along hind margin. Legs as in generic diagnosis. Male genitalia not available.

Etymology. This species is named "declinatus" after its notably declivous epistoma.



Figs. 161-163. Reninoides declinatus (new genus, new species).

Genus Reninopsis new genus

Figs. 164-167

Reninopsis new genus.TYPE-SPECIES: Reninopsis reichenspergeri new species.

DIAGNOSIS. Form oval; setose above (Fig. 165). Head 1.2 times as wide as long (Fig. 167); lateral margins carinate from occiput to front margin of clypeus; vertex and frons somewhat broad; mandibles with outer surface unmodified near base; labrum 4.5 times as wide as long, apical margin with narrow ridge, apical surface not broadened; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 165) 2 times as wide as long; lateral margins arcuate, convergent forwards; front angles rounded; surface convex, somewhat depressed inside hind angles; with one lateral stria approximate to marginal stria; hind margin feebly V-shaped. Elytron (Fig. 165) strongly convex; dorsal striae when present feebly cariniform, sometimes only indicated by row of punctures; internal subhumeral stria cariniform, straight; external subhumeral stria cariniform, arcuate behind middle. Propygidium 1.7 times as wide as long; without tubercles. Pygidium as wide as long. Prosternum (Fig. 166) with keel broadly convex; carinal striae widely divergent behind front coxae, parallel in front, reaching from hind to front margin;



lateral striae absent; lateral marginal striae cariniform, divergent in front; lobe separated from rest of prosternum by suture, marginal stria entire and widely separated from sides, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, shallowly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria present; surface strongly depressed at middle, depression extending onto metasternum; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria and its recurrent arm present; inner lateral stria beginning at median depression, rather widely separated from outer lateral stria in front. First abdominal sternum with two postcoxal striae. Legs rather stout; tibiae expanded; front tibia evenly arcuate; middle and hind tibiae with outer edge roundly angulate at middle. Male genitalia as in Fig. 164; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused separate, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus produced forward, apical margin not produced forward to form "hooked" structures; 10th tergite present absent; basal piece long short, parameres long very short.

**Etymology.** This name is a combination of "Reninus"

and the suffix "-opsis" meaning "likeness" to indicate the similarity of this new genus to the genus Reninus Lewis.

Remarks. The genus Reninopsis may be separated from other genera in this group by the following combination of characters: its pronotum is convex, somewhat depressed inside the hind angles and without large punctures; its mesosternum and anterior metasternum are strongly depressed; its prosternal carinal striae are widely divergent behind the front coxae (and parallel in front; and its epistoma is not strongly declivous.

Reninopsis reichenspergeri new species

Figs. 164-167

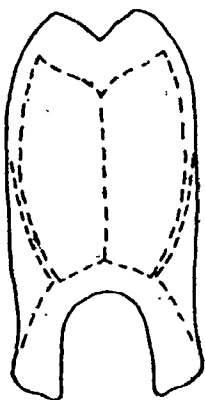
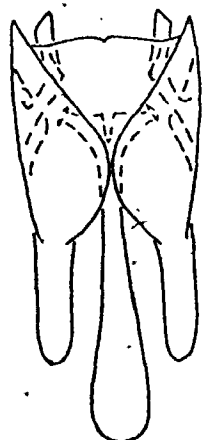
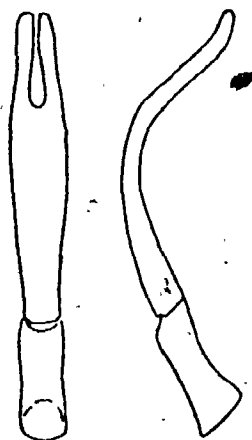
Reninopsis reichenspergeri new species.

TYPE. Holotype, male, Brazil, Santa Catarina, Nova Teutonia, 27.viii.1952, F. Plaumann (FMNH).

Description. Length: 1.5 mm; width: 1.3 mm. Head (Fig. 167) with frons and vertex somewhat broad and sparse setae; labrum with six setiferous punctures near apical margin; mandibles evanescently rugulose near base. Pronotum (Fig. 165) with marginal stria entire along sides and across front, except briefly interrupted along front margin just mesad of front angles; lateral striae entire along sides, continued around front angles where they are sinuous and more widely separated from margin; surface with sparse setae. Elytron (Fig. 165) with dorsal striae 1-3 entire, inwardly, transversely hooked behind; striae 4-5 and sutural indicated by rows of punctures behind; internal and external subhumeral striae very close together; marginal elytral and marginal epipleural striae absent. Propygidium and pygidium evenly convex; with minute to small, irregularly placed punctures. Prosternum (Fig. 166) with sparse, rather long setae; otherwise as in generic diagnosis. Mesosternum with marginal stria present at middle; front margin with scattered setae. Metasternum with postcoxal stria reaching to metasternal-metepisternal suture near

middle; outer lateral stria with front end inwardly, transversely hooked, its recurrent arm ending near postcoxal stria; inner lateral stria feebly sinuate, reaching to hind coxa near outer lateral stria. First abdominal sternum with outer postcoxal stria strongly arcuate, reaching front angle. Legs as in generic diagnosis. Male genitalia as in Fig. 164.

Etymology. This species is named in honor of Dr. August Reichensperger in recognition of his many contributions to our knowledge of histerids that are associated with ants and termites.



164



165



166



167

Figs. 164-167. Reninopsis reichenspergeri (new genus, new species)

Genus Reninus Lewis

Figs. 168-171

Reninus Lewis 1889: 275.

TYPE-SPECIES: Reninus meticulosus Lewis (by monotypy). -- Bickhardt 1917: 241 (generic diagnosis).

Renia Lewis 1885: 467.Brachylister Bickhardt 1917: 234.

TYPE-SPECIES: Phylloscelis arechavaletae Marseul (by original designation). NEW SYNONYMY.

DIAGNOSIS. Form oval; not setose above (Fig. 169). Head as wide as long (Fig. 171); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; labrum 4 times as wide as long, with prominent ridge along apical margin, this ridge sometimes present along lateral margin; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 169) 2 times as wide as long; lateral margins arcuate, convergent forward; front angles rounded to nearly truncate; surface convex; usually with oblique carina which extends forward from hind margin opposite midpoint of each elytron; hind margin arcuate. Elytron (Fig. 169) convex; dorsal striae strongly, inwardly, transversely hooked in front; internal and external subhumeral striae cariniform.

Propygidium 1.7 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 170) with keel convex; carinal striae divergent behind front coxae, parallel, divergent or joined in rounded arch in front; lateral striae variable, entire from hind to front margin or front 0.2, or interrupted at middle; lateral marginal striae cariniform, widely divergent in front; lobe separated from rest of prosternum by suture, marginal stria entire, sometimes indistinct at sides; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; sometimes with additional, transverse stria just before meso-metasternal suture; without lateral foveae. Metasternum with two postcoxal striae; outer lateral stria variable, forming uninterrupted arc or with recurrent arm; inner lateral stria straight, divergent from outer lateral stria. First abdominal sternum with two to three postcoxal striae. Legs normal length; tibiae moderately to strongly expanded; front tibia evenly arcuate; middle and hind tibia with outer edge angulate at middle, if strongly expanded then angulate on inner edge as well. Male genitalia as in Fig. 168; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical

margin; 9th tergites with or without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece long, parameres long.

Remarks. The genus Reninus may be separated from other genera in this group by its dorsal elytral striae which are strongly, inwardly, transversely hooked in front; and by the usual presence of two, oblique, convergent carinae on its pronotum. I concur with the opinion of Reichensperger (1935) and Wenzel (1940) and consider Brachylister to be a synonym of Reninus.

Species of Reninus

\* Reninus arechavaletae Marseul 1870: 109. NEW COMBINATION. URUGUAY. BRAZIL. Santa Catarina: Nova Teutonia. HOST: Atta sp.

Reninus bryeri Bruch 1940: 315. ARGENTINA. HOST:

Reninus bruchi Reichensperger 1927: 307. BRAZIL. HOST:

Reninus curvatus Lewis 1912: 260. NEW COMBINATION. BRAZIL. Originally in Discoceles.

Reninus distinguendus Desbordes 1923: 369. ARGENTINA. HOST:

\* Reninuseticulosus Lewis 1885: 467. BRAZIL. Rio de



Janeiro: Mendes. HOST: Atta rubrus.

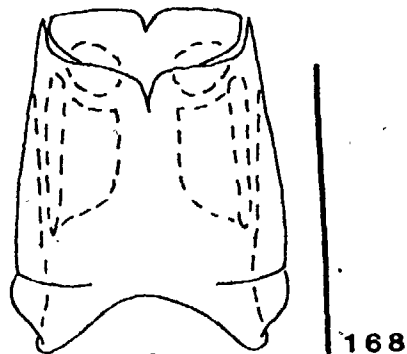
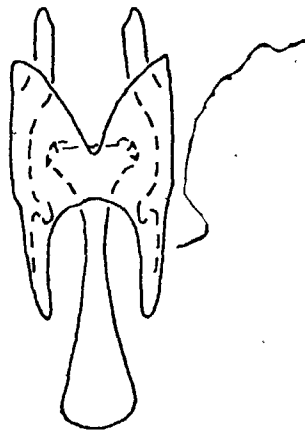
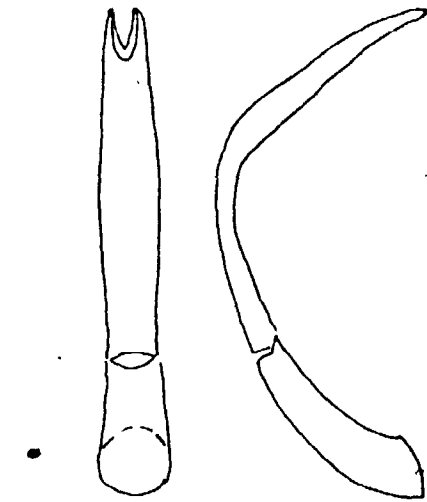
Reninus puncticollis Lewis 1907: 105. GUIANA. HOST:

\* Reninus salvini Lewis 1888: 220. MEXICO. Puebla:  
Atilisco. USA. Texas: San Antonio. HOST: Atta texana.

Reninus seminitens Schmidt 1893: 174. BOLIVIA. HOST:

Reninus turritus Lewis 1902: 271. BRAZIL. HOST:

Reninus wagneri Desbordes 1923: 308. ARGENTINA. HOST:



168



169



170



171

Figs. 168-171. Reninus meticulosus Lewis.

Genus Euclasea Lewis

Figs. 172-174.

Euclasea Lewis 1888: 220.TYPE-SPECIES: Euclasea godmani Lewis (by monotypy).

-- Bickhardt 1917: 239 (generic diagnosis).

DIAGNOSIS. Form oval; not setose above (Fig. 172). Head as wide as long (Fig. 174); lateral margins carinate from occiput to front margin of clypeus; labrum 2.5 times as wide as long, apical margin feebly emarginate, apical surface sometimes very broad; mandibles unmodified near base; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 172) 2 times as wide as long, lateral margins arcuate, convergent forward; front angles rounded; surface convex, slightly reflexed at sides; hind margin obtusely V-shaped. Elytron (Fig. 172) convex; dorsal striae absent or outer dorsal striae feebly cariniform; internal and external subhumeral striae entire, cariniform, subparallel, arcuate behind middle. Propygidium 1.5 times as wide as long. Pygidium as wide as long; females with two median, spiral-shaped erosions on hind 0.5. Prosternum (Fig. 173) with keel convex; carinal striae absent to evanescent; lateral striae feebly impressed, divergent behind front coxae, convergent in front; lateral marginal striae cariniform, divergent in front; lobe separated from rest of prosternum by suture, marginal stria entire,

widely separated from sides; proepisternum and proepimeron without setose patches; hind margin roundly, feebly to strongly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present, sometimes interrupted at middle; without lateral foveae. Metasternum with one to two postcoxal striae; inner lateral stria absent; outer lateral stria represented by its recurrent arm only. First abdominal sternum with one postcoxal stria. Legs normal length; tibiae expanded; front tibia with outer edge evenly arcuate; middle and hind tibiae with outer edge roundly angulate at middle. Male genitalia not available.

Remarks. The genus Euclasea may be separated from other genera in this group by the absence of prosternal carinal striae; and by either the absence of dorsal elytral striae or the presence of cariniform outer dorsal elytral striae that are not strongly, transversely, hooked in front. While I have not seen any of Lewis' species of this genus, I feel that my Euclasea n. spp. 1 and 2 belong in this genus, because Lewis (1888) describes Euclasea as having "... , striis dorsalibus obsoletis" and describes the pygidium of Euclasea godmani as "pygidio apice rugoso bi-impresso". Lewis (1893) describes the locality of two species Euclasea pauperella and Euclasea tuberculata as "Bahia" and states that this genus was "one peculiar to the Central-American fauna".

I think because of this last statement that "Bahia" of Lewis is not as some author have assumed in Brazil, but possibly Islas de la Bahia, in Honduras.

Species of Euclasea

Euclasea godmani Lewis 1888: 221. GUATEMALA. Vera Paz: Chiacam. HOST: no data.

Euclasea obliqua Lewis 1893: 425. MEXICO. HOST: no data.

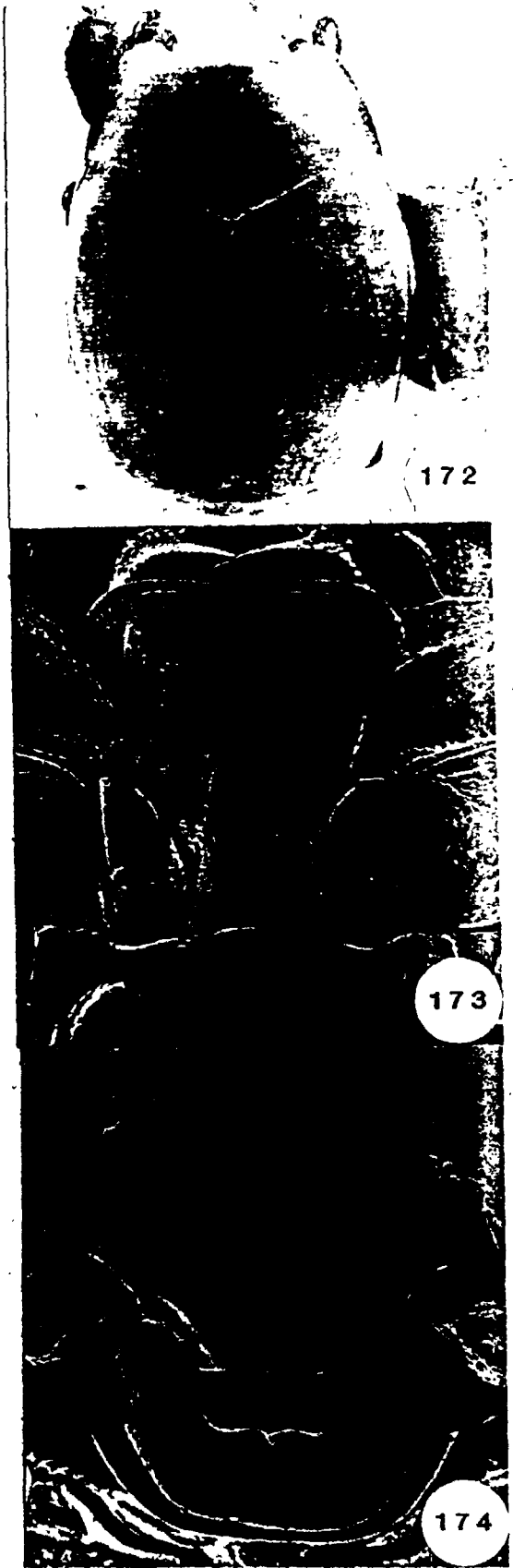
Euclasea pauperella Lewis 1893: 424. HONDURAS?. Islas de la Bahia?. HOST: no data.

Euclasea raptantis Reichensperger 1925: 353. BRAZIL. HOST:

Euclasea tuberculata Lewis 1893: 425. HONDURAS?. Islas de la Bahia?. HOST: no data.

\* Euclasea n. sp. 1. USA. Texas: Fort Davis. HOST: no data, "at light".

\* Euclasea n. sp. 2. USA. Arizona: Tucson. HOST: no data, "at light".



Figs. 172-174. Euclasea n.sp. 1.

Genus Hetaerobus Reichensperger

Figs. 175-178

Hetaerobus Reichensperger 1925: 351.

TYPE-SPECIES: Hetaerobus bucki Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form elongate oval; setose above (Fig. 176). Head as wide as long (Fig. 178); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin broadly emarginate, apical surface declivous and broad; antennal club oval, sclerotized on part of dorsal, ventral, and part of inner surfaces. Pronotum (Fig. 176) 1.5 times as wide as long; lateral margins feebly sinuate, nearly parallel; front angles obliquely truncate; surface either evenly convex with large, elongate, contiguous punctures or evenly convex at middle with large punctures densest along front margin, elevated at sides with these elevations divided into three portions, middle portion forming rounded bulla; with only marginal stria present; hind margin obtusely V-shaped. Elytron (Fig. 176) convex; five dorsal and sutural striae marked by elongate, oval punctures; internal subhumeral stria either short and anterior or long; external subhumeral stria feebly cariniform, sinuate. Propygidium 1.5 times as wide as long.

Pygidium as wide as long. Prosternum (Fig. 177) with keel convex; carinal striae feebly cariniform, parallel, joined in acute to rounded arch in front; surface between carinal striae feebly depressed to flat; lateral striae feebly cariniform, approximate to carinal striae; lateral marginal striae cariniform, sinuate; lobe long, separated from rest of prosternum by suture, with large irregular punctures, marginal stria separated from lateral margins, with surface mesad of marginal stria feebly inflated, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria strongly arcuate; outer lateral stria joined in front to postcoxal stria, reaching to hind coxa, its recurrent arm present; inner lateral stria widely separated from and divergent from outer lateral stria. First abdominal sternum with one to two postcoxal striae. Legs long; tibiae expanded, with outer edges angulate at middle. Male genitalia as in Fig. 175; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with internal "guides" for aedeagus produced forward, with apical margin not

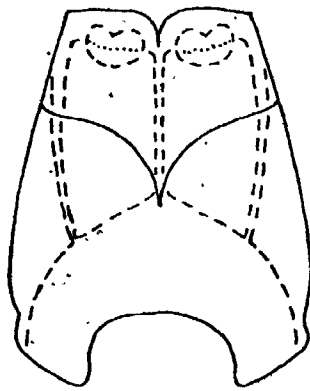
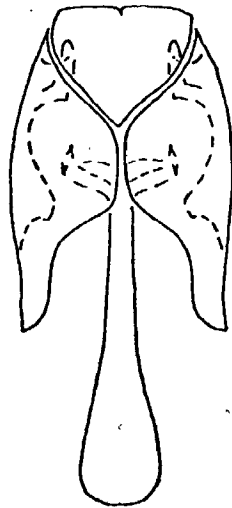
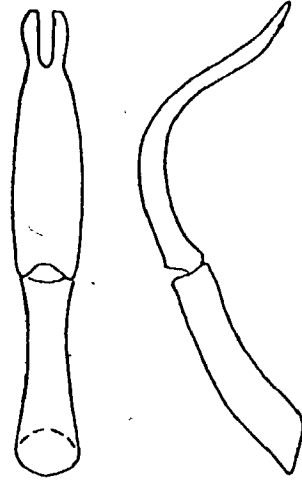


produced to form "hooked" structures; 10th tergite present; basal piece long, parameres long.

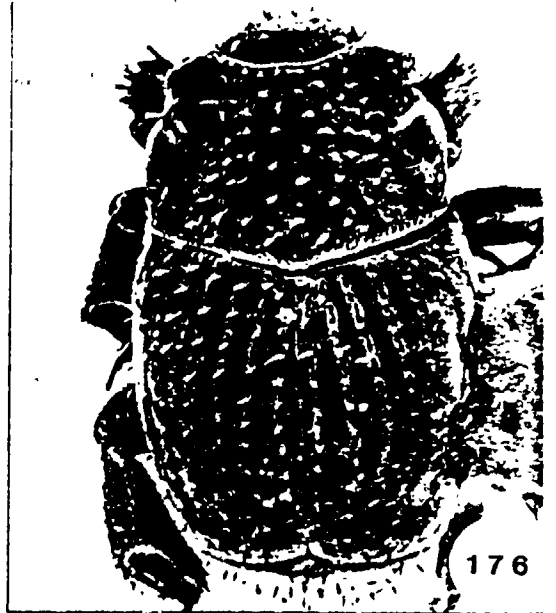
Remarks. The genus Hetaerobus may be separated from other genera in this group by the large, elongate, contiguous punctures on its pronotum; by its dorsal elytral striae which are marked by elongate, oval punctures; and by the large, irregular punctures on its prosternal lobe. I have extended the limits of Hetaerobus to include Chrysetaerius borgmeieri. This species definitely does not belong in Chrysetaerius, and while it is possible that it is not congeneric with Hetaerobus bucki, I feel that they are very closely related and have taken a conservative approach and included them in the same genus.

Species of Hetaerobus

- \* Hetaerobus borgmeieri Reichensperger 1929: 261. NEW COMBINATION. BRAZIL. Parana: Rio Negro. HOST: Neivamyrmex legionis.
- \* Hetaerobus bucki Reichensperger 1925: 352. BRAZIL. Rio Grande do Sul: Porto Alegre. HOST: Neivamyrmex raptans.



175.



Figs. 175-178. Hetaerlobus bucki Reichensperger.

Genus Nevermannister Reichensperger

Figs. 179-182

Nevermannister Reichensperger 1938: 80.

TYPE-SPECIES: Nevermannister anomoiopus  
 Reichensperger (by original designation and  
 monotypy).

DIAGNOSIS. Form truncate oval; not setose above (Fig. 180). Head as wide as long (Fig. 182); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles unmodified near base; labrum 1.5 times as wide as long, apical margin truncate; antennal club oval, sclerotized on part of dorsal, ventral and part of inner surfaces. Pronotum (Fig. 180) 2 times as wide as long; lateral margins with strongly expanded lobe in front 0.3, arcuate and convergent in hind 0.6; front angles truncate; surface broadly depressed at middle; with many parallel, transverse striae; hind margin arcuate. Elytron (Fig. 180) flat in front, feebly convex behind; humeral angle prominent, acute; dorsal striae present; subhumeral striae approximate; internal subhumeral stria short, posterior; external subhumeral stria cariniform, straight, forming distinct margin between disk and epipleuron. Propygidium 1.4 times as wide as long. Pygidium as wide as long; with prominent median keel. Prosternum (Fig. 181) with keel very narrow, prominent;

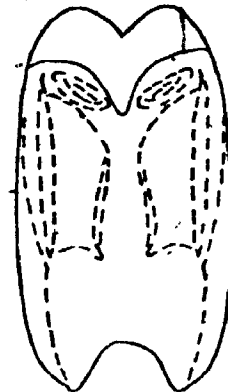
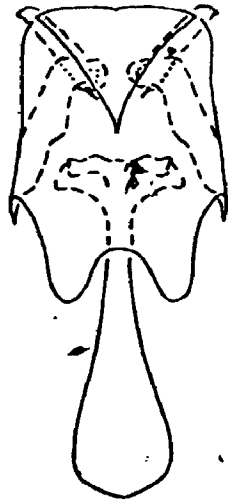
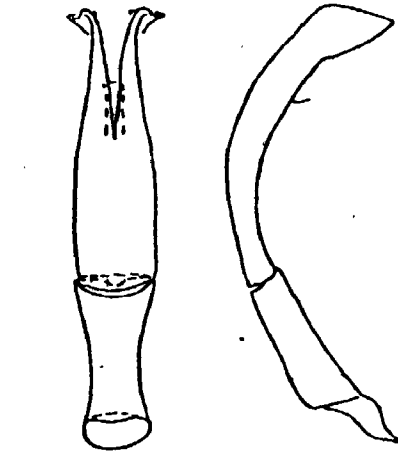
carinal striae narrowly separated, feebly divergent behind, subparallel in front; lateral striae fine, placed above ventral surface of keel, long, joined in front to lateral marginal striae; lateral marginal striae cariniform, feebly divergent forward, arched in front, joined to lateral striae; surface between lateral and lateral marginal striae strongly depressed; lobe trilobed, separated from rest of prosternum by suture and from alae by stria, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, not deeply emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria sinuate in front; lateral striae parallel, widely separated; outer lateral stria reaching to hind coxa, its recurrent arm present; inner lateral stria reaching to hind coxa. First abdominal sternum with two postcoxal striae. Legs long; hind femur robust, with inner surface concave and covering pygidia at rest; tibiae expanded; front tibia quadrate; middle and hind tibiae with outer edge angulate at middle; hind tibia concave on inner surface. Male genitalia as in Fig. 179; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes",

with internal "guides" for aedeagus produced forward, with apical margin not produced to form "hooked" structures; 10th tergite present; basal piece long, parameres long.

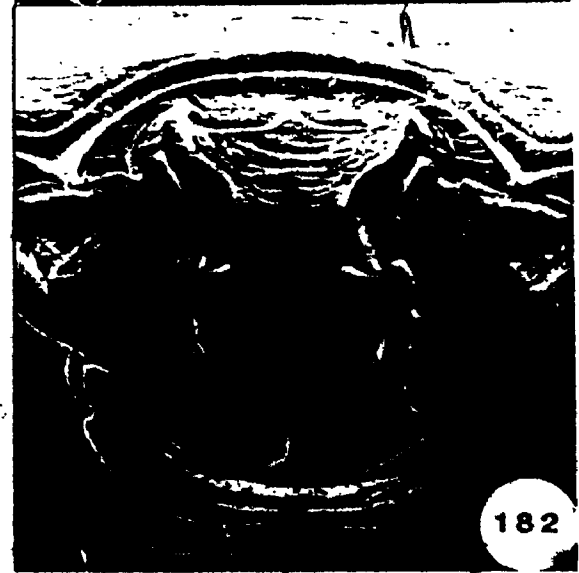
Remarks. The genus Nevermannister may be separated from other genera in this group by the lateral margins of its pronotum which have an expanded lobe in the front 0.3; by its strongly margined elytra; by the median keel on its pygidium; and by its robust hind legs which have the inner surface of the femur and tibia concave. This is a very unusual genus and is difficult to place. I have considered it as part of this group because its genitalia have forward-projecting internal "guides" on the 9th tergites and its basal piece and parameres are long.

Species of Nevermannister

- \* Nevermannister anomoiopus Reichensperger 1938: 82. COSTA RICA. Osa Peninsula: Rincon. HOST: Labidus praedator.



179



Figs. 179-182. Nevermannister anomioopus Reichensperger.

Genus Troglosternus Bickhardt.

Figs. 183-186

Troglosternus Bickhardt 1917: 245.TYPE-SPECIES: Troglosternus dasytus Bickhardt (by original designation and monotypy).

DIAGNOSIS. Form oval; setose above (Fig. 184). Head 0.9 times as wide as long (Fig. 186); lateral margins carinate from occiput to front margin of clypeus, these carinae approximate on fronto-clypeal margin and divergent thence; mandibles unmodified near base; labrum 2 times as wide as long, apical margin truncate, apical surface not broad; antennal club oval, sclerotized on part of dorsal, ventral and part of inner surfaces. Pronotum (Fig. 184) 1.7 times as wide as long; lateral margins arcuate, convergent forward to rounded front angles; with lateral fovea just in front of hind margin, mesad of each hind angle; with two parallel, obtusely V-shaped striae originating at fovea and reaching to front margin; surface convex at middle, somewhat costate between lateral striae; hind margin arcuate. Elytron (Fig. 184) convex; dorsal striae displaced outward, their courses obscured by many subparallel, longitudinal striae; internal subhumeral stria straight, long; external subhumeral stria cariniform, sinuate. Propygidium 1.3 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 185) with keel broad, flat at

middle; carinal striae cariniform, parallel behind, convergent in front, sometimes joined in rounded arch in front; lateral striae approximate to carinal striae, somewhat sinuate at middle, divergent in front and nearly joined to lateral marginal striae; lateral marginal striae cariniform, sinuate, divergent in front; lobe separated from rest of prosternum by suture, marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, obtusely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; with two very large, deep foveae. Metasternum with postcoxal stria present; outer lateral stria reaching to hind coxa, its recurrent arm present; inner lateral stria originating in mesosternal fovea, bifurcate, widely separated from outer lateral stria. First abdominal sternum with at least two postcoxal striae. Legs slightly longer than normal; tibiae expanded and robust; front tibia quadrate; middle and hind tibiae with outer edge angulate at middle; hind tibia concave on inner surface. Male genitalia as in Fig. 183; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with internal "guides" for aedeagus produced forward, with apical margin not

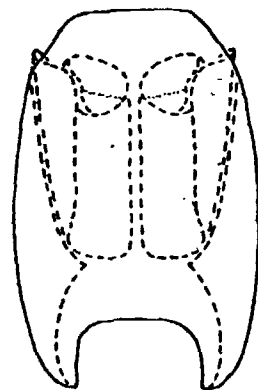
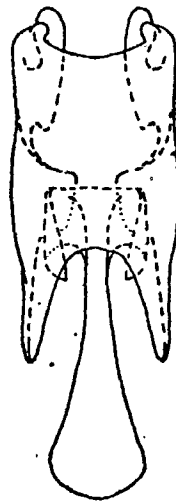
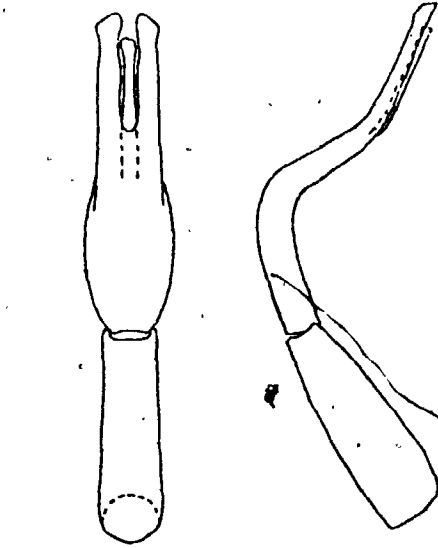


produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres long.

Remarks. The genus Troglosternus may be separated from other genera in this group by the two, large foveae on its mesosternum; the many, subparallel striae on its elytra; and by the lateral foveae just before the hind margin of its pronotum; and by the two, parallel, V-shaped lateral striae on its pronotum.

Species of Troglosternus

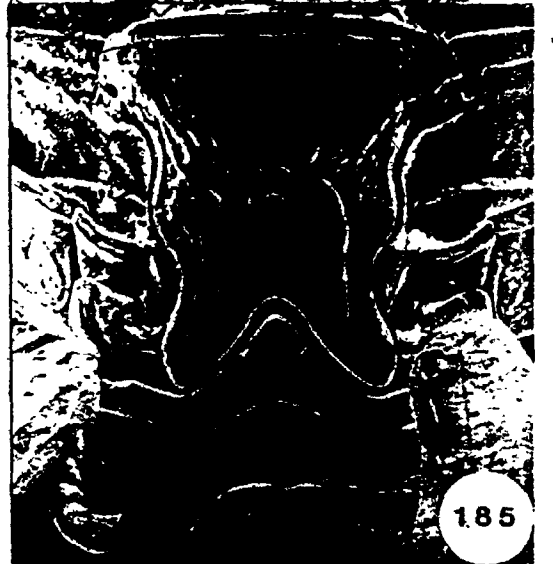
- \* Troglosternus dasypus Bickhardt 1917: 247. BRAZIL. Rio Grande do Sul. Santa Catarina: Nova Teutonia. HOST: Labidus praedator.
- \* Troglosternus ecitonis Mann 1925: 172. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton hamatum.
- \* Troglosternus lisaavedouae Reichensperger 1938: 78. COSTA RICA. San Jose: San Jose. HOST: Labidus coecus.



183



184



185



186

Figs. 183-186. Troglosternus ecitonis Mann.

## GROUP E

## SUBGROUP E1

Genus Oudaimosister new genus

Figs. 187-190

Oudaimosister new genus

TYPE-SPECIES: Mesynodites verruculosus  
Reichensperger.

DIAGNOSIS. Form elongate oval; not setose above; densely, closely punctate above (Fig. 188). Head 1.2 times as wide as long (Fig. 190); lateral margins carinate from occiput to front margin of clypeus, these carinae narrowly separated in front; vertex and frons with two, longitudinal carinae; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin shallowly emarginate, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 188) 2 times as wide as long; lateral margins nearly straight, convergent forward; front angles obliquely truncate; surface strongly convex at middle, distinctly inflated along side; with one lateral stria distant from margin along sides but close to margin around front angles; hind margin arcuate. Elytron (Fig. 188) strongly, evenly convex; dorsal striae strongly impressed, their

interstices costiform; internal subhumeral stria long, straight; external subhumeral stria cariniform, sinuate, rather close to lateral margin. Propygidium 2 times as wide as long; surface transversely inflated along hind margin. Pygidium as wide as long. Prosternum (Fig. 189) with keel convex, rather acute; carinal striae parallel, very close, joined in front; lateral striae absent; lateral marginal striae cariniform, divergent in front; lobe separated from rest of prosternum by suture, marginal stria bifurcate at sides, these branches separating small lateral areas, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, triangularly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria widely separated from front margin; meso-metasternal suture marked by row of deep, round punctures; without lateral foveae. Metasternum with postcoxal stria present and strongly cariniform; outer lateral stria represented by its recurrent arm which is marked by deep, round punctures; inner lateral stria reaching from front to hind margin, marked by row of deep, round punctures, this row of punctures extending to first abdominal sternum. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded, quadrate; front tibia with three teeth; hind tibia robust. Male genitalia as in Fig. 187; 8th tergite

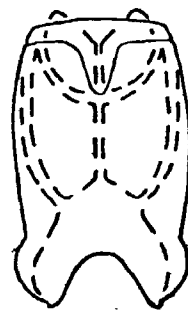
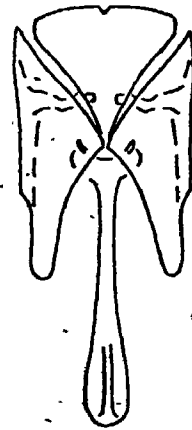
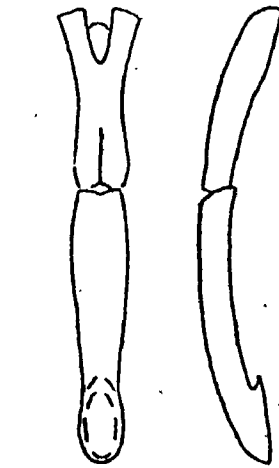
with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, apical margin not produced forward to form "hooked" structures; 10th tergite present; basal piece long, parameres long.

Etymology. "Oudaimos" meaning "good for nothing" and the suffix "-ister" meaning "having the nature of".

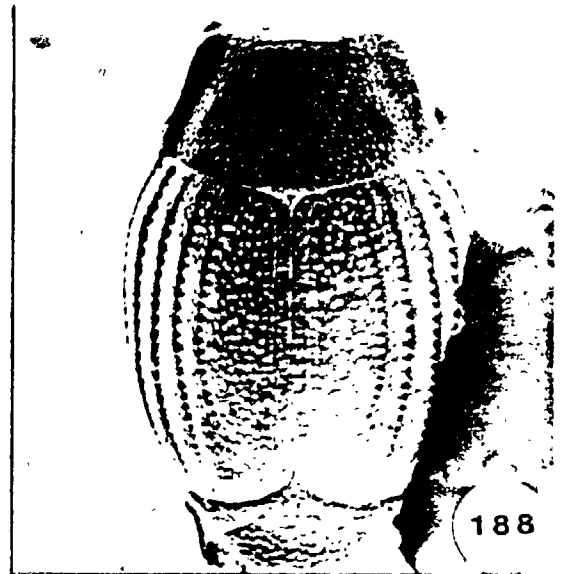
Remarks. The genus, Oudaimosister may be separated from all other genera by the row of deep, round punctures on its meso-metasternal suture and by the row of deep, round punctures that mark its inner lateral metasternal stria. Reichensperger (1939) in describing the species, Mesynodites verruculosus, suspected that it may represent a new genus because of its unusual meso-metasternal punctation. The structure of its male genitalia confirm that this species does not belong in Mesynodites and therefore, I have erected the genus Oudaimosister for it.

#### Species of Oudaimosister

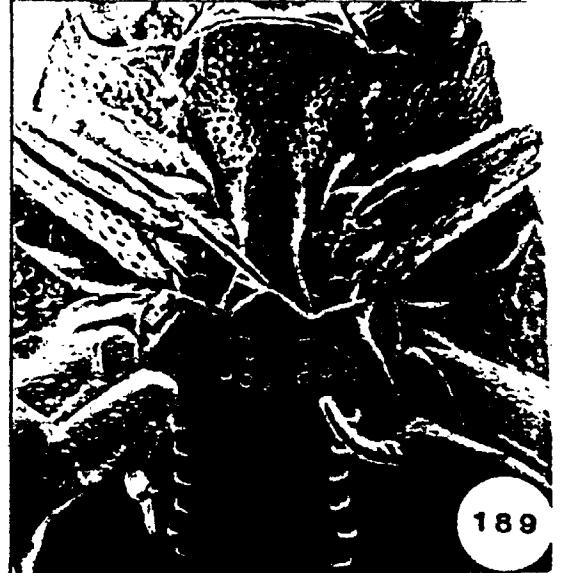
- \* Oudaimosister verruculosus Reichensperger 1939: 126. NEW COMBINATION. COSTA RICA. Limon: Revertazon, Hamburg Farm. Osa Peninsula: Rincon. HOST: Labidus praedator.



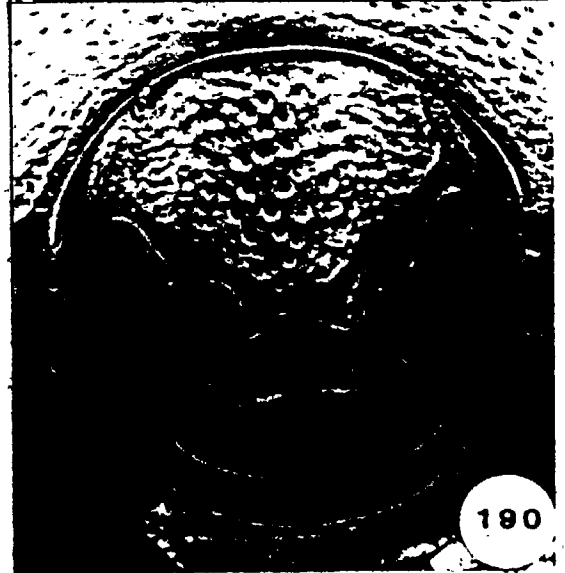
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188



189



190

Figs. 187-190. Oudaimosister verruculosus Reichensperger (new genus).

Genus Ponerolister Bruch

Figs. 191-193

Ponerolister Bruch 1929: 424.

TYPE-SPECIES: Ponerolister striaticeps Bruch (by original designation and monotypy).

DIAGNOSIS. Form oval; not setose above (Fig. 191). Head 1.3 times as wide as long (Fig. 193); lateral margins carinate from eyes to front margin of clypeus, these carinae interrupted above antennal sockets and widely separated in front; vertex and frons broad; surface above antennal sockets narrowly, longitudinally depressed; mandibles with outer surface unmodified near base; labrum 4 times as wide as long, apical margin truncate, apical surface not broadened; antennal club subcylindrical, sclerotized everywhere except truncate tip. Pronotum (Fig. 191) 2 times as wide as long; lateral margins nearly straight, convergent forward; front angles nearly transversely truncate; surface evenly convex, with many parallel, longitudinal, closely placed, fine striae extending from near hind margin to front margin; with one lateral stria approximate to marginal stria; hind margin arcuate. Elytron (Fig. 191) evenly convex; with dense round punctures, punctures large near suture and gradually smaller toward sides and behind; dorsal striae if present, fine; internal subhumeral stria long; external subhumeral stria short, anterior.

Propygidium 2 times as wide as long; without tubercles. Pygidium as wide as long. Prosternum (Fig. 192) with keel convex, rather acute; carinal striae narrowly separated, parallel, joined in front; lateral striae evanescent; lateral marginal striae cariniform, widely separated, divergent in front; lobe separated from rest of prosternum by suture, marginal stria separated from lateral margins, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, rather shallowly, roundly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria present; inner lateral stria absent. First abdominal sternum with two postcoxal striae. Legs short; femora somewhat robust; tibiae expanded; front tibia quadrate, broadly emarginate along outer edge; middle and hind tibia with outer edge angulate at middle. Male genitalia not available.

Remarks. The genus Ponerolister may be separated from all other genera by the following combination of characters: its pronotum has many parallel, longitudinal striae; its elytra have dense, round punctures which are largest near the suture and gradually smaller to the sides and behind; and the carinae on the lateral margins of its head are interrupted above the antennal sockets



and the surface there is longitudinally depressed.

Species of Ponerolister

Ponerolister manni Wenzel and Dybas 1941: 470. BOLIVIA.

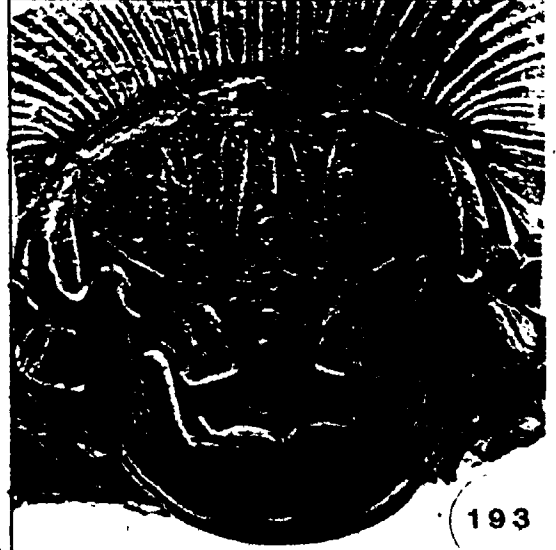
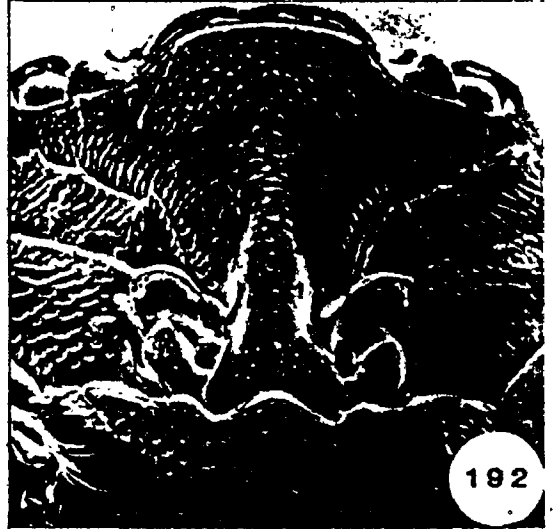
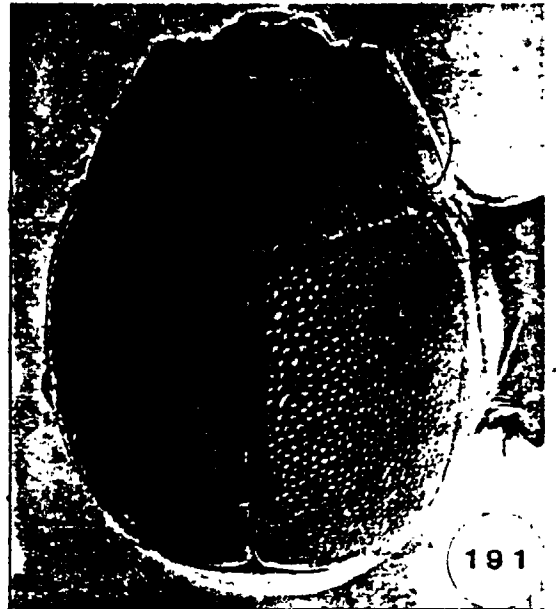
Tumupas. HOST: no data.

Ponerolister striaticeps Bruch 1929: 426. ARGENTINA.

HOST:

\* Ponerolister n.sp. 1. BRAZIL. Para: Belem. HOST: no

data.



Figs. 191-193. Ponerolister n.sp. 1.

Genus Hippeutister Reichensperger

Figs. 194-197

Hippeutister Reichensperger 1935: 207.

TYPE-SPECIES: Hippeutister solenopsidis  
Reichensperger (by original designation and  
monotypy).

Hippenlister (Zoological Record 1936).Solenopsister Wenzel 1938: 318. -- Blackwelder 1944: 186.TYPE-SPECIES: Solenopsister amabilis Wenzel.

DIAGNOSIS. Form oval; not setose above (Fig. 195). Head 1.2 times as wide as long (Fig. 197); lateral margins carinate from eyes to front margin of clypeus, these carinae interrupted above antennal sockets and widely separated in front; vertex and frons broad; surface above antennal sockets narrowly, longitudinally depressed; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin truncate, apical surface not broadened; antennal club subcylindrical, sclerotized everywhere except obliquely truncate tip. Pronotum (Fig. 195) 2 times as wide as long; lateral margins straight, convergent forward; front angles obliquely truncate; surface evenly convex at middle, with shallow, oblique depression mesad of each hind angle; with one lateral striae approximate to marginal stria; hind margin very obtusely V-shaped.

Elytron (Fig. 195) convex; not densely punctate; dorsal striae absent, except sutural stria represented by medium, shallow punctures; surface along suture depressed; internal subhumeral stria long, cariniform; external subhumeral stria cariniform, not strongly sinuate. Propygidium 2 times as wide as long; without tubercles. Pygidium 1.3 times as wide as long; not strongly convex. Prosternum (Fig. 196) with keel very broad and flat; carinal striae short, median, very widely separated; lateral striae widely separated, cariniform, strongly divergent forward; lateral marginal striae cariniform, strongly divergent forward; lobe very short, marginal stria fine and dorsal, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, very deeply, triangularly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria present at sides only; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria short, fine; inner lateral stria widely separated in front from and nearly parallel behind to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs short; femora somewhat robust; tibiae expanded with outer edges arcuate. Male genitalia as in Fig. 194; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused

, without "disks", without setae along apical margin; 9th tergites without ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced forward to form "hooked" structures; 10th tergite absent; basal piece long, parameres short.

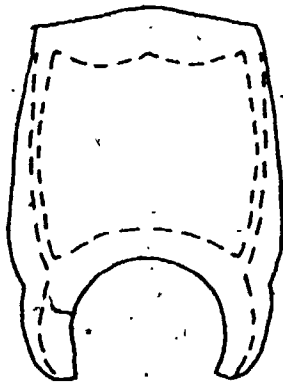
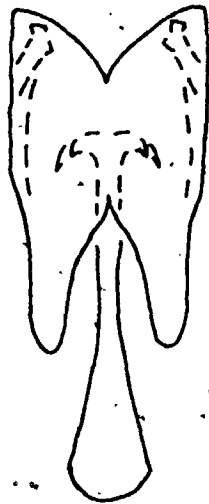
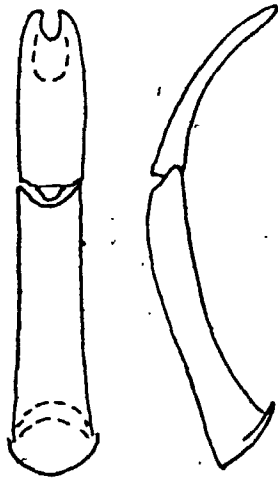
Remarks. The genus Hippeutister may be separated from other genera by the following combination of characters: the carinae on the lateral margins of its head are interrupted above the antennal sockets and the surface there is longitudinally depressed; its prosternal keel is very broad and flat; the hind margin of its prosternal keel is broadly, very deeply, triangularly emarginate; and its elytra are without dorsal striae, except that the sutural stria is indicated by medium, shallow punctures.

Species of Hippeutister

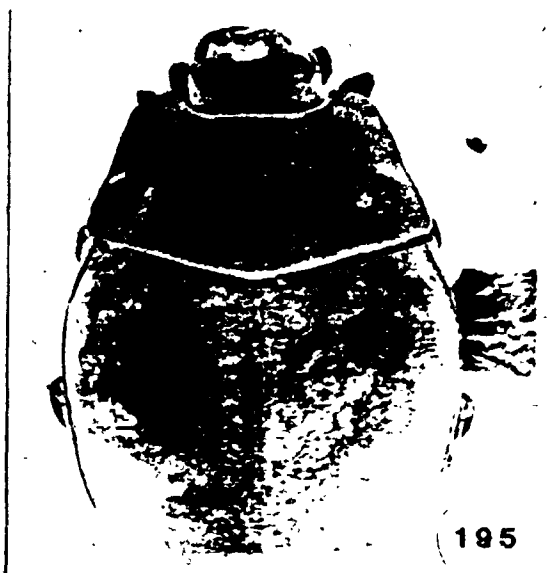
Hippeutister amabilis (Wenzel) 1938: 318. MEXICO. Vera Cruz: Cordoba. HOST: Solenopsis xyloni.

\* Hippeutister plaumanni Reichensperger 1936: 226. BRAZIL. Santa Catarina: Nova Teutonia. HOST: Solenopsis sp.

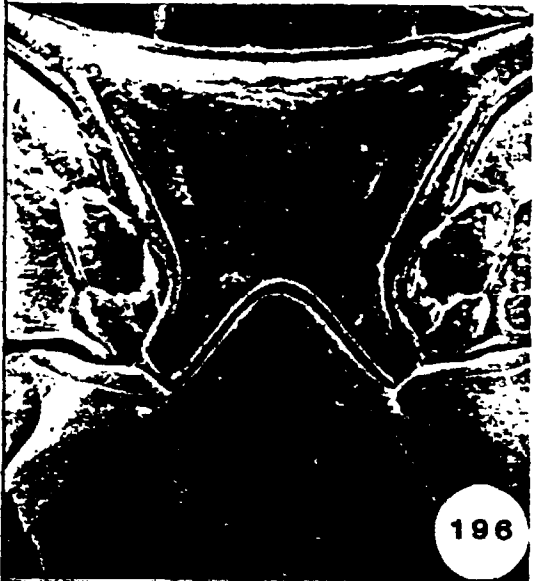
Hippeutister solenopsidis Reichensperger 1935: 208. COSTA RICA. HOST:



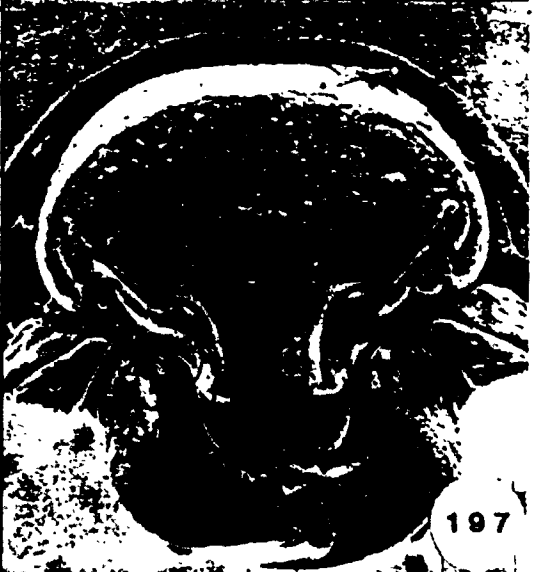
194.



195



196



197

Figs. 194-197. Hippeutister plaumanni Reichensperger.

## SUBGROUP E2

Genus Tubulister Borgmeier

Figs. 198-200

Tubulister Borgmeier 1948: 382.

TYPE-SPECIES: Tubulister curvipilosus Borgmeier (by original designation and monotypy).

DIAGNOSIS. Form oval; setose above (Fig. 198). Head as wide as long (Fig. 200); lateral margins not carinate; without frontal stria; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin truncate, apical surface broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 198) 7 times as wide as long; lateral margins nearly straight, convergent forward; front angles rounded; surface evenly convex; with marginal stria only; with large to medium, shallow, drop-shaped punctures over most of surface; hind margin arcuate. Elytron (Fig. 198) convex; dorsal striae fine, well-impressed; with one additional stria between dorsal stria five and sutural stria; internal subhumeral stria long; external subhumeral stria short, anterior; with one additional stria between subhumeral striae. Propygidium as wide as long; with very prominent, acute tubercle in each hind angle. Pygidium as wide as long. Prosternum (Fig. 199) with keel convex, nearly cylindrical, front

margin produced forward forming acute process that is nearly as long as prosternal lobe; carinal and lateral striae absent; lateral marginal striae short, cariniform, divergent forward; lobe long, with marginal stria well-impressed and separated from lateral margins, with preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria absent; surface depressed at sides; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria reaching hind coxa, its recurrent arm present; inner lateral stria parallel to and widely separated from outer lateral stria, reaching to front margin of mesosternum. First abdominal sternum with two postcoxal striae. Fifth abdominal sternum with two prominent, acute tubercles. Legs normal length; tibiae expanded, with outer edges arcuate. Male genitalia not available.

Remarks. The genus Tubulister may be separated from Fistulaster by the absence of carinae on the lateral margins of its head; by the large to medium, shallow, drop-shaped punctures over most of its pronotum; by the very prominent, acute tubercles in each hind angle of its propygidium; and by the acute process on the front margin of its prosternal keel being nearly as long as its prosternal lobe.



Species of Tubulister

- \* Tubulister curvipilosus Borgmeier, 1948: 384. BRAZIL.  
Goiás: Campinas. HOST: Labidus coecus.



Figs. 198-200. Tubulister curvipilosus Borgmeier,

Genus Fistulaster new genus

Figs. 201-203

Fistulaster new genus.TYPE-SPECIES: Fistulaster hamata new species.

DIAGNOSIS. Form oval; sparsely setose above (Fig. 201). Head as wide as long (Fig. 203); lateral margins carinate from occiput to front margin of clypeus, these carinae rather narrowly separated in front; mandibles with outer surface unmodified near base; labrum 2.5 times as wide as long, apical margin truncate, apical surface not broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 201) 2.3 times as wide as long; lateral margins feebly arcuate, strongly convergent forward; front angles rounded; surface convex at middle and in front, with shallow depression in front of hind angles; with two striae beginning at hind margin, arched forward and reaching to contralateral side; with one very fine lateral stria widely separated from marginal stria; with sparse, small, setiferous punctures; hind margin nearly arcuate. Elytron (Fig. 201) convex; dorsal striae well impressed, outer striae cariniform; sutural stria marked by large, crescentiform punctures; internal subhumeral stria fine, long; external subhumeral stria feebly cariniform, sinuate; with one additional stria between subhumeral striae. Propygidium 2 times as wide as long; surface

strongly, transversely inflated before hind margin. Pygidium 1.3 times as wide as long. Prosternum (Fig. 202) with keel convex, nearly cylindrical, front margin produced forward forming blunt process nearly half as long as prosternal lobe; carinal striae widely separated, parallel, joined in rounded arch in front; lateral striae widely separated behind from carinal striae, parallel, convergent in front, nearly joined to carinal striae; lateral marginal striae cariniform, short, posterior; lobe long, separated from rest of prosternum by suture, marginal stria widely separated from lateral margins, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, shallowly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform, widely separated from front margin; surface depressed at sides; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria reaching to hind coxa, its recurrent arm present; inner lateral stria parallel to and widely separated from outer lateral striae, reaching to front margin of mesosternum. First abdominal sternum with two postcoxal striae. Fifth abdominal sternum without tubercles. Legs normal length; tibiae expanded, outer edges arcuate. Male genitalia not available.

Etymology. "Fistula" meaning "pipe" and "-aster"

suffix meaning "having the nature of".

Remarks. The genus Fistulaster may be separated from Tubulister by the carinate margins of its head; by the fine lateral stria which is widely separated from the margin on its pronotum; by the transversely inflated hind margin of its propygidium; and by the blunt process on the front margin of its prosternal keel being half as long as its prosternal lobe.

Fistulaster hamata new species

Figs. 201-203

Fistulaster hamata new species.

TYPE: Holotype, female, Brazil, Santa Catharina, Nova Teutonia, ii.1953, F. Plaumann, Host Eciton praedator (?), (FMNH).

Description. Length: 1.5 mm; width: 1.4 mm. Head (Fig. 203) with vertex and frons flat, clypeus depressed between lateral carinae; labrum with one seta near each lateral margin. Pronotum (Fig. 201) with marginal stria entire along sides and across front margin; with two median striae briefly joined just before hind margin, divergent behind this juncture, inner stria reaching to middle, outer stria reaching to front margin and joined to marginal stria; with lateral stria very fine, parallel to and widely separated from marginal stria, reaching around front angles; surface between marginal and lateral striae with several oblique, very fine striae. Elytron (Fig. 201) with dorsal striae 1-3 entire, cariniform; stria 4 reaching from near hind margin to front 0.3, strongly, inwardly hooked in front, stria 5 absent; sutural stria marked by large, shallow, crescentiform punctures; internal subhumeral stria reaching from front to hind margin and continued along hind margin, nearly confluent with dorsal stria 1 behind; external subhumeral stria sinuate, interrupted briefly just before and just

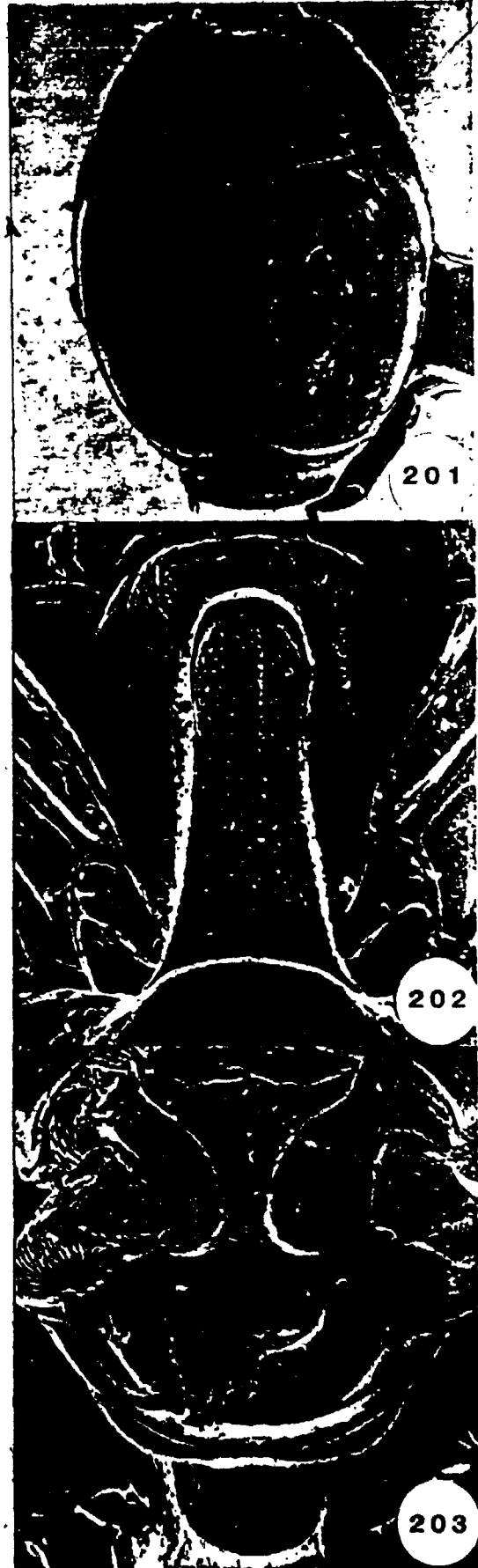
behind middle. Propygidium strongly inflated before hind margin, with transverse stria running near apex of elevation. Pygidium nearly flat, with marginal stria that is entire everywhere except narrowly interrupted at middle of front margin. Prosternum (Fig. 202) with carinal striae poorly impressed behind, reaching to near front margin; lateral striae poorly impressed behind, nearly joined to carinal striae; prosternal alae separated from lobe, with marginal striae. Mesosternum with marginal stria entire, joined at sides to inner lateral metasternal stria. Metasternum with postcoxal stria reaching to lateral margin at middle; outer lateral stria hooked inward just before hind coxa, its recurrent arm fine, reaching to lateral margin near postcoxal stria; inner lateral stria reaching to hind margin; surface rather strongly convex. First abdominal sternum with outer postcoxal stria reaching to hind margin; inner postcoxal stria strongly, inwardly hooked near hind margin. Second and third abdominal sterna with arcuate lateral stria that is concentric with outer postcoxal stria of first abdominal sternum. Legs as in generic diagnosis. Male genitalia not available.

**Etymology.** This species derives its name from the hooked, anterior end of its dorsal elytral stria four.

**Remarks.** Rupert L. Wenzel has noted that this

species may be synonymous with Paratropus anthracinus Lewis. In any case, the genus Paratropus Gerstacker does not occur in the New World, and Paratropus anthracinus must be assigned to a different genus.





Figs. 201-203. Fistulaster hamata (new genus, new species).

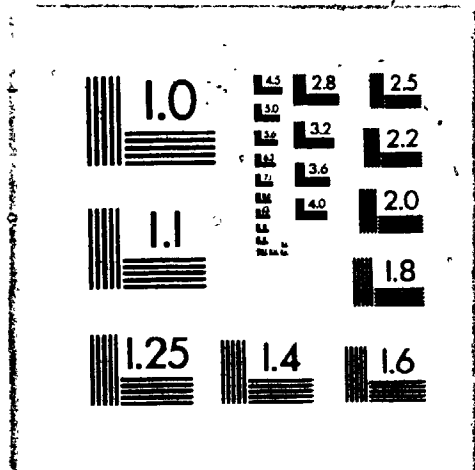
Genus Leptosister new genus

Figs. 204-207

Leptosister new genus.TYPE-SPECIES: Leptosister patulus new species.

DIAGNOSIS. Form truncate oval, depressed; setose above (Fig. 205). Head as wide as long (Fig. 207); lateral margins not carinate, with frontal stria from occiput to level with antennal sockets, surface thence to front margin of clypeus broadly elevated; mandibles with distinct fovea on outer edge near base; labrum 2 times as wide as long, apical margin feebly emarginate, apical surface not broad; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 205) 1.8 times as wide as long; lateral margins arcuate, convergent forward; front angles rounded; surface feebly convex; with two lateral striae; outer lateral stria continued short distance along hind margin, approximate to marginal stria along lateral margin to just behind front angles, thence transversely, inwardly hooked; inner lateral stria widely separated from but parallel to lateral margin; at middle with large, oval, shallow punctures; hind margin obtusely V-shaped. Elytron (Fig. 205) feebly convex; dorsal striae reduced in number; sutural stria broad, shallow; internal subhumeral stria fine, long; external subhumeral stria cariniform, strongly sinuate. Propygidium 1.3 times as

4



wide as long. Pygidium as wide as long. Prosternum (Fig. 206) with keel convex; carinal striae short, widely separated behind, joined by transverse stria along hind margin, strongly convergent forward, joined in acute arch in front; surface between carinal striae feebly depressed; lateral striae evanescent; lateral striae cariniform, parallel, joined in front to marginal stria of lobe; lobe not separated from rest of prosternum by suture, divided into three subequal portions by marginal stria, with middle portion raised and forming continuation of keel, preapical stria separating front of middle portion; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, obtusely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria represented by recurrent arm only; inner lateral stria forming broad, shallow fossa. First abdominal sternum with two postcoxal striae; front margin with large, shallow punctures. Legs normal length; tibiae expanded; front tibiae with outer edge arcuate; middle and hind tibiae with outer edge roundly angulate at middle. Male genitalia as in Fig. 204; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along

apical margin; 9th tergites with ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Etymology. "Leptos" meaning "thin" and "-ister" suffix meaning "having the nature of".

Remarks. The genus Leptosister is very similar in body shape and in prosternal structure to the genus Eurysister; the two may be congeneric, but in the absence of geographically or morphologically intervening material, their differences were judged to be sufficient to accord each generic status. These two genera may also be closely related to Trichoreninus imbricatus Lewis, but Lewis' description of the latter is not sufficiently detailed to allow me to determine if it is congeneric with either of these two new genera. Any elucidation of their relationship must be delayed until I have had an opportunity to see the type of Trichoreninus imbricatus. The genus Leptosister may be separated from Eurysister by the costate elytra and the strongly depressed meso-metasterna of the latter. From Metasynodites and Ecitonister, Leptosister may be separated by its truncate oval, depressed body form; by its prosternal carinal striae which are strongly impressed and joined in front;

and by the large, shallow, oval, median punctures on its pronotum.

Leptosister patulus new species

Figs. 204-207

Leptosister patulus new species.

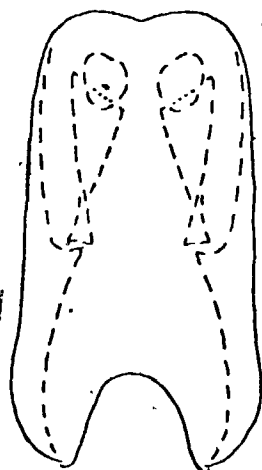
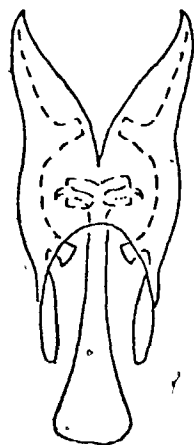
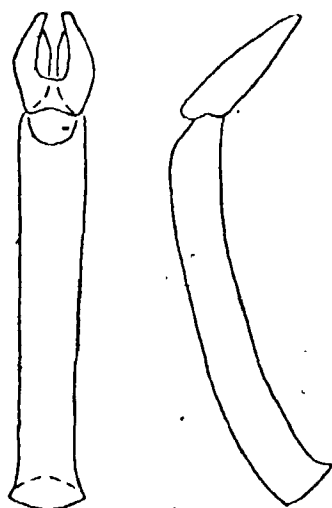
TYPE: Holotype, male, Brazil, Santa Catharina, Nova Teutogia, F. Plaumann, (FMNH). HOST: no data.

Description. Length: 1.4 mm; width: 1.0 mm. Head (Fig. 207) impunctate except for transverse row of large, oval punctures along occipital margin each bearing long seta; labrum without setiferous punctures. Pronotum (Fig. 205) with marginal stria broadly interrupted behind head; with outer lateral stria extending along hind margin nearly to outer dorsal elytral stria, extending inward in front to and very nearly joined to inner lateral stria; inner lateral stria reaching from hind margin to near front margin behind head, strongly, inwardly hooked in front; with large, oval punctures on disk very sparse, confined to hind 0.5; punctures along hind margin beginning near end of outer lateral stria, contiguous, increasing in size towards middle. Elytron (Fig. 205) with two dorsal striae; outer one fine; inner stria mesal, present in front 0.6, its front end inwardly hooked; sutural stria broad, present from front to hind margin; external subhumeral stria broadly joined to internal subhumeral stria behind middle. Prosternum (Fig. 206) with carinal striae reaching from hind margin to middle, joined in acute arch in front; lateral striae

evanescent. Mesosternum with marginal stria bifid at middle, joined at sides to inner lateral metasternal stria. Metasternum with postcoxal stria reaching metepisternal suture near middle; recurrent arm of outer lateral stria reaching from hind coxa to metepisternal suture near postcoxal stria; inner lateral stria parallel to midline, reaching from front margin to near hind coxa. First abdominal sternum with inner postcoxal stria short; outer postcoxal stria strongly arcuate, reaching to near front angle. Legs as in generic diagnosis. Male genitalia as in Fig. 204.

Etymology. "Patulus" meaning "broad".





204



205



206



207

Figs. 204-207. Leptosister patulus (new genus, new species).

Genus Eurysister new genus

Figs. 208-210

Eurysister new genus.TYPE-SPECIES: Eurysister carinatus new species.

DIAGNOSIS. Form truncate oval, depressed; not setose above (Fig. 208). Head as wide as long (Fig. 210); lateral margins not carinate, with frontal stria from occiput to level with antennal sockets, surface thence to front margin of clypeus broadly elevated; mandible with distinct fovea on outer surface near base; labrum 1.7 times as wide as long, apical margin truncate, apical surface not broadened; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 208) 1.7 times as wide as long; lateral margins arcuate, convergent forward; front angles rounded; surface flat at middle, feebly convex at sides; with one lateral stria, approximate to margin along sides, inwardly, transversely hooked just before front angles, thence nearly joined to transverse stria behind head; without large, shallow punctures; hind margin obtusely V-shaped. Elytron (Fig. 208) very feebly convex; dorsal striae absent but with three broad, shallow fossae; surface between fossae forming costae; internal subhumeral stria cariniform, long; surface between internal subhumeral stria and outer costa depressed; external subhumeral stria cariniform, strongly sinuate.

Propygidium 1.4 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 209) with keel narrow, rather acute in front; carinal striae short, widely separated behind, joined by transverse stria along hind margin, strongly convergent forward; surface between carinal striae depressed; lateral striae evanescent; lateral marginal striae cariniform, short, posterior; lobe not separated from rest of prosternum by distinct suture, divided into three subequal portions by marginal stria, middle portion narrowly raised forming continuation of keel, preapical stria separating front of middle portion; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, obtusely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria reaching hind coxa, its recurrent arm present; inner lateral stria long; surface between inner lateral stria and midline depressed forming longitudinal costa along midline, these depressions continuous to mesosternum. First abdominal sternum with one postcoxal stria; without large punctures along front margin. Legs normal length; tibiae expanded; front tibia arcuate; middle and hind tibiae roundly angulate at middle of outer edge. Male genitalia not available.

Etymology. "Eurys" meaning "broad" and "-ister"

suffix for "state of".

Remarks. The costate elytra, strongly depressed metasternum and the lack of large, oval punctures on the pronotum serve to separate the genus Eurysister from the closely allied genus Leptosister. Refer to the "Remarks" section of the latter genus for further comments. From Metasynodites and Ecitonister, Eurysister may be separated by its truncate oval, depressed body form; by its prosternal carinal striae which are strongly impressed and joined in front; and by its costate elytra.

Eurysister carinatus new species

Figs. 208-210

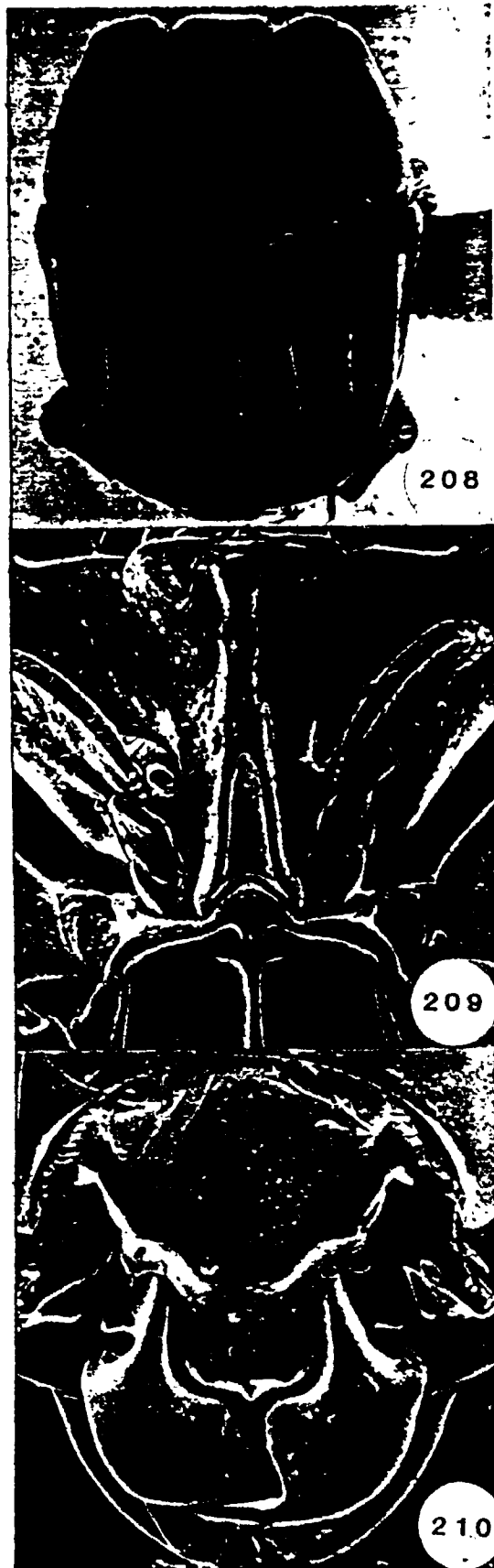
Eurysister carinatus new species.

TYPE: Holotype, female, Panama, Bocas del Toro, Almirante, 26.iii.1959, H.S. Dybas, FMNH(HD) #59-269, Berlese: #B-622 concentrated floor litter in forest, (FMNH). HOST: no data.

Description. Length: 1.8 mm; width: 1.4 mm. Head (Fig. 210) impunctate; labrum without setiferous punctures. Pronotum (Fig. 208) with lateral margins thickened; marginal stria present along front margin, broadly interrupted behind head, continued at sides to join striae along front margin of prosternal alae; lateral stria reaching from hind margin to just behind front angles, thence inwardly, transversely hooked, nearly joined to transverse stria behind head; surface feebly depressed mesad of hind angles. Elytron (Fig. 208) as in generic diagnosis; external subhumeral stria broadly joined to internal subhumeral stria at middle; marginal elytral and marginal epipleural striae absent. Prosternum (Fig. 209) with carinal striae reaching to middle, joined in front in rounded arch; lateral marginal striae short, not reaching more than half way to prosternal lobe; alae with marginal striae joined to marginal stria of pronotum. Mesosternum with marginal stria bifid at middle, joined at sides to inner lateral

metasternal stria; meso-metasternal suture marked by very short, transverse, median stria. Metasternum with postcoxal stria reaching to metepisternal margin near middle; recurrent arm of outer lateral stria reaching from hind coxa to metepisternal margin near postcoxal stria. First abdominal sternum with front end of postcoxal stria hooked inward, surface within this hook depressed. Legs as in generic diagnosis. Male genitalia not available.

Etymology. "Carinatus" meaning "keeled".



Figs. 208-210. Eurysister carinatus (new genus, new species).

Genus Metasynodites Reichensperger

Figs. 211-214

Metasynodites Reichensperger 1931: 269. NEW STATUS.TYPE-SPECIES: Synodites legionarius Reichensperger  
(by original designation).

DIAGNOSIS. Form oval; not setose above (Fig. 212). Head as wide as long (Fig. 214); lateral margins carinate from occiput to front margin of clypeus, these carinae joined on clypeus; mandibles with distinct fovea on outer surface near base; labrum 2 times as wide as long, apical margin broadly, not deeply, emarginate, apical surface not broadened; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 212) 2 times as wide as long; lateral margins nearly straight, convergent forward; front angles rounded; surface evenly convex; with one lateral stria, approximate to marginal stria along sides, more distant along front margin; with large, shallow, oval punctures over most of surface; hind margin obtusely V-shaped. Elytron (Fig. 212) evenly convex; dorsal striae marked by broad, shallow grooves in front, by large, shallow, oval punctures behind; interstices of dorsal striae cariniform to costiform; internal subhumeral stria long, cariniform; external subhumeral stria formed by double stria in front, sinuate. Propygidium 2 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 213) with keel convex;



carinal striae absent; lateral striae long, subparallel, evanescent; lateral marginal striae cariniform, straight, feebly divergent forward, join in front to marginal stria of lobe; lobe not separated from rest of prosternum by distinct suture, divided into three subequal portions by marginal stria, with middle portion raised and forming continuation of keel, with preapical stria separating front of middle portion; proepisternum and proepimeron without setose patches; hind margin broadly, obtusely, somewhat triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria bifid at middle, discontinuous at sides just in front of inner lateral metasternal stria; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria reaching to hind coxa, its recurrent arm present; inner lateral stria forming broad, shallow fossa. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia with outer edge arcuate; middle and hind tibiae with outer edge roundly angulate at middle. Male genitalia as in Fig. 211; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites without ventral "apodemes", without internal "guides" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite

absent; basal piece long, parameres very short.

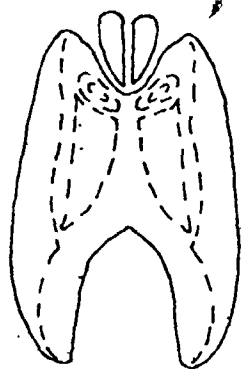
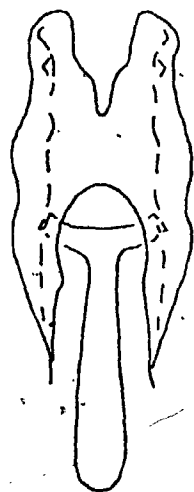
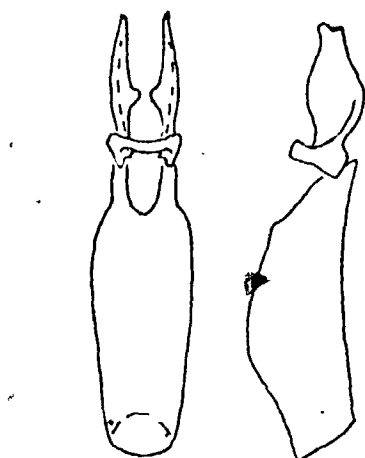
Remarks. The genus Metasynodites may be separated from Eurysister and Leptosister by its oval, not depressed body form; by the lack of prosternal carinal striae; and by the large, shallow, oval punctures occurring over most of its pronotum. From Ecitonister, Metasynodites may be separated by the carinae on the lateral margins of its head being joined on the clypeus; by the absence of an inner lateral pronotal stria; and by the large, shallow, oval punctures occurring over most of its pronotum. I have elevated Metasynodites to generic status from a subgenus of Mesynodites because, even with the limited material I have seen at this time, it is distinctive and readily characterized. This judgement is based particularly on those mandibular and prosternal characters that group this genus with Eurysister, Leptosister and Ecitonister.

Species of Metasynodites

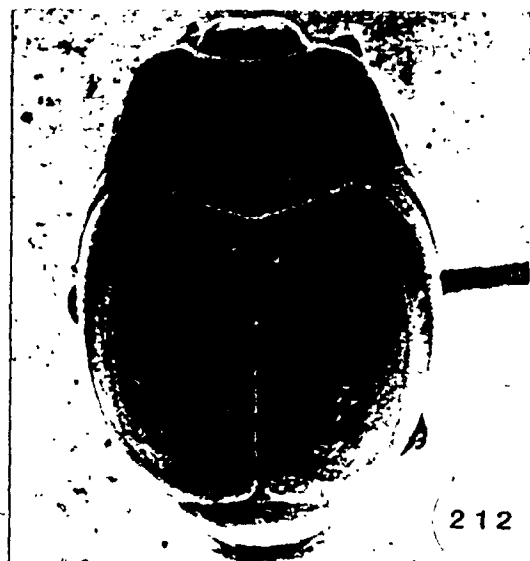
- \* Metasynodites legionarius Reichensperger 1929: 133.  
 BRAZIL, Parana: Rio Negro. HOST: Neivamyrmex legionis.
- \* Metasynodites minor Reichensperger 1931: 269. BRAZIL.  
 Parana: Rio Negro. Santa Catharina: Nova Teutonia. Rio Grande do Sul: Sinimbu. HOST: Neivamyrmex legionis.

\* Metasynodites n. sp. 1. BRAZIL. Parana: Rio Negro.

HOST: Neivamyrmex legionis.



211



212



213



214

Figs. 211-214. Metasynodites minor Reichensperger.

Genus Ecitonister Reichensperger

Figs: 215-218

Ecitonister Reichensperger 1923: 326.TYPE-SPECIES: Ecitonister perversus Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; sparsely setose above (Fig. 216). Head as wide as long (Fig. 218); lateral margins carinate from occiput to front margin of clypeus, these carinae low behind, somewhat elevated and widely separated in front; mandibles with outer surface deeply incised near base; labrum 2 times as wide as long, apical margin broadly emarginate and beaded; apical surface not broad; antennal club oval, sclerotized on part of ventral surface. Pronotum (Fig. 216) 1.7 times as wide as long; lateral margins feebly sinuate, convergent forward; front angles obliquely truncate; surface nearly flat at middle, somewhat inflated along lateral margins; with two lateral striae; outer lateral stria approximate to marginal stria, reaching around front angles; inner lateral stria sinuous, widely separated from lateral margin, continued along front margin behind head; without large, shallow, oval punctures at middle; hind margin obtusely V-shaped. Elytron (Fig. 216) evenly convex; dorsal striae broad, shallow grooves, outer striae feebly cariniform; internal subhumeral stria long, cariniform; external subhumeral stria feebly cariniform, strongly sinuate. Propygidium 2

times as wide as long. Pygidium as wide as long. Prosternum (Fig. 217) with keel narrowly convex; carinal striae absent; lateral striae straight, widely separated, evanescent; lateral marginal striae cariniform, divergent to near front margin, thence parallel, joined in front to marginal striae of prosternal lobe; lobe not separated from rest of proternum by suture, divided into three portions by marginal stria, middle portion strongly raised at middle forming continuation of keel, preapical stria separating front of middle portion; proepisternum and proepimeron without setose patches; hind margin broadly, shallowly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria strongly sinuate; with one additional stria at meso-metasternal suture; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria long, reaching hind margin; inner lateral stria, if present, very oblique, front end very close to midline, hind end near outer lateral stria. First abdominal sternum with one or two postcoxal striae. Legs normal length; tibiae expanded; front tibiae strongly arcuate; middle and hind tibiae feebly angulate at middle of outer edge. Male genitalia as in Fig. 215; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites

with ventral "apodemes", with internal "guide" for aedeagus, with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Ecitonister may be separated from Eurysister and Leptosister by its oval, not depressed body shape; by the lack of prosternal carinal striae; and by the carinae on the lateral margins of its head being widely separated in front. From Metasynodites, Ecitonister may be separated by the carinae on the lateral margins of its head being widely separated; by the presence of an inner lateral stria on its pronotum; and by the absence of large, shallow, oval punctures on its pronotum.

Species of Ecitonister

Ecitonister borgmeieri Reichensperger 1931: 268. BRAZIL.  
Goiás: Campinas. HOST: Labidus praedator.

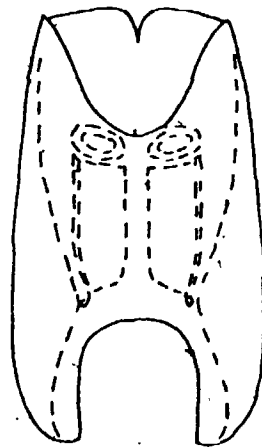
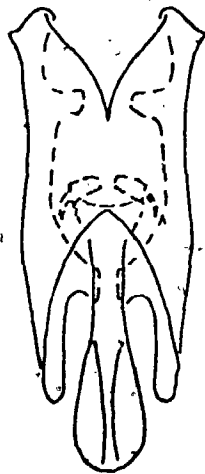
\* Ecitonister latipes Reichensperger 1933: 305. BRAZIL.  
Minas Gerais: Itatiaya. HOST: Labidus praedator.

Ecitonister ogloblini Bruch 1933: 34. ARGENTINA.  
Misiones: Loreto. HOST: Labidus coecus.

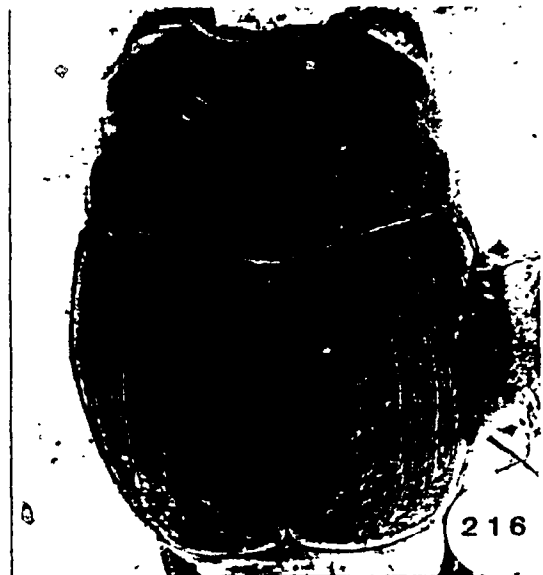
Ecitonister perversus Reichensperger 1923: 327. BRAZIL.  
Santa Catarina: Blumenau. HOST: Labidus coecus.

- \* Ecitonister sericeus Borgmeier 1948: 387. BRAZIL. Goias:  
Campinas. HOST: Neivamyrmex pseudops.

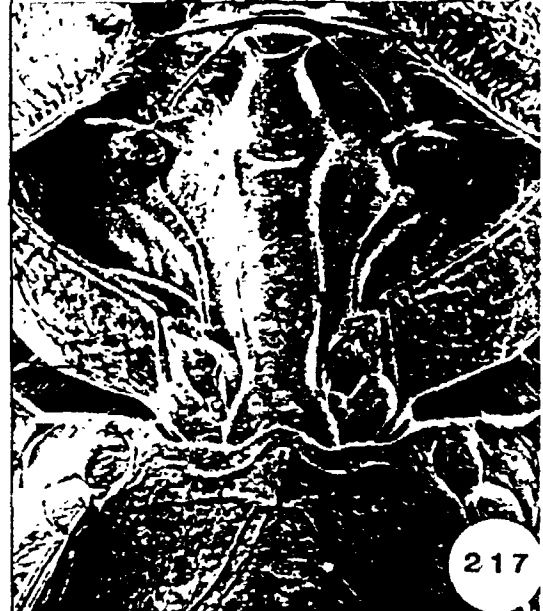




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216



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218

Figs. 215-218. Ecitonister sericeus Borgmeier.

Genus Monotonodites Reichensperger

Figs. 219-222

Monotonodites Reichensperger 1939: 131. NEW STATUS.TYPE-SPECIES: Mesynodites levis Reichensperger (by original designation).

DIAGNOSIS. Form oval; not setose above to very sparsely setose above (Fig. 220). Head as wide as long (Fig. 222); lateral margins carinate from occiput to front margin of clypeus, these carinae rather narrowly separated in front; mandibles deeply, transversely incised on outer surface near base; labrum 3 times as wide as long, apical margin broadly emarginate, apical surface not broad; antennal club oval, sclerotized on part of dorsal, ventral and part of inner surfaces. Pronotum (Fig. 220) 2 times as wide as long; lateral margins nearly straight, convergent forward; front angles obtusely truncate to nearly rounded; surface strongly, evenly convex; with one lateral stria, approximate to marginal stria along sides, transversely hooked just behind front angles; without punctures or with medium to small, shallow punctures over most of surface. Elytron (Fig. 220) evenly convex; dorsal stria 1, if present, short and feebly cariniform; inner dorsal striae, if present, marked by large, shallow, oval punctures; internal subhumeral stria long; external subhumeral stria sinuate. Propygidium 2 times as wide as long. Pygidium

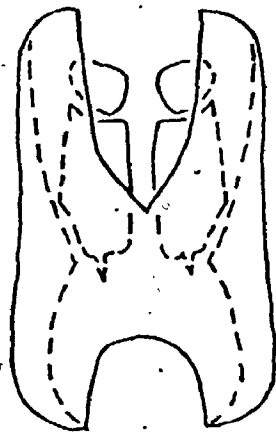
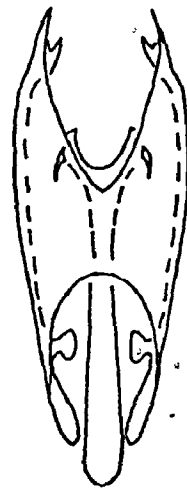
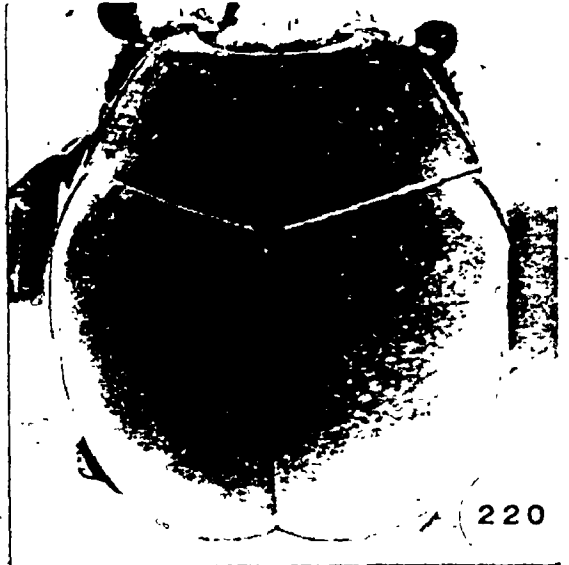
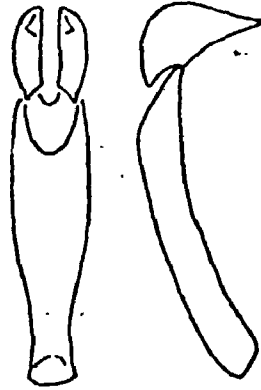
as wide as long. Prosternum (Fig. 221) with keel convex; carinal striae, if present, long, divergent behind front coxae, convergent in front, joined in rounded arch in front; lateral striae, if present, fine, feebly sinuate, joined in front to lateral marginal striae; lateral marginal striae cariniform, nearly straight, reaching to marginal stria of lobe or joined to lateral striae in front; lobe separated from rest of prosternum by indistinct suture, divided into three subequal portions by marginal stria, with hind ends of marginal stria ending in deep foveae, with middle portion raised and forming continuation of keel, with preapical stria indistinctly present at middle; proepisternum and proepimeron without setae patches; hind margin broadly, not deeply, somewhat triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria, if present, very indistinct; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria, if present, short and anterior; inner lateral stria, if present, long and somewhat sinuate. First abdominal sternum with one or two postcoxal striae. Legs normal length; tibiae expanded; front tibia with outer edge arcuate; middle and hind tibiae with outer edge roundly angulate at middle. Male genitalia as in Fig. 219; 8th tergite without transverse anterior stria, without inward extensions

along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with internal "guides" for aedeagus, with apical margin not produced forward to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Monotonodites, based on mandibular, prosternal and genitalic characters, is clearly allied with Ecitonister, Eurysister, Leptosister and Metasynodites. It differs from the latter genera in that the base of its mandibles, while transversely incised, does not have a distinct fovea and in that the median portion of the prosternal lobe is not as keeled. I have elevated Monotonodites to generic status from a subgenus of Mesynodites because it is distinctive and readily characterized. I have extended the limits of this genus with the inclusion of Monotonodites n. sp. 1 and 2 to encompass species with greatly attenuated dorsal elytral striae (Monotonodites lev.) and species with distinct inner dorsal elytral striae (Monotonodites n. sp. 2). The species I have seen appear to form a cline from one extreme to the other. I should note, however, that the genitalia of Monotonodites n. sp. 2 are quite distinctive and that the acquisition of new material may reveal it to belong to a separate genus.

Species of Monotonodites

- \* Monotonodites levis Reichensperger 1939: 132. COSTA RICA. San Jose: San Jose, Farm La Caja. HOST: Neivamyrmex sp.
- \* Monotonodites nitidus Reichensperger 1923: 244, BRAZIL. Parana: Rio Negro. HOST: Neivamyrmex quadriglume.
- \* Monotonodites subopacus Reichensperger 1939: 133. COSTA RICA. San Jose: San Jose, Farm La Caja. HOST: Neivamyrmex sp.
- \* Monotonodites n. sp. 1. BRAZIL. Santa Catarina: Nova Teutonia. HOST: no data.
- \* Monotonodites n.sp. 2. MEXICO. Veracruz: Cordoba. HOST: no data.



219



Fig. 219. Monotonodites nitidus Reichensperger. Figs. 220-222. Monotonodites levis Reichensperger.

## SUBGROUP E3

Genus Symphilister Reichensperger

Figs. 223-226

Symphilister Reichensperger 1923: 323.

TYPE-SPECIES: Symphilister collegianus  
Reichensperger (by monotypy).

DIAGNOSIS. Form elongate oval; setose above (Fig. 224). Head 0.8 times as wide as long (Fig. 226); lateral margins carinate from occiput to front margin of clypeus, these carinae broad and joined at level of antennal sockets, thence nearly parallel to front margin of clypeus; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 224) as wide as long; lateral margins aruncate, convergent forward; front angles obliquely truncate; surface convex and rugulose at middle, strongly elevated on lateral 0.25, this elevated portion extends from front to hind margin, it has vertical lateral edges and is flat on top, this flat top is rugose, has one median, longitudinal, confused stria, and many large to small punctures each bearing robust tuft of setae; hind margin obtusely V-shaped. Elytron (Fig. 224) feebly convex; not continuous in outline with pronotum; dorsal striae represented by three, short, divergent striae near

front margin; with two rows of punctures bearing robust tufts of setae, of which one is median and one is at juncture of dorsal surface and epipleura, both continued transversely along hind margin; without subhumeral striae. Propygidium as wide as long; with sparse setiferous punctures similar to those on elytron and pronotum; surface depressed at hind and front angles. Pygidium as wide as long; with setiferous punctures similar to those on elytron and pronotum. Prosternum (Fig. 225) with keel convex; carinal striae absent; lateral striae widely separated, somewhat sinuate, nearly parallel; lateral marginal striae feebly cariniform, very short, posterior; lobe not separated from rest of prosternum by suture, continuous in outline with keel, with marginal stria dorsal and ending laterally in deep foveae, with preapical stria present; proepisternum with large, arcuate setose patch along prosternal-proepisternal suture; proepimeron with setose patch; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria close to front margin, nearly continuous with postcoxal metasternal stria at sides; without lateral foveae. Metasternum with postcoxal stria very close to middle coxa; inner and outer lateral striae absent. First abdominal sternum without postcoxal striae. Legs extremely long; tibiae

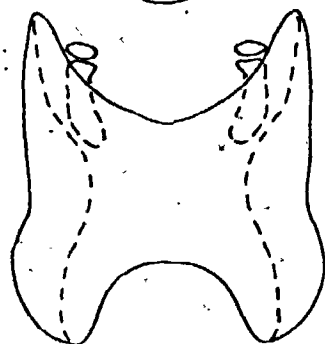
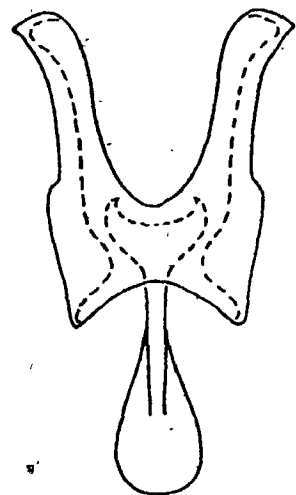
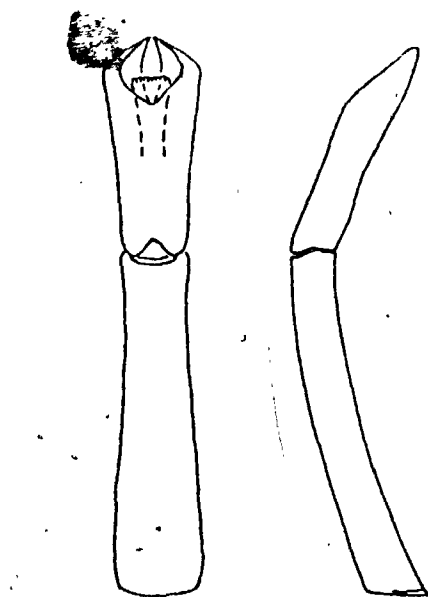


cylindrical. Male genitalia as in Fig. 223; 8th tergite without transverse anterior stria, without extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Symphilister may be separated from Oaristes by the carinae on the lateral margins of its head being joined transversely on the frons; and may be separated from Oaristes and Panoplitellus by the straight sided, flat topped elevations at the sides of its pronotum; and by the absence of carinal striae on its prosternum.

Species of Symphilister

- \* Symphilister collegianus Reichensperger 1923: 325. BRAZIL. Rio de Janeiro: Itatiaya. Santa Catarina: Blumenau. HOST: Eciton burchelli.
- \* Symphilister hamati Reichensperger 1929: 259. BRAZIL. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton burchelli.



223

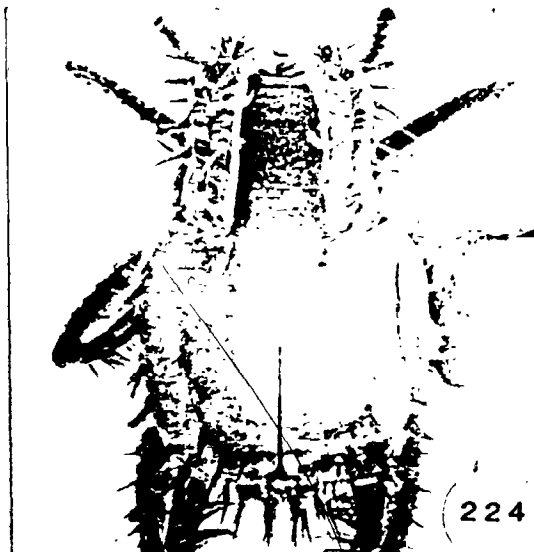


Fig. 223. *Symphilister hamati* Reichensperger. Figs. 224-226. *Symphilister collegianus* Reichensperger.

Genus Panoplitellus Hedicke

Figs. 227-229

Panoplitellus Hedicke 1923: 431.

TYPE-SPECIES: Panoplitellus comes Reichensperger (by original designation and monotypy).

Panoplitellus Reichensperger 1923: 321. (preoccupied)

DIAGNOSIS. Form truncate oval; setose above (Fig. 227). Head 0.8 times as wide as long (Fig. 229); lateral margins carinate from occiput to front margin of clypeus, these carinae joined at level of antennal sockets, thence divergent to front margin of clypeus; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin truncate, apical surface not broadened; antennal club oval, sclerotized on dorsal, ventral, inner and part of outer surfaces. Pronotum (Fig. 227) 1.4 times as wide as long; lateral margins strongly arcuate, nearly parallel; front angles obliquely truncate; surface nearly flat at middle, strongly elevated in lateral 0.25, these elevations are broadly rounded, highest at middle, impunctate; with only marginal stria, which is very strongly impressed, rather distant from lateral margins and continued across front margin; hind margin feebly sinuate. Elytron (Fig. 227) flat in front, feebly convex behind; dorsal striae represented by few feebly impressed, short striae near front margin; juncture of dorsal surface and epipleura

strongly margined, this margin composed of two striae which are approximate but not joined; with inner of these striae costiform in hind 0.6, outer stria costiform in front 0.4 (these striae may represent dorsal stria 1 and internal subhumeral stria); external subhumeral stria represented by short, marginal, anterior stria. Propygidium 1.4 times as wide as long; surface evenly convex. Pygidium as wide as long; surface feebly convex. Prosternum (Fig. 228) with keel rather narrow, convex; carinal striae not widely separated, parallel, joined in rounded arch in front; surface between carinal striae depressed; lateral striae strongly impressed, posterior, parallel; lateral marginal striae cariniform, short, posterior; lobe not separated from rest of prosternum by distinct suture, with marginal stria ventral and not ending in foveae at sides, with preapical stria absent; proepisternum with arcuate, setose patch along prosternal-proepisternal suture; proepimeron with setose patch; hind margin broadly, deeply, somewhat acutely, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; front margin incised behind lateral margins of prosternal keel; marginal stria somewhat distant from margin, joined at sides to postcoxal stria of metasternum; without lateral foveae. Metasternum with only postcoxal stria. First abdominal sternum with one postcoxal stria. Legs very long; tibiae

expanded; front and middle tibiae with outer edge angulate at middle; hind tibia with outer edge arucate, thin, inner surface concave. Male genitalia not available.

Remarks. : The genus Panoplitellus may be separated from Oaristes by the carinae on the lateral margins of its head being joined on the frons; by its prosternal carinal striae which are not joined in front; by the strongly, broadly elevated sides of its pronotum; and by its large size. From Symphilister, Panoplitellus may be separated by the presence of carinal striae on its pronotum; by the broadly rounded rather than straight sided, flat topped elevations at the sides of its pronotum; and by the absence of setose dorsal striae on its elytra. While I have not seen the male genitalia of this genus, I feel that it is best grouped with Oaristes and Symphilister because it shares with them the setose patches of the proepisternum and proepimeron, as well as the close similarity of its head and prosternum with that of Symphilister.

#### Species of Panoplitellus

- \* Panoplitellus comes Reichensperger 1923: 322. BRAZIL. Santa Catarina: Blumenau. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton burchelli.



Figs. 227-229. Panoplitellus comes Reichensperger.

Genus Oaristes new genus

Figs. 230-233

Oaristes new genus.TYPE-SPECIES: Sternocoelopsis subglabricollis Bruch.

DIAGNOSIS. Form truncate oval; setose above (Fig. 231). Head 0.8 times as wide as long (Fig. 233); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin truncate, apical surface not broadened; antennal club oval, sclerotized on part of ventral surface only. Pronotum (Fig. 231) 1.4 times as wide as long; lateral margins sinuate, nearly parallel; front angles broadly, obliquely truncate; surface flat at middle, broadly and roundly elevated at sides; inner edge of elevation with oblique stria that begins at hind angle, reaches to just behind head, thence transversely near front margin and is joined to contralateral stria; elevations with numerous, confused, longitudinal striae between oblique stria and lateral margin; hind margin obtusely V-shaped. Elytron (Fig. 231) flat in front, convex behind; dorsal striae fine, if not well-impressed their courses marked by row of setae; internal subhumeral stria long, feebly sinuate; external subhumeral stria sinuate, present in front 0.5. Propygidium 1.4 times as wide as long; surface evenly convex. Pygidium as wide as

long; surface strongly convex. Prosternum (Fig. 232) with keel rather narrow, convex; carinal striae divergent behind, parallel before front coxae, joined in rounded arch in front; lateral striae nearly parallel, joined in rounded arch to lateral marginal striae in front; lateral marginal striae cariniform, short; lobe not separated from rest of prosternum by suture, with marginal stria ventral and not ending in foveae at sides, with preapical stria widely separated from margin; proepisternum with arcuate, setose patch along prosternal-proepisternal suture; proepimeron with setose patch; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present at sides only, joined to outer lateral metasternal stria; surface depressed at front margin just behind lateral margins of prosternal keel; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria long, its recurrent arm present; inner lateral stria long, parallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs very long; tibiae expanded, their outer edges arcuate; hind tibia thin, its inner surface concave. Male genitalia as in Fig. 230; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical



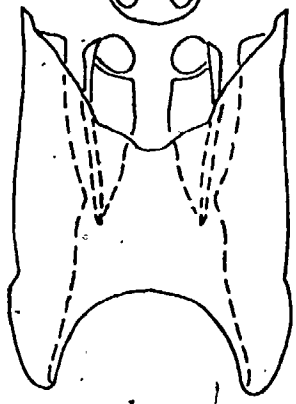
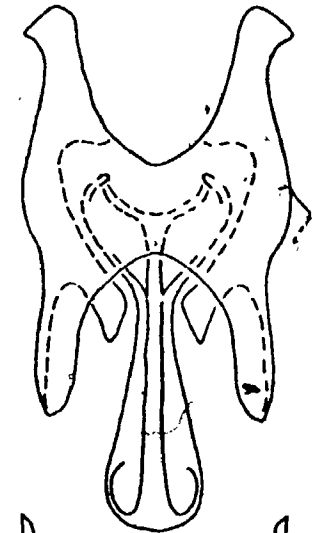
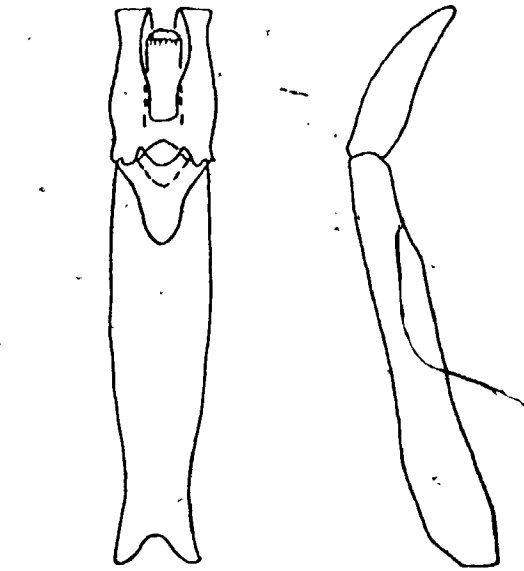
margin; 9th tergites with ventral "apodemes", without internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Etymology. "Oaristes" meaning "private friend".

Remarks. The genus Oaristes may be separated from Panoplitellus and Symphilister by the unjoined carinae on the lateral margins of its head; by its prosternal carinal striae which are joined in rounded arch in front; and by the presence of an inverted, U-shaped, lateral stria on its pronotum. I have erected the genus Oaristes for Sternocoelopsis subglabricollis. While this species does bear a superficial resemblance to other species of Sternocoelopsis, an inspection of its genitalia reveals that it lacks the characteristic movable "armature" of the other species. The presence of setose patches on its proepisternum and proepimeron and the shape of its genitalia indicate that Oaristes is best placed in a group with Panoplitellus and Symphilister.

#### Species of Oaristes

- \* Oaristes subglabricollis Bruch 1926: 25. NEW COMBINATION.  
ARGENTINA. BRAZIL. Goias: Campinas. HOST: Eciton dulcius.



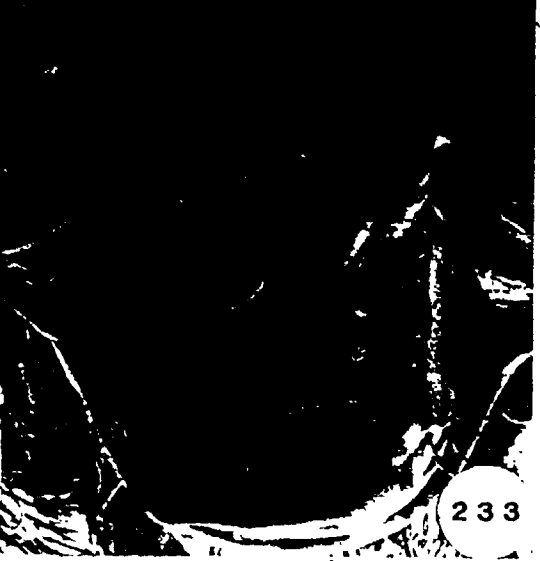
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Figs. 230-233. Oaristes subglabricollis Bruch (new genus).

Genus Gallaster new genus

Figs. 234-237

Gallaster new genus.TYPE-SPECIES: Gallaster hirsuta new species.

DIAGNOSIS. Form broadly oval; setose above (Fig. 235). Head as wide as long (Fig. 237); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin broadly emarginate, apical surface somewhat broadened; antennal club oval, sclerotized on ventral surface only. Pronotum (Fig. 235) 2 times as wide as long; lateral margins strongly arcuate, convergent forward; front angles obliquely truncate; surface broadly saddle-shaped and strigulate at middle, strongly elevated on lateral 0.25, these elevations broadly rounded, highest at middle, impunctate; with only marginal stria; hind margin obtusely V-shaped. Elytron (Fig. 235) convex; dorsal striae marked by crescentiform, shallow punctures; internal subhumeral stria long, cariniform; external subhumeral stria feebly cariniform, strongly sinuate. Propygidium 1.7 times as wide as long; surface evenly convex. Pygidium as wide as long; surface not strongly convex. Prosternum (Fig. 236) with keel broad, convex; carinal striae widely separated, parallel; surface between carinal striae flat, ascending in front;

lateral striae parallel, joined in front to lateral marginal striae; lateral marginal striae cariniform, straight, parallel; lobe short, not separated from rest of prosternum by distinct suture, marginal stria dorsal and ending in prominent foveae at sides, preapical stria present; proepisternum without setose patch, surface strongly concave; proepimeron without setose patch; hind margin broadly, shallowly, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria long, its recurrent arm present; inner lateral stria parallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs long; tibiae feebly expanded; front tibia quadrate, outer edge denticulate; middle tibia angulate at middle of outer edge; hind tibia arcuate, feebly concave on inner surface. Male genitalia as in Fig. 234; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without or reduced internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short,

Etymology. "Galla" meaning "pathological swelling on

plants" and "-aster" suffix meaning "state or condition of".

Remarks. The genus Gallaster may be separated from Daptisister and Latronister by the strong, broadly rounded, impunctate elevations at the sides of its pronotum; and by the strigulate anterior, median portion of its pronotum. I have mentioned above only some of the most outstanding differences between these genera. The species, Gallaster hirsuta, differs from both Daptisister and Latronister in other noteworthy characters, but many of these, such as the length and density of setae or the striae of the meso- and metasternum, are somewhat variable characters within other genera. Therefore, they do not represent potentially reliable characters for separating these genera, especially since two of them, Daptisister and Gallaster, are monotypic.

Gallaster hirsuta new species

Figs. 234-237

Gallaster hirsuta new species.

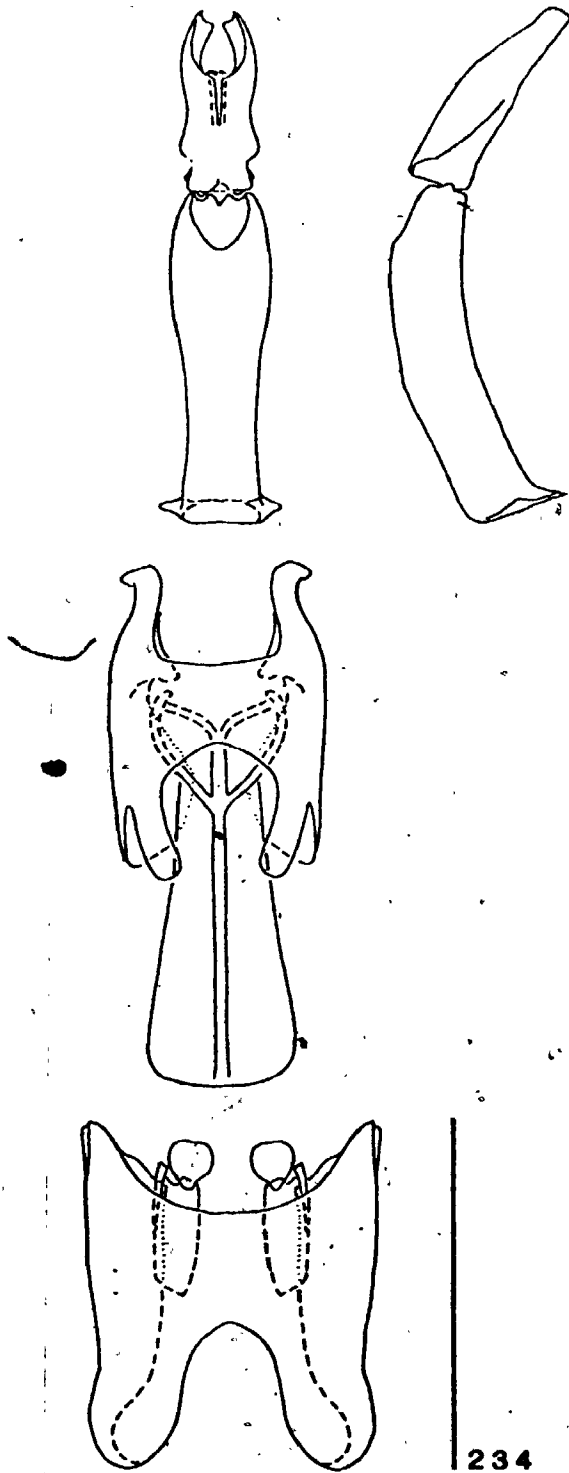
TYPE. Holotype, male, Panama, Canal Zone, Barro Colorado Island, 26.vii.1956, C.W. & M.E. Rettenmeyer, #2199, (FMNH). Allotype, female, same data as holotype, (FMNH). Paratypes, (1) male, type locality, 3.i.1956, C.W. & M.E. Rettenmeyer, #2673, Host Eciton hamatum, Colony E-308; (1) female, type locality, 7.viii.1956, C.W. & M.E. Rettenmeyer, #2271-x; (1) male, Panama, Cerro Campana, 10.iv.1963, C.W. & M.E. Rettenmeyer, #2864, Host Eciton mexicanum Roger, Colony E-344.

Description. Length: 2.4-2.8 mm; width: 2.1-2.4 mm. Head (Fig. 237) with vertex, frons and clypeus depressed; vertex with sparse, long setae which occur in small tufts; labrum with five long setae across apical margin. Pronotum (Fig. 235) with marginal stria entire only across front margin, this stria continuous with stria across front margin of prosternal alae; front 0.5 of median depression with scattered tufts of long setae, these tufts densest at sides; lateral elevations very prominent, impunctate. Elytron (Fig. 235) with dorsal stria 1 entire; stria 2 well impressed in hind 0.5 and marked by crescentiform punctures in front 0.5; 3-4-sutural striae marked by crescentiform punctures;

stria 5 absent; internal subhumeral stria reaching from front to hind margin, and briefly across hind margin; external subhumeral stria reaching from front to hind margin, joined behind to internal subhumeral stria; marginal elytral stria fine, not as strongly sinuate as external subhumeral stria; marginal epipleural stria absent. Propygidium and pygidium strigulate; with scattered long setae; pygidium of males slightly more convex than that of females. Prosternum (Fig. 236) with carinal striae reaching from hind to front margin, outwardly hooked in front; lateral striae reaching from hind to near front margin; surface between carinal and lateral striae with row of setae. Mesosternum with marginal stria bifid at middle, with separate appendages at sides; with scattered setae across front margin; in males surface behind marginal stria feebly depressed. Metasternum with postcoxal stria not strongly arcuate, reaching metasternal-metepisternal suture near middle; outer lateral stria reaching to near hind coxa, inwardly hooked in front and behind, its recurrent arm close to and nearly parallel to postcoxal stria; inner lateral stria parallel to outer lateral stria, inwardly hooked in front and behind, sometimes extending to middle across hind margin. First abdominal sternum with postcoxal striae joined just before hind margin and extending to middle of lateral margin. Legs as in generic diagnosis.

Male genitalia as in Fig. 234.





Figs. 234-237. Gallaster hirsuta (new genus, new species).

Genus Daptesister new genus

Figs. 238-241

Daptesister new genus.TYPE-SPECIES: Daptesister pilosus new species.

DIAGNOSIS. Form oval; surface not densely punctate; setose above (Fig. 239). Head as wide as long (Fig. 241); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles not unusually long, outer surface unmodified near base; labrum 4 times as wide as long, apical margin broadly emarginate, apical surface somewhat broadened; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 239) 2 times as wide as long; lateral margins straight, strongly convergent forward; front angles obtusely truncate; surface evenly convex; with marginal striae only; with rather sparse, medium to small, oval rimmed punctures each bearing tuft of setae; hind margin obtusely V-shaped. Elytron (Fig. 239) evenly convex; not densely punctate; dorsal striae marked by punctures similar to those on pronotum; internal subhumeral stria long, cariniform; external subhumeral stria feebly cariniform, strongly sinuate. Propygidium 1.6 times as wide as long; without tubercles. Pygidium as wide as long; surface strongly convex. Prosternum (Fig. 240) with keel broad, convex; carinal striae widely separated,

subparallel; surface between carinal striae flat; lateral striae approximate to carinal striae; lateral marginal striae cariniform, straight, parallel; lobe short, separated from rest of prosternum by suture, marginal stria well impressed, ventral, preapical stria absent; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria widely separated from front margin at sides; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria widely separated from middle coxa in front, its recurrent arm present; inner lateral stria absent. First abdominal sternum with one postcoxal stria. Legs slightly longer than normal; tibiae expanded; front tibia arcuate; middle and hind tibiae angulate at middle of outer edge. Male genitalia as in Fig. 238; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without or reduced internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Etymology. "Daptes" meaning "eater, bloodsucker" and "-ister" suffix meaning "having the nature of".

Remarks. The genus Daptesister may be separated from Gallaster and Latronister by the sparse, medium to small, oval, rimmed punctures, each bearing a tuft of setae, on its pronotum and elytra. From Gallaster, Daptesister may be separated by the absence of broadly rounded, impunctate bullae at the sides of its pronotum. From Latronister which it resembles more closely, Daptesister may be separated by the presence of prosternal carinal striae and the presence of a marginal stria on its mesosternum.

Daptesisister pilosus new species

Figs. 238-241

Daptesisister pilosus new species.

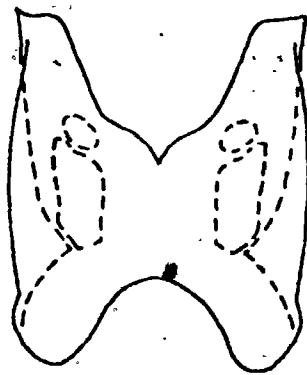
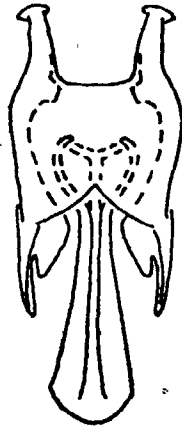
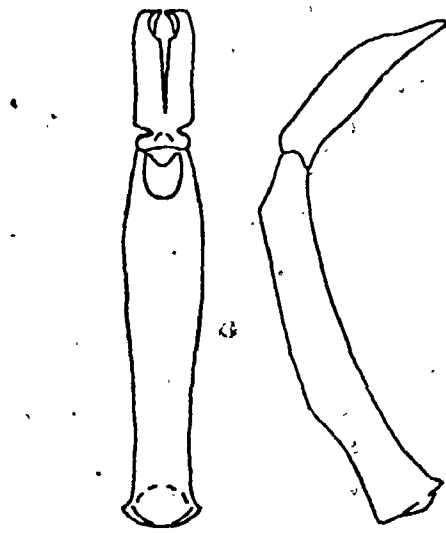
TYPE: Holotype, male, Panama, Canal Zone, Barro Colorado Island, 1.iii.1955, C.W. Rettenmeyer, #930, Eciton burchelli Refuse Deposit, Colony B-IV, Statory Day (FMNH). Allotype, female, type locality, 4.iii.1955, C.W. Rettenmeyer, #953, same host data. Paratypes, sex undetermined, (1) type locality, 2.iv.1956, C.W. & M.E. Rettenmeyer, #1595; (1) type locality, 11.iv.1956, C.W. & M.E. Rettenmeyer, #1645; (2) type locality, 5.vii.1956, C.W. & M.E. Rettenmeyer, #2075; (1) type locality, 5.vii.1956, C.W. & M.E. Rettenmeyer, #2077; (1) type locality, 17.iv.1963, R.D. Akre, #189, Host Eciton dulcius, Colony E-55; (1) type locality, 10.iv.1967, R.D. Akre, #300, Host Eciton dulcius crassinode Borgmeier, Colony Ec-51, Berlese; (1) Costa Rica, Monteverde, 10°29' N, 84°50' W, 1400 m. 17.iv.1963, R.D. Akre, #189, Eciton dulcius crassinode, Colony E-355.

Description. Length: 1.9-2.2 mm; width: 1.7-1.9 mm. Entire surface with rather sparse, medium to small, oval, rimmed punctures each bearing tuft of setae, surface between punctures almost everywhere finely rugulose. Head (Fig. 241) with vertex flat, frons and clypeus

depressed; labrum with two to three setiferous punctures along front margin. Pronotum (Fig. 239) with lateral margins very feebly incised just before hind angles; marginal stria continuous along lateral and front margins except briefly interrupted behind head; surface feebly inflated at hind angles. Elytron (Fig. 239) continuous in outline with pronotum; dorsal striae one to five and sutural stria marked by setiferous punctures; internal subhumeral stria cariniform, reaching from front to hind margin, forming distinct margin between dorsal surface and epipleuron; external subhumeral stria cariniform, reaching from front to hind margin, strongly sinuate, briefly united with internal subhumeral stria behind middle; marginal elytral stria feebly cariniform, not as strongly sinuate as external subhumeral stria, to which it is very close in front and more widely separated from behind; marginal epipleural stria very short, anterior. Pygidium of females with marginal stria which is close to hind margin and widely divergent from lateral margins in front. Prosternum (Fig. 240) with carinal striae reaching from hind margin to or near front margin of keel; lateral striae very close and parallel to carinal striae; surface between carinal and lateral striae with row of setiferous punctures. Mesosternum with marginal stria rather distant from front margin at middle, very distant at sides, joined to postcoxal stria of

metasternum; surface feebly concave behind marginal stria. Metasternum with postcoxal stria not strongly arcuate, reaching to meta-metepisternal suture near middle; outer lateral stria widely separated from middle coxa in front, reaching from meso-metasternal suture to near hind coxa, its recurrent arm close to and parallel to postcoxal stria; inner lateral stria absent; surface on disk nearly smooth, very sparsely punctate. First abdominal sternum with inner postcoxal stria reaching from front to hind margin; outer postcoxal stria long, broadly arcuate, reaching from front margin to lateral margin. Legs as in generic diagnosis. Male genitalia as in Fig. 238.

**Etymology.** "Pilosus" meaning "hairy".



238



239



240



241

Figs. 238-241. Daptesisister pilosus (new genus, new species).



Genus Latronister Reichensperger

Figs. 242-246

Latronister Reichensperger 1932: 8.

TYPE-SPECIES: Latronister rugosus Reichensperger (by original designation and monotypy).

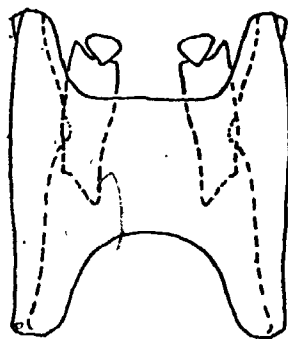
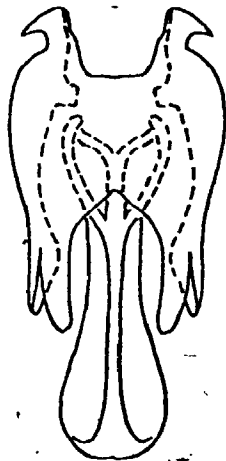
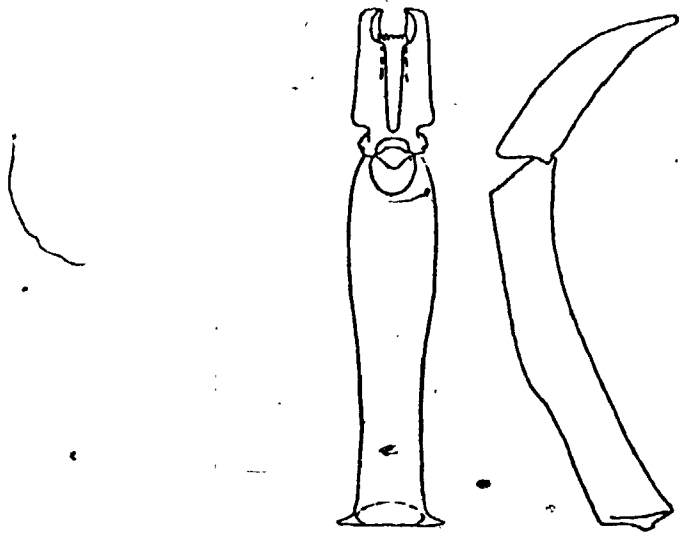
DIAGNOSIS. Form oval; setose above; surface densely, closely punctate (Fig. 243). Head as wide as long (Fig. 246); lateral margins carinate from occiput to front margin of clypeus, these carinae nearly obsolete and very widely separated in front; mandibles unusually long, with outer surface unmodified near base; labrum 8 times as wide as long, apical margin broadly emarginate, apical surface greatly broadened and declivous; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 243) 1.6 times as wide as long; lateral margins inwardly arcuate, divergent behind and in front, narrowest at middle; front angles obliquely truncate; surface evenly convex; with marginal stria only; with contiguous, irregular punctures over entire surface; hind margin obtusely V-shaped. Elytron (Fig. 243) evenly convex; densely punctate; dorsal striae marked by medium, irregular punctures bearing setae; internal subhumeral stria marked in same way as dorsal striae; external subhumeral stria fine, cariniform, strongly sinuate. Propygidium 1.2 to 1.4 times as wide as long; without tubercles. Pygidium as wide as long;

surface not strongly convex. Prosternum (Fig. 245) with keel broad, convex; carinal striae absent; lateral striae widely separated, evanescent, divergent in front, their courses marked by setae; lateral marginal striae nearly obsolete; lobe short, separated from rest of prosternum by suture, marginal stria well impressed and ventral, without preapical stria; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria absent; without lateral foveae. Metasternum with meso-metasternal suture marked by carina; with or without postcoxal stria; outer lateral stria represented by recurrent arm only; inner lateral stria short and anterior, joined to carina marking meso-metasternal suture. First abdominal sternum without postcoxal striae. Legs long; front tibia feebly expanded, quadrate; middle and hind tibiae cylindrical. Male genitalia as in Fig. 242; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without or reduced internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Latronister may be separated from Daptēsister and Gallaster by the dense, close punctation of its pronotum and elytra; and by its unusually long mandibles. From Gallaster, Latronister may be separated by the absence of broadly rounded, impunctate elevations at the sides of its pronotum. From Daptēsister, Latronister may be separated by the presence of a carina on its meso-metasternal suture; and by the absence of carinal striae on its prosternal keel.

Species of Latronister

- \* Latronister rugosus Reichensperger, 1932: 9. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton
- \* Latronister n. sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton vagans.



242



Fig. 242. Latronister n.sp. 1. Figs. 243-246. Latronister rugosus Reichensperger.

Genus Nymphister Reichensperger

Figs. 247-250

Nymphister Reichensperger 1933: 188.

TYPE-SPECIES: Nymphister simplicissimus  
Reichensperger (by original designation and  
monotypy).

DIAGNOSIS. Form oval; not setose above (Fig. 248). Head as wide as long (Fig. 250); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin truncate and somewhat thickened, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 248) 2 times as wide as long; lateral margins straight, convergent forward; front angles obliquely truncate; surface convex at middle, feebly reflexed at sides; with one lateral stria approximate to marginal stria; without large punctures; hind margin strongly, obtusely V-shaped. Elytron (Fig. 248) evenly convex; without dense punctures; dorsal striae marked by large, shallow, crescentiform punctures; internal subhumeral stria long, cariniform; external subhumeral stria cariniform, strongly sinuate. Propygidium 1.8 times as wide as long; without tubercles. Pygidium as wide as long. Prosternum (Fig. 249) with keel broad, convex; carinal striae widely

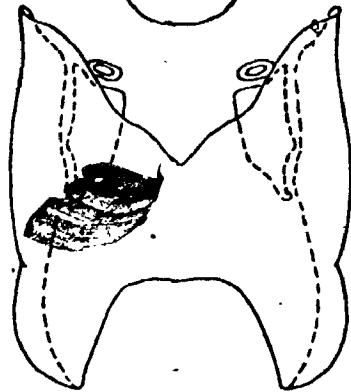
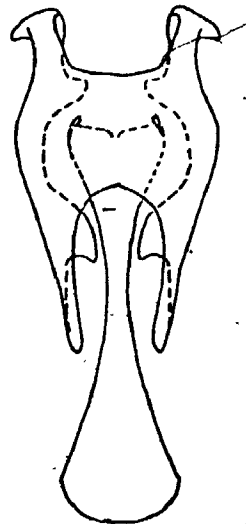
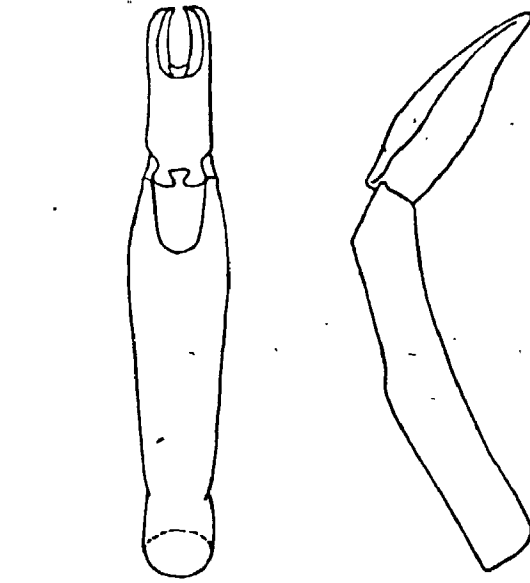
separated, feebly divergent behind, feebly convergent in front; surface between carinal striae flat; lateral striae approximate to carinal striae, feebly sinuate; lateral marginal striae cariniform, subparallel; lobe short, separated from rest of prosternum by suture, with marginal stria dorsal, with preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, shallowly, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria bifid at middle; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria with recurrent arm present; inner lateral stria sinuate behind. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia quadrate; middle and hind tibiae with outer edge angulate at middle. Male genitalia as in Fig. 247; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without or reduced internal "guides" for aedeagus, with apical margin produced to form "hooked" structure; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Nymphister may be separated from other genera in this group by the absence of shallow,

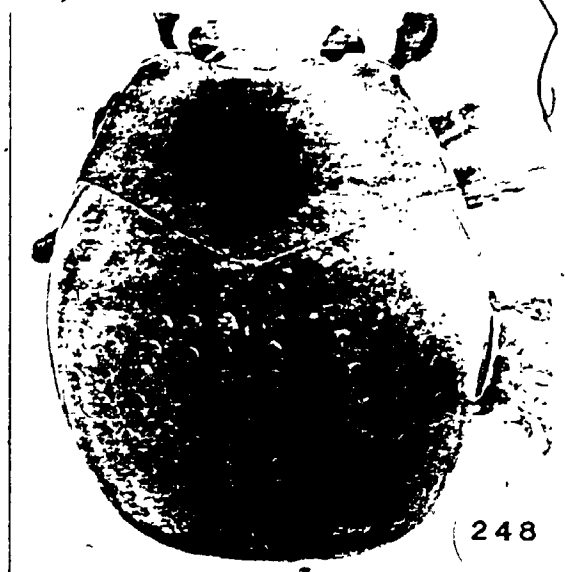
oval punctures on its pronotum; and by the nearly parallel, widely separated carinal striae on its prosternum. From Paratropinus and Psalidister, which it superficially resembles most closely, Nymphister may be separated by the presence of a bifid marginal stria on its mesosternum; and by the less well-defined dorsal striae on its elytra.

Species of Nymphister

- \* Nymphister simplicissimus Reichensperger 1933: 189.  
COSTA RICA. Limon: Revertazon, Hamburg Farm. Osa Peninsula: Rincon. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton hamatum, Eciton mexicanum.
- \* Nymphister n. sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton burchelli.



247



248



249



250

Figs. 247-250. Nymphister simplicissimus Reichensperger.



Genus Paratropinus Reichensperger

Figs. 251-254

Paratropinus Reichensperger 1923: 317.

TYPE-SPECIES: Paratropinus variepunctatus  
Reichensperger (by original designation and  
monotypy).

DIAGNOSIS. Form oval; not setose above (Fig. 252). Head as wide as long (Fig. 254); lateral margins carinate from occiput to front margin of clypeus, these carinae rather widely separated in front; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin truncate, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 252) 1.7 times as wide as long; lateral margins feebly arcuate, convergent forward; front angles obliquely truncate; surface evenly convex; with one lateral stria approximate to marginal stria; with medium to small, shallow, oval punctures over most of surface; hind margin obtusely V-shaped. Elytron (Fig. 252) evenly convex; not densely punctate; dorsal striae marked by large, crescentiform punctures; interstices of striae somewhat elevated; internal subhumeral stria long; external subhumeral stria strongly sinuate. Propygidium 1.8 times as wide as long; without tubercles. Pygidium as wide as long; surface strongly convex. Prosternum (Fig. 253) with keel broad,

evenly convex; carinal striae widely divergent behind, convergent forward, joined in rounded arch in front; surface between carinal striae flat; lateral striae strongly divergent forward; lateral marginal striae cariniform, subparallel; lobe separated from rest of prosternum by suture, with marginal stria narrowly separated from lateral margins, with preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria absent; surface depressed at front margin just behind lateral margins of prosternal keel; without lateral foveae. Metasternum with postcoxal stria present; outer lateral stria with recurrent arm present; inner lateral stria broad, shallow, sinuate. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia with outer edge arcuate; middle and hind tibia with outer edge angulate at middle. Male genitalia as in Fig. 251; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", without or reduced internal "guides for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long,

parameres very short.

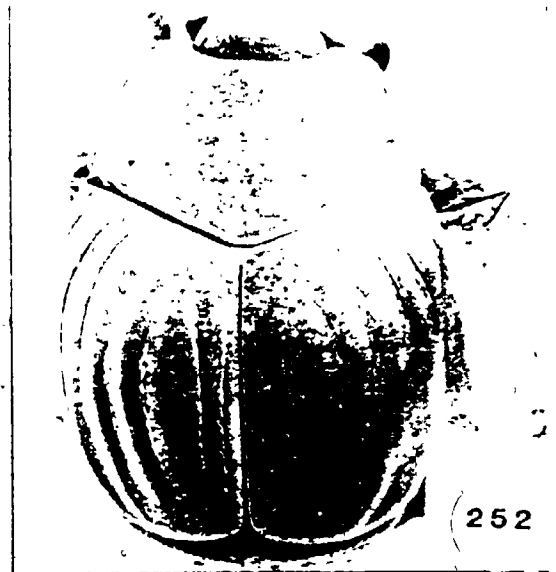
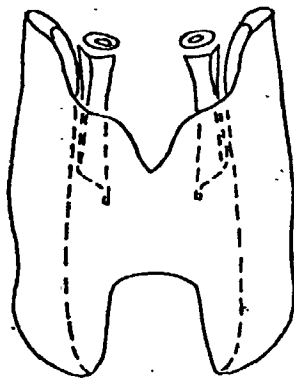
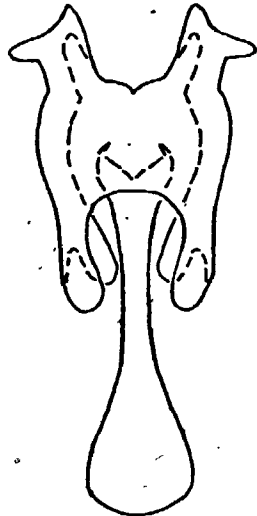
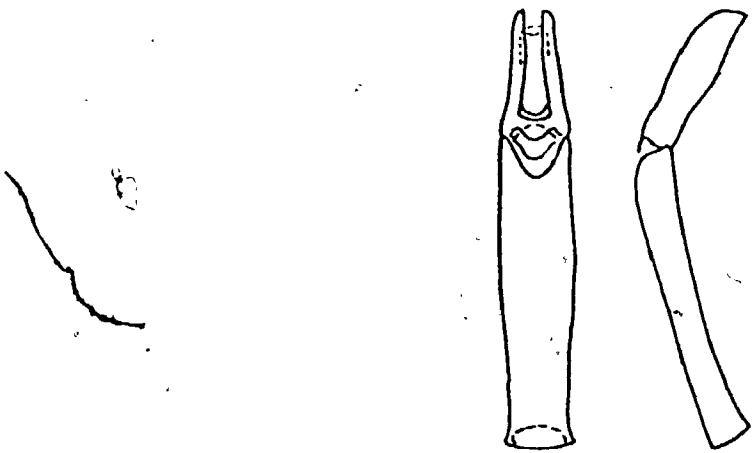
Remarks. The genus Paratropinus may be separated from other genera in this group by the medium to small, shallow, oval punctures over most of its pronotum; and by its prosternal carinal striae which are widely divergent behind, convergent forward and joined in rounded arch in front. From Nymphister, Paratropinus may be separated by the absence of a marginal stria on its mesosternum; and by the somewhat costiform interstices of its dorsal elytral striae. From Psalidister, Paratropinus may be separated by the presence of carinal striae on its prosternum; and by its broad, shallow, sinuate inner lateral metasternal striae.

Species of Paratropinus

Paratropinus sculptus Reichensperger 1935: 199. COSTA RICA. HOST:

Paratropinus variepunctatus Reichensperger 1923: 318. BRAZIL. HOST:

\* Paratropinus n. sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton burchelli.



Figs. 251-254. Paratropinus n.sp. 1.

Genus Psalidister Reichensperger

Figs. 255-258

Psalidister Reichensperger 1924: 144.

TYPE-SPECIES: Psalidister quadriglumis  
Reichensperger (by original designation).

DIAGNOSIS. Form oval; not setose above (Fig. 256). Head as wide as long (Fig. 258); lateral margins carinate from occiput to front margin of clypeus, these carinae rather widely separated in front; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin truncate, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 256) 1.7 times as wide as long; lateral margins feebly arcuate, convergent forward; front angles obliquely truncate; surface convex at middle, feebly inflated along sides; with one lateral stria approximate to marginal stria; with large, shallow, oval to crescentiform punctures just before hind margin; hind margin rather strongly, obtusely V-shaped. Elytron (Fig. 256) evenly convex; not densely punctate; dorsal striae well-impressed, not marked by large, shallow, oval punctures; internal subhumeral stria long, feebly cariniform; external subhumeral stria feebly cariniform, strongly sinuate. Propygidium 1.4 times as wide as long; without tubercles. Pygidium as wide as long; surface strongly convex. Prosternum (Fig. 257)

with keel broad, evenly convex; carinal striae absent; lateral striae fine, widely separated, nearly parallel; lateral marginal striae cariniform, short, feebly divergent forward; lobe separated from rest of prosternum by suture, with marginal stria very strongly impressed and narrowly separated from lateral margins, with preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, very deeply, triangularly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria absent; surface strongly depressed at front margin just behind lateral margins of prosternal keel; without lateral foveae. Metasternum with postcoxal stria present; inner and outer lateral striae joined in front, divergent behind; outer lateral stria with recurrent arm present. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia quadrate; middle and hind tibiae with outer edges angulate at middle. Male genitalia as in Fig. 255; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks" subdivided into 2, without setae along apical margin; 9th tergites with ventral "apodemes", without or reduced internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent; basal piece long,

parameres very short.

Remarks. The genus Psalidister may be separated from other genera in this group by its pronotum which has a row of large, shallow, oval to crescentiform punctures just before the hind margin; and by the absence of carinal striae on its prosternum. From Nymphister, Psalidister may be separated by the absence of a marginal stria on its mesosternum. From Pañatropinus, Psalidister may be separated by its narrow, convergent lateral metasternal striae.

#### Species of Psalidister

Psalidister burchelli Reichensperger 1924: 146. BRAZIL.

HOST:

\* Psalidister burchelli costaricensis Reichensperger 1935: 198. COSTA RICA. PANAMA: Canal Zone: Barro Colorado Island. HOST: Eciton burchelli.

Psalidister carinulatus Reichensperger 1924: 147.

BRAZIL. HOST:

Psalidister distinctus Reichensperger 1935: 197. COSTA RICA. San Jose: San Jose, Farm La Caja. Limon: Revertazon, Hamburg Farm. HOST: Eciton burchelli.

Psalidister foveatus Reichensperger 1924: 147. BRAZIL.

HOST:

Psalidister furcatus Reichensperger 1924: 306. BRAZIL.

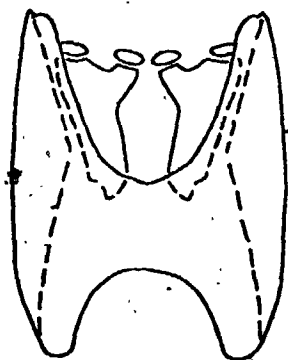
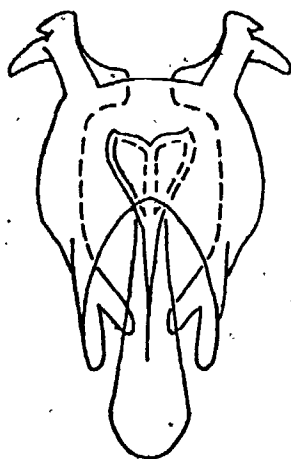
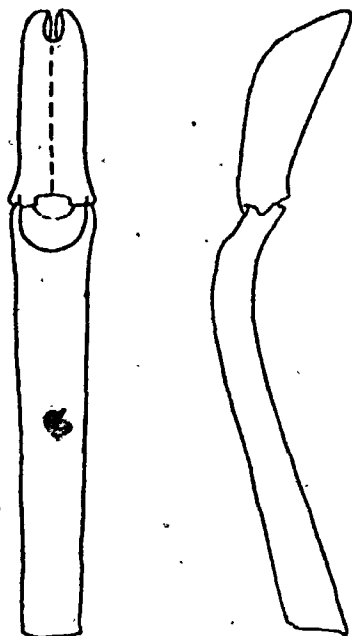
HOST:

Psalidister quadriglumis Reichensperger 1924: 144.

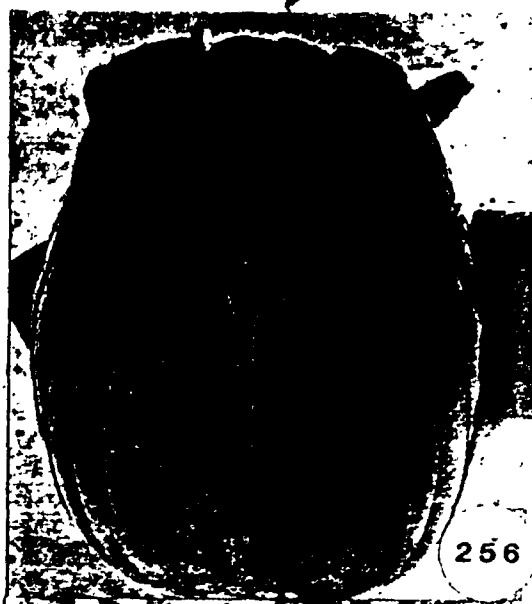
BRAZIL. HOST:

\* Psalidister n. sp. 1. PANAMA. Canal Zone: Barro Colorado  
Island. HOST: Eciton burchelli.





255



Figs. 255-258. Psalidister burchelli costaricensis Reichensperger.

Genus Anasynodites Reichensperger

Figs. 259-261

Anasynodites Reichensperger 1935: 200.TYPE-SPECIES: Anasynodites striatus Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; setose above (Fig. 259). Head as wide as long (Fig. 261); lateral margins carinate from occiput to front margin of clypeus, these carinae rather widely separated in front; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin broadly emarginate, apical surface feebly broadened; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 259) 2 times as wide as long; lateral margins arcuate, convergent forward; front angles obliquely truncate; surface evenly convex at middle, somewhat inflated at sides; with one lateral stria approximate to marginal stria; with large, shallow, oval to crescentiform punctures over most of surface; hind margin obtusely V-shaped. Elytron (Fig. 259) evenly convex; not densely punctate; dorsal striae marked by medium, shallow, crescentiform, setiferous punctures; with one additional stria between dorsal stria five and sutural stria; interstices of dorsal striae longitudinally striolate; internal subhumeral stria long, cariniform; external subhumeral stria carinulate, strongly sinuate, joined

briefly to internal subhumeral stria near middle. Propygidium 1.4 times as wide as long; without tubercles. Pygidium as wide as long; surface not strongly convex. Prosternum (Fig. 260) with keel broad, convex; carinal striae widely separated, parallel; surface between carinal striae depressed behind; lateral striae sinuate, divergent forward; lateral marginal striae cariniform, divergent forward; lobe short, separated from rest of prosternum by suture, marginal stria dorsal, narrowly separated from lateral margins, preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, very deeply, triangularly emarginate. Mesosternum produced forward to fit prosternal emargination; marginal stria absent; surface strongly depressed at front just behind lateral margins of prosternal keel; without lateral foveae. Metasternum with postcoxal stria; inner and outer lateral striae nearly joined in front, divergent behind; outer lateral stria with recurrent arm present. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia quadrate; middle and hind tibiae with outer edge angulate at middle. Male genitalia not available.

Remarks. The genus Anasyodites may be separated from the other genera in this group by the longitudinally striolate interstices of its dorsal elytral striae, and

by the notably inflated sides of its pronotum. I have tentatively placed the genus Anasynodites in this group. It appears to share a number of characteristics with members of this group, especially with Psalidister; however, it also appears to share characteristics with Aphanister and Daitrosister. All the genera in the groups involved are obviously interrelated, and most likely their relationship is more complex than the simple version of my preliminary analysis. Hopefully, when I have the opportunity to dissect the males of Anasynodites more light will be shed on this interrelationship.

Species of Anasynodites

Anasynodites striatus Reichensperger 1935: 200. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton burchelli.

\* Anasynodites striatus costaricae Reichensperger 1935: 200. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton burchelli.



Figs. 259-261. Anasynodites striatus Reichensperger.

Genus Alloiodites Reichensperger

Figs. 262-265

Alloiodites Reichensperger 1939: 99.

TYPE-SPECIES: Mesynodites plaumanni Reichensperger  
(by original designation).

DIAGNOSIS. Form oval; sparsely setose above (Fig. 263). Head as wide as long (Fig. 265); lateral margins carinate from occiput to front margin of epistoma, these carinae widely separated in front; labrum 3 times as wide as long, apical margin broadly, quite deeply emarginate, apical surface somewhat broad; mandibles not modified on outer surface at base; antennal club oval, sclerotized on part of dorsal, ventral and part of inner surfaces. Pronotum (Fig. 263) 1.8 times as wide as long; lateral margins arcuate, convergent forward; front angles obliquely truncate, nearly rounded; surface evenly convex at middle, feebly reflexed at sides; with one lateral stria approximate to marginal stria; with large, shallow, elongate oval to drop-shaped punctures over most of surface; hind margin arcuate. Elytron (Fig. 263) evenly convex; with 12-14 dorsal striae, marked by large to small, shallow, oval punctures; interstices of striae somewhat costiform; internal subhumeral stria long, cariniform; external subhumeral stria cariniform, sinuate. Propygidium 2 times as wide as long; somewhat inflated before hind margin. Pygidium as wide as long.

Prosternum (Fig. 264) with keel convex; carinal striae divergent behind front coxae, nearly parallel before hind coxae, nearly joined or joined in rounded arch in front; surface between carinal striae feebly depressed; lateral striae evanescent; lateral marginal striae cariniform, short, divergent forward; lobe separated from rest of prosternum by suture, marginal stria separated from lateral margins, preapical stria present but poorly impressed; proepisternum and proepimeron without setose patches; hind margin broadly, rather acutely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria somewhat cariniform, bifid at middle or entire; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria joined in front to postcoxal stria, long, reaching to hind coxa; inner lateral stria long, somewhat confused by punctures; entire surface with large, shallow, oval punctures. First abdominal sternum with two postcoxal striae; surface with large, shallow, oval to crescentiform punctures. Legs normal length; tibiae expanded; front tibia arcuate, denticulate; middle and hind tibia angulate at middle. Male genitalia as in Fig. 262; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemés", without or

reduced internal "guides" for aedeagus, with apical margin produced to form "hooked" structures; 10th tergite absent, basal piece long, parameres very short.

Remarks. The genus Alloiodites may be separated from other genera in this group by the 12-14 dorsal striae on its elytra, and by the large, shallow, elongate oval to drop-shaped punctures over most of its head, pronotum and meso-metasterna. Within this group, Alloiodites appears to have the greatest affinity to Paratropinus. I have elevated Alloiodites to generic status from a subgenus of Mesynodites because it is distinctive and readily characterized. This judgement is based on the consistent expression of the extra striae on the elytra and of the punctation in all species.

#### Species of Alloiodites

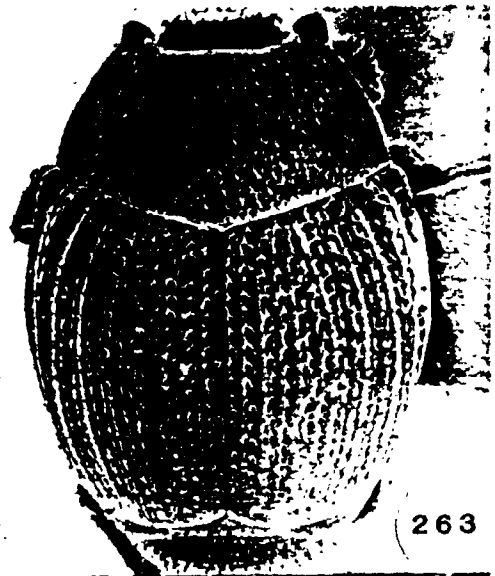
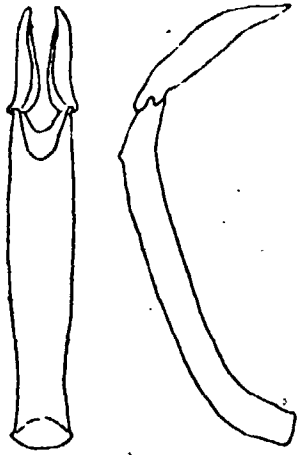
Alloiodites dispar Reichensperger 1939: 104. BRAZIL.  
Santa Catharina, Nova Teutonia. HOST: Labidus praedator.

\* Alloiodites plaumanni Reichensperger 1939: 99. BRAZIL.  
Santa Catharina, Nova Teutonia. HOST: Labidus praedator.

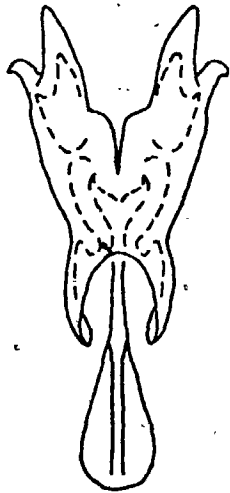
Alloiodites regulus Reichensperger 1939: 102. BRAZIL.  
Santa Catharina, Nova Teutonia. HOST: Labidus praedator.



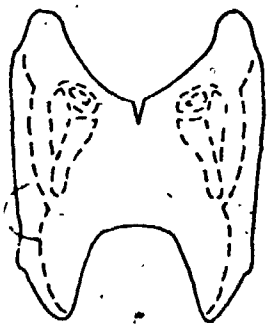
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Figs. 262-265. Alloiodites plaumanni Reichensperger.

## SUBGROUP E4

Genus Sternocoelopsis Reichensperger

Figs. 266-269

Sternocoelopsis Reichensperger 1923: 328.

TYPE-SPECIES: Sternocoelopsis veselyi Reichensperger  
(by monotypy).

DIAGNOSIS. Form truncate oval; setose above (Fig. 267). Head as wide as long (Fig. 269); lateral margins carinate from occiput to front margin of clypeus, these carinae closely separated on frons and clypeus; labrum 2 times as wide as long, apical margin broadly emarginate, apical surface somewhat broadened; antennal club oval, sclerotized on part of dorsal, ventral and inner surfaces. Pronotum (Fig. 267) 1.6 times as wide as long; lateral margins strongly sinuate; front angles expanded, rounded; with stria close to and entire along sides and front margin; surface nearly flat, feebly convex at middle, feebly depressed behind head and mesad of hind angles; hind margin feebly sinuate. Elytron (Fig. 267) flat in front, feebly convex behind; surface opaque; dorsal striae absent; internal subhumeral stria absent; external subhumeral stria sinuate, feebly cariniform. Propygidium 1.6 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 268) with keel convex; carinal striae parallel, joined in rounded arch in front; surface

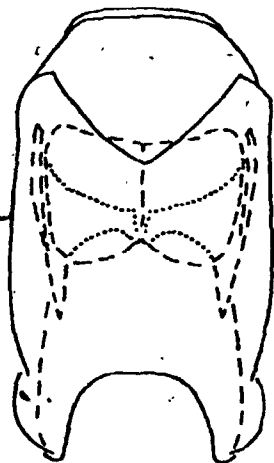
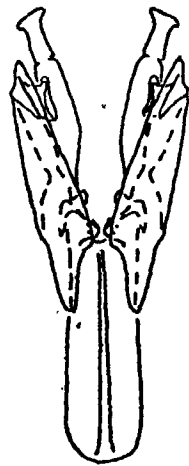
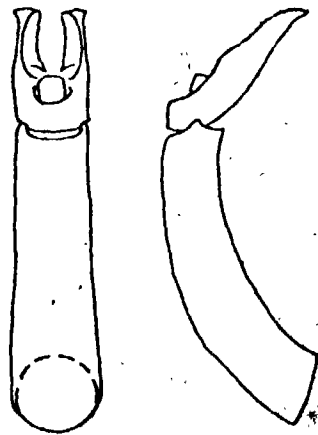
between carinal striae deeply depressed; lateral striae fine, long; lateral marginal striae widely divergent in front; surface between lateral and lateral marginal striae depressed; lobe separated from rest of prosternum by feebly impressed suture, with marginal stria present and separated from lateral margin, with preapical stria present; alae with marginal stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, acutely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present; surface behind marginal stria depressed; without lateral foveae. Metasternum with only short outer lateral stria present. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. Male genitalia as in Fig. 266; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, with "disks" fused, without setae along apical margin; 9th tergites with ventral "apodemes", with movable "armature", with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Sternocoelopsis may be separated from Chrysetaerius and Pulvinister by the absence of dense, close punctation on its pronotum and elytra; by the strongly sinuate lateral margins of its pronotum; and

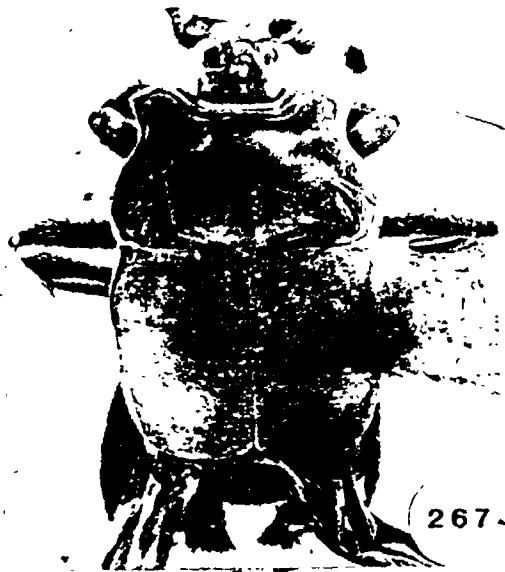
by the presence of carinal striae on its prosternum. From Aphanister which it resembles most closely, Sternocoelopsis may be separated by the absence of a strong, median, transverse depression on its pronotum; and by the absence of dorsal striae on its elytra.

Species of Sternocoelopsis

- Sternocoelopsis apricomus Reichensperger 1923: 250.  
BRAZIL. HOST: Neivamyrmex
- \* Sternocoelopsis nevermanni Reichensperger 1932: 6. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton burchelli.
- \* Sternocoelopsis veselyi Reichensperger 1923: 330.  
BRAZIL. HOST: Eciton burchelli.
- \* Sternocoelopsis n. sp. 1. COSTA RICA. Puntarenas: Monte Verde, PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton burchelli.



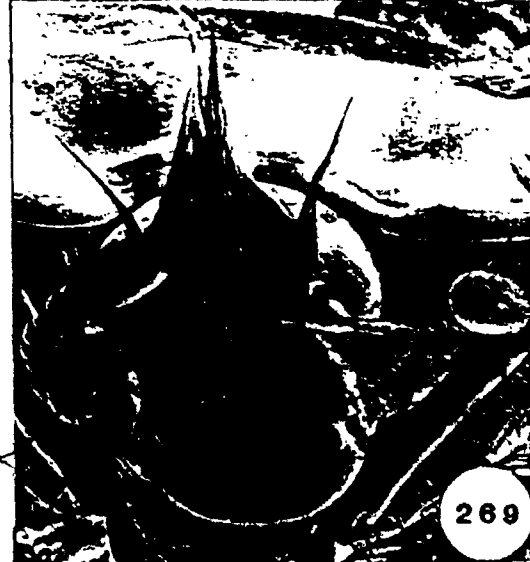
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Figs. 266-269. Sternocoelopsis nevermanni Reichensperger.

Genus Aphanister Reichensperger

Figs. 270-273

Aphanister Reichensperger 1933: 302.TYPE-SPECIES: Aphanister fungifer Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form truncate oval; setose above (Fig. 271). Head 0.8 times as wide as long (Fig. 273); lateral margins carinate from occiput to front margin of clypeus, these carinae narrowly separated on frons and clypeus; labrum 2 times as wide as long, apical margin truncate; apical surface not broad; antennal club oval, sclerotized on dorsal, ventral, and inner surfaces. Pronotum (Fig. 271) 1.7 times as wide as long; lateral margins sinuate; front angles expanded, obliquely truncate; with stria along lateral margins continued across front margin; surface with strong, median, transverse depression, this depression somewhat H-shaped; hind margin obtusely V-shaped. Elytron (Fig. 271) flat in front, convex behind; dorsal striae cariniform; internal subhumeral stria cariniform, entire; external subhumeral stria cariniform, arcuate, joined to internal subhumeral stria at middle. Propygidium 1.5 times as wide as long. Pygidium as wide as long. Prosternum (Fig. 272) with keel convex, short, broad; carinal striae parallel, joined in front in rounded arch, sometimes these striae may be absent; surface between carinal striae depressed,

especially deeply before hind margin; lateral striae long, parallel, usually setose, at times prominently so; lateral marginal striae cariniform, very short; lobe separated from rest of prosternum by very finely impressed suture, marginal stria separated from lateral margin, preapical stria present; alae with marginal stria; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, acutely emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria present on projection and at sides; surface depressed, especially along front margin just behind prosternal keel; lateral foveae not present. Metasternum with postcoxal stria present; inner and outer lateral striae reaching to hind coxa, latter with or without recurrent arm. First abdominal sternum with short outer postcoxal stria, long inner postcoxal stria. Legs long; front femora robust, very narrow at proximal end; front tibia quadrate, thick; middle and hind tibiae either narrow or expanded, if expanded then outer edges arcuate. Male genitalia as in Fig. 270; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, with "disks" fused; without setae along apical margin; 9th tergites usually with ventral "apodemes", with movable "armature", with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece

long, parameres very short.

Remarks. The genus Aphanister may be separated from Chrysetaerius and Pulvinister by the absence of dense, close punctation on its pronotum and elytra, by the strong, median transverse depression on its pronotum, and by the presence of carinal striae on its prosternum. From Sternocoelopsis which it resembles most closely, Aphanister may be separated by the strong, median transverse depression on its pronotum, and by the presence of dorsal striae on its elytra. I have extended the limits of the genus Aphanister to include Aphanister n. spp. 1 and 2. As a consequence of this, Aphanister is a more variable genus than most others. For example, Aphanister n. sp. 1, while it shares the general "conspectus" of other species of Aphanister, it lacks strongly impressed carinal striae on its prosternum, its prosternum is margined by very long setae, the front margin of the mesosternum has similar setae and the front ends of its dorsal elytral striae have one long seta each. However, because the trend within the Hetaeriinae is for setae to be readily gained or lost, I have decided to include this species within Aphanister, Aphanister n. sp. 2 shares with the other species the movable "armature" or the 9th tergites, while the 9th tergites themselves are greatly reduced. This reduction is probably related to the small size of this species,



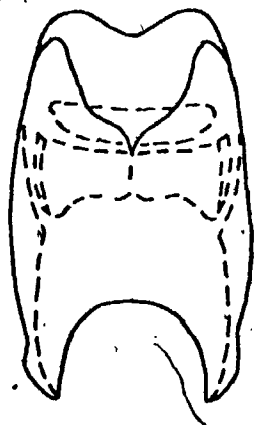
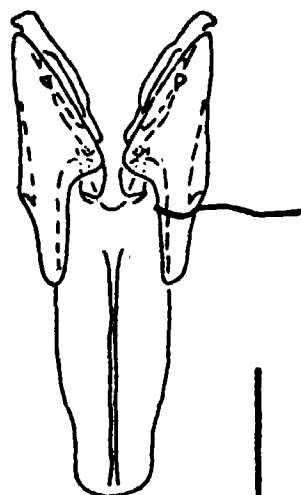
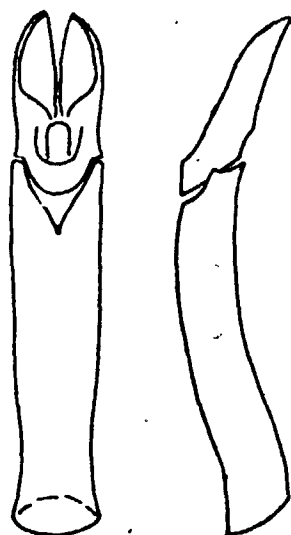
rather than being indicative of new generic status.

Species of Aphanister

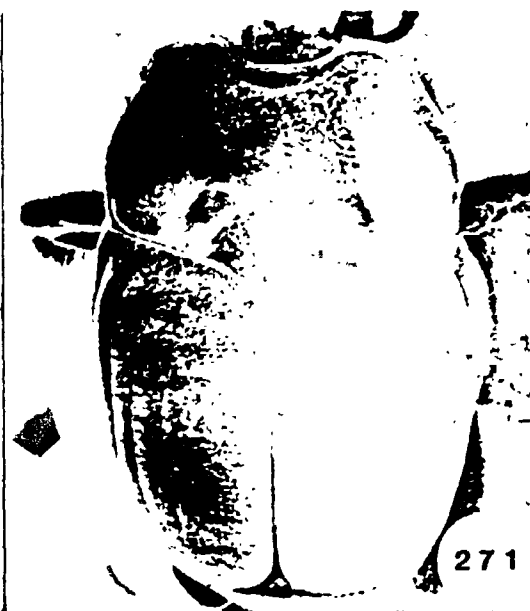
\* Aphanister fungifer Reichensperger 1933: 303. COSTA RICA. Limon: Revertazon, Hamburg Farm. MEXICO. Oaxaca: Tuxtepec. HOST: Eciton hamatum.

\* Aphanister n. sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton hamatum.

\* Aphanister n. sp. 2. COSTA RICA. Limon: Puerto Viejo. HOST: Eciton hamatum.



270



271



272



273

Figs. 270-273. Aphanister fungifer Reichensperger.

Genus Daitrosister new genus

Figs. 274-277

Daitrosister new genus.TYPE-SPECIES: Mesynodites confirmatus Reichensperger.

DIAGNOSIS. Form oval; sparsely setose above (Fig. 275). Head as wide as long (Fig. 277); lateral margins carinate from occiput to front margin of clypeus, these carinae nearly parallel before antennal sockets, thence convergent forward, narrowly separated in front; mandibles with outer surface unmodified near base; labrum 2.5 times as wide as long, apical margin broadly emarginate, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 275) 2 times as wide as long; lateral margins feebly arcuate, convergent forward; front angles obliquely truncate; surface evenly convex at middle, reflexed along sides; with one lateral stria approximate to marginal stria, continuous at sides and along front margin; with fairly dense, medium, oval to drop-shaped punctures except near margins; hind margin obtusely V-shaped. Elytron (Fig. 275) evenly convex; not densely punctate over entire surface; dorsal striae marked by large to medium, oval, shallow punctures; with one additional stria between dorsal stria five and sutural stria; internal subhumeral stria long, cariniform; external subhumeral stria cariniform,

strongly sinuate. Propygidium 1.7 times as wide as long; without tubercles. Pygidium as wide as long. Prosternum (Fig. 276) with keel convex; carinal striae widely separated, nearly parallel in hind 0.5, strongly convergent in front 0.5, acutely joined in front; surface between carinal striae feebly concave; lateral striae evanescent, approximate to carinal striae; lateral marginal striae cariniform, straight, feebly divergent in front; lobe separated from rest of prosternum by suture, marginal striae narrowly separated from lateral margins, preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform, somewhat distant from margin; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria joined to postcoxal stria in front, reaching to hind coxa; inner lateral stria inwardly hooked in front, parallel to outer lateral stria, reaching to hind coxa. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded; front tibia with outer edge feebly arcuate; middle and hind tibiae with outer edge angulate at middle. Male genitalia as in Fig. 274; 8th tergite without transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites fused, with "disks" subdivided into 3, without

setae along apical margin; 9th tergites without ventral "apodemes", with movable "armature", with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

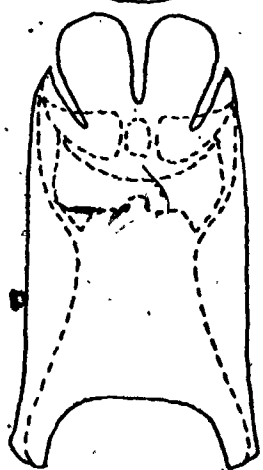
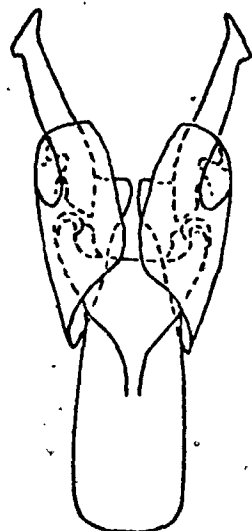
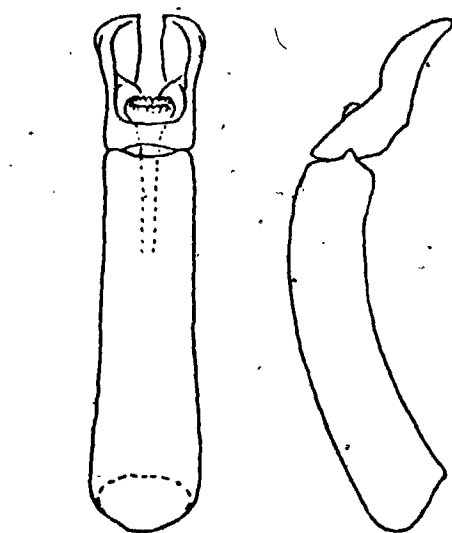
Etymology. "Daitros" meaning "bloodsucker" and "-ister" suffix meaning "having the nature of".

Remarks. The genus Daitrosister may be separated from Clientister and Ecclisister by the lack of dense, close punctation on its dorsal surface and by the absence of tubercles near the lateral margins of its propygidium. From Cheilister, Daitrosister may be separated by the presence of fairly dense, large, oval to drop-shaped punctures on its pronotum and by its prosternal carinal striae which are nearly parallel in the hind 0.5 and strongly convergent in the front 0.5. I have erected the genus Daitrosister for those species of Mesynodites which share, with other genera, the distinctive "armature" of the 9th genitalic tergites.

#### Species of Daitrosister

- \* Daitrosister confirmatus Reichensperger 1935: 194. NEW COMBINATION. COSTA RICA. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton burchelli.

- \* Daitrosister n. sp. 1. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton dulcius crassinode, Eciton mexicanum.



274



275



276



277

Figs. 274-277. Daitrosister confirmatus Reichensperger (new genus).

Genus Cheilister Reichensperger

Figs. 278-281

Cheilister Reichensperger 1924: 147.

TYPE-SPECIES: Cheilister lucidulus Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; surface smooth; not setose above (Fig. 279). Head as wide as long (Fig. 281); lateral margins carinate from occiput to front margin of clypeus, these carinae widely separated in front; mandibles with outer surface unmodified near base; labrum 3 times as wide as long, apical margin truncate, apical surface not broad; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 279) 2 times as wide as long; lateral margins arcuate, convergent forward to feebly truncate, oblique front angles; surface convex at middle, reflexed at side; with very fine lateral stria, approximate to marginal stria; continuous around front angles; without large, shallow, drop-shaped punctures; hind margin obtusely V-shaped. Elytron (Fig. 279) evenly convex; dorsal striae fine, feebly cariniform; internal subhumeral striae long, cariniform; external subhumeral stria fine, sinuate. Propygidium 1.5 times as wide as long; without tubercles. Pygidium as wide as long. Prosternum (Fig. 280) with keel convex, broad; carinal striae parallel, widely separated; surface between carinal striae flat; lateral



striae fine, feebly divergent in front; lateral marginal striae cariniform, parallel behind, divergent in front; lobe separated from rest of prosternum by suture, marginal stria separated from lateral margin, preapical stria present; alae not margined; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform, central portion widely displaced from front margin, disconnected from lateral appendages; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria reaching to hind coxa, recurrent arm present; inner lateral stria long, its front end widely separated from outer lateral stria and nearly confluent with marginal stria of mesosternum. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded, somewhat thickened; front tibia arcuate; middle and hind tibiae roundly angulate at middle. Male genitalia as in Fig. 278; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks" subdivided into 3, without setae along apical margin; 9th tergites with ventral "apodemes", with movable "armature", with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

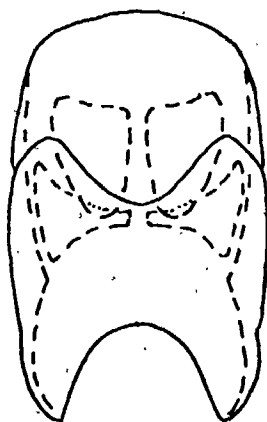
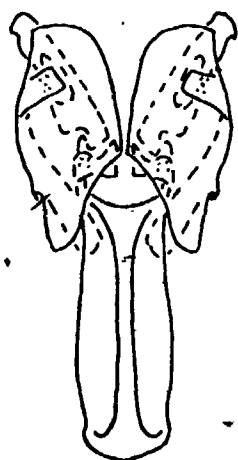
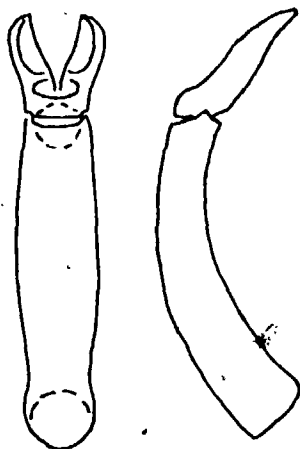
Remarks. The genus Cheilister may be separated from Clientister and Ecclisister by the lack of setae and of dense, close punctation on its dorsal surface and by the absence of tubercles near the lateral margins of its propygidium. From Daitrosister, Cheilister may be separated by the absence of fairly dense, large, oval to drop-shaped punctures on its pronotum and by the parallel, widely separated carinal striae of its prosternum.

Species of Cheilister

\* Cheilister lucidulus Reichensperger 1924: 148. BRAZIL. PANAMA. Canal Zone: Barro Colorado Island. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton burchelli.

Cheilister monotonus Reichensperger 1938: 83. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Eciton hamatum.

Cheilister sphaeroides Reichensperger 1938: 85. COSTA RICA. Limon: Revertazon, Hamburg Farm. HOST: Neivamyrmex pilosus.



278



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Figs. 278-281. Cheilister lucidulus Reichensperger.

Genus Ecclisister Reichensperger

Figs. 282-285

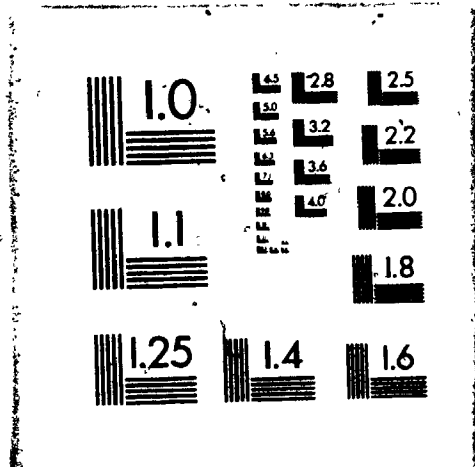
Ecclisister Reichensperger 1935: 203.

TYPE-SPECIES: Cyclechinus bickhardti Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; surface densely, closely punctate; setose above (Fig. 283). Head as wide as long (Fig. 285); lateral margins carinate from occiput to front margin of clypeus, these carinae nearly parallel before antennal sockets, thence convergent forward, narrowly separated in front; mandibles with outer surface modified near base; labrum 3 times as wide as long, apical margin broadly emarginate, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral and lateral surfaces. Pronotum (Fig. 283) 2 times as wide as long; lateral margins feebly arcuate, strongly convergent forward; front angles obliquely truncate; surface strongly, evenly convex; with fine stria approximate to marginal stria; with large, oval, shallow punctures in addition to small, dense punctures; hind margin arcuate. Elytron (Fig. 283) strongly, evenly convex; densely punctate; dorsal striae marked by large, oval, shallow punctures; with one additional stria between dorsal stria five and sutural stria; internal subhumeral stria long, cariniform; external subhumeral stria cariniform, feebly sinuate, close to internal

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subhumeral stria. Propygidium 1.7 times as wide as long; with two very small tubercles, one on each side near lateral margin; Pygidium 1.3 times as wide as long. Prosternum (Fig. 284) with keel convex; carinal striae somewhat sinuate, joined in rounded arch in front; surface between carinal striae flat; lateral striae very feebly impressed, approximate to carinal striae; lateral marginal striae cariniform, straight, feebly divergent in front; lobe separated from rest of prosternum by suture, marginal stria separated from lateral margins, preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform, central portion widely separated from front margin, disconnected from lateral appendages; without lateral foveae. Metasternum with postcoxal stria; outer lateral stria reaching to hind coxa, its recurrent arm present; inner lateral stria long, subparallel to outer lateral stria. First abdominal sternum with two postcoxal striae. Legs normal length; femora somewhat robust; tibiae expanded, outer edges arcuate. Male genitalia as in Fig. 282; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with

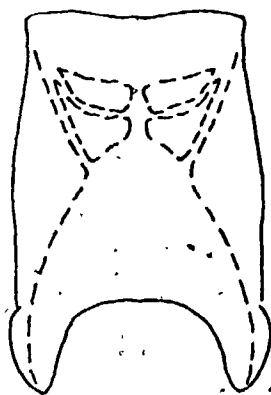
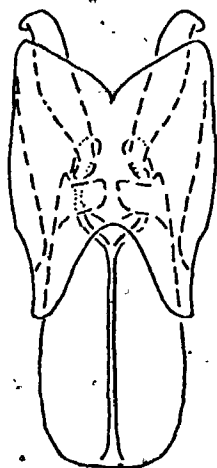
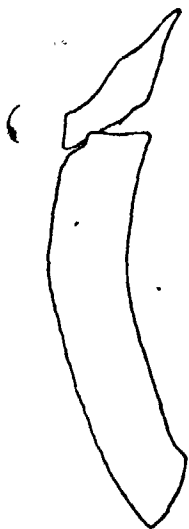
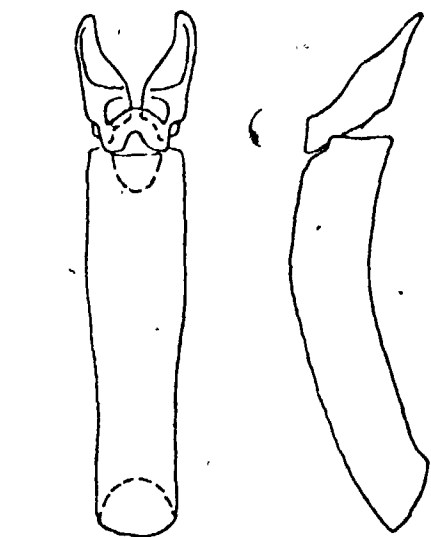
movable "armature" with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Ecclisister may be separated from Cheilister and Daitrosister by the dense, close punctation on its dorsal surface, by the presence of tubercles near the lateral margins of its propygidium and by its prosternal carinal striae which are fairly narrowly separated and joined in rounded arch in front. From Clientister, Ecclisister may be separated by the lack of impunctate bullae at the hind angles of its pronotum, by the large, oval, shallow punctures and arcuate lateral margins of its pronotum and by its prosternal carinal striae which are fairly narrowly separated and joined in a rounded arch in front.

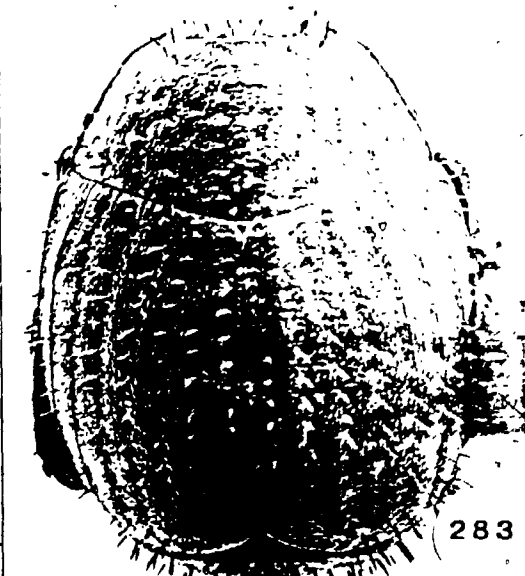
Species of Ecclisister

Ecclisister bickhardti Reichensperger 1923: 248. BRAZIL.  
Santa Catarina: Blumenau. HOST: Eciton burchelli.

\* Ecclisister bickhardti costaericae Reichensperger 1935:  
204. COSTA RICA. Limon: Revertazon, Hamburg Farm; Puerto  
Viejo. PANAMA. Canal Zone: Barro Colorado Island. HOST:  
Eciton burchelli.



282



283



284



285

Figs. 282-285 *Ecclisister bickhardti costaricae* Reichensperger.



Genus Clientister Reichensperger

Figs# 286-289

Clientister Reichensperger 1935: 191.

TYPE-SPECIES: Clientister henrici Reichensperger (by original designation and monotypy).

DIAGNOSIS. Form oval; setose, densely, closely punctate above (Fig. 287). Head as wide as long (Fig. 289); lateral margins carinate from occiput to front margin of clypeus, these carinae subparallel before antennal sockets, thence strongly convergent, joined in front; mandibles with outer surface unmodified near base; labrum 2 times as wide as long, apical margin broadly emarginate, apical surface feebly broadened; antennal club oval, sclerotized on dorsal, ventral, inner and part of outer surfaces. Pronotum (Fig. 287) 1.7 times as wide as long; lateral margins sinuate, convergent forwards; front angles obliquely truncate; surface evenly convex, except with impunctate bulla on hind angles; with only one stria near margins; with dense, medium to small punctures; hind margin broadly, obtusely V-shaped. Elytron (Fig. 287) evenly convex; densely punctate; dorsal striae feebly cariniform, marked by large, oval, shallow punctures; with one additional stria between dorsal stria five and sutural stria; all striae confused by dense punctures; internal subhumeral stria long, cariniform; external subhumeral stria feebly cariniform,

strongly sinuate. Propygidium 1.5 times as wide as long; with two, prominent tubercles behind, one on each side near lateral margin. Pygidium as wide as long. Prosternum (Fig. 288) with keel convex, broad; carinal striae widely separated, parallel, not joined in front; surface between carinal striae flat; lateral striae absent; lateral marginal striae cariniform, short; lobe separated from rest of prosternum by suture, marginal stria separated from lateral margins, preapical stria present, apical margin broadly emarginate; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform, nearly joined to outer lateral metasternal stria; without lateral foveae. Metasternum with postcoxal stria angulate; outer lateral stria reaching to hind coxa, its recurrent arm present; inner lateral stria long, quite widely separated from outer lateral stria. First abdominal sternum with two postcoxal striae. Legs normal length; tibiae expanded, with outer edges arcuate. Male genitalia as in Fig. 286; 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with movable "armature", with apical margin not produced to

form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Clientister may be separated from Cheilister and Daitrosister by the dense, close punctation on its dorsal surface, by the presence of tubercles near the lateral margins of its propygidium and by the presence of impunctate bullae at the hind angles of its pronotum. From Ecclisister, Clientister may be separated by the impunctate bullae at the hind angles of its pronotum, by the widely separated, parallel carinal striae of its pronotum and by the sinuate lateral margins of its pronotum.

Species of Clientister

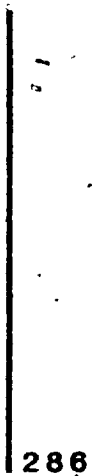
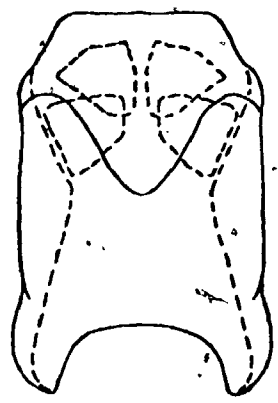
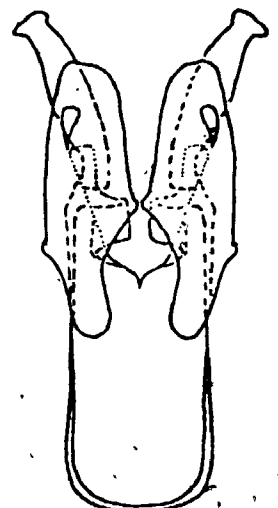
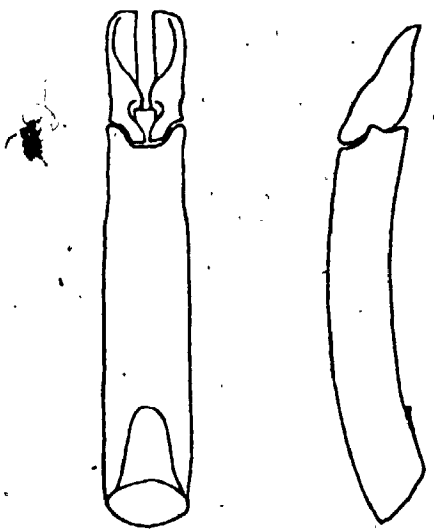
Clientister fernandi Reichensperger 1938: 86. COSTA

RICA. HOST:

\* Clientister henrici Reichensperger 1935: 192. COSTA

RICA. PANAMA. Canal Zone: Barro Colorado Island. HOST:

Eciton Burchelli.



286



287

288

289

Figs. 286-289. Clientister henrici Reichensperger.

Genus Pulvinister Reichensperger

Figs. 290-293

Pulvinister Reichensperger 1933: 299.

—, TYPE-SPECIES: Pulvinister nevermanni Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; setose above; pronotum at sides and elytra densely, closely punctate (Fig. 291). Head 0.8 times as wide as long (Fig. 293); lateral margins carinate from occiput to front margin of clypeus, these carinae nearly parallel before antennal sockets, thence convergent, narrowly separated and poorly defined on frons and clypeus; labrum 2.5 times as wide as long, apical margin arcuate, apical surface not broadened; antennal club oval, sclerotized on dorsal, ventral, inner and part of outer surfaces. Pronotum (Fig. 291) 1.6 times as wide as long; lateral margins arcuate, convergent in front and behind; front angles obliquely truncate; surface nearly flat at middle, with large, longitudinal, cushion-like swellings at sides; with dense, medium to small punctures on lateral swellings, impunctate at middle; hind margin broadly, obtusely V-shaped. Elytron (Fig. 291) strongly, evenly convex; wider in front than pronotum is behind; humerus prominent; dorsal striae absent; internal subhumeral stria absent; external subhumeral stria fine, strongly sinuate. Propygidium 1.5 times as wide as long; without

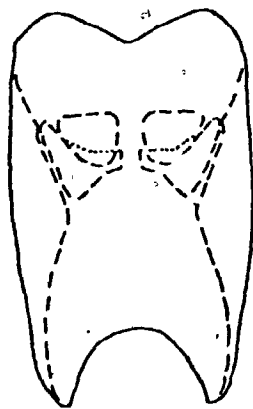
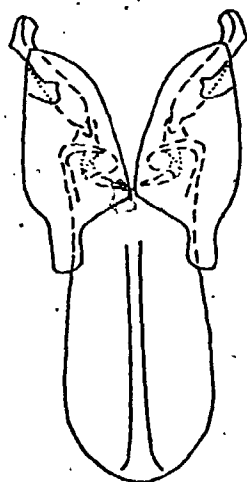
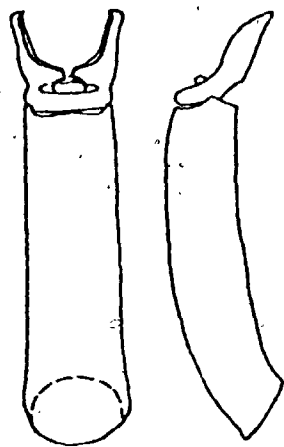
tubercles. Pygidium as wide as long; surface strongly convex. Prosternum (Fig. 292) with keel convex, broad; carinal striae absent; lateral striae widely separated, sinuate; surface between lateral striae flat; lateral marginal striae cariniform, short; lobe separated from rest of prosternum by suture, with marginal stria separated from lateral margins, with preapical stria present; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, triangularly, emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform; without lateral foveae. Metasternum with postcoxal stria nearly reaching hind coxa; outer lateral stria reaching to hind coxa, its recurrent arm absent; inner lateral stria absent. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. Male genitalia as in Fig. 290; 8th tergite with transverse anterior stria; without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margin; 9th tergites with ventral "apodemes", with movable "armature", with apical margin not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Pulvinister may be separated from Aphanister, Chrysetaerius and Sternocoelopsis by the large, cushion-like swellings at the sides of its

pronotum; by the densely punctate lateral areas and impunctate median area of its pronotum; and by the dense, close punctation of its elytra.

Species of Pulvinister

- \* Pulvinister nevermanni Reichensperger 1933: 299. COSTA RICA. Limon: Revertazon, Hamburg Farm. PANAMA. Canal Zone: Barro Colorado Island. HOST: Eciton hamatum.



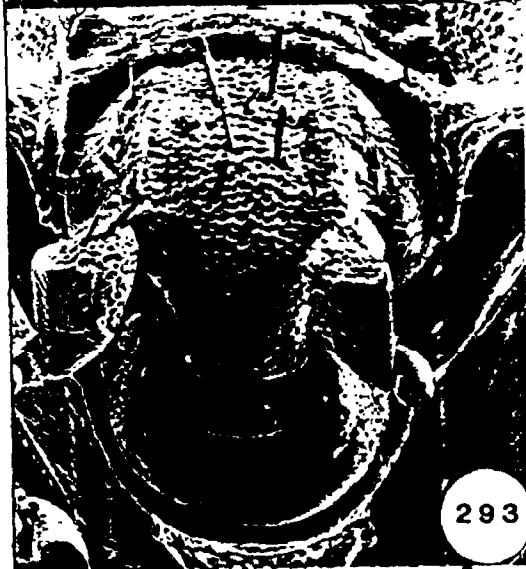
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291



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293

Figs. 290-293. Pulvinister nevermanni Reichensperger.



Genus Chrysetaerius Reichensperger

Figs. 294-297

Chrysetaerius Reichensperger 1923: 331.TYPE-SPECIES: Chrysetaerius iheringi Reichensperger  
(by original designation and monotypy).

DIAGNOSIS. Form oval; setose above; pronotum and elytra densely, closely punctate over most of their surface (Fig. 295). Head as wide as long (Fig. 294); lateral margins carinate from occiput to front margin of clypeus, these carinae nearly parallel before antennal sockets, thence convergent, widely separated in front; mandibles with outer surface unmodified near base; labrum 2.5 times as wide as long, apical margin broadly arcuate and ridged, apical surface declivous, broad; antennal club oval, sclerotized on dorsal, ventral and inner surfaces. Pronotum (Fig. 295) 1.3 times as wide as long; lateral margins inwardly arcuate, divergent behind and in front, pronotum narrowed at middle; front angles obliquely truncate; surface evenly convex; with only marginal stria; with dense, irregular, contiguous punctures; hind margin broadly, obtusely V-shaped. Elytron (Fig. 295) strongly, evenly convex; wider in front than pronotum is behind; humerus prominent; dorsal striae marked by large, oval, shallow punctures; with one additional stria between dorsal stria five and sutural stria; internal subhumeral stria short, anterior;

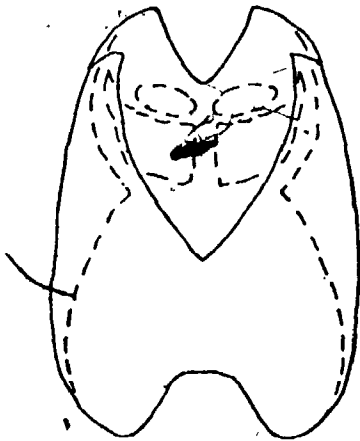
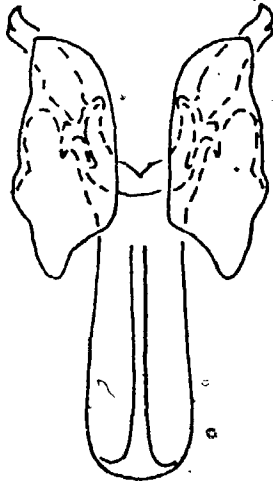
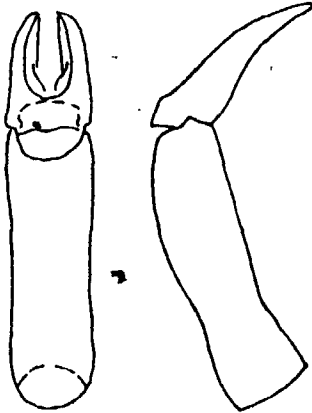
external subhumeral stria feebly cariniform, sinuate. Propygidium 1.5 times as wide as long; without tubercles. Pygidium as wide as long; surface quite strongly convex. Prosternum (Fig. 296) with keel convex, broad; carinal striae absent lateral striae widely separated, feebly cariniform; surface between lateral striae feebly depressed; lateral marginal striae cariniform, short, divergent in front; lobe separated from rest of prosternum by suture, short, marginal stria narrowly separated from lateral margins, preapical stria present, front margin broadly emarginate; proepisternum and proepimeron without setose patches; hind margin broadly, deeply, roundly emarginate. Mesosternum produced in front to fit prosternal emargination; marginal stria cariniform; without lateral foveae. Metasternum with postcoxal stria short; outer lateral stria and its recurrent arm indistinct; inner lateral stria absent. First abdominal sternum without postcoxal striae. Legs very long; tibiae cylindrical. Male genitalia as in (Fig. 294); 8th tergite with transverse anterior stria, without inward extensions along ventral hind margin; 8th sternites separate, with "disks", without setae along apical margins; 9th tergites with ventral "apodemes", with movable "armature", with apical margins not produced to form "hooked" structures; 10th tergite absent; basal piece long, parameres very short.

Remarks. The genus Chrysetaerius may be separated from Aphanister, Pulvinister and Sternocoelopsis by its densely punctate pronotum which is narrowest at the middle, by the carinae on the lateral margins of its head being widely separated on the clypeus, and by the absence of large cushion-like swellings, or median transverse depression, or lateral striae on its pronotum. Seyfried (1931) presents a detailed description of the morphology of Chrysetaerius iheringi, including histological studies of the trichome glands, and some observations of its biology by J.F. Zikan.

Species of Chrysetaerius

\* Chrysetaerius iheringi Reichensperger 1923: 332. BRAZIL.  
Santa Catharina: Blumenau; Nova Teutonia. HOST:  
Neivamyrmex quadriglume.

Chrysetaerius reichenspergeri Bruch 1926: 23. ARGENTINA.  
Cordoba: Alta Gracia. HOST: Neivamyrmex pseudops.



294



Figs. 294-297. Chrysetaerius iheringi Reichensperger.

Genus Mesynodites Reichardt

Figs. 298-301

Mesynodites Reichardt 1924: 166.TYPE-SPECIES: Synodites schuppi Schmidt (by subsequent designation).Synodites Schmidt 1893: 175 (nec Foerster).

Remarks. The genus Mesynodites is a large one and impossible for me to define at this time. The limited material I have seen indicates that Mesynodites is in fact composed of a number of genera. Figs. 298-301 illustrate the genitalia of four species. Of these; Mesynodites geminus Reichensperger and Mesynodites elegantulus Reichensperger are probably congeneric, while Mesynodites novaetuntoniae Reichensperger and Mesynodites virgatus Reichensperger clearly belong in different genera with different affinities. Since I have not seen the type-species, I cannot determine which, if any, of these potential genera represents Mesynodites Reichardt. The division of Mesynodites into its component genera will require a reevaluation of the proposed phylogeny.

Species of MesynoditesMesynodites acamati Reichensperger 1939: 124. COSTA RICA.

HOST:

Mesynodites aciculatus Schmidt 1893: 179. BRAZIL. HOST:

Mesynodites affinis Reichensperger 1931: 283. BRAZIL.

HOST:

Mesynodites arcanus Reichensperger 1939: 122. COSTA

RICA. HOST:

Mesynodites attaphilus Bruch 1933: 32. ARGENTINA. HOST:

Mesynodites bifurcatus Mann 1925: 170. PANAMA. HOST:

\* Mesynodites ciliatus Bruch 1923: 192. ARGENTINA. HOST:

Mesynodites collaris Reichensperger 1939: 110. BRAZIL.

HOST:

Mesynodites detritus Schmidt 1893: 180. MEXICO. HOST:

Mesynodites diadochus Reichensperger 1939: 113. BRAZIL.

HOST:

Mesynodites drakei Schmidt 1893: 179. BOLIVIA. HOST:

Mesynodites ecitonis Bruch 1923: 190. ARGENTINA. HOST:

Mesynodites eidmanni Reichensperger 1935: 28. BRAZIL.

HOST:

\* Mesynodites elegantulus Reichensperger 1939: 115.

BRAZIL. HOST:

Mesynodites evanescens Reichensperger 1935: 31. BRAZIL.

HOST:

Mesynodites exclamationis Reichensperger 1931: 279.

BRAZIL. HOST:

\* Mesynodites geminus Reichensperger 1935: 193. COSTA

RICA. HOST:

Mesynodites gibbidorsum Schmidt 1893: 180. MEXICO.

HOST:

Mesynodites grandiformis Schmidt 1893: 181. MEXICO?.

HOST:

Mesynodites inops Reichensperger 1935: 196. COSTA RICA.

HOST:

Mesynodites intermedius Reichensperger 1933: 190.

BRAZIL. HOST:

Mesynodites irregularis Reichensperger 1938: 88. BRAZIL.

HOST:

Mesynodites longipilus Reichensperger 1931: 270. BRAZIL.

HOST:

Mesynodites major Bruch 1923: 289. ARGENTINA. HOST: v.

crassicornis Reichensperger 1931: 282. BRAZIL. HOST:

Mesynodites manicus Reichensperger 1939: 121. COSTA

RICA. HOST:

Mesynodites megacantha Reichensperger 1938: 90. BRAZIL.

HOST:

Mesynodites nanus Reichensperger 1939: 118. COSTA RICA.

HOST:

\* Mesynodites novaetotohia Reichensperger 1939: 109.

BRAZIL. HOST:

Mesynodites obscurus Reichensperger 1939: 119. COSTA

RICA. HOST:

Mesynodites paschalis Reichensperger 1930: 84. BRAZIL.

HOST:

Mesynodites praeclusus Reichensperger 1939: 112. BRAZIL.

HOST:

Mesynodites pumilis Reichensperger 1925: 192. BRAZIL.

HOST:

Mesynodites reticulatus Bruch 1926: 8. ARGENTINA. HOST:

Mesynodites robustus Reichensperger 1939: 107. BRAZIL.

HOST:

Mesynodites schmidti Lewis 1893: 423. BRAZIL. HOST:

Mesynodites schuppi Schmidt 1893: 177. BRAZIL. HOST:

Mesynodites schwarzmaieri Reichensperger 1931: 277.

BRAZIL. HOST:



Mesynodites semistriatus Bruch 1933: 30. ARGENTINA.

HOST:

Mesynodites setulosus Reichensperger 1923: 243. BRAZIL.

HOST:

Mesynodites sodalis Reichensperger 1924: 209. BRAZIL.

HOST:

Mesynodites speculum Reichensperger 1931:280. BRAZIL.

HOST:

Mesynodites striatus Reichensperger 1924: 211. BRAZIL.

ARGENTINA. HOST:

Mesynodites strigilatus Reichensperger 1931: 274.

BRAZIL. HOST:

\* Mesynodites virgatus Reichensperger 1931: 272. BRAZIL.

HOST:

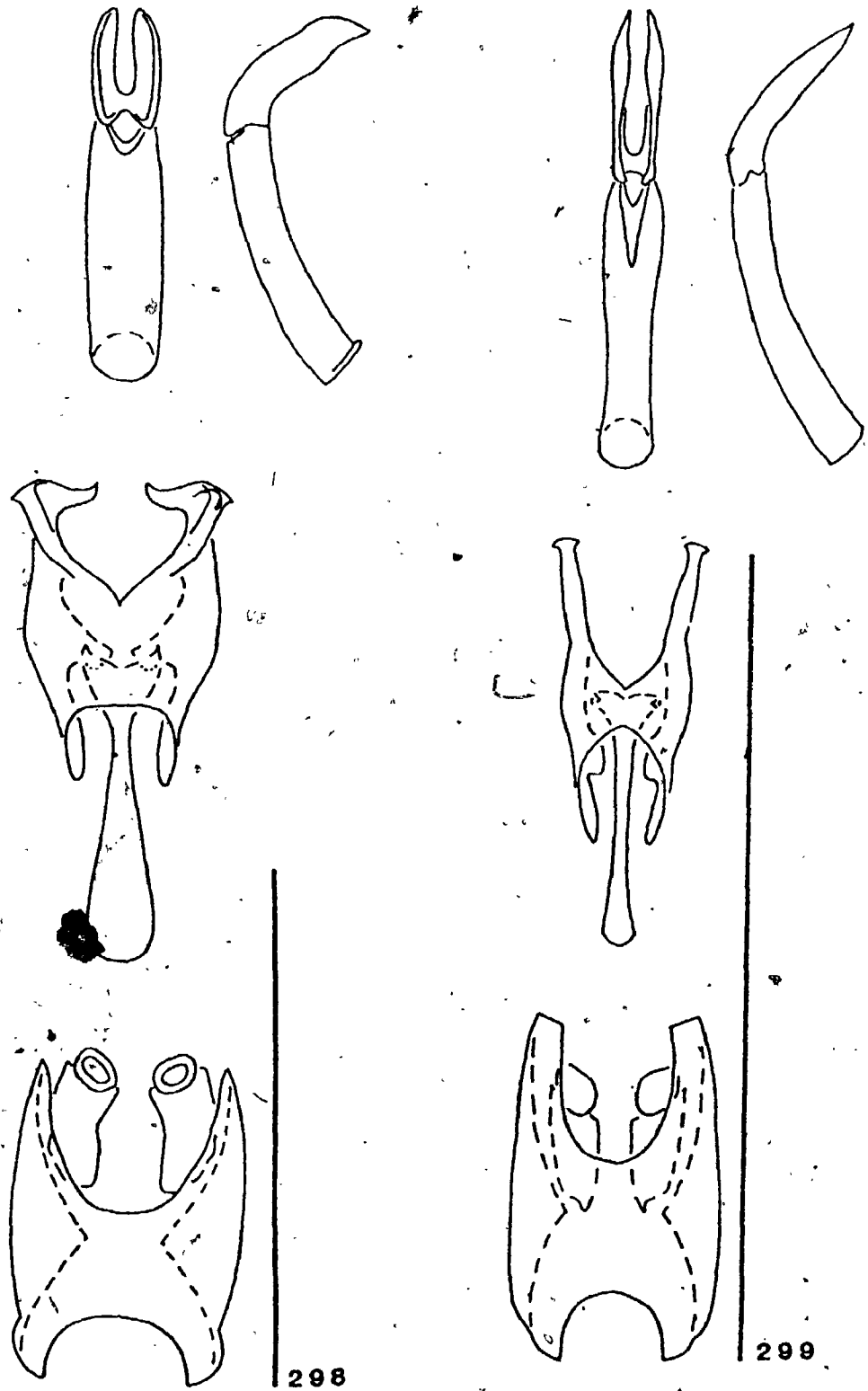


Fig. 298. Mesynodites geminus Reichensperger.  
 Fig. 299. Mesynodites elegantulus Reichensperger.

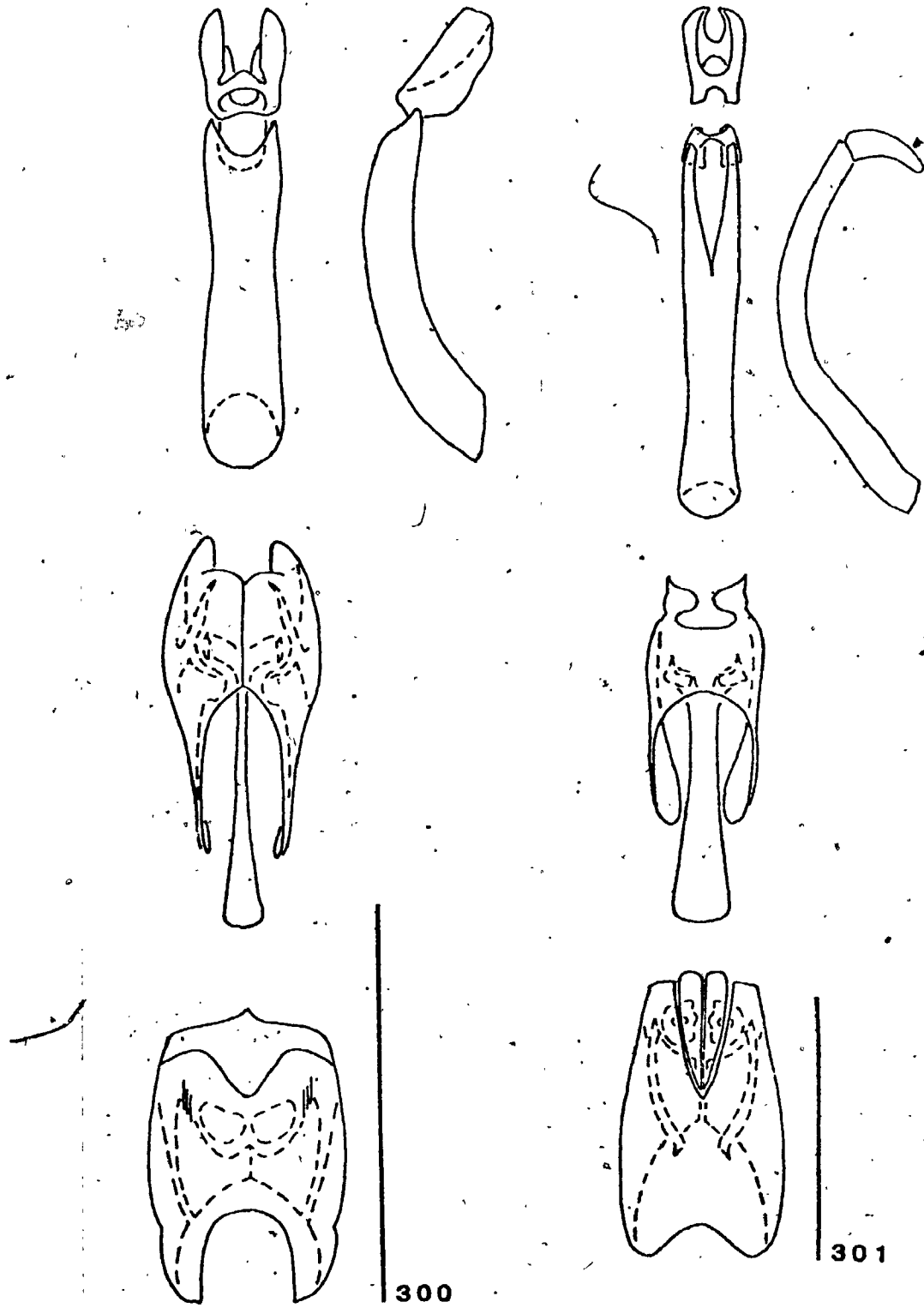


Fig. 300. Mesynodites novaeteutonise Reichensperger.  
 Fig. 301. Mesynodites virgatus Reichensperger.

Aemulister Reichensperger 1938: 75.

Aemulister borgmeieri Reichensperger 1938: 76.  
BRAZIL. HOST:

Alienister Reichensperger 1925: 184.

Alienister patrum Reichensperger 1925: 185. BRAZIL.  
HOST:

Aneuterapus Reichensperger 1958: 285.

Aneuterapus gracilipes Bruch 1929: 9. ARGENTINA.  
HOST:

Aristomorphus Lewis 1913: 84.

Aristomorphus rutilus Lewis 1913: 84. BRAZIL ?. Rio  
de Janeiro: Corcovado. HOST:

Attalister Bruch 1937: 125.

Attalister daguerrei Bruch 1937: 127. ARGENTINA.  
HOST:

Cachexia Lewis 1888: 136.

Cachexia puberula Lewis 1888: 236. NICARAGUA.  
HOST:

Chelonosternus Bickhardt 1909: 241.

Chelonosternus tremolerasi Bickhardt 1909: 241.  
URUGUAY. HOST:

Coelister Bickhardt 1917: 243.

Coelister cavernosus Schmidt 1889: 322. BRAZIL.

PARAGUAY. HOST:

Cyclechinus Bickhardt 1917: 237.

Cyclechinus amphibolus Reichensperger 1935: 201.

COSTA RICA. HOST:

Cyclechinus raucus Bickhardt 1917: 237. BOLIVIA.

HOST:

Hetaeriodes Schmidt 1893: 188.

Hetaeriodes fraudulentus Schmidt 1893: 188. MEXICO.

HOST:

Lissosternus Lewis 1905: 347.

Lissosternus gracilipes Lewis 1905: 348. BRAZIL.

HOST:

Mecistostethus Marseul 1870: 123.

Mecistostethus pilifer Marseul 1870: 123. BRAZIL.

HOST:

Morphetaerius Reichensperger 1939: 272.

Morphetaerius elegans Reichensperger 1939: 273.

COSTA RICA. HOST:

Murexus Lewis 1907: 350.

Murexus muricatus Lewis 1900: 286. PARAGUAY. HOST:

Nomadister Borgmeier 1948: 379.

Nomadister papillatus Borgmeier 1948: 380. BRAZIL.

HOST:

Notocoelis Lewis 1900: 283.

Notocoelis satur Lewis 1900: 283. PARAGUAY. HOST:

Parasynodites Bruch 1930: 8.

Parasynodites suturacava Bruch 1930: 9. ARGENTINA.

HOST:

Pelatetister Reichensperger 1939: 267.

Pelatetister pretiosus Reichensperger 1939: 269.

COSTA RICA. HOST:

Plagioscelis Bickhardt 1917: 244.

Plagioscelis daedalus Lewis 1891: 392. BRAZIL.

HOST:

Synoditinus Reichensperger 1929: 135.

Synoditinus herteli Reichensperger 1929: 135. --

Bruch 1930: 7. BRAZIL. HOST:

Wasmannister Bruch 1929: 427.

Wasmannister rufus Bruch 1929: 428. ARGENTINA.

HOST:

Xenister Borgmeier 1929: 85.

Xenister schwarzmaieri Borgmeier 1929: 87. BRAZIL.

HOST:

Genera Doubtfully Hetaeriinae

Discoscelis Schmidt 1889: 319.

Discoscelis canaliculata Schmidt 1889: 319. -- Bruch  
1931: 391. PARAGUAY. HOST:

Hetaerister Desbordes 1920: 156.

Hetaerister defectivus Desbordes 1920: 156. BRAZIL.  
HOST:

## REVIEW OF HOSTS

Hister beetles of the subfamily Hetaeriinae are associated predominantly with army ants of the subfamily Ecitoninae, although some are associated with non-ecitonine ants belonging to such genera as Formica, Lasius, Pheidole, Atta and Solenopsis or with termites of the subfamily Nasutitermitinae. Wilson (1971) pointed out two important attributes shared by these taxonomically diverse hosts. First, the greatest diversity of ant or termite guests is found, if measured either per host species or per host colony, with host species that have large mature colonies. The theoretical significance of colony size is that: (1) host species with large mature colonies also have longer life spans, and thus there is an increased probability that invasions can occur, that the invaders can reproduce in the colony and that selection can take place; (2) if the population of the host is large, the population of the guests can be correspondingly large and the probability that the guests will survive is increased; (3) the large host population implies that there is a greater diversity of microhabitats in the nest and a correspondingly greater potential diversity of guests. Second, for a better understanding of the diversity and certain aspects of the biology of the guests, the host colony may be



regarded as an island analogue.

Wilson (1971) and Kistner (1979) have identified manifold mechanisms that enable the integration of guests into host colonies. First, guests may use chemical means: (1) with exudative glands that abate aggressive behavior in the host or mimic chemical communication systems of the host; (2) by breaking the chemical codes that the hosts use to mark their trails, allowing guests to detect and infest host colonies; (3) by acquiring colony odors through frequent grooming of the host and thereby avoiding attack by the host. Second, guests may morphologically and behaviorally mimic the host and thus either dupe the host into accepting them as members of the colony or deceive outside predators that would otherwise be able to pick them out of a host colony. Third, since the transfer of food between colony members is important among social insects, guests may gull the host into regurgitating food for them.

Many classifications have been proposed that group ant and termite guests according to biological function. The most widely used one was devised by Wasmann in a series of papers (1884-1925) and translated into English by Wheeler (1910). The categories of this classification are: (1) Synecthrans or Persecuted Guests; (2) Synoeketes or Indifferently Tolerated Guests; (3) Symphiles or "True" Guests; (4) Ectoparasites and Endoparasites; and

(5) Trophobionts. Unfortunately, many guests can be fitted into more than one of these categories. Akre and Rettenmeyer (1966) proposed a scheme that classifies species as "generalized" or "specialized" according to behavioral attributes. Kistner (1979) presented a scheme which incorporated many of the criteria proposed by Akre and Rettenmeyer (1966). In this scheme guests are classified as "integrated" or "nonintegrated" species. Integrated species are those "which by their behavior and their hosts' behavior can be seen as incorporated into their hosts' social life". This category can be further subdivided according to the mechanisms used, etc. Nonintegrated species are those "which are not integrated into the social life of their hosts but which are adapted to the nest as an ecological niche". This category can be further subdivided according to food habits, etc.

The following reviews of the principal hosts of the histerids are presented as background to a synthesis of host-histerid relationships. Many of these hosts interact with each other or at least nest in proximity. Bees, wasps, termites and other ants, especially Pheidole and Atta, are common prey of the army ants, which frequently take over the preempted nest of their victims. Gardening ants have been observed nesting at the base of (if not inside) termite nests and termites frequently nest in the loose soil surrounding the nests of gardening

ants. Fire ants sometimes join in this partnership.

#### THE ARMY ANTS

The New World army ants, revised by Borgmeier (1955), belong to the subfamily Ecitoninae of the family Formicidae. They are subdivided into the tribe Ecitonini containing the genera Labidus Jurine (8 species), Nomamyrmex Borgmeier (2 species), Neivamyrmex Borgmeier (110 species) and Eciton Latreille (12 species) and the tribe Cheliomyrmecini containing Cheliomyrmex Mayr (5 species). Each genus, except Cheliomyrmex, has at least some species with exceptionally broad ranges from southern United States or Mexico to Argentina. The New World army ants are considered by Brown (1973) and Gotwald and Kupiec (1979) to be monophyletic and distinct from the Old World army ants.

Schneirla (1971) has presented a detailed study of their biologies. Army ants are characterized by a life-style that encompasses massive predatory raids and cyclic, nomadic movements which can differ considerably in frequency, duration and regularity among species. These behavioral cycles alternate between a statary and a nomadic phase. During the statary phase the colony remains at the same nesting site and only small daily raids are sent out. A new brood is produced and the pupae from the previous cycle eclose, beginning the next

nomadic phase. During the nomadic phase the entire colony emigrates nightly along one of that day's raiding trails to a new bivouac (temporary nest) site. The brood matures and pupates, beginning the next-statory phase. Most members of the genus Labidus and Nomamyrmex are subterranean, usually nesting and foraging underground. Members of Neivamyrmex and Eciton are more surface adapted. Those of the former usually nest underground but forage on the surface, while those of the latter nest and forage on the surface. Colony sizes may range from an estimated 100 thousand to 2 million individuals.

#### THE GARDENING ANTS

The distribution and biology of the gardening ants has been summarized by Weber (1972). All gardening ants, or fungus-growing ants, belong to the tribe Attini of the ant subfamily Myrmicinae. This tribe is endemic to the New World and contains 12 genera and 180-200 species. According to Weber (1972), they probably originated in the moist lowland tropics of northern South America and expanded northward, presumably in several waves, to Central and North America along lowland routes during the late Tertiary. Numerous interruptions of the Isthmian connection probably encouraged the development of a rich Central American fauna. The largest and most conspicuous of these gardening ants are the leaf-cutters

belonging to the genera Atta and Acromyrmex. The genus Acromyrmex Mayr (24 species) is broadly distributed and includes species in highly diverse habitats ranging from lowland rainforests to high Andean mountains. It is the most common grassland and semidesert fungus-growing ant. The genus Atta Fabricius (14 species) is nearly as broadly distributed and includes species that have the largest colonies and do the most conspicuous damage. The Attini excavate many chambered nests in the soil for their fungus gardens. These ant gardens consist of vegetable and insect fecal material to which the ants add saliva and liquid fecal droplets. The evolution of this unique skill has freed these ants from usual food limitations and has allowed them to develop some of the largest ant colonies known with populations in the millions. Members of the genus Atta either cast out exhausted substrate and dead ants or store it in specialized chambers. In either case, these large volumes of refuse attract many other organisms, especially when in the humid conditions of the nest.

#### MISCELLANEOUS ANTS

In addition to those ants mentioned above, histerids are associated with other genera of ants belonging to diverse subfamilies. The following summary of them is based on Brown (1973) and Creighton (1950). The genus

Pachycondyla F. Smith (Ponerinae) is a pantropical genus, known from Oligocene Baltic Amber and Miocene Chiapas Amber. † The broadly distributed genus Pheidole Westwood (Myrmecinae) is known from Miocene Florissant Shale and Miocene Chiapas Amber. Today it is a dominant genus in tropical rainforest, warm semidesert and some warm temperate areas in most of the world. Many tropical species forage on the trunks and branches of herbs, shrubs and trees. In North America, most of the species garner seeds; even exceptionally large colonies number only two to three thousand individuals. Fire ants belonging to the genus Solenopsis Westwood (Myrmecinae) are an important component of mesic and xeric habitats in most parts of the world. Some species form large and aggressive colonies that have active and extremely pugnacious workers possessing particularly painful stings. The genus Formica L. (Formicinae) is restricted to mesic and xeric habitats of the Nearctic and Palearctic Regions. It is known from Oligocene Baltic Amber and Miocene Florissant Shale. Species belonging to the exsecta group of Formica build large mound nests that may reach a height of one meter and a diameter of nearly two meters by incorporating surface soil and detritus. Most of the species belonging to the fusca group are singularly docile except for the only really aggressive form Formica rufibarbis occidua. Many of the histerids

that are found with these groups of Formica are also occasionally found with Lasius Fabricius (Formicinae) and Aphaenogaster Mayr (Myrmecinae).

#### THE TERMITES

Krishna (1970) and Araujo (1970) discussed the phylogeny and biology of the termites belonging to the subfamily Nasutitermitinae, the most highly specialized subfamily of the Termitidae. The Nasutitermitinae are pan-tropical but probably originated in the Neotropics. The most noteworthy morphological change in this subfamily is the gradual reduction of the mandibles of the soldier caste and the concomitant development of a snout or nasus from which an irritating, sticky fluid is ejected during defence of the nest. There are 19 genera and 185 species in the Neotropics and all but two of these genera are endemic to this region. Histerids have been found in the termitaria of Syntermes, Cornitermes and Nasutitermes. Syntermes Holmgren (20 species), the most primitive genus in this subfamily, is a typical Brazilian forest and savanna genus and ranges northward to Venezuela and southward to Paraguay. Cornitermes Wasmann (15 species) is a dominant savanna and forest genus, especially in the campo and pasture land of Brazil. One species ranges northward to Costa Rica and at least one species southward to Argentina.

Nasutitermes Dudley (67 species) is especially diversified in South America where its species occur in nearly every type of habitat. Termites build a variety of nests by excavation and construction. A principal construction material is excrement, especially in arboreal nests, although often materials from the surrounding environment are incorporated. The nests of Syntermes are frequently entirely subterranean and their sites marked by large heaps of loose soil. The nests of Cornitermes are initially entirely subterranean but as the nest develops an above ground structure is built which may attain a diameter of nearly two meters. The majority of the species of Nasutitermes build an arboreal nest consisting of agglutinated feces and wood debris; few are ground dwellers.



## MORPHOLOGICAL SPECIALIZATION

Many histerids associated with ants and termites have retained a generalized appearance and differ little from their free-living relatives, while others are very highly derived. There has been no trend towards any development of a typical myrmecoid body form with its petiolate abdomen. There are trends towards a reddish-brown coloration and dense, close surface punctation. It is unclear whether these characteristics are important to the integration of the guests into host colonies or whether these are cryptic adaptations that allow the guests to evade outside predators. Regressive specializations such as the reduction of eyes or ability to fly, have not occurred in histerids.

The following morphological specializations among the histerids either increase their ability to survive defensive reactions by their hosts or are implicated in their integration into host colonies. The antennal scape is greatly enlarged to protect the antennal club when it is withdrawn into the antennal cavity. At least part of the antennal club is strongly sclerotized. The body surface may have prominent tufts of hair, or prominent protuberances, or deep pits or well-developed longitudinal costae or carinae. The body form of some genera is dorso-ventrally flattened or cylindrical. The legs either are unusually long or have broadly expanded

tibiae and sometimes femora. The tibiae may have very deep tarsal grooves into which the tarsi may be withdrawn for protection or have prominent combs of hairs, or may have both of these character states.

Many guests frequently secrete exudates that are sought-after by their hosts. Reichensperger (1924) and Seyfried (1928) found single and multiple exudative, glandular cells on Euxenister caroli and Chrysetaerius iheringi which they considered to be "appeasement glands". The observations of Akre (1968) on E. caroli emphasize that the ants did not concentrate significantly on these glandular areas. Both Rettenmeyer (1961) and Akre (1968) suggest, however, that these glands are instead important to the transfer of colony odors to the histerids. It is, however, possible that true "appeasement glands" do exist in other genera, many of which have prominent swellings and tufts of hair.

Each host genus has at least one highly modified histerid genus associated with it. Many of the above-mentioned morphological specializations are shared by genera that belong in different groups and are associated with different hosts. These specializations are considered, therefore, to have evolved independently in these groups. Genera that have unusually long legs are associated with Nasutitermes, Labidus, Neivamyrmex, Eciton and Pheidole. Genera with setose patches or

fossae on the proepisternum are associated with Neivamyrmex and Eciton. Genera with large swellings or elevations on their pronotum are associated with Labidus, Neivamyrmex, Eciton, Formica and Pheidole. Genera with mesosternal foveae are associated with Formica, Labidus and Eciton. The hypothesis that the highly derived genera that have many morphological specializations are also integrated genera seems likely although the supporting behavioral information is not available. Some morphological specializations clearly enable the integrations of these histerids into their hosts' colonies. Long legs probably allow guests to keep up with their hosts. The functions of other specializations, for example pronotal swellings, is not at all clear.

## BEHAVIOR

Biological studies, other than casual observations and host records, are scant for histerids associated with ants and termites. Immature stages are unknown for species belonging to the Hetaerinae. Wheeler (1908) presented observations of Hetaerius brunneipennis Randall in an artificial nest of its host Formica fusca. This species was not attacked by the ants, was successful in soliciting food from its host, and would feed on dead and wounded ants as well as other insects that the ants brought into the nest.

The following is a summary of the observations of Rettenmeyer (1961), Akre (1968) and Akre and Rettenmeyer (1968) on three species, Euxenister caroli Reichensperger, Euxenister wheeleri Mann and Pulvinister nevermanni Reichensperger that are associated with army ants belonging to the genus Eciton. These histerids are host specific and will follow the chemical trails of their host species as well as other species of Eciton but avoid the trails of Neivamyrmex pilosus (F. Smith). They live within the bivouacs and are rarely seen around the periphery of bivouacs or in refuse deposits. They are absent or rare at bivouac sites shortly after the ants have emigrated. They are present in emigration columns throughout the time that brood is seen and rare at other times. They run in the center of emigration columns or

frequently ride on worker ants or on brood and booty. They are not attacked by ants in the nests. They often groom the surface of living workers assuming specific postures on them and are in turn groomed by the workers. They rub their legs alternately on workers and themselves. They are sometimes successful in soliciting food from workers and they feed on the ants' brood and booty in the nests. These behavioral specializations, if assessed according to a model proposed by Akre and Rettenmeyer (1966) for rove beetles, indicate that these histerids are relatively specialized.

The chemoreceptors responsible for the ability of E. caroli and E. wheeleri to follow the chemical trails of Eciton were shown by Torgerson and Akre (1970) to be confined to the antennal club. Further, Torgerson and Akre (1970) showed that these two species were unable to utilize the chemical trails of their hosts if the trails were more than a few hours old. Akre and Rettenmeyer (1968) tested the ability of two other species of histerids to follow the chemical trails of their hosts in the laboratory. The more generalized Clientister henrici Reichensperger did not follow its host's trails, while the more modified Sternocoelopsis veselyi Reichensperger did.

The possibility that the reproductive cycles of histerids associated with army ants are synchronized with

the nomadic-statory phases of the ants was first suggested by Akre (1968). Morphological and histological studies by Torgerson and Akre (1970) of E. caroli and E. wheeleri have shown that the ovaries were enlarged at the end of the nomadic phase and that these beetles were ready to oviposit at the beginning of the statory phase. The ovaries were not enlarged at the beginning of the nomadic phase. However, they were unable to find any immature histerids in or under the statory bivouacs or in emigration columns during the first few days of the nomadic phase.

These histerids have large eyes and functional wings. The inability of these guests to complete development in time to move with the ants and their inability to follow chemical trails that are more than a few hours old suggests that they find host colonies by odors and fly to them. Many army ant bivouacs have characteristic odors that are traceable to their refuse deposits. This hypothesis is supported by the capture of ant-associated histerids with passive interception traps in lowland rainforest (B. Gill, unpublished data).

The abundance of many tropical organisms is known to fluctuate with seasons. The collecting records on ant- and termite-associated histerids, while still very incomplete, indicate no discernable seasonal pattern. Data on E. caroli and E. wheeleri collected by Torgerson

and Akre (1970) show very little difference in the abundance of these species during wet and dry seasons. Adults of the temperate genus Hetaerius are always collected in the early spring. Whether this is because they are easier to collect at this time or whether it reflects their developmental cycles is as yet unclear.

According to the information presented above, the three species E. caroli, E. wheeleri and P. nevermanni can be classified as integrated species that use chemical mechanisms to enable their integration into the fabric of their hosts' colonies.

## EVOLUTIONARY CONSIDERATIONS

If, as the phylogenetic analysis indicates, the Hetaeriinae are monophyletic, then in the strictest sense they have evolved from one histerid species that invaded and successfully adapted to the conditions of life in an ant colony. However, it is possible that the Hetaeriinae have arisen polyphyletically from a group of related species that may have been associated with a number of different hosts. I cannot, at this time, favor one or the other of these two alternatives. The subsequent diversification of the Hetaeriinae, along with their transfer to new host species, has given rise to the five distinct lineages. The proximity of or frequent contact between the different host colonies provides a mechanism that has at least facilitated host transfers by the histerids.

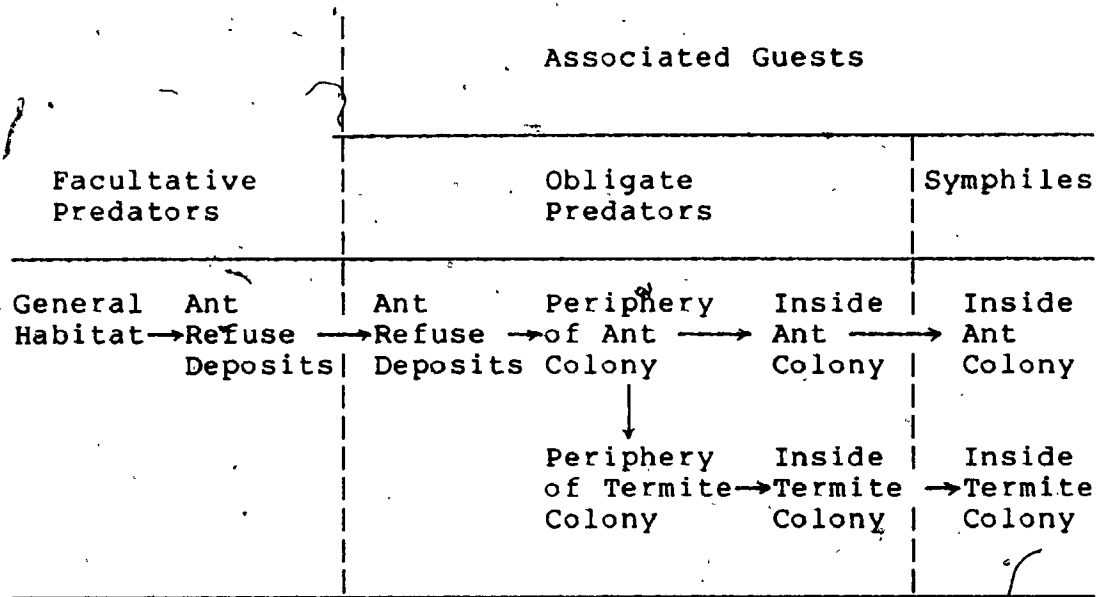
The great diversity of ant and termite associated histerids can best be explained by attributes of their hosts. As mentioned above, large host colonies have a higher diversity of microhabitats and favor the probability of being invaded and the subsequent survival and selection of the invaders. Host colonies may be regarded as island analogues. They have a patchy distribution and are difficult to invade (most ants and termites defend their nest with considerable tenacity).



Under these conditions, it is not inconceivable that any new invasion of a host colony would have a small population size, have a very low genetic exchange with its parent population and probably be subjected to selection pressures that are different from those of its parent population. This situation favors relatively rapid evolutionary change.

Figures 302-303 present the host associations of the Hetaeriinae superimposed on the preliminary phylogenetic analysis. It is impossible, at this time, to define the plesiotypic host association. Very highly autapomorphic genera occur with all the Ecitonine genera. Rather than reflecting a longer period of association, these genera are probably convergent in the degree to which they are integrated into the fabric of their host colonies. However, two patterns are discernable. First, there seems to be a very high degree of host specificity. Except for two genera, each genus of histerids is associated with only one genus of ants or termites. Second, except in Group E, the genera of histerids within any potentially monophyletic lineage are associated with many different host genera. It seems that in Groups B, C and D diversification has taken place by transfers between host genera and in Group E, for which most associations are with Eciton, by some form of inter- and intra-colony partitioning.

An hypothesis concerning the evolution of ant and termite association among the Hetaeriinae is modelled below. This hypothesis is based on the current knowledge of host associations, life-histories and behavior and on the preliminary phylogenetic analysis of the Hetaeriinae.



From the hypothesis modelled above, arise the following testable implications:

1. The, as yet unidentified, "sister group" to ant and termite guests will be found among the "facultative predators" in ant refuse deposits.

The gradient from "facultative predators" to "symphiles" is mirrored by:

2. A gradient of increasing isolation in the ecosystems

and, therefore, increasing diversity of the guest species.

3. A gradient of more radical changes in selection pressures and, therefore, of more radical changes in morphological adaptations.
4. A gradient of increasing integration of the guests into the host colony and, therefore, increasing behavioral adaptations of the guests to the life-style of the host.
5. A gradient of increasing host dependence and, therefore, increasing host specificity and more accurate resource tracking (coevolution of hosts and guests).

These implications are testable with a future phylogenetic analysis of this subfamily. This phylogenetic analysis must be based on morphological analyses which are derived from systematic revisions of each genus belonging to the Hetaeriinae.

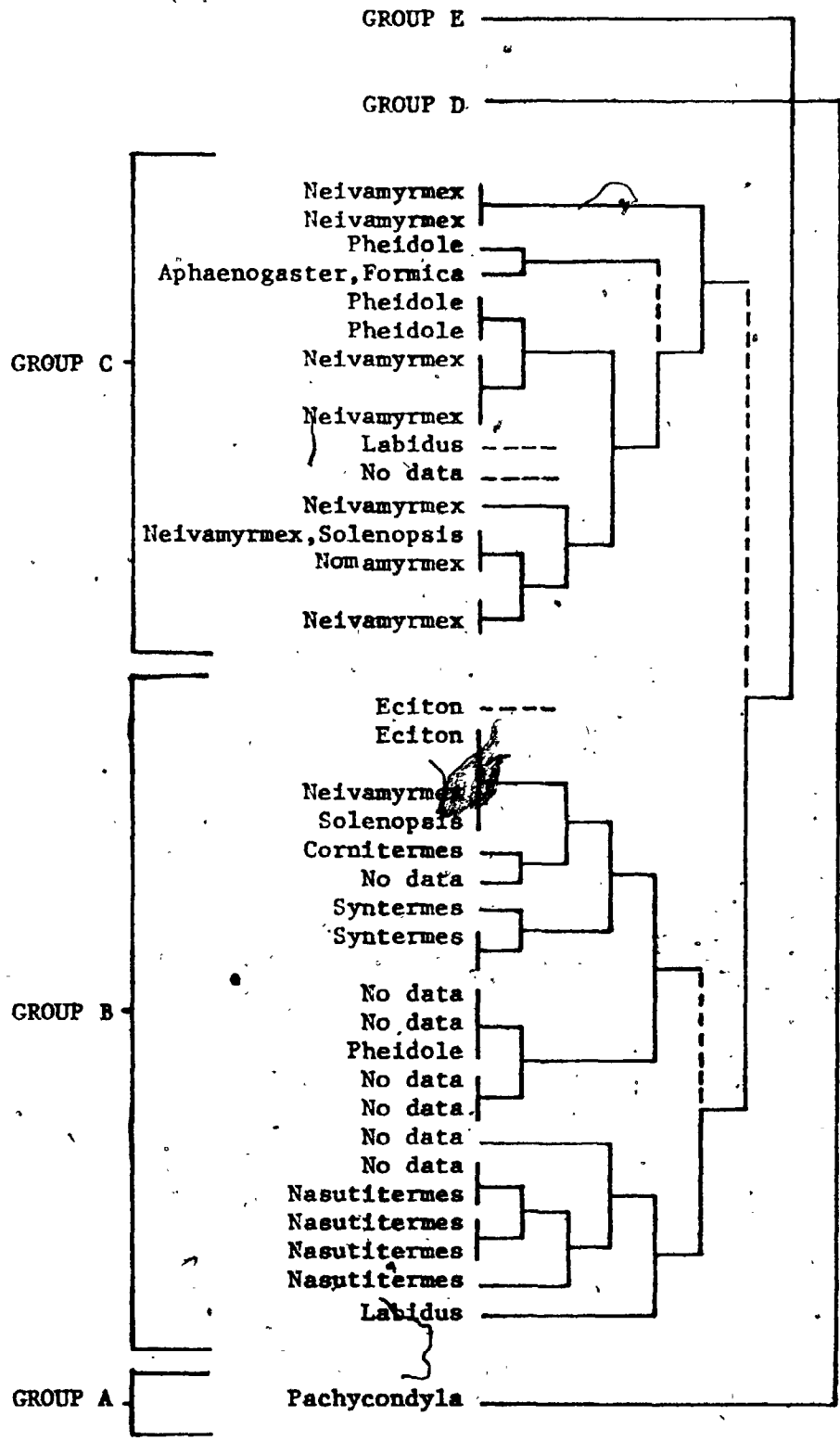


Fig. 302. Combined Phylogenies of the Hetaerinae (Figs. 3-5) with superimposed host genera.

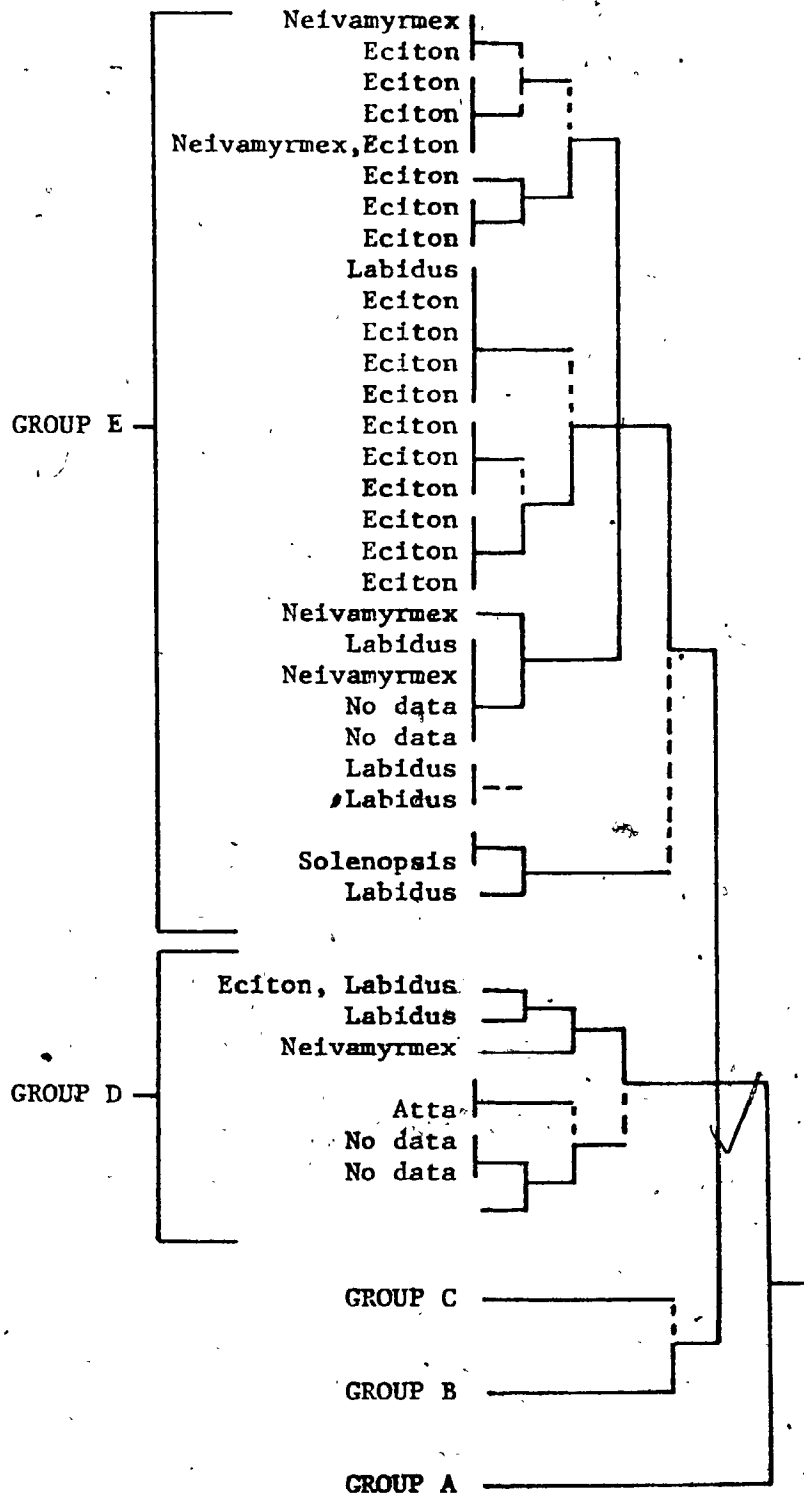


Fig. 303. Combined Phylogenies of the Heteriinae (Figs. 7-10) with superimposed host genera.

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