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# A GENERIC AND TRIBAL REVISION OF THE NORTH AMERICAN ALEOCHARINAE (COLEOPTERA: STAPHYLINIDAE)

CHARLES H. SEEVERS

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*With additions and annotations by*
LEE H. HERMAN

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# A GENERIC AND TRIBAL REVISION OF THE NORTH AMERICAN ALEOCHARINAE (COLEOPTERA: STAPHYLINIDAE)

FRONTISPIECE. Charles H. Seevers, April 19, 1907–December 4, 1965.

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# A GENERIC AND TRIBAL REVISION OF THE NORTH AMERICAN ALEOCHARINAE (COLEOPTERA: STAPHYLINIDAE)

CHARLES H. SEEVERS†

*Research Associate, Division of Insects*
*Field Museum of Natural History*
*and*
*Professor of Biology, Roosevelt University*
*Chicago, Illinois*

*With additions and annotations by*
LEE H. HERMAN
*American Museum of Natural History*
*New York, N.Y.*

†Deceased

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## FOREWORD

Prior to his death on December 4, 1965, Prof. Charles Seevers had nearly completed this revision of the North American genera of Aleocharinae. This subfamily comprises roughly 40 per cent of the approximately 30,000 named species of staphylinid beetles, with hundreds of genera. There has been a long history of differing opinions regarding the classification of the tribes and genera of this immense subfamily.

Prof. Seevers was internationally recognized as an outstanding specialist on the systematics of the Staphylinidae. Before embark ing on the present study, he had made important contributions to improving and clarifying the classification, through his world revisions of the myrmecophilous and termitophilous Staphylinidae, which constitute a very large percentage of the genera of Aleocharinae. This background, together with his access to the important Bernhauer collection at Field Museum and his study of the important collections of Casey, Fenyes, Sharp, Cameron, Wasmann, and others, here and abroad, put him in a unique position to revise the North American genera.

Although the resulting monograph is primarily concerned with genera of North America, its ramifications and importance extend beyond this faunal subregion. Prof. Seevers has attempted to integrate the nomenclature and classification of North American taxa with those of Eurasia. Further, his approach and methodology apply to the Aleocharinae generally. Thus, it was especially important that the monograph be published, even though not complete.

Shortly after Prof. Seevers' death, I began to review the manuscript. A number of crucial lacunae were apparent. Some illustrations had either not yet been made or, in some cases, completed. None of the references to illustrations had been entered in the text. Characterizations of a number of genera were lacking. The keys contained some errors, and a number of couplets were problematical.

I entered all of the text references to the completed illustrations —a laborious and difficult task for a non-specialist on this group because of inconsistencies in terminology of the morphology be-

tween legends and text. During this work, it became obvious that if the monograph were to be published, it would be necessary for a knowledgeable specialist to complete the illustrations and to carefully review and annotate the entire monograph. We are greatly indebted to Dr. Lee H. Herman, Chairman, Department of Entomology, American Museum of Natural History—an outstanding specialist on the Staphylinidae—for undertaking this important and very time-consuming task and bringing the manuscript to the point where it could be submitted for publications.

Dr. Herman completed the illustrations, added missing genera, and described one as new. He tested the keys with identified material and annotated them to identify difficult or problematical couplets and error for the user. His contributions are identified throughout, in brackets or as footnotes. These are supplemental. Prof. Seevers' interpretations remain intact.

Dr. Peter Hammond of the British Museum (Natural History) apprised us of several pertinent papers on Aleocharinae that have appeared since Seevers prepared his bibliography. Several of these deal with classification of higher categories, or with methodology in research on taxa of this subfamily. I have added these to the references. They are Kistner (1972), Sawada (1972), Lohse (1974), and Hammond (1975). Lohse's treatment is part of a larger work dealing with the Aleocharinae in volume 5 (1974) of *Die Käfer Mitteleuropas* (H. Freude, K. W. Harde, and G. A. Lohse, eds., *q.v.*), which includes other important contributions by G. Benick and G. A. Lohse, and Z. Likowsky. Because Seevers' revision treats the Athetini at some length, references to certain recent papers on this group were also added. These are Sawada (1974, 1977) and Yosii and Sawada (1976).

With Prof. Seevers death, we at Field Museum lost a close personal friend and valued Research Associate. Systematic entomology lost a distinguished researcher who was about to pursue several other important projects on the systematics of the Staphylinidae. However, his meticulous studies on the myrmecophilous and termitophilous species, his revision of the mammal-parasitizing Amblyopinini and the fungus-dwelling Gyrophaenae, and this, his final and perhaps most important contribution, form an invaluable legacy.

Rupert L. Wenzel
Curator of Insects
Field Museum of Natural History

## INTRODUCTION[1]

The coleopterous family Staphylinidae, comprising about 30,000 described species of rove beetles, is one of the largest and most diversified families of insects. The Aleocharinae, its largest subfamily, includes perhaps 40 per cent of the species. With a seemingly endless variety of species to cope with, the taxonomy of the Aleocharinae for most sections of the world fauna is poorly known. The North American Aleocharinae are no exception; the nearly 200 genera and more than 1,300 species are very difficult to recognize from existing literature.

This revision has as its objectives: A systematic review of the genera of Aleocharinae inhabiting the North American continent; the organization of a new tribal system for the subfamily; the construction of an illustrated key to the North American genera, and a revised catalogue of the species.

The aleocharine fauna of North America has never been treated systematically, even at the generic level, and no key to the genera has been prepared. The literature on the New World Aleocharinae is very difficult to use, and determinations are almost impossible to make without a substantial reference collection. About 90 per cent of the North American species were described by Thomas L. Casey, and an additional 8 per cent by Max Bernhauer. None of their descriptions are illustrated. The Casey collection in the United States National Museum is the only comprehensive and authoritative collection of the North American aleocharine fauna. The Fenyes collection in the California Academy of Sciences is fairly comprehensive but is not authoritative because it lacks carefully determined Casey species. The Bernhauer collection in Field Museum of Natural History has the types of more than 100 North

[1]Throughout the paper there are footnotes followed by the initials L. H. in brackets. These are all comments, additions, or alterations supplied by Lee Herman.

American aleocharine species, but it, too, lacks the Casey species. The Bernhauer collection, one of the world's largest and most comprehensive staphylinid collections, probably has the best assemblage of world aleocharines.

In preparation for this monograph, I have studied all of the genera of North American Aleocharinae and a very high percentage of the species. In addition, I have had access to the fine Bernhauer palaearctic collection, and have been able to study the type species of nearly every genus considered. This has been most important because a high percentage of the North American genera are based on European type species.

One of the major problem groups of Aleocharinae is the so-called genus *Atheta* to which perhaps 2,000 species throughout the world have been assigned. For reasons given in more detail later in the paper, I believe it advisable to raise a majority of the subgenera of *Atheta* to generic status and to elevate the entire athetine complex to tribal status. This will, in my opinion, solve numerous problems and yet not require new generic names; more than 150 subgeneric names are available.

The revised tribal system proposed here is based primarily on the holarctic fauna, which is highly representative of the world fauna, especially at the tribal level. Tribes that are endemic to other zoogeographic regions are usually of a specialized nature, a majority consisting of termitophilous or myrmecophilous species. The system proposed here is designed to replace an artificial, archaic system in use for about 70 years (since Ganglbauer, 1895). The system which was elaborated by Fenyes (1918, 1920, 1921), assigns genera to tribes strictly on the artificial basis of the number of tarsal, palpal, and antennal segments. It is almost needless to say that the system produces some strange associations. It may be a good system for classifying tarsi but is certainly a poor one for classifying beetles.

The Aleocharinae are small beetles, ranging in length from less than 1 mm. to about 15 mm., with the great majority of species in the 2-6 mm. range. The Aleocharinae are ecologically important in many microhabitats and may well be the dominant predators in many. They thrive in microhabitats of decomposing animal and vegetable materials where there is an abundance of dipterous larvae and other soft-bodied arthropods. Some species doubtless feed on the organic material of their substratum. The following ecological situations are those in which aleocharines occur with greatest

frequency: in decomposing animal matter (animal carcasses, dung); in decomposing vegetable matter (dead leaves, grass, mushrooms, forest floor litter, cacti, etc.); on fresh mushrooms (species feed on spores and hyphae); in birds nests and mammal burrows; on flowers; on leaves of trees and plants (as predators on mites); on lake shores and pond margins; on sandy shores of streams and swift rivers; in the intertidal zone of sea-shores; in ant and termite nests; in caves (a limited fauna); in puparia of cyclorrhaphous Diptera (as predator-parasites); under bark of logs; under moss.

Life in these varied habitats is reflected in the morphology of the species in some cases; this is especially true for myrmecophilous and termitophilous species (Seevers, 1957, 1965). The Aleocharinae have been especially successful in adapting to conditions of the societies of ants and termites. It is safe to say that this subfamily has provided more independently evolved inquilinous groups than any family of insects. Much of the success of the group for this mode of life may be attributed to the "genetic pliability" of the aleocharine abdomen. Not covered by elytra and being highly flexible, the abdomen has become physogastric (more or less inflated and membranous) for life in termite societies, myrmecoid (petiolate) for life in army-ant societies, and provided with trichomes for life with higher ants.

## Acknowledgements

I am very grateful to the following men for opportunities afforded me to study material in collections under their supervision: Dr. J. F. Gates Clarke and Mr. Oscar Cartwright of the United States National Museum; Dr. Edward R. Ross and Mr. Hugh Leech of the California Academy of Sciences; Dr. Jerome G. Rozen of the American Museum of Natural History; and Dr. Philip J. Darlington, Jr. of the Museum of Comparative Zoology.

I am very much indebted to the National Science Foundation for providing funds (Grants G5190 and GB564) that made possible trips to the above institutions. It is always a pleasure to acknowledge with much gratitude the privileges afforded me by the authorities of Field Museum of Natural History, and by Dr. Rupert L. Wenzel, Curator of Insects, in particular. These privileges include the freedom to study and curate the remarkable Max Bernhauer collection of more than 12,000 species of Staphylinidae from all parts of the world. Most of all, I am deeply appreciative for the invaluable aid and encouragement given by my wife Frances.

### Abbreviations Used In Illustrations[1]

| | |
|---|---|
| *abm* | abductor muscles of paramerite |
| *ac* | distal end of condylite |
| *adm* | adductor muscles of paramerite |
| *aml* | apical process of median lobe |
| *apl* | apical lobe of paramerite |
| *bcr* | proximal crest |
| *con* | condylite of paramere |
| *cp* | compressor plate |
| *cv* | condylite portion of velum |
| *dcr* | distal crest of median lobe |
| *dvm* | dorso-ventral muscles of median lobe |
| *ejd* | ejaculatory duct |
| *f* | flagellum |
| *hz* | hinge zone |
| *ins* | internal sac |
| *ivp* | internal velar pad |
| *lm* | longitudinal retractor muscles of internal sac |
| *meph* | medial phragma |
| *mf* | median foramen |
| *ml* | median lobe |
| *mph* | marginal phragma |
| *ol* | ostial lamella |
| *par* | paramerite |
| *pc* | paramere condyles |
| *pph* | proximal phragma |
| *pv* | paramerite velum |
| *s* | sternite |
| *t* | tergite |
| *v* | velum (? velar sac) |
| *vph* | velar phragma |
| *vs* | = ? (probably velar sac) |
| *vss* | velar sac slerite |

## The Classification of the Aleocharinae: A Brief History

The earliest recorded species of the Aleocharinae were described by Linnaeus and Paykull, and the first genera (*Aleochara* and *Callicerus*) were proposed by Gravenhorst (1802). Gravenhorst's *Aleochara* was broad in concept and contained 50 species. It was not until 1831 that the family Staphylinidae was subdivided along the lines of the currently recognized subfamily system. Mannerheim in

[1]Compiled by R. L. Wenzel.

a pioneering work divided the family into six tribes (currently subfamilies), one of which was the tribe Aleocharides. Mannerheim recognized 16 genera including the monotypic genus, *Homalota,* based on *plana* Gyllenhal.

In a short but brilliant career, Erichson established a basic classification of the Staphylinidae that has survived with surprisingly few major changes. In his classic works of 1837 and 1839, 1840, Erichson recognized and provided diagnoses for 11 tribes (currently subfamilies). His work encompassed broad geographic areas. Erichson's tribe I, Aleocharini (now the subfamily Aleocharinae), included 25 genera which were not organized into higher categories other than those implied by a key. Erichson utilized tarsal and palpal segmentation in his key to genera, and as a whole produced a rather artificial classification. His work influenced classification procedure to such an extent that Fenyes (1918, 1920, 1921), as well as Bernhauer and Scheerpeltz (1926), utilized what was essentially an Erichsonian system with modifications. Erichson made one serious error that took more than 50 years to rectify; he greatly expanded *Homalota* Mannerheim (a genus of Bolitocharini) to include more that 130 species that belong in the Athetini.

The first staphylinid specialist to subdivide the subfamily Aleocharinae into tribes seems to have been Kraatz (1856), who proposed Aleocharini, Gyrophaenini, and Gymnusini. The priority of the name Gyrophaenini over Bolitocharini has generally been ignored but I shall use the earlier tribal name. The first comprehensive tribal system for the Aleocharinae was proposed by Thomson (1859-1867); in 1860-61 he used 12 subtribes (equivalent to current tribes). There are some serious defects in Thomson's first arrangement, especially with regard to generic placements, but his final (1867) arrangement of categories was much improved and included 14 categories (Autalides, Hygronomides, Oligotides, Gymnusides, Phytosides, Lomechusides, Myrmedoniides, Aleocharides, Eurysides, Bolitocharides, Gyrophaenides, Tachyusides, Oxypodides, Homalotides). With some mergers and additions, this arrangement is not unlike that of twentieth-century cataloguers. Thomson corrected Erichson's misuse of *Homalota* (and proposed *Atheta* and other athetine genera), but his suggestions were not immediately accepted. Despite shortcomings, Thomson's handling of the *Atheta* problem was, in my opinion, much more logical than that ultimately accepted by Ganglbauer, Fenyes, Bernhauer, Scheerpeltz, Cameron, and others. Thomson accorded generic status to many of the species groups later placed as subgenera of *Atheta.*

Mulsant and Rey's (1871, 1873, 1873b, 1874a, 1875) eight branches (rameaux) of the Aleocharinae correspond to tribal categories now in use. The most significant precedent set by their classification was the establishment of a large and heterogeneous category—*rameau Myrmedoniaires*—that contained all genera of aleocharines with 4,5,5 segmented tarsi. For nearly 100 years this "catch-all" tribe (Myrmedoniini) has confused many relationships. Rey (the staphylinid specialist of these collaborators) was one of the most competent of aleocharine specialists and proposed numerous genera for species groups of the *Atheta* complex. He did not agree, however, with Thomson on the nature of *Homalota* and accepted the Erichson system which incorrectly placed many athetine species in it. Fauvel and Sharp made numerous important contributions to the systematics of Aleocharinae during the last half of the nineteenth century but did not influence the tribal classification significantly; in fact they adopted arrangements much simpler than those utilized by either Thomson or Rey.

Ganglbauer (1895), although a general coleopterist, influenced the tribal classification of the Aleocharinae greatly. His division of the subfamily into 10 tribes (Aleocharini, Myrmedoniini, Bolitocharini, Oligotini, Hygronomini, Diglossini, Pronomaeini, Myllaenini, Gymnusini, and Dinopsini) was accepted by Bernhauer, Casey, Fenyes, Scheerpeltz, Cameron, and others who built on it with slight modifications. Actually, Ganglbauer made few significant original contributions and took many of the Thomson and Rey proposals. His influence on the taxonomy of the *Atheta* complex was especially important; he correctly took the numerous athetine species out of *Homalota* and placed them in Thomson and Rey categories (as subgenera of *Atheta*). Ganglbauer's broad concept of *Atheta* was accepted without comment or protest by the most influential specialists—those who were also the cataloguers (Bernhauer, Fenyes, Cameron, Scheerpeltz, etc.). The only twentieth-century specialist to significantly modify Ganglbauer's concept of *Atheta* was Casey (1910, 1911) who elevated many species groups to generic rank.

Fenyes (1918, 1920, 1921) expanded the Ganglbauer tribal system to include 22 tribes, while Bernhauer and Scheerpeltz (1926) recognized 24. Undeniably artificial, the Ganglbauer-Fenyes-Bernhauer-Scheerpeltz tribal system ignores phylogenetic considerations and frequently isolates related forms in different taxa or brings together obviously unrelated genera. Although Casey con-

formed in general to the prevailing views on aleocharine classification, he did not necessarily agree with them as is obvious from his remarks on the phylogenetic relations of some groups. In considering Casey's contributions, one must bear in mind that he was a general coleopterist who devoted only a fraction of his taxonomic career to the Aleocharinae. Had he been able to devote all his taxonomic talents—which were very great—to the Aleocharinae (which he considered his favorite group of beetles), he probably would have modified the system considerably.

More than a century and a half of taxonomic work on the Aleocharinae has resulted in a tribal system that is hardly acceptable from any standpoint.

It is not a sound basic classification from which to draw inferences concerning evolution, phylogeny, or zoogeography, nor is it a very practical system. There is no denying that the system may work if one is interested in a fauna of limited geographic scope. There can be little doubt that a work such as Hansen's treatment of the Aleocharinae of Denmark (1954) serves a useful purpose even though it conforms to the artificial system. But if a systematist is concerned with the world fauna of Aleocharinae from zoogeographic, evolutionary, phylogenetic, and ecological standpoints, the present classification has very serious defects. My criticisms of the system should not be construed as criticisms of the pioneering taxonomists who were faced with the monumental task of classifying a seemingly endless variety of small beetles which, at first, bear a discouraging similarity to one another. The systematics of the Aleocharinae has attracted a notably competent group of entomologists; among these one may perhaps mention the following: Gravenhorst, Mannerheim, Erichson, Kraatz, Maeklin, Thomson, Rey, Fauvel, Sharp, Ganglbauer, Bernhauer, Casey, Wasmann, Scheerpeltz, Fenyes, Cameron, and Brundin. The most noteworthy achievement made by some of these men was in the organizing of remarkably fine collections. Although it was not always reflected in their published works, many of these men had a comprehensive knowledge of the Aleocharinae, at times on a world wide basis. Unfortunately, much of the published work on the group is inferior in quality and not helpful to either the beginner or the specialist; for most areas of the world, the literature cannot be relied upon for identifications. The dearth of illustrations is notorious; it is unfortunate that some of the most prolific workers did not provide illustrations for their new species. There

have been a few notable exceptions in recent years. The illustrated works of Lars Brundin on very difficult groups of European Athetini will no doubt serve as important landmarks in aleocharine taxonomy.

## A Revised Tribal Classification

As pointed out in the previous section, the aleocharine tribal system introduced in the nineteenth century, stabilized by Ganglbauer (1895), and expanded by Bernhauer, Scheerpeltz, Fenyes, Casey, Cameron, and others in the twentieth century, is indefensible, except on the ground of expediency. Even as a "useful" system it leaves much to be desired, although it does permit relatively easy generic assignment through the use of only a few characters. The system ignores the principles of sound systematics, and does not consider phylogenetic, evolutionary, ecological, and zoogeographical problems. It is an unimaginative system in that it requires only the ability to count tarsal and antennal segments. The subfamily Aleocharinae has many fascinating evolutionary features but these are almost completely obscured by the artificiality of the classification. One of the main purposes of classification—to show relationships—is not achieved by the tribal system.

The writer (Seevers, 1957, 1965) has been one of the few to question the validity of the system in print, but others have realized its artificiality. It seems important to attempt a major revision of the aleocharine classification at this time, because the task becomes more formidable as the list of genera and species becomes longer and longer.

Ideally, a revision should encompass the world fauna so as to avoid a piece-meal approach, with its dual system of revised and unrevised sections of the subfamily. Yet this is difficult for one person to do. Carefully considering the difficulties, I have concluded that the fundamentals of a new system can be established without including all of the world genera. The tribal system herein proposed is based chiefly on the Holarctic fauna, although it takes into consideration major tropical groups as well. The Holarctic aleocharine fauna is highly representative of the major tribes of the world fauna, except for certain termitophilous and myrmecophilous groups. The tribe Oxpodini, which I believe to be the most generalized, is especially well represented in our fauna. It may well be that the Aleocharinae originated in the north temperate

region and spread to other areas; the faunas of tropical areas of the world seem to be derived and to have more specialized forms.

It is my conviction that the classification should bear as close a relationship as possible to the phylogenetic history of a group. To that end a grouping of the tribes, as well as their arrangement in a system, seems to be important. Although it is not possible to express phyletic relationships in a linear sequence, it is desirable to begin the classification with the most generalized genera and to progress toward the specialized. It has always been somewhat puzzling that most aleocharine specialist have reversed the sequence, and have progressed from the specialized to the generalized. Even though Ganglbauer (1895) properly began his classification with the Aleocharini (including the Oxpodini of this paper), subsequent cataloguers such as Fenyes, Bernhauer, and Scheerpeltz have placed that tribe at the end of their systems. A revised tribal and generic system, outlined in the next section, begins with the most generalized aleocharines, *Oxypoda* and allied genera.

## The Tribes and Genera of North America: A Catalogue

Family STAPHYLINIDAE

Section ALEOCHARIDEA: Subfamily ALEOCHARINAE

Division: OXYPODINEA

Tribe OXYPODINI

OXYPODAE:

*Acrimea* Casey
*Amarochara* Thomson
*Calodera* Mannerheim
*Crataraea* Thomson
*Devia* Blackwelder (=*Dasyglossa* Kraatz)
*Dexiogyia* Thomson
*Gnathusa* Fenyes
*Haploglossa* Kraatz (=*Microglotta* Kraatz)
*Ilyobates* Kraatz (=*Gennadota* Casey)
*Longipeltina* Bernhauer
*Melanalia* Casey
*Moluciba* Casey
*Ocalea* Erichson
*Ocyusa* Kraatz
*Oxypoda* Mannerheim
*Pachycerota* Casey
*Pentanota* Bernhauer
*Phloeopora* Erichson
*Tetralaucopora* Bernhauer (=*Chilopora* Kraatz)
*Thyasophila* Fairmaire and Laboulbene

DINARDAE:
*Decusa* Casey
*Euthorax* Solier
*Myrmobiota* Casey
*Losiusa* Seevers, new genus

MEOTICAE:
*Alisalia* Casey
*Apimela* Mulsant and Rey
*Bamona* Sharp
*Gyronycha* Casey
*Leptobamona* Casey
*Meotica* Mulsant and Rey

BLEPHARHYMENI:
*Blepharhymenus* Solier

TACHYUSAE:
*Brachyusa* Mulsant and Rey (=*Tetralina* Casey)
*Gnypeta* Thomson
*Gnypetella* Casey
*Meronera* Sharp
*Tachyusa* Erichson
*Teliusa* Casey
*Trachyota* Casey

Tribe COROTOCINI

*Eburniogaster* Seevers
*Termitonidia* Seevers

Tribe ATHETINI

ACROTONAE:
*Acrotona* Thomson
*Strigota* Casey

DIMETROTAE:
*Amischa* Thomson
*Anatheta* Casey
*Canastota* Casey
*Datomicra* Mulsant and Rey
*Dimetrota* Mulsant and Rey
*Fusalia* Casey
*Pancota* Casey
*Pseudota* Casey
*Sableta* Casey
*Synaptina* Casey

ATHETAE:
*Aloconota* Thomson
*Anepsiota* Casey
*Atheta* Thomson
*Athetalia* Casey
*Athetota* Casey
*Lamiota* Casey
*Liogluta* Thomson

*Pseudomegista* Bernhauer
*Schistoglossa* Kraatz

XENOTAE:
*Amphibitherion* Notman[1]
*Anopleta* Mulsant and Rey
*Clusiota* Casey
*Dinaraea* Thomson
*Halobrecta* Thomson
*Homalotusa* Casey
*Hydrosmectina* Ganglbauer
*Hydrosmecta* Thomson
*Iotota* Casey
*Micratheta* Casey
*Micrearota* Casey
*Microdota* Mulsant and Rey
*Noverota* Casey
*Omegalia* Casey
*Panalota* Casey
*Paradilacra* Bernhauer
*Phasmota* Casey
*Philhygra* Mulsant and Rey
*Stethusa* Casey
*Valenusa* Casey
*Xenota* Mulsant and Rey (=*Atheta sensu* Thomson, Fenyes, Bernhauer, Casey, etc.)

GEOSTIBAE:
*Anaduosternum* Notman
*Asthenasita* Casey
*Crephalia* Casey
*Gaenima* Casey
*Geostiba* Thomson
*Sibiota* Casey
*Sipaliella* Casey

MISCELLANEOUS:
*Doliponta* Blackwelder (=*Lipondonta* Fenyes)
*Earota* Mulsant and Rey
*Thamiaraea* Thomson
*Euromota* Casey
*Goniusa* Casey
*Lypoglossa* Fenyes
*Parameotica* Ganglbauer
*Pontomalota* Casey
*Strophogastra* Fenyes
*Tarphiota* Casey
*Trichiusa* Casey

[1]Under *Philhygra* (p. 123), *Amphibitherion* is listed as a junior synonym [Ed.].

Division: ALEOCHARINEA

Tribe ALEOCHARINI

*Aidochara* Casey
*Aleochara* Gravenhorst
*Baryodma* Thomson
*Calochara* Casey
*Echochara* Casey
*Emplenota* Casey
*Funda* Blackwelder (=*Eucharina* Casey)
*Isochara* Bernhauer
*Maseochara* Sharp
*Oreochara* Casey
*Pinalochara* Casey
*Polychara* Mulsant and Rey
*Rheochara* Mulsant and Rey
*Rheocharella* Casey
*Rheobioma* Casey
*Xenochara* Mulsant and Rey

Tribe HOPLANDRIINI

*Genosema* Notman
*Hoplandria* Kraatz
*Lophomucter* Notman
*Nosora* Casey
*Platandria* Casey
*Tetrallus* Bernhauer
*Tinotus* Sharp

Division: FALAGRINEA

Tribe FALAGRIINI

*Aleodorus* Say
*Anaulacaspis* Ganglbauer
*Borboropora* Kraatz
*Cordalia* Jacobs (=*Cardiola* Mulsant and Rey)
*Falagria* Leach
*Falagriota* Casey
*Lissagria* Casey
*Myrmecopora* Saulcy
*Omoschema* Notman
*Stenagria* Sharp (=*Lorinota* Casey)

Tribe SCEPTOBIINI

*Apteronina* Wasmann
*Dinardilla* Wasmann
*Sceptobius* Sharp
*Symbiochara* Fenyes

Division: MYRMEDONIINEA

Tribe MYRMEDONIINI

MYRMEDONIAE:
*Apalonia* Casey
*Drusilla* Leach (=*Myrmedonia* Erichson)
*Myrmoecia* Mulsant and Rey (=*Nototaphra* Casey)
*Xenodusa* Wasmann
*Xesturida* Casey
*Zyras* Stephens

DINOCORYNAE:
*Dinocoryna* Casey
*Ecitonidia* Wasmann

ECITOPORAE:
*Ecitoxenidia* Wasmann
*Microdonia* Casey

TETRADONIAE:
*Tetradonia* Wasmann

Tribe DORYLOMIMINI

*Beyeria* Fenyes
*Probeyeria* Seevers

Division: BOLITOCHARINEA

Tribe BOLITOCHARINI

GYROPHAENAE:
*Agaricochara* Kraatz
*Encephalus* Kirby
*Eumicrota* Casey
*Gyrophaena* Mannerheim
*Phanerota* Casey

BOLITOCHARAE:
*Bolitochara* Mannerheim
*Leptusa* Kraatz
*Sipalia* Mulsant and Rey (not Fenyes, Bernhauer, Casey, etc.)

SILUSAE:
*Apheloglossa* Casey
*Elachistarthron* Notman
*Orthodiatelus* Notman
*Silusa* Erichson

HOMALOTAE:
*Anomognathus* Solier
*Homalota* Mannerheim
*Placusa* Erichson
*Thecturota* Casey

MISCELLANEOUS:
*Euvira* Sharp
*Cyphea* Fauvel
*Schistacme* Notman

Tribe AUTALIINI

*Autalia* Leach

Tribe PHILOTERMITINI

*Philotermes* Kraatz

Tribe PHYTOSINI

*Amblopusa* Casey
*Bryobiota* Casey
*Bryothinusa* Casey
*Diaulota* Casey
*Liparocephalus* Maeklin
*Thinusa* Casey

Division: GYMNUSINEA

Tribe GYMNUSINI

*Gymnusa* Gravenhorst

Tribe DEINOPSINI

*Deinopsis* Matthews

Tribe MYLLAENINI

*Myllaena* Erichson

Division: OLIGOTINEA

Tribe OLIGOTINI

*Anacyptus* Horn
*Cypha* Leach (=*Hypocyphtus* Gyllenhal)
*Holobus* Solier
*Oligota* Mannerheim

Division: DIGLOTTINEA

Tribe DIGLOTTINI

*Diglotta* Haliday

Section ALEOCHARIDEA: Subfamily TRICHOPSENIINAE

*Trichopsenius* Horn
*Xenistusa* LeConte

Inasmuch as the subfamily is so large, several levels in the hierarchy of classification are necessary to show relationships. I have attempted to group the tribes into divisions and to subdivide them into subtribes. The following section is devoted to a consideration of these taxa as they relate to the classification as catalogued by Bernhauer and Scheerpeltz (1926) in the *Coleopterorum Catalogus,* and generally accepted.

*Division Oxypodinea:* The Oxypodini, Corotocini, and Athetini seem to constitute a group of allied tribes. The Oxypodini, in my opinion, contains the most generalized members of the subfamily. *Oxypoda* Mannerheim serves well as a prototype of the subfamily, having 5,5,5 segmented tarsi, a frontal suture, a convex pronotum

with inflexed hypomera that are not visible in lateral view, generalized mouthparts, a generalized pronotal pubescence pattern, 11 segmented antennae, narrowly separated mesocoxae and generalized intercoxal processes, a generalized abdomen, and aedeagi that are as generalized as any in the subfamily. The presence of a frontal suture is especially significant; in the Aleocharinae it is present in *Oxypoda* and a few allied genera, in *Diglotta,* and in the Termitopaediini of the Ethiopian Region. The frontal suture and other characteristics serve to link the Aleocharinae with the Tachyporinae, which are in all probability their closest staphylinid allies. The aleocharine aedeagus, with its unique parameres, seemingly provides no clues to the staphylinid progenitors of the Aleocharinae. Although the Oxypodini are cosmopolitan in distribution, their greatest concentration is in the Holarctic Region, and it may be reasonable to believe that the Aleocharinae originated in that zoogeographic realm.

The Oxypodini as herein constituted includes a major part of Bernhauer and Scheerpeltz' subtribes Oxypodae, Caloderae, and Dinardae of the Aleocharini, part of their Hygronomini, their Decusini, and a number of genera of their subtribe Falagriae (Myrmedoniini). I believe that the Oxypodini are distinct from the Aleocharini for reasons discussed under the latter tribe. My tribe Oxypodini includes four subtribes: Oxypodae, Meoticae, Dinardae, and Tachyusae. Characters other than tarsal segmentation are given considerable weight so that the tribe has several tarsal formulae—5,5,5; 4,5,5; and even 4,4,4. The Meoticae must include, for example, not only *Meotica* and *Apimela* with five-segmented tarsi, but also *Gyronycha, Bamona, Leptobamona,* and *Alisalia* which because of four-segmented tarsi have been placed incorrectly in the Hygronomini. The six genera of the Meoticae have distinctive coeloconic sensilla in the terminal antennal segments. The myrmecophilous subtribe Dinardae must include *Decusa* even though it has 10-segmented antennae and has been given tribal status (Decusini) in the artificial system.

Perhaps the most drastic change in the composition of the Oxypodini is the addition of the Tachyusae. The genera of this subtribe were formerly in the Falagriae (Myrmedoniini), but I believe that they are more closely allied to the Oxypodini. If it were not for the fact that the Tachyusae have 4,5,5 segmented tarsi and the Oxypodae 5,5,5 segmented tarsi, the two groups would be difficult to separate. *Gnypeta,* probably the most generalized of the Tachyusae, is especially close to some Oxypodae.

Allied to the Oxypodini and apparently derived from oxypodine stock are several pantropical tribes of termitophiles, Corotocini and Perinthini. All members of these tribes are associated with termites of the subfamily Nasutitermitinae. Most corotocines are physogastric and highly specialized; the perinthines are limuloid (Seevers, 1957). The fauna of these tribes is extensive, but only two genera, *Eburniogaster* and *Termitonidia,* enter the Nearctic fauna in our southwestern states. Inasmuch as the members of these tribes have the distinctive antennal coeloconic sensilla found in a number of Oxypodini, notably the Meoticae, they may have been derived from Oxypodine stock at some remote geologic period. (see Seevers, 1957, for a consideration of the evolution of the Corotocini and Perinthini).

The Athetini are a very large cosmopolitan tribe of small aleocharines. As discussed in more detail elsewhere in the monograph, a major feature of the reclassification of *Atheta* and allies is the organization of the tribe Athetini to contain them. Their former position in the Myrmedoniini seems to me to be indefensible. Indeed, the Athetini are probably more closely allied to the Oxypodini and accordingly are placed in the division Oxypodinea. *Acrotona,* seemingly the most generalized of the athetines, resembles *Oxypoda* in a number of respects. It is reasonable to postulate that the Athetini were derived from an oxypodine ancestor. Within the Athetini there seems to have been few strong evolutionary trends, except perhaps a tendency toward small size, and occasional retrogression (reduction of eyes, elytra, wings). There seems to have been relatively little tendency to acquire special ecological roles; most species are probably generalized predators on small larvae and other arthropods, or generalized feeders on decaying vegetable and animal materials. A remarkably successful group, the vast number of species and individuals of athetines throughout the world was a major evolutionary feature of the Aleocharinae. The athetine species and individuals may be so numerous in a microhabitat as to constitute the dominant group of predators. In the Nearctic Region, the Athetini constitute about 40 per cent of the species of Aleocharinae, and in terms of individuals probably outrank all other tribes combined. Without undergoing much structural change, some Athetini live in special habitats—ant and termite nests, in bird and mammal nests, in fungi, in flowers, etc. In all likelihood, several tribes of specialized army-ant associates—Deremini (Africa) and Ecitocharini (Neotropical Region)—were

derived from athetines (Seevers, 1965). In the North American fauna, several specialized endemic sea-shore genera—*Tarphiota* and *Pontomalota*—apparently differentiated independently on the Pacific Coast. The large majority of the genera of Bernhauer and Scheerpeltz' subtribes Athetae and Schistogeniae (of the Myrmedoniini) belong in the Athetini. Two exceptions are considered elsewhere: *Brachyusa* belongs in the Tachyusae (Oxypodini), and *Xesturida* in the Myrmedoniini. Throughout the tribe the tarsal formula has remained a remarkably constant 4,5,5. The intercoxal processes between the narrowly separated mesocoxae are slender, and the mesosternal process is almost always longer than the metasternal process. After careful search for characteristics to delimit the Athetini, I believe that an aedeagal character, described elsewhere in the paper, may be the best for diagnostic purposes.

There can be little doubt that the Athetini provide the aleocharine systematist with his most difficult taxonomic problems. The "*Atheta*" problems have been aggravated by very poor taxonomic practices—weak, trivial descriptions, no illustrations, no keys, the use of superficial characters, and the neglect of essential aedeagal and spermathecal characters. The problem of what constitutes a genus has been very baffling in the Athetini, perhaps not inherently, but certainly in practice. In the systematic section I attempt to deal with this problem and suggest a revised system for *Atheta* and its relatives; a substantial number of the subgenera are elevated to generic rank.

*Division Aleocharinea:* The tribes Aleocharini and Hoplandriini probably represent a phyletic series quite apart from the Oxypodinea. The tribe Aleocharini should contain only Bernhauer and Scheerpeltz' Aleocharae (Aleocharini), and the tribe Hoplandriini their Hoplandriae from the Myrmedoniini. The members of this division are characterized by 5-segmented maxillary palpi, 4-segmented labial palpi, and reticulated (not striated) velums of the parameres. The basic tarsal formula for the division is 5,5,5; this condition prevails in all of the Aleocharini and in some Oriental genera (*Pseudoplandria,* etc.) of Hoplandriini. All New World Hoplandriini probably have four-segmented anterior tarsi (because of which they have always been placed in the Myrmedoniini).

The Aleocharini are cosmopolitan but perhaps most abundant in the Holarctic Region. It is probable that all species are characterized by a specialized life history (only a few species have been

investigated). The larvae are predator-parasites in the puparia of cyclorrhaphous Diptera and undergo hypermetamorphosis. It is difficult to believe that this interesting life history is limited to those few species of Aleocharini that have been studied (those that parasitize the cabbage maggot and a few other Dipterous puparia).

Life histories of the Hoplandriini have not, to my knowledge, been studied; it would be interesting to know if any of them are predator-parasites. The Hoplandriini are best represented in the Neotropical, Nearctic, and Oriental Regions. The Palaearctic and Ethiopian Regions have few representatives. The occurrence of hoplandriine genera with 5,5,5 segmented tarsi only in the Oriental Region suggests the possibility of the origin of the tribe in that area. The largest number of species may occur in the Neotropical Region.

*Division Falagriinea:* Contains the tribes Falagriini and Sceptobiini, characterized by a very distinctive paramere character described in the section on morphology. The tribe Falagriini is composed of Bernhauer and Scheerpeltz' Falagriae (Myrmedoniini) without the Tachyusae (herein placed in the Oxypodini) and without tropical myrmecophilous genera (*Derema, Ecitophila,* etc.). The falagriines have a distinctive facies: slender neck, pronotum that narrows appreciably at base and has a median sulcus, and ventral surface featuring procoxal cavities "closed" by large sclerotized peritremes, elongated prosternum, and inflexed hypomera. The Falagriini are almost cosmopolitan. They frequent moist situations, such as the margins of streams and ponds, and wet moss.

The Sceptobiini are a new tribe organized for four genera associated with ants of the genus *Liometopum* in the southwestern United States and Mexico. These genera have been "lost" in the huge tribe Myrmedoniini. Their affinities are very difficult to determine unless the aedeagi are examined. The Sceptobiini are rather specialized: their facies are distinctive, eyes reduced, elytra reduced, and wings absent.

*Division Myrmedoniinea:* Contains the tribe Myrmedoniini, and, doubtfully, the tribe Dorylomimini. Of the enormous polyphyletic assemblage called the Myrmedoniini Bernhauer and Scheerpeltz (1926) and almost all other staphylinid specialists only the subtribe Myrmedoniae (and that appreciably reduced) is now retained in this tribe. No one can logically assert that the tribe Myrmedoniini has been anything more than a catch-all for genera with 4,5,5 segmented tarsi. The major objection to categories of expediency is

that they may become so large and so widely accepted that there is hesitation in undertaking the formidable task of analyzing the taxon and suggesting revisions. In the case of the Myrmedoniini (*sensu lato*), I initiated a revision in earlier studies on myrmecophiles and termitophiles (Seevers, 1957, 1965). It is likely that all of the Myrmedoniini (*sensu stricto*) are associated either with ants or termites in some relationship. Some species of *Zyras,* for example, are probably no more than obligatory predators on insect societies—and exhibit no signs of integration with societies—while other myrmedoniines are more or less well integrated with social systems.

The complex Myrmedoniini (*sensu lato*) of Fenyes, Bernhauer, Scheerpeltz, and others is herein revised as follows: The subtribe Falagriae becomes the tribe Falagriini (less the Tachyusae (Oxypodini) and certain myrmecophilous genera); the subtribes Athetae and Schistogeniae are incorporated in the tribe Athetini; the Hoplandriae are elevated to tribal rank, the Hoplandriini. This leaves the subtribe Myrmedoniae as the basis for the tribe Myrmedoniini. But even the Myrmedoniae of Bernhauer and Scheerpeltz is heterogeneous (in a previous revision—Seevers, 1957, 1965—I transferred genera from this complex to the tribes Termitopaediini, Corotocini, Dorylomimini, Ecitocharini, and Deremini). In the present study four genera are removed to the tribe Sceptobiini.

The North American fauna of the true Myrmedoniini is relatively small compared to that of tropical Africa, where the group reaches its peak, or to that of tropical America. Within the Myrmedoniini the huge *Zyras* complex offers difficult taxonomic problems. *Drusilla* seems to be Palaearctic in distribution, although it has been greatly expanded by assignment of numerous discordant tropical elements. Myrmecophily and termitophily were independently evolved on numerous occasions within the tribe, and involved various ant and termite groups. Those groups associated with army ants and termites are discussed in some detail by me (Seevers, 1957, 1965) in earlier monographs.

The tribe Dorylomimini established by Wasmann (1916) for several genera of African driver-ant inquilines—and expanded by me (Seevers, 1965) to include many more genera of both Old and New World army ant guests—is represented in the Nearctic Region only by *Beyeria* and *Probeyeria* with *Neivamyrmex.* I have pointed out in the above-mentioned monograph that the Dorylomimini may be a polyphyletic taxon and that the New World genera may belong to

their own tribe (Mimecitonini). In any event, they are not to be confused with the Myrmedoniini. The Dorylomimini may have originated independently of the Myrmedoniini and their inclusion in the same division may be unwarranted.

*Division Bolitocharinea:* Contains several tribes comprising genera formerly included in the tribe Bolitocharini of Bernhauer and Scheerpeltz: Bolitocharini, Phytosini, Autaliini, and Philotermitini. Each of these tribes is ecologically distinctive. *Philotermes* (Philotermitini) is associated with termites of the genus *Reticulitermes* in the New World; *Phytosus* and allies (Phytosini) are intertidal forms on the seacoasts of the world; *Autalia* and allies (Autaliini) are inhabitants of damp situations; and Bolitocharini are fungicoles and wood-dwelling species. From the nature of their mandibles, with a dentate molar surface, it is suggested that the Bolitocharini feed on spores and hyphae of fungi and molds. Some Bolitocharini are inhabitants of gilled mushrooms (*Gyrophaena, Bolitochara*); others live on polypore fungi (*Agaricochara, Eumicrota*). Such genera as *Homalota* and *Placusa* are subcortical forms. Zoogeographically, the Bolitocharini seem to occur in all realms, but are especially well represented in the Oriental Region and in the islands of the Pacific. *Gyrophaena* and allied genera are very well represented on the fungi of the Nearctic Region. I (Seevers, 1951) revised the Gyrophaenae.

*Division Gymnusinea:* Contains three tribes, Gymnusini, Deinopsini, and Myllaenini. In a number of respects the members of this division are different from other aleocharines, so much so in fact that Casey suggested their isolation as the subfamily Myllaeninae. I regard such a separation as unnecessary because these genera are aleocharines. In its terminal abdominal segments *Gymnusa* is perhaps the most generalized of all aleocharines; the ninth tergite is a complete transverse sclerite (fig. 25C) as in generalized Staphylinidae (e.g., Omaliinae). The terminal segments of *Deinopsis* and *Myllaena,* on the other hand, are quite specialized. The tarsal formula in this division is diversified 5,5,5 (*Gymnusa*); 4,4,5 (*Myllaena*); 3,3,3 (*Deinopsis*). *Gymnusa* and *Deinopsis* exhibit their affinity in the presence of "combs" of short spinose setae on the apices of abdominal sclerites (fig. 26E, F). The mouthparts of all members of this division are highly specialized (fig. 26A, B, C, D, G, H, I). Apparently, the species are inhabitants of wet environments such as margins of ponds and streams.

The Gymnusini includes the single Holarctic genus *Gymnusa* with only a few species. The Deinopsini has contained only *Deinopsis* in previous catalogues, but I would certainly add the Neotropical genus *Pagla* Blackwelder (=*Pachyglossa* Fauvel) heretofore placed in the tribe Pachyglossini. The Deinopsini have the following known range: Holarctic Region; Neotropical Region; Australia; Ceylon. The Myllaenini should include *Myllaena* Erichson, a large genus occurring in many regions although apparently limited in Africa and the Orient; *Camacopalpus* (Oriental Region); *Mniophila* Cameron (India); and *Polypea* Fauvel (Aru). The Myllaenini should probably also include *Dimonomera* Cameron (Dimonomerini) and *Masuria* Cameron (Masuriini) of India, as well as *Pronomaea* Erichson and *Mataris* Fauvel (Pronomaeini), widespread in distribution. Whether or not the tribe Leucocraspedini of the Indo-Australian Region should be separated is questionable. Some of the above-mentioned tribes have been separated on the basis of different tarsal formulae and other artificial differences.

*Division Oligotinea:* Contains a number of minute species in many parts of the world. Many are mite feeders and occur on vegetation. In addition to the genera conventionally placed here, I am adding *Cypha* (=*Hypocyphtus*) and allied genera which have been variously placed in the tribe Hypocyphtini of the subfamily Tachyporinae, or as the separate subfamily Hypocyphtinae. As the male genitalia of *Cypha* and relatives are clearly aleocharine in structure, and as their other characteristics are distinctly oligotine, I see no basis whatsoever for giving them subfamilial status or placing them in or near the Tachyporinae. It seems to me that there is nothing but historical precedent, illogically conceived, that has kept them out of the Oligotini.

*Division Diglottinea:* Contains the single genus *Diglotta* that occurs in the intertidal zone of seacoasts. *Diglotta* has an unusual assemblage of characters, some specialized (mouthparts) and some peculiarly generalized (frontal suture). For the present, it seems best to isolate *Diglotta*. There is the possibility that *Diglotta* belongs to the same phyletic series as the intertidal genera of the tribe Phytosini.

## The Problem of the Large Genus

Practices relating to the size of the genus in the Aleocharinae have been very uneven. In some areas of the subfamily, e.g., the

tribe Oxypodini, the genera are relatively small and often delimited by slight differences. In contrast, in the Athetini, Aleocharini, and Myrmedoniini we find such large and complex genera as *Atheta, Aleochara,* and *Zyras.* In this revision it is my thesis that each of these species complexes is essentially a subtribe or tribe and should be replaced by numerous genera. As presently constituted, *Atheta, Aleochara,* and *Zyras* have more than 150, 40, and 68 subgenera, respectively. The names *Atheta, Zyras,* and *Aleochara* are no longer meaningful because of the necessity of adding a subgeneric name. It seems unnecessarily burdensome to use a "trinomial" system when a binominal would be just as informative. A taxon, whether subgenus or genus, must be delimited from allied taxa, and the degree of difference is relatively unimportant at this level.

The genus *Atheta* (*sensu lato*), as now generally recognized, contains about 2,000 named species. If its subgenera are raised to generic rank, the genera will average between 12 and 15 species. But since it is unlikely that more than one-half of the species of this vast complex have been discovered, the average number of species per genus will increase materially in time (the number of new genera will not increase at the same rate). If one predicts that *Atheta* (*sensu lato*) will have 4,000 to 5,000 species, it is not unreasonable to expect 200 to 300 genera, averaging 15 to 20 species per genus. Mayr (1942) believed that the average of 3.27 species of birds per genus was too low, and that five per genus would be better. Elevating many of the subgenera of Aleocharinae to generic rank is certainly not going to unreasonably fragment the large species complexes.

## TAXONOMIC MORPHOLOGY

*Head capsule:* Relatively generalized, the head rarely has impressions, carinae, or other ornamentation, except in some termitophilous and myrmecophilous genera. The proportions and shape are subject to considerable variation. The generalized head does not have a neck, but in specialized cases a narrow or broad neck is present. The antennal fossae are medial to the eyes (a characteristic shared with the Tachyporinae and a few other subfamilies). The anterior tentorial pits are located at the inner corners of the antennal fossae. The head capsule in front of these pits is the postclypeus, which in a generalized condition is delimited by a frontal suture between the pits (an indication of an internal phragma between the pits). The presence of a frontal suture (apparently not noted by previous investigators) may be considered a generalized condition shared by *Oxypoda, Diglotta,* and a few other aleocharine genera with the Tachyporinae and some other staphylinid subfamilies. The postclypeus is absent or very short in some staphylinid subfamilies. The anteclypeus is membranous and separates the labrum from the postclypeus. Postgenal carinae extending from the occipital region to the maxillary sinuses are complete, incomplete, faint, or absent. The underside of the head tends to be conservative and rarely is the gular region appreciably modified.

*Labrum:* Less variable than in some subfamilies, the labrum has limited diagnostic value (exception: *Gnathusa*).

*Eyes:* Varying from very large and coarsely faceted (*Phanerota, Tetradonia*) to complete absence. In this paper the length of the eye is usually compared to the distance of the eye from the base of head.

*Antennae:* Extremely variable; very useful for classification at the generic and specific levels. The presence of sensilla in the terminal segment (usually visible only in slide mounts) is important for taxonomic purposes. Generally 11 segmented, the segmentation

was reduced to 10 on several occasions in the evolution of the group (*Decusa; Oligotini*).

*Labium:* The mentum varies in form and degree of emargination of its apex. In the Corotocini (termitophilous) the mentum is completely fused to the submentum (no suture evident). The labial palpi are typically three segmented; in the Aleocharini and Hoplandrini an additional "segment" is present; in scattered cases (e.g., *Gyrophaena, Thamiaraea*) the first and second segments are fused; in some instances the segments are extremely long and filiform (e.g., *Silusa*); and in certain specialized termitophiles (some Corotocini) the segments are greatly reduced in size and perhaps in number. The glossae may be separate and in a relatively generalized condition (*Gymnusa*), but in the great majority of aleocharines they are fused to form a "ligula." The ligula may be entire or bifid. It is probable that this structure has been accorded too much significance in classification.

*Maxillae:* The galea and lacinia are subject to great variation in the Aleocharinae. In a generalized condition, these structures are only moderately long; the galea is no longer than the distance from its base to the base of the cardo (figs. 27C, 28L)—Oxypodini, Athetini. In the Myrmedoniini the galea and lacinia are elongated (often inordinately so) and the former is longer than the distance from its base to the base of the cardo (fig. 33B,C). On the whole, the galea and lacinia are very valuable for diagnostic purposes, and should be used more than they were in this work. To use characters of the maxilla to best advantage, slide preparations are essential. The compound microscope should be used and drawings prepared. The relationship of maxillary structure and food habits in the Aleocharinae should be investigated. The maxillary palpi are four segmented, except in the Aleocharini and Hoplandrini, which have an additional "segment." In many genera there is a circle of peg-like sensilla at the apex of the third segment. The form of the palpi is of diagnostic value.

*Mandibles:* Most of the Aleocharinae have relatively simple mandibles. There are notable exceptions: *Gnathusa* (fig. 27H); *Deinopsis* (fig. 26C); *Diglotta* (fig. 26J); *Oligotini* (fig. 32D,E). The mandibles of the Gyrophaenini are of special interest because of a probable relationship of structure to fungus feeding. There is a "molar surface" with rows of denticles (fig. 31A,B,E). The species of *Gyrophaena,* for example, probably feed on spores and hyphae of

fresh gilled-mushrooms; those of *Homalota* perhaps feed on molds in a subcortical environment of logs. It is significant that the termitophilous Old World genus *Termitodiscus* (Termitodiscini) possesses similar mandibles and feeds on fungal structures in the fungus gardens of its hosts (*Odontotermes*). *Termitodiscus* may or may not have been derived from a gyrophaenine ancestor. *Philotermes,* an inhabitant of colonies of wood dwelling termites (*Reticulitermes*) in the Nearctic Region, also has mandibles of this structure, and may have evolved from wood inhabiting Gyrophaenini.

*Pronotum:* This shield-like sclerite varies greatly in form, convexity, proportions, surface contours, form of hypomera, and their degree of inflexion (determining whether or not they are visible in lateral view). The generalized form may have been rather convex, with invisible hypomera (as in the Tachyporinae). Flattening of the pronotum and exposure of the hypomera are probably derived conditions.

*Pronotal pubescence patterns:* Distinctive patterns of pronotal pubescence are surprisingly numerous in the Aleocharinae. These patterns have clearly become genetically "stabilized" at various levels of classification and are very useful taxonomically. Although these patterns have been utilized by European taxonomists in recent years (Hansen, 1954), they have not been used in the United States. It is puzzling that Casey, who was usually so perceptive, did not realize the importance of the patterns. To facilitate reference to the patterns, they are herein designated in the following manner:

Pattern A: Hairs subparallel and directed caudad; distribution relatively uniform although density varies considerably (fig. 24A).

Pattern B: Hairs directed caudad or laterocaudad, more or less radiating out from a midapical point (fig. 24B–E).

Pattern C: Hairs in a narrow median strip directed caudad; other hairs swirling laterally from this median row (fig. 24F–H).

Pattern D: Hairs subparallel and directed caudad except for several transverse rows of hairs at base; more or less a modification of pattern A.

Pattern E: Hairs in a narrow median strip all directed cephalad; other hairs curving laterocephalad to laterad in a swirling pattern (fig. 24I).

Pattern F: In a narrow median strip the hairs in anterior half of pronotum are directed cephalad, and in basal half caudad. Other hairs curve laterocephalad in anterior half, and laterocaudad in basal half (fig. 24J–L).

Pattern G: In a narrow median strip the hairs in the anterior half are directed caudad, and in basal half cephalad. Other hairs curve correspondingly (fig. 24M).

Pattern H: All hairs more or less parallel and directed cephalad (fig. 24N).

Pattern H(a): Median area almost glabrous; laterally the hairs are directed laterocephalad (fig. 24O).

Pattern I: Rosettes in the midline or elsewhere.

Pattern J: Hairs absent or extremely sparse.

In the Oxypodini, for example, the large majority of genera have patterns A, B, or C; in *Ocalea, Blepharhymenus,* and *Ilyobates* the pattern is E; in the Meoticae, *Alisalia, Meotica,* and *Leptobamona* have pattern C; *Gyronycha* has E; *Apimela,* F; and *Bamona,* H; in the Tachyusae all have B or C except *Teliusa* which has G. The conditions in other tribes are discussed in the systematic section.

*Elytra:* Usually generalized in structure and longer than the pronotum. They are reduced in size in some Athetini (Geostibae), Phytosini, Diglottini, and Sceptobiini. Two of these groups inhabit seashores and one lives in ant nests. Rarely the elytra have spines, carinae, or impressions.

*Wings:* Wings are reduced or are absent in the groups with reduced elytra.

*Elytral pubescence patterns:* Less variable than pronotal patterns, there are distinctive types: Pattern R—hairs subparallel, scarcely curving, all directed caudad; pattern S—hairs directed caudad and laterocaudad; pattern T—hairs in a swirling pattern.

*Prosternum:* Usually short and with little modification. In the Falagriini and Dorylomimini, it may be prolonged behind the procoxae to be contiguous with or fused to enlarged peritremes. The prosternum may participate in forming acetabula for the anterior coxae and in closing their cavities.

*Mesothoracic peritremes:* As a rule, the peritremes are very small and scarcely encompass the spiracles behind the procoxae. In the

Falagriini and some Dorylomimini they are very large and heavily sclerotized (contiguous with or fused with the prosternum).

*Mesosternum-metasternum:* These areas provide many useful diagnostic characters. As a rule, the mesocoxae are set in deep acetabula conjointly formed by these sterna; the acetabula are usually margined. In some tribes of termitophilous and myrmecophilous Aleocharinae (Corotocini, Dorylomimini) the mesocoxae are not set in acetabula but are free (Seevers, 1957, 1965).

*Intercoxal processes:* The presence of margined acetabula for the mesocoxae results in the formation of mesosternal and metasternal processes that are highly variable within the subfamily. These intercoxal processes vary in width, length, convexity, form, and degree of separation. In those cases in which the processes are separated, there is a connection between the mesocoxal acetabula, herein designated the isthmus. For purposes of comparison, I shall use the m:i:m ratio (mesosternal process: isthmus: metasternal process). As in Figure 33D, the length of the mesosternal process is measured from a line connecting the anterior margins of the mesocoxal acetabula to the apex of the process. The metasternal process is considered only that part of the metasternum that is margined between the coxae. The isthmus is also a part of the metasternum but is usually at a slightly different level. The m:i:m ratio varies appreciably and is usually a good indicator of the condition of the intercoxal processes (except, of course, width).

*Legs:* Little needs to be said about the legs here. Although they obviously vary appreciably in length, form, etc., they infrequently have outstanding characteristics in the Aleocharinae. The tarsi vary in number of segments and this has been taken advantage of to classify genera in an artificial tribal system. In this work the tarsal segmentation has been given secondary consideration to other characters, and some tribes have several tarsal formulae. The tarsal formula is not to be ignored, of course, for in some tribes, e.g., Athetini, the 4,5,5 segmentation has remained remarkably constant.

*Abdomen:* Fundamentally, the abdomen is 10 segmented, but segments I and II are largely hidden by the elytra, and IX and X are modified in relation to the genitalia. Segments I and II have only a tergal region in a great majority of cases but a second segment sternite is secondarily present in a few Dorylomimini (*Beyeria, Probeyeria*) and Corotocini. Segments III through VI are

generalized in the respect that they have a tergite, a sternite, two paratergites, and two parasternites. Segment VII lacks parasternites and segment VIII has only a tergite and sternite. The eighth tergite, especially in the male, provides numerous distinctive characters at the species level. Segments IX and X are modified conjointly. Only the male has a ninth segment sternite and this provides the only external means of identifying the sexes (in the absence of secondary sex characters). Unfortunately, the terminal segments are too often telescoped in dried specimens so that identification of the sexes is difficult. Segments IX and X have different patterns on their dorsal surface. Only the genus *Gymnusa* has what I believe to be a generalized staphylinid condition (if one may judge from the situation in the Omaliinae). In *Gymnusa* the ninth tergite is not subdivided as in all other aleocharines but is a relatively long sclerite in front of the tenth tergite (fig. 25C). The ninth tergite extends onto the sides and ventral surface. In the Oxypodini, as well as in many other genera, the ninth tergite is divided into two parts (Blackwelder's [1936] lateral plates of ninth segment) that are very narrowly separated at the base of the tenth tergite (fig. 25A). In the Aleocharini and other groups, the two parts of the ninth tergite are more widely separated, although perhaps connected by a narrow strand (fig. 25B). In *Myllaena* the parts of the ninth tergite are widely separated and the tenth tergite is deeply incised (fig. 25G). In *Deinopsis* the two parts of the ninth tergite are reduced to widely-spaced rod-like sclerites (fig. 25D).

*Female genitalia:* The vulva and vagina are usually relatively simple. In rare cases, as in the athetine *Philhygra,* these areas are sclerotized and ornamented with spines, etc. (fig. 25J,L). The spermathecal duct is usually weakly sclerotized, but the spermathecal sac (spermatheca) is almost always heavily sclerotized and distinctive in form.

## The Aedeagus

The remarkably distinctive aedeagus of male Aleocharinae and Trichopseniinae provides the most reliable basis for distinguishing members of these subfamilies from other Staphylinidae. The paramere structure is unique and easily recognized. There is great aedeagal diversity to provide diagnostic characters at the generic and specific levels.

The aedeagus consists of a tubular median lobe (penis) and two

mobile parameres (lateral lobes). In the Aleocharinae there are at least two copulatory positions: the sexes are either in tandem (fig. 2A) with the female in front and the male arching his flexible abdomen to the female terminalia; or the male is above the female (fig. 2B) and curves its genitalia under the abdomen to make contact. The position of the aedeagus relative to the vulva is the same (fig. 2C) in both positions, i.e., the *morphologically dorsal surface* of the aedeagus assumes a functionally *ventral* position. In all figures the aedeagus is represented in its functional position (with the morphologically dorsal surface on the underside). I avoid the terms "dorsal" and "ventral" to prevent confusion between morphological and functional relationships.

The aleocharine median lobe does not differ appreciably from that of other Staphylinidae but the parameres are distinctive. The parameres of most Staphylinidae are slender and somewhat filiform; those of most Aleocharinae are relatively large and expansive. To my knowledge, the functions of the parameres have not been recorded, and the following suggested functions are speculative. The parameres are probably rotated and placed with their medial surfaces on the eighth female tergite (fig. 2B,C). This arrangement may allow the male to tap the abdomen of the female to evoke exposure of the vulva and may provide adhesion between the aedeagus and female abdomen. The apical lobe of the paramerite (fig. 2C, *ap*), which has a strong musculature, may be moved to tap the female; the broad expanse of the medial surface may provide an adhesive surface. Dermal glands may provide a secretion to facilitate adhesion.

**Median lobe of aedeagus**

The median lobe is a tubular intromittent organ with an enlarged bulbous portion—typical of the Staphylinidae—and a more slender subcylindrical apical part. The ejaculatory duct enters an internal sac which exhibits considerable complexity.

1. *Internal sac (ins):* After the median lobe is inserted in the female tract, the membranous sac (fig. 1D) is everted into the vulva. Its membranes are frequently beset with numerous spinules, denticulate plates, and other devices to aid in retention of the sac in the vulva. There is great diversity in the accessory structures of the internal sac, but unless the sac is everted (usually not the case in captured specimens) the details are difficult to discern. It is not feasible at present to use these differences for

classificatory purposes. When a collecting method that results in frequent extrusion of the sac is discovered, the variation will be useful for diagnosis. The internal sac is frequently, if not invariably, accompanied by a slender sclerotized flagellum (fig. 1D, *f*) that is hollow and serves to introduce sperm into the female tract. The flagellum is sometimes of great length and may be inserted into the female spermathecal duct.

2. *Compressor plate (cp):* On the underside of the functioning median lobe and attached to the main part by a thin membrane, is an oval or elongated compressor plate (fig. 1B). Moved by dorsoventral muscles (fig. 1D, *dvm*) that originate on the upper surface of the bulbous base, this plate serves to increase hydrostatic pressure within the median lobe and to cause eversion of the internal sac. The internal sac is withdrawn by a set of longitudinal muscles (fig. 1D, *lm*) that originate on the proximal surface of the bulbous base.

3. *External surface of median lobe:* In front of a median foramen (fig. 1D, *mf*)—through which the ejaculatory duct (*ejd*) enters—there is a pair of condyles (fig. 1B, *pc*) with which the parameres articulate (paramere condyles). Several elevated crests of the bulbous base serve as surfaces of attachment for muscles that move the parameres: a distal crest (fig. 1B, *dcr*) in front of the paramere condyles is almost always present, and proximal crest (fig. 1B, *bcr*) behind the median foramen is less frequently present. The surface of the median lobe is often more heavily sclerotized in certain areas.

4. *Apical process (aml):* The distal portion of the median lobe terminates in a slender apical process (figs. 1B; 2D,E) that is inserted in the vulva before the internal sac is everted. The apical process is often extremely variable interspecifically (e.g., in *Gyrophaena*), but seems to be relatively constant within a species.

5. *Ostial lamella (ol):* There is often a hinged sclerite (fig. 1D) that presumably closes the apical orifice of the median lobe when the internal sac is withdrawn.

**Parameres of the aedeagus**

The parameres articulate with condyles distal to the median foramen of the median lobe (fig. 2D,E). The parameres are composed of two parts that articulate with one another: the condylite and paramerite.

1. *Condylite (Con):* This relatively slender, heavily sclerotized structure (figs. 1A; 2D,E) articulates with condyles (*pc*) of the me-

dian lobe. The distal end of the condylite (*ac*) varies in form, and the condylite velum (*cv*) varies in size, striation, and in relationships with the paramerite velum (*pv*). The condylite is not uniform in thickness and bears on its external (or internal) surface a shelf (phragma) upon which the adductor muscles (*adm*) of the parameres insert. As the condylites may take somewhat spiral courses, the muscles apparently abduct and partially rotate the parameres so that their internal surfaces rest upon the female eighth tergite (fig. 2C, *8t*). The abductor muscles (*abm*) originate on the surface of the bulbous base (fig. 2E).

2. *Paramerite (par):* The complex paramerite articulates with the condylite, usually near the apex of the latter (fig. 2D,E). The proximal one-half to two-thirds of the paramerite (fig. 2D) is moderately heavily sclerotized and bears phragma on its internal surface for muscle attachments. The distal part of the paramerite is usually somewhat delimited from the proximal portion by a weakly sclerotized "hinge zone (fig. 1A, *hz*)." The distal area of the paramerite is apparently very mobile and consists of two independently movable structures (figs. 1A; 2D,E): the apical lobe of paramerite (*apl*), and velar sac (*v*).

(a) *Apical lobe of paramerite (apl):* The sclerotized apical lobe is usually filiform, but is subject to much variation in length and shape. Closely associated with the velar sac, the apical lobe may be independently flexed judging from the muscles that originate on the proximal (*pph*) and marginal phragma (*mph*) and insert on the apical lobe. Movements of the apical lobe may serve to tap the female abdomen to evoke exposure of the female terminalia. In some instances the apical lobe appears to have glandular openings on the planter surface.

(b) *Velar sac (v):* The semimembranous velar sac is the most distinctive element of the paramere and is probably not found in other Staphylinidae, and possibly not in beetles. The external surface of the movable velum is bounded proximally by the velar phragma (fig. 1A, *vph*) to which flexor muscles of the velum insert (they originate on the proximal (*pph*) and marginal phragma (*mph*) of the paramerite). The velar phragma is just distal to the thinner "hinge zone (fig. 1A, *hz*)" of the paramerite. The external membrane of the velar sac is strengthened by distinctive, sclerotized "velar ribbing." The velum is a composite structure and has contributions from both the condylite and paramerite (fig. 1A). The extent and manner in which the two parts contribute to the velum

are highly diversified and are in some cases tribally and generically distinctive.

The internal membrane of the velar sac is very thin and at times difficult to discern. The internal membrane is usually supported by one or more thin sclerites (fig. 1C, *vss*) and includes a specialized area which may be designated the internal velar pad (fig. 1C, *ivp*). It seems likely that this area is the principal one appressed to the female tergite and is adhesive in function. The velar sac is probably distended by increasing hydrostatic pressure within; this may aid in pressing the velar pad against the tergite. The internal membrane may be finely striated and is so represented in some accompanying figures. The extent of the internal membrane is often difficult to detect as it is usually broken during dissection. Indeed, it would always be broken if it is, in fact, continuous with an abdominal membrane to form a distensible sac filled with hemolymph.

(c) *Paramerite phragma and musculature:* A series of internal skeletal folds (phragma) serve as surfaces for muscle attachment. The flexors of the velum (*v*) and apical lobe (*apl*) originate on the proximal (*pph*) and marginal phragma (*mph*), and insert on the velar phragma (*vph*) and apical lobe (*apl*), respectively (fig. 1A,C); the abductors of the paramere originate on the base of the median lobe and insert on the condylite; the adductor (*adm*) of the paramere originate on the distal crest (figs. 1A, 2D: *ac*) and surface of the median lobe and insert on the medial phragma (*meph*) of the paramerite (figs. 1A, 2E).

(d) *General remarks concerning parameres:* The basic structural pattern described above is subject to appreciable variation at all levels of classification. The principal variations are in the following areas: form of the condylite; degree and manner in which the condylite and paramerite contribute to the velum; size of the velum and the nature of its "ribbing" (complete ribs of varying number or thickness or broken ribs of various forms, e.g., reticulate); form and chaetotaxy of apical lobe of paramerite; form and size of the medial phragma of the paramerite; length and thickness of the velar phragma and the area immediately distal to it; the prominence of the hinge zone of the paramerite; sclerites of the internal membrane of the velar sac, and the size of the velar pad; and whether or not the condylite velum is contiguous with the paramerite velum.

The above variations are to some degree related to the size of the species and the aedeagus. The size and form of the phragma are doubtless related to size of muscle bundles.

## SYSTEMATIC SECTION

## STAPHYLINIDAE: SECTION ALEOCHARIDEA

The section Aleocharidea is proposed for the subfamilies Aleocharinae and Trichopseniinae. The members of these subfamilies are distinguished from all other staphylinids by their bipartite parameres, consisting of a condylite and paramerite and having a distinctive velum. These subfamilies have the antennae inserted medial to the eyes, and the galea and lacinia subequal in length.

The subfamily Trichopseniinae is composed entirely of obligatory termitophiles. Comprising only eight genera and 16 recorded species, the Trichopseniinae occur in both Old and New Worlds, primarily with the Rhinotermitidae. Inasmuch as the Trichopseniinae were considered in considerable detail in earlier works (Seevers, 1941, 1957, 1960), they will not be reviewed here. Only two genera, *Trichopsenius* Horn, with five species, and *Xenistusa* LeConte, with two species, are known to occur in the Nearctic Region.

The two subfamilies can be separated with the following characters:

*Subfamily Aleocharinae*

1. Hind coxae transverse.
2. Paratergites and parasternites present.
3. Species free-living, myrmecophilous or termitophilous.

*Subfamily Trichopseniinae*

1. Hind coxae fused to the metasternum, and not delimited. Hind legs articulating by their trochanters to the coxa-metasternum. Metasternal plates cover the bases of the hind femora in repose. For discussions and figures of this remarkable hind leg-metasternum relationship see Seevers, 1941, 1957.
2. Paratergites and parasternites absent.
3. Species termitophilous

## The Subfamily Aleocharinae

Aleocharides Mannerheim, 1831, p. 425 (tribe).

Aleocharini Erichson, 1837, p. 283; 1839, p. 33 (tribe); Kraatz, 1856, p. 18 (group); Fauvel, 1875, p. 620; Casey, 1893, p. 282.

Aleocharii Fairmaire and Laboulbene, 1856, p. 370.

Aleocharina Thomson, 1860, p. 238 (tribe).

Aleocharites Jacquelin Duval, 1857-1859, p. 2 (group).

Aleochariens Mulsant and Rey, 1873, p. 3 (family).

Aleocharinae Sharp, 1883, p. 145; Ganglbauer, 1895, p. 17; Casey, 1906, p. 126; 1910, p. 1; 1911, p. 1; Fenyes, 1918, p. 1; Bernhauer and Scheerpeltz, 1926, p. 500.

## The North American Aleocharinae: Taxonomic History

*Pre-Casey classification:* Prior to 1885 about 86 endemic species were recorded. The first two species (*bimaculata* and *dichroa*) were named by Gravenhorst (1802) and placed in *Aleochara*. Thomas Say (1830, 1834, 1839) was the first American entomologist to name aleocharine species. Unfortunately, the Say collection was almost completely destroyed and the identity of some of his species may never be known. Say proposed the first endemic American genus *Aleodorus,* but 11 of his species were categorized as *Aleochara*. LeConte (1863) attempted to place the Say species more accurately and assigned them to *Oligota, Gyrophaena, Aleochara,* and *Homalota* (the nineteenth-century version of *Atheta*). It is the species of "*Homalota*" that are difficult to identify today. Erichson (1839) in his classic monograph recorded 18 North American species, most of them from Pennsylvania and North Carolina. The identity of the Erichson species has been established, probably accurately. During the ensuing 50 years, species were described by Mannerheim (1843, 1846), Melsheimer (1844), Maeklin (1852, 1853), Sachse (1852), Kraatz (1857), LeConte (1858, 1863, 1866), Walker (1866), Horn (1871, 1877), and Sharp (1883). The 22 species described by Mannerheim and Maeklin are Alaskan. During this period relatively few endemic American genera were recognized (*Philotermes* Kraatz, *Hoplandria* Kraatz). It is safe to say that in this pre-Casey era no substantial groundwork was established. The taxonomy consisted entirely of isolated, weak descriptions of species that more often than not were very difficult to identify.

*Casey-Bernhauer-Fenyes era:* Except for common, easily recognizable species, Casey largely ignored the work of his predecessors. He did recognize some Erichson, Melsheimer, Say, LeConte, Mannerheim, Maeklin, and Kraatz species, but many he did not attempt to place. In his 1885 and 1893 papers, Casey continued, in the tradition of earlier workers, to describe and name new species and genera.

The great work by Ganglbauer (1895) revolutionized classification procedure for the Aleocharinae and set a precedent that has existed until the present time. Ganglbauer's work doubtless influenced Casey very much, but he was also much impressed by the work of Thomson and Rey and tended to adopt their ideas on the composition of a genus. This is well illustrated by Casey's (1910) classification of the Athetae. Not satisfied to lump all species under the name *Atheta,* he recognized many of the Thomson and Mulsant and Rey categories as genera and added many of his own. The same was true with respect to *Aleochara* (1906). Casey proposed about 90 per cent of the species names and a high percentage of genera. Yet he did not provide a synthetic treatment of the subfamily upon which later workers could build. Prospective students of the Aleocharinae have found Casey's publications very discouraging. Although he provided some keys to genera and species, they are not illustrated. His practice of combining species descriptions with diagnostic keys leaves much to be desired (diagnostic features are not clearly defined). After one is well acquainted with the Aleocharinae as a result of studying Casey's collection, his descriptions and diagnoses prove to be much better than anticipated. Casey did provide a broad and comprehensive view of the North American Aleocharine fauna even though it is not systematically presented as such. While it is almost certain that new generic elements will be found in our fauna, it seems unlikely that any dramatically different groups will be discovered.

Bernhauer (1901-1912) described more than 100 species of Nearctic aleocharines (about 8 per cent) but, in general, did little more than add to confusion. His species are not integrated with those of Casey, but are generally compared with European species. In terms of priority, Bernhauer's species antedate most of Casey's, so perhaps, in fairness, we should have stated that Casey's species are not integrated with his. But, Casey could not possibly have interpreted Bernhauer's descriptions of species of *Atheta* and tended to ignore them.

During this period, Fenyes (1908) did a great disservice to American coleopterology by recording, for the most part erroneously, about 150 species of European aleocharine species in our fauna. Later, Fenyes (1918, 1920, 1921) did a further disservice by synonymizing several hundred Casey species without having studied his collection. In my own experience (Seevers, 1951), I have found that in the Gyrophaenae, Fenyes synonymized a number of valid Casey species and failed to synonymize others that have no validity. In the species catalogue at the end of this monograph I have restored all Casey species subject to later investigations. Although he organized a fine collection, Fenyes' determinations are frequently faulty. Not only does his collection contain many American species incorrectly identified as European species, but many of his species series contain more than one species, as many as a dozen in *Gyrophaena*. It is quite clear that many of Fenyes' determinations are not to be considered authoritative.

In ending this section, I should like to call attention to several conclusions reached after intensive study of Casey's collection. In the first place, it is a remarkably fine collection—the specimens are beautifully mounted (even the structures of the underside are usually visible); the collection is very well curated; each species lot contains a single species, with extremely rare exceptions. Casey had several faulty practices. Measurements and proportions given in his descriptions are frequently incorrect. He consistently underestimated lengths and widths of specimens. One wonders what type of measuring device he used, if any. Casey probably estimated proportions, for at times they are notoriously bad (if he states that the pronotum is a little broader than long, it may actually be one-fourth broader). At times Casey used trivial differences to separate species when no such differences exist.

*Post-Casey era:* Following the great proliferation of species names by Bernhauer, Casey, and Fenyes, there have been relatively few attempts to classify Nearctic Aleocharinae. Notman (1919-1922) described some genera and species from Florida, and Moore (1956b) contributed a revision of the species inhabiting the intertidal zone of the Pacific Coast. The only revisional work concerned with a sizable group was by the writer (Seevers, 1951) on the subtribe Gyrophaenae (fungicoles). I (Seevers, 1938, 1957, 1960, 1965) have also revised the groups associated with termites and army ants.

Insofar as possible, diagnostic characters for the key are those that can be seen on conventionally mounted dry specimens. A key prepared from slide mounts would be better, because more characteristics can be seen in such mounts. In the future it is likely that study of dry specimens will be augmented very frequently by use of cleared slide preparations. It is a simple procedure to macerate specimens with potassium hydroxide to remove the soft parts, and to mount them in an appropriate medium. The aedeagi, in particular can only be studied to advantage from slide preparations (dry mounts on cards are entirely inadequate). To study the details of aleocharine anatomy, a compound microscope is essential. Slide mounts will facilitate use of the present key; if the user of the key has a series of a species, it is recommended that at least one be cleared and mounted.

Several couplets in the key may be difficult to use. Although I have tried to avoid an alternative involving the number of segments of the anterior tarsi, I could find no way of doing so without keying out genera (or small groups) one at a time. Inasmuch as this couplet (17) separates the Oxypodini from the Athetini, it is important. It would seem that determining the number of segments of the anterior tarsi is an easy matter, but it does not prove to be so without considerable experience. Hairs on the tarsi may give a false impression of segment separation.

After considerable experience with the Aleocharinae, I can only conclude that it is not a group for which one may prepare a key that will be "easy" to use. It must be assumed that anyone who is interested in the Aleocharinae will make an effort to acquaint himself with the morphology of the subfamily. It must also be assumed that his specimens will be properly prepared for study. No key will enable a person to identify specimens carelessly glued to cards or points. A very large percentage of aleocharines in our major museums are in appalling condition. It is no wonder that the subfamily has lacked appeal for the novice or prospective specialist. The mounted aleocharines that he first encountered were probably dirty, greasy specimens gummed to unsightly cards, and possessing poor data.

## A Key to the Genera of North American Aleocharinae[1]

1. Antennae 10 segmented ..... 2
Antennae 11 segmented ..... 3

2 (1). Hind coxae with lamella over base of femur (fig. 32G) ..... 113
Hind coxae without lamella ..... *Decusa* Casey

3 (1). Sclerites of abdominal segments 3-6 with apical ctenidium of short spinulose setae; hind coxae with lamella over base of femur (fig. 32G) 116
Sclerites of abdomen without ctenidium ..... 4

4 (3). Abdomen petiolate; petiole formed by second segment tergite and sternite, or by base of third tergite and elongated second sternite; species associated with army ants of genus *Neivamyrmex* (fig. 34A-C) .... 117
Abdomen not petiolate ..... 5

5 (4). Mentum fused to submentum; abdomen physogastric or not; species associated with termites of genus *Tenuirostritermes* in southwestern states ..... 118
Mentum distinct; species never physogastric; rarely termitophilous ... 6

6 (5). Sutural length of elytra not more than two-thirds pronotal length and usually considerably less; species of intertidal zone of seacoast, or in colonies of ant genus *Liometopum* (except *Geostiba*) ..... 7
Sutural length of elytra more than two-thirds pronotal length, and usually considerably more ..... 10

7 (6). Hind tarsi four segmented; head unusually large; labial palpi, mandibles and maxillae elongated and beak-like; tarsal claws sickle-shaped; species of seashore (figs. 26J-N) ..... *Diglotta* Champion
Hind tarsi five segmented; head only moderately large; mouthparts not beak-like; claws generalized ..... 8

8 (7). Middle tarsi four segmented; species of intertidal zone of Pacific Coast 119
Middle tarsi five segmented ..... 9

9 (8). Pronotal disk deflexed onto prothoracic flanks and not delimited from hypomera by margined line; eyes small; species associated with ant genus *Liometopum* ..... 134
Pronotum not as above; hypomera delimited by margined line; eyes moderate in size; species not myrmecophilous ..... 112

10 (6). Hind tarsi four segmented ..... 47
Hind tarsi five segmented ..... 11

11 (10). Middle tarsi four segmented ..... 12
Middle tarsi five segmented ..... 15

[1]Although referred to in the text, *Anopleta, Cyphea, Euryodma, Hydrosmectina, Liogluta, Lophagria, Parameotica, Pseudomegista,* and *Pulicomorpha* do not appear in the key. Apparently only one of the three species of *Iotota* and one of the two species of *Anatheta* can be keyed out [L.H.].

12 (11). Form sublimuloid; head somewhat deflexed; maxillae and labium elongated; pronotal hypomera not visible in lateral view; middle coxae contiguous, metasternal process scarcely produced; tenth male tergite completely divided (figs. 25G, 26G, H) ..... *Myllaena* Erichson

Species without above combination of characters ..... 13

13 (12). Head with very slender neck, only one-third as broad as head; tergites 3-5 with median and several lateral carinae in basal impressions (fig. 31H-K) ..... *Autalia* Leach

Head usually without neck, and never with slender one as above; tergites without carinae ..... 14

14 (13). Pronotum strongly transverse, its pubescence sparse or absent medially and forming distinctive pattern (pattern Ha); antennae robust, with segments 4-10 not incrassate; mesocoxae contiguous, their acetabula not margined caudally; species associated with termites of the genus *Reticulitermes* (figs. 24O, 31L) ..... *Philotermes* Kraatz

Pronotal pubescence usually directed caudad (patterns A-C), rarely cephalad (pattern E), or absent; antennae relatively slender, with segments 4-10 incrassate; mesocoxae separated by slender or very broad intercoxal processes; mesocoxal acetabula margined completely; not termitophilous ..... 155

15 (11). Pronotum distinctive, broadest subapically, its sides converging to base which is not more than three-fourths maximum pronotal width; disk of pronotum with moderately deep median sulcus (shallow and faint in *Falagriota*). Neck slender, about one-third as broad as head. Peritremes usually much enlarged and heavily sclerotized; prosternum elongated behind procoxae and in company with inflexed hypomera and peritremes tending to "close" procoxal cavities. Parameres distinctive: condylite velum separated from paramerite velum. (figs. 17I, 18A) ..... 126

Pronotal base more than three-fourths maximum pronotal width; disk without median sulcus. Neck, if present, usually more than one-third head width (but only one-third as broad as head in *Gnypetella, Meronera,* and possibly others). Peritremes not enlarged, prosternum not elongated ..... 16

16 (15). Metasternal process distinctly longer than mesosternal process; both processes very broad in most instances; galea and lacinia, as rule, exceptionally long, (as long as or longer than its distance from base of cardo) ..... 137

Metasternal process not longer than mesosternal process and usually much shorter; both processes slender; galea and lacinia only moderately long (shorter than its distance from base of card) ..... 17

17 (16). Anterior tarsi five segmented (terminal segment shorter than first four segments combined) ..... 18

Anterior tarsi four segmented (terminal segment longer than first three segments combined, or subequal to them) ..... 19

18 (17). Maxillary palpi five segmented; labial palpi four segmented; middle coxae often widely separated, but sometimes narrowly separated . 154

Maxillary palpi four segmented; labial palpi three segmented (or with fewer segments); middle coxae almost always narrowly separated . 22

19 (17). Maxillary palpi five segmented; labial palpi four segmented ..... 148

Maxillary palpi four segmented; labial palpi three segmented ..... 20

20 (19). Head with narrow neck, not more than one-third as broad as head .. 124

Neck not narrow, considerably more than one-third as broad as head . 21

21 (20). Eighth male sternite distinctive, its apex deeply emarginate and with two widely spaced processes (each with a short row of spines; eighth sternite with circlet of extremely long black subapical setae. Manitoba *Strophogastra* Fenyes

Eighth male sternite rarely modified, or not as above ..... 49

22 (18). Frontal suture present (fig. 27B) ..... 23

Frontal suture absent ..... 30

23 (22). Pronotal hypomera not or doubtfully visible in lateral view (fig. 37D) . 24

Pronotal hypomera distinctly visible in lateral view (fig. 37E) ..... 25

24 (23). Mandibles with subapical tooth (fig. 38C); body moderately large and robust; length 3 mm ..... *Devia* Blackwelder (=*Dasyglossa* Kraatz)

Mandibles without subapical tooth; large majority of American species slender, and about 2 mm ..... *Oxypoda* Mannerheim

25 (23). Four tergites (third to sixth) strongly impressed at base; several basal sternites also transversely impressed; head with broad neck *Calodera* Mannerheim

Three tergites (third to fifth) impressed at base; sternites not impressed[1] (except in *Melanalia*); head without neck ..... 26

26 (25). Pronotum as long as broad, or longer than broad *Tetralaucopora* Bernhauer

Pronotum at least one-sixth broader than long ..... 27

27 (26). Pronotum not more than one-fourth broader than long ..... 29

Pronotum at least two-fifths broader than long ..... 28

28 (27). Pronotal hypomera almost entirely visible in lateral view; length, 4 mm. Siberia and Alaska ..... *Pentanota* Bernhauer[2]

Pronotal hypomera only slightly visible in lateral view; length, 2.4 mm.; basal three sternites impressed basally, impressions densely, acicu-lately punctate. California ..... *Melanalia* Casey

29 (27). Sternites 3-5 without basal impressions; coloration pale rufoflavate *Ocyusa* Kraatz

[1]The sternites of *Tetralaucopora* are impressed slightly [L.H.].

[2]The holotype of the type species of *Pentanota* has no frontal suture. This suture is needed at couplet 22 to reach *Pentanota* at 28. Without the suture, the type species of *Pentanota* goes to *Ilyobates*. Upon comparison, *Pentanota* and *Ilyobates* seem to be very similar [L.H.].

Sternites 3-5 with distinct basal impressions which are densely punctate; mesosternal process extremely long and spine-like; three times as long as metasternal process; intercoxal processes contiguous
*Moluciba* Casey

30 (22). Basal impressions of tergites 3-5 with median carina
*Blepharhymenus* Solier

Basal impressions of tergites without carinae ..... 31

31 (30). Mandibles extremely long, thin, sickle-shaped; labrum usually with prominent spines (fig. 27H) ..... *Gnathusa* Fenyes

Mandibles not as above ..... 32

32 (31). Mesosternum carinate ..... *Acrimea* Casey

Mesosternum not carinate ..... 33[1]

33 (32). Pronotum very broad (two-thirds to four-fifths broader than long); hypomera not visible in lateral view; sublimuloid species with acuminate abdomens; myrmecophilous ..... *Euthorax* Solier

Pronotum not more than one-half broader than long; hypomera visible in lateral view; not limuloid, abdomen not acuminate ..... 34

34 (33). Four tergites (segments 3-6) impressed at base[2] ..... 35

Three tergites (segments 3-5) impressed at base ..... 36

35 (34). Sternites of segments 4 and 5 with transverse basal impressions; species larger and more robust (more than 3.5 mm. in length and 1.25 mm. in width); elytra conspicuously broader than abdomen . *Ilyobates* Kraatz

Sternites (at most) with very shallow, inconspicuous impressions; species smaller (less than 3 mm. in length); elytra little broader than abdomen ..... *Phloeopora* Erichson

36 (34). Pronotum not margined laterally; dorsum continuous with and not delimited from hypomera ..... *Losiusa* new genus

Pronotum margined laterally; hypomera delimited ..... 37

37 (36). Pronotum subquadrate to distinctly elongated ..... 38

Pronotum at least one-tenth broader than long and usually considerably more ..... 39

38 (37). Pronotum distinctly elongated; tarsal claws generalized; third male tergite without median tubercle ..... *Longipeltina* Bernhauer

Pronotum subequal in length and width; tarsal claws sickle-shaped; third male tergite with median tubercle ..... *Gyronycha* Casey

39 (37). Antennae somewhat claviform and strongly incrassate; tenth segment almost twice as broad as fourth; antennal segments 5-10 short and

[1]The mesosternal carina apparently extends the length of the mesosternum. *Ilyobates,* which goes from here to couplet 35, has a short, basal, mesosternal carina [L.H.].

[2]*Gyronycha* and *Apimela* have a shallow impression on the sixth tergite. These genera go from here to couplets 38 and 45 respectively [L.H.].

broad, 9 and 10 about twice as broad as long; species myrmecophilous *Myrmobiota* Casey[1]

Antennae not claviform; segments 5-10 only moderately incrassate; only a few myrmecophilous species ..... 40

40 (39). Antennal segments 4-6 elongated, 7-10 subquadrate, feebly elongated, or slightly transverse ..... 41

Antennal segments 5-10 short, transverse ..... 42

41 (40). Mesocoxae narrowly separated, mesosternal process long and spine-like; relatively large (3-5 mm.) robust species; not myrmecophilous. Western states ..... *Ocalea* Erichson

Mesocoxae moderately widely separated; mesosternal process moderately broad, rounded at apex; small myrmecophilous species. Eastern North America ..... *Thyasophila* Fairmaire and Laboulbene

42 (40). Mesocoxae narrowly separated; mesosternal process slender, usually acuminate ..... 44

Mesocoxae moderately widely separated; mesosternal and metasternal processes moderately broad and subequal in length ..... 43

43 (42). Head and pronotum dull, with coarse, raised, close-meshed reticulation and small umbilicate punctures that gives impression of "beading"; pronotum broadest near base ..... *Pachycerota* Casey

Head and pronotum smooth, shining, with only traces of reticulation; pronotum broadest at middle or in front; postgenal carinae absent *Amarochara* Thomson

44 (42). Mesosternal process short and acute; metasternal process extremely short (if indicated at all) ..... 45

Mesosternal process long and slender; metasternal process relatively long ..... 46

45 (44). Metasternum behind mesocoxae one-third longer than mesocoxae; tarsal claws sickle-shaped (fig. 37F); neck moderately long; spermatheca distinctive (fig. 25E) ..... *Apimela* Mulsant and Rey

Metasternum behind mesocoxae not or very slightly longer than mesocoxae; tarsal claws generalized; neck very short; spermatheca distinctive (fig. 38D); aedeagus distinctive (fig. 5A-C) *Meotica* Mulsant and Rey

46 (44). Head and pronotum reticulated but not asperately punctate; ligula simple; velum of paramere striated; eighth male tergite not denticulate; eighth male sternite produced at middle ..... 186

Head and pronotum asperately punctate as well as reticulated; ligule bifid; velum of parameres very small, reticulated (not striated); labial palpi subfiliform; eighth male tergite denticulate; eighth male sternite not produced at middle ..... *Dexiogyia* Thomson

[1]The antenna of *Myrmobiota* is not easily differentiated from *Pachycerota* or *Amarochara*, genera which run through this couplet to 43 [L.H.].

47 (10). Pronotal pubescence pattern distinctive (pattern H)—with all hairs directed cephalad (fig. 24N); pronotum and head conspicuously narrower than elytra (only two-thirds as broad; tergites 3-5 deeply impressed; impressions inpunctate and non-reticulate; pronotum slightly longer than broad; sides of body not parallel throughout ..... *Bamona* Sharp

Pronotal pubescence pattern type C (fig. 24F, G, H)—all hairs directed caudad and laterad; pronotum only slightly narrower than elytra (nine-tenths as broad); sides of body subparallel; impressions of tergites 3-5 punctate or reticulate; pronotum about one-fifth broader than long ..... 48

48 (47). Tergites 3-6 deeply impressed and coarsely punctate .*Leptobamona* Casey

Tergites 3-5 impressed; impressions reticulated ..... *Alisalia* Casey

49 (21). Tergites 3-5 deeply impressed; impressions with median carina and series of parallel ridges and coarse deep punctures ..*Tachyusa* Erichson

Tergites 3-5 without carinae ..... 50

50 (49). Elytra longitudinally impressed near lateral borders, the side margins appearing slightly inflexed; elytra about three-fourths as long as pronotum; male with prominent spine on seventh tergite. California *Trachyota* Casey

Elytra not impressed; elytra as long as or longer than pronotum (except in *Acrotona*); male without spine on seventh tergite (except in *Thamariaea* and *Earota*) ..... 51

51 (50). Postclypeus abruptly deflexed (fig. 29C); integuments with fine white pile ..... *Brachyusa* Mulsant and Rey

Not as above ..... 52

52 (51). Pronotal pubescence pattern distinctive (pattern G, as in fig. 24M); hairs in midline directed caudad in apical half, and cephalad in basal half. Texas ..... *Teliusa* Casey

Pronotal pubescence pattern not as above ..... 53

53 (52).[1] Mesocoxae moderately widely separated; metasternal process relatively broad and arcuately rounded (fig. 36I) ..... 54

Mesocoxae narrowly separated; mesosternal and metasternal processes relatively slender (fig. 37C) ..... 57

54 (53). Antennae elongated; segments 1-8 longer than broad; 9 and 10 subquadrate to feebly transverse ..... *Gnypeta* Thomson

Antennae short to moderately long; segments 5-10 transverse ..... 55

55 (54). Abdomen oval in outline, broadest at fifth segment, and broader than head and thorax; elytra one-fifth broader than pronotum; pronotal pubescence directed cephalad in midline (pattern E, as in fig. 24I); body usually exceptionally hairy ..... *Trichiusa* Casey

Abdomen not as above; elytra not much broader than pronotum; pronotal pubescence variable; body not especially hairy; seventh male ter-

[1]The characters are difficult to interpret. Some genera have the reverse condition necessary for identification in this key [L.H.].

gite with median spine; eighth male tergite as in fig. 28G, H ..... 56

56 (55). Terminal segment of labial palpi swollen distally (fig. 28I), and two basal segments fused (labial palpi usually considered two-segmented); metasternal process as long as mesosternal process; isthmus short, less than one-third as long as metasternal process
*Thamiaraea* Thomson

Terminal segment of labial palpi filiform (fig. 28J), the palpi three-segmented; metasternal process relatively short, subequal in length to isthmus ..... *Earota* Mulsant and Rey

57 (53). Pronotum robust; pronotal base narrow—three-fourths as broad as apex, its sides evenly arcuate; elytra a little shorter than pronotum; elytral apices strongly bisinuate, their outer apical angles prolonged; head, pronotum, and elytra appearing finely granulose (due to a raised, fine-meshed reticulation); species inhabiting seashore of Pacific Coast
*Pontomalota* Casey

Pronotum very little narrower at base than apex; species without combination of other characters above ..... 58

58 (57). Empodial bristle between tarsal claws longer than claws (fig. 28D); pronotum only one-tenth broader than long; seventh male tergite with smooth carina; eighth male tergite as in Figure 37K; length, 3 mm. or more ..... 59

Empodial bristle not longer than tarsal claws ..... 60

59 (58). Pronotal pubescence pattern with hairs directed caudad or caudolaterad, never cephalad ..... *Aloconota;* subgenus *Taphrodota* Casey

Pronotal pubescence with hairs in median line directed cephalad (pattern E, as in fig. 24I) ..... *Aloconota;* subgenus *Terasota* Casey

60 (58). Pronotal hypomera not visible in lateral view (or very slightly so in some *Strigota*) ..... 61

Pronotal hypomera clearly visible in lateral view (but not completely so in some genera) ..... 62

61 (60). Elytra and pronotum subequal in length (in a few species of *Acrotona* elytra up to one-sixth longer than pronotum) ..... 93

Elytra one-fourth to one-third longer than pronotum ..... 96

62 (60). Pronotum three-fifths to seven-tenths broader than long ..... 63

Pronotum not over one-half broader than long ..... 64

63 (62). Pronotal pubescence directed caudad; pronotum almost three-fifths broader than long, its basal angles distinct; pronotal sides converging strongly toward apex which is not more than three-fourths as broad as base; pronotal disk strongly impressed in male (impression almost three-fifths as broad as pronotum, and deeper in basal half) and very shallowly impressed near base in female; medium-sized (3.1 to 3.5 mm. in length) and robustly built; myrmecophilous ... *Goniusa* Casey

Pronotal pubescence in midline directed cephalad (pattern E, as in fig. 24I); pronotum exceptionally broad—about seven-tenths broader than long; pronotal characters not as above; at least first six antennal seg-

ments elongated; hypomera incompletely visible; larger species (5 mm.); not myrmecophilous ..... *Lypoglossa* Fenyes

64 (62). Pronotal pubescence pattern of patterns B (fig. 24B-E) or C (fig. 24F-H), with all hairs directed caudad to laterocaudad ..... 66

Pronotal pubescence pattern of patterns E (fig. 24I) or F (fig. 24J-L), with hairs in midline directed cephalad (at least in the apical half) 65

65 (64). Eyes very small (9-16 facets), their length only one-third distance to base of head; seventh tergite exceptionally short (little more than one-half as long as sixth); intercoxal processes long, acuminate, and on same plane; body width not uniform (elytra broader than head or pronotum); small (length, 1.5 mm.); coloration rufoflavate. Southern Florida ..... *Asthenesita* Casey

Eyes moderate in size, usually longer than their distance from base of head; other conditions not as above ..... 97

66 (64). Eyes very small (9-16 facets), their length only one-third distance from base of head; seventh tergite exceptionally long (three-fifths longer than sixth); intercoxal processes on different planes; body small and slender, with parallel sides; length 1.2 mm.; coloration pale. New England ..... *Sipaliella* Casey

Eyes moderately large to small, but never as small as above; other characters not as above ..... 67

67 (66). Eye length less than distance from base of head (but not less than one-half that distance) *and* elytra shorter than pronotum or subequal to it (up to one-eighth longer than pronotum in *Gaenima*) ..... 68

Eyes moderately large to large (their length equal to or greater than distance to base of head); elytra usually considerably longer than pronotum (if eyes smaller than indicated above—some *Micrearota* and *Phasmota*—elytra about one-fifth longer than pronotum ..... 76

Eyes medium sized (their length equal to distance from base of head); elytra only slightly longer than pronotum .. *Anaduosternum* Notman

68 (67). Pronotal hypomera fully visible in lateral view; mesocoxal acetabula completely margined ..... 69

Pronotal hypomera not visible or incompletely visible in lateral view; in latter case, mesocoxal acetabula unmargined or very finely so ..... 71

69 (68). Third male tergite with apical angles prolonged as strong spines; seventh male tergite with strong median crista ..... new genus[1]

Species without the above characters ..... 70

70 (69). Seventh tergite of male with pair of oblique carinae; pronotum with broad median impression (especially in male); each elytron with impression (in western species) or not (in eastern species) *Sibiota* Casey

Seventh male tergite without carinae; pronotum and elytra without impressions ..... 74

[1]Seevers had intended a new genus to run to this part of the couplet. I was unable to find it in the text or catalogue [L.H.].

71 (68). Mesocoxal acetabula unmargined ..... *Amischa* Thomson

Mesocoxal acetabula margined, even though finely ..... 72

72 (71). Third antennal segment obtrapezoidal, its width at apex equal to length of segment; hypomera not visible in lateral view. Virginia *Anatheta curata* Casey

Third antennal segment not as above; hypomera visible ..... 73

73 (72). Tergites with numerous elongated, carinulate, setigerous punctules. Wyoming, Colorado ..... *Amischa,* subgenus *Colposura* Casey

Tergites with fine aciculate punctules. California ... *Iotota tepida* Casey

74 (70). Intercoxal processes subequal and subcontiguous (isthmus, if present very short) ..... *Gaenima* Casey

Metasternal process somewhat shorter than mesosternal process and separated from it by distinct isthmus ..... 75

75 (74). Isthmus at least one-half as long as mesosternal process; isthmus convex (subcarinate), in same plane as metasternal process *Crephalia* Casey

Isthmus less than one-half as long as mesosternal process, neither convex nor subcarinate ..... *Geostiba* Thomson

76 (67). Mesocoxal acetabula not margined (except for short distance along side); sculpture of head, pronotum, and elytra granulose in appearance (from fine-meshed reticulation); pronotum and elytra with dense pale recumbent pubescence; species inhabiting the seashore of Pacific Coast *Tarphiota* Casey

Mesocoxal acetabula margined; sculpture not as above ..... 77

77 (76). Pronotal pubescence pattern A (fig. 24A) (all hairs subparallel and directed caudad) ..... 78

Pronotal pubescence patterns B, C, or D[1] (fig. 24B-H) ..... 80

78 (77). Pronotal hypomera narrowly visible in lateral view, partially obscured at base; eighth tergite with carinulate setigerous punctules *Synaptina* Casey

Pronotal hypomera fully visible; eighth tergite without carinulate punctules ..... 79

79 (78). Pronotum very broad, almost one-half broader than long, and subequal in width to elytra; elytra subequal in length to pronotum or up to one-sixth longer ..... *Pancota* Casey

Pronotum about one-third broader than long; elytra one-fourth longer than pronotum; pronotal pubescence with many hairs curving toward midline (except in *personata*); metasternal process very short *Noverota* Casey (in part)

80 (77). Pronotal pubescence subparallel and directed caudad except for two or three transverse rows at base of pronotum (pattern D[2]) ..... 81

A large majority of pronotal hairs directed laterad ..... 82

[1,2]Type D pubescence is described under "Pronotal pubescence pattern" in "Taxonomic Morphology" this paper [L.H.].

81 (80). Pronotum one-fourth broader than long; elytra very slightly longer than pronotum; metasternal process slightly shorter than mesosternal process (ratio—10:12) and contiguous with it (isthmus absent) *Micratheta* Casey

Pronotum one-sixth broader than long; elytra three-tenths longer than pronotum; metasternal process very short, only one-tenth as long as mesosternal process; isthmus as long as mesosternal process *Omegalia* Casey

82 (80). All antennal segments elongated ..... *Schistoglossa* Kraatz

All segments of antennae not elongated ..... 83

83 (82). Dorsal surface with dense microsculpture of fine asperulate punctules and reticulation, and with vestiture of fine pale pubescence; pronotal pubescence pattern distinctive (fig. 37J); antennae elongated and with segments 4-6 (or 4-7) elongated; remaining segments quadrate to feebly transverse and only slightly incrassate ... *Paradilacra* Bernhauer

Species not having the above combination of characters ..... 84

84 (83). Pronotal hypomera fully exposed in lateral view (as in fig. 28E) ..... 85

Pronotal hypomera with basal part obscured in lateral view (as in fig. 28F); hypomera relatively narrow ..... 88

85 (84). Elytra short, subequal in length to pronotum; robust species *Anepsiota* Casey

Elytra at least one-sixth longer than pronotum ..... 86

86 (85). Medium sized, robust species (3.0-3.8 mm.); fourth antennal segment slightly elongated; 5-10 robust and at most slightly transverse; elytra only one-sixth longer than pronotum; metasternal process very short and isthmus relatively long (m:i:m ratio-18:14:2 or 18:12:4 or 18:16:3) *Athetota* Casey

Species not conforming to all of above conditions ..... 87

87 (86). Abdomen enlarged apically; width of seventh segment one-half greater than width of abdomen at base; seventh tergite twice as long as preceding tergites (its basal half smooth and slightly impressed) *Clusiota* Casey

Abdomen not as above ..... *Xenota* Mulsant and Rey (including *Delphota* Casey, *Halobrecta* Thomson, *Micrearota* Casey, *Phasmota* Casey, and *Ceritaxa militaris* Bernhauer)

88 (84). Pronotal pubescence pattern of pattern A (fig. 24A) (all hairs subparallel and directed caudad) ..... *Canastota flaviventris* Casey

Pronotal pubescence pattern with some transversely directed hairs (pattern B (fig. 24B-E) or C (fig. 24F-H)) ..... 89

89 (88). Elytra subequal in length to pronotum ..... *Anatheta curata* Casey

Elytra at least one-sixth longer than pronotum and usually somewhat more ..... 90

90 (89). Antennae exceptionally long (segments 4-8 subquadrate, 9-10 feebly transverse at most) ... *Dimetrota* Mulsant and Rey (*revoluta, nuptalis*)

Antennae short to moderately long (segments 5-10 with most segments transverse, sometimes markedly so) ..... 91

91 (90). Metasternal process as long as mesosternal process or slightly longer; pronotum two-fifths broader than long ..... *Sableta* Casey (*infulata* Casey) and *Fusalia* Casey

Metasternal process not more than three-fourths as long as mesosternal process and usually somewhat less; pronotum usually somewhat less than two-fifths broader than long ..... 92

92 (91). Isthmus between intercoxal processes very short (m:i:m ratios-18:2:8; 16:2:10); eighth male tergite not crenate ..... *Canastota* Casey

Isthmus longer (m:i:m ratio-14:5:8; 12:3:8); eighth male tergite crenate *Pseudota* Casey (in part)

93 (61). Elytra only three-fourths as long as pronotum; pronotal pubescence sparse; antennae distinctive (segments 4-6 slightly elongated, 7 subquadrate, 8-10 slightly transverse) *Acrotona*, subgenus *Eurypronota* Casey

Elytra at least as long as pronotum; pronotal pubescence usually, but not always, dense; antennae other than above ..... 94

94 (93). Metasternal process very short; isthmus at least one-half as long as mesosternal process ..... 95

Metasternal process moderately long and isthmus very short *Acrotona*, subgenus *Neada* Casey

95 (94). Pronotal, elytral, and abdominal pubescence dense and pilose; mesosternal process short and isthmus almost as long; postgenal carina feeble; basal segment of hind tarsi equal in length to two following segments *Strigota* Casey

Pubescence of dorsum often dense but not pilose; mesosternal process moderately long; isthmus about one-half as long; postgenal carina present; first four segments of hind tarsi subequal . *Acrotona* Thomson (*sensu stricto*), and *Dolosota* Casey

96 (61). Pronotum one-fourth broader than long, and broadest behind middle; elytral apices strongly bisinuate . *Acrotona*, subgenus *Ancillota* Casey

Pronotum one-third, or more, broader than long ... *Acrotona*, Subgenera *Microlia* Casey, *Aremia* Casey and *Reania* Casey

97 (65). Tergites 3-6 deeply impressed at base; impressions with coarse setigerous punctures; tergites subglabrous, strongly shining; pronotum and elytra without reticulation ..... *Euromota* Casey

Tergites 3-5 (or 3-6) impressed, the impressions without coarse setigerous punctures; tergites not glabrous; pronotum and elytra with ground sculpture ..... 98

98 (97). Antennae long (segments 4 and 5 elongated, and usually some other segments as well; segments 6-10 quadrate, slightly transverse, or even elongated); relatively large robust species (length, 3.2-4.5 mm.), except some *Hydrosmecta* and smaller *Philhygra* ..... 99

Antennae long (segment 4 quadrate; 5-7 elongated; 8, 9 subquadrate, 10

slightly transverse; pronotum about one-sixth broader than long; mesosternal and metasternal relations distinctive *Doliponta* Blackwelder (=*Lipodonta* Fenyes)

99 (98). Small, slender, elongated species (length 1.5-2 mm.; width 0.45 mm. or less); antennae very long (about 0.9 mm.), almost one-half as long as body and reaching pronotal base; nearly all antennal segments elongated (some distal segments may not be); pronotum one-sixth to one-fifth broader than long; elytra one-fourth to two-fifths longer than pronotum ..... *Hydrosmecta* Thomson

Larger species (more than 2 mm. in length); antennae moderate in length (rarely with some segments elongated); pronotum more than one-fifth broader than long (rarely narrower in some of Casey's "*Metaxya*" ..... 100

100 (99). Basal segment of hind tarsi twice as long as second segment; postgenal carina complete, strong ..... *Athetalia* Casey

Basal segment of hind tarsi not twice as long as second segment; postgenal carina variable ..... 101

101 (100). Eighth tergite of male as in figure[1]; pronotum at least one-fourth broader than long; first four segments of hind tarsi subequal *Lamiota* Casey

Eighth male tergite not as above ..... 102

102 (101). Eighth tergite of male crenulate (fig. 37I); eighth sternite of male incised (fig. 37H) but not triangularly produced; species relatively large, piceus (length, 3.2-4.8 mm.). Alaska, western Canada, Rocky Mountains of Colorado ..... *Atheta* Thomson

Eighth tergite and sternite not as above; eight sternite frequently (but not always) triangularly produced, and its apex often incised or truncate; length 2.0-4.2 mm.; coloration light reddish brown ..... 103

103 (102). Larger more robust species, 3.5-4.2 mm. in length ... *Homalotusa* Casey

Smaller, more slender species; length 2-3 mm. *Metaxya* (Mulsant and Rey) Casey (see *Philhygra*)

104 (98).[2] Pronotum only one-sixth broader than long; elytra less than one-tenth longer than pronotum; eyes small, their length about one-half their distance from base of head ..... *Valenusa* Casey

Species without the above combination of characters ..... 105

105 (104). Terminal segment of antennae with a pale "spongy area" (probably

[1]Specimens were not available for illustration, so a description of the eighth tergite of the male of *Lamiota* is as follows:

Posterior margin of eighth tergite of male with slender, posteriorly directed process near each lateral margin; median portion broad and produced, with longitudinal carinules and with margin crenulate [L.H.].

[2]It is not possible to reach this couplet. The couplet that appears to be at fault is 98. The situation precludes identification of the genera in couplets 104 through 111 [L.H.].

sensory) near base; antennae robust and slightly incrassate; segments 4-6 subquadrate to elongated; 7-10 subquadrate to feebly transverse; mesosternal process broad, its apex rounded; eighth male tergite modified (fig. 37B) ..... *Stethusa* Casey

Terminal antennal segment without distinctive pale sensory area; species without combination of other characters above ..... 106

106 (105). Pronotal hypomera fully exposed, and relatively broad in lateral view (as in fig. 28E) ..... 107

Pronotal hypomera not visible at base (fig. 28F) and narrow in lateral view ..... 111

107 (106). Antennae relatively long and "loosely organized" (pedicels conspicuous; segments 1-6 subequal in thickness; segments 7-11 slightly incrassate; segments 4-7 slightly elongated or quadrate, 8-10 quadrate to feebly transverse) ..... 108

Antennae more compact, their pedicels inconspicuous to invisible; segments 1-6 never uniform in thickness, and 5-10 usually transverse (some segments may be subquadrate) ..... 109

108 (107). Elytra more than two-fifths longer than pronotum; elytral pubescence with hairs curving in laterocaudad pattern; postgenal carina absent; tarsal setae inordinately long ..... *Panalota* Casey

Elytra one-tenth to one-sixth longer than pronotum; elytra with hairs subparallel and directed caudad; postgenal carinae present; tarsal setae not usually long ..... *Dinaraea* (Thomson) Casey

109 (108). Small species—length usually less than 1.8 mm. (a few may attain 2 mm.), and width, 0.5 mm. or less; antennal segments 5-10 short and strongly transverse (moderately so in a few cases) ..... 114

Larger species—more than 2 mm. in length and 0.5 mm. in width; antennae variable, but segments 5-10 are usually only moderately transverse .. *Xenota* Mulsant and Rey (including *Halobrecthina* Bernhauer)

110 (109). Antennae more strongly incrassate, segment 5 relatively slender, tenth segment about three-fifths broader than fifth
*Microdota* Mulsant and Rey

Antennae less strongly incrassate, segment 5 relatively broad, tenth segment about three-tenths broader than fifth ..... *Noverota* Casey (in part)

111 (106). Small species, less than 1.8 mm. in length; antennal segments 5-10 short and strongly transverse ..... *Datomicra* Mulsant and Rey (including *Taxicerella* Casey)

Larger species, length 2.1-2.8 mm.; antennal segments more robust and tending not to be transverse (segments may be subquadrate or feebly transverse)..... *Dimetrota* Mulsant and Rey, *Pseudota* Casey (in part)

112 (9). Metasternum extremely short behind mesocoxae; pronotum robust and strongly reticulated; species in intertidal zone of Pacific Coast
*Pontomalota* Casey

Metasternum moderately long behind mesocoxae; pronotum generalized, athetine in appearance ..... *Geostiba* Thomson

113 (2). Mesocoxae contiguous or nearly so; antennal segments 3-7 minute, 8-10 forming an abruptly larger "club"; hind tarsi 5 segmented; species very minute (length, 1 mm.) ..... *Anacyptus* Horn

Mesocoxae widely separated; antennal segments 3-7 more slender than segments 8-10 but not minute; hind tarsi 4 segmented; species small to moderate sized ..... 114

114 (113). Head short and relatively broad, deflexed (almost twice as broad as long, including labrum) ..... *Cypha* Leach

Head less than one-half broader than long; not or only slightly deflexed 115

115 (114). Form of body relatively generalized; sides of body behind head subparallel; antennal segments 3-7 subequal in width ... *Oligota* Mannerheim

Form of body subovoidal, robust; broadest at elytral level; abdomen tapering apically ..... *Holobus* Solier

116 (3). Tarsi 3,3,3 segmented; tergal comb with distinctive setal pattern as in Figure 26E ..... *Deinopsis* Matthews

Tarsi 5,5,5 segmented; tergal comb with setae as in Figure 26F *Gymnusa* Gravenhorst

117 (4). Sternite of second abdominal segment not extended caudad below third segment (fig. 34B) ..... *Probeyeria* Seevers

Sternite of second abdominal segment extremely long, underlying slender attenuated basal part of third tergite (fig. 34D) ... *Beyeria* Fenyes

118 (5). Abdomen physogastric (inflated, ovate, and with large areas of membranous integument exposed); pronotum broadest in front of middle, apical and basal widths subequal; pronotal base straight or arcuate; basal segment of labial palpi moderately long ..... *Eburniogaster* Seevers

Abdomen stenogastric; pronotum broadest at middle or behind; apex three-fourths as broad as base; pronotal base strongly bisinuate; basal segment of labial palpi very long ..... *Termitonidia* Seevers

119 (8). Anterior and middle tibiae spinose externally ..... *Thinusa* Casey

Tibiae not spinose externally ..... 120

120 (119). None of tergites impressed ..... 121

Tergites 3-5 impressed at base ..... 122

121 (120). Smaller species (2.5 mm.); coloration flavotestaceus; sides of body subparallel; pronotum only little more than one-eighth broader than long, its base straight; pronotal pubescence pattern E (hairs directed cephalad in midline); elytra three-fourths as long as pronotum; abdomen not much broader at fifth segment at base ..... *Bryothinusa* Casey

Larger species (3.5-4.2 mm.); coloration reddish brown; width appreciably different at various levels (head one-seventh broader than pronotum; pronotum broader than elytra; abdomen two-fifths broader than elytra at fifth segment level); pronotum one-fifth broader than long, its base arcuate at middle; pronotal pubescence pattern C (hairs in midline directed caudad); elytra less than one-half as long as prono-

tum; abdomen about one-half broader at fifth segment than at base
*Liparocephalus* Maeklin

122 (120). Seventh tergite impressed at base ..... *Amblopusa* Casey
Seventh tergite not impressed ..... 123

123 (122). Elytra only one-half as long as pronotum; vertex of head without median impression; abdomen one-fifth broader at seventh segment than at base; species uniform dark reddish brown ..... *Diaulota* Casey
Elytra four-fifths as long as pronotum; vertex of head with medial impression extending forward from base; abdomen perceptibly wider at seventh segment than at base, but not nearly one-fifth broader; species bicolored (foreparts yellow-brown; abdomen reddish brown)
*Bryobiota* Casey

124 (20). Transverse impressions of tergites 3-5 not coarsely punctate; antennal segments 1-7 elongated ..... 125
Transverse impression of tergites 3-5 with numerous coarse punctures; antennal segments 5-10 transverse ..... *Gnypetella* Casey

125 (124). Head subquadrate, its base broad and almost straight; antennal segments 1-7 elongated, 8-10 subquadrate, 11 two-fifths longer than broad; larger species (length, 3.5 mm.); uniformly reddish-brown
*Myrmecopora* Saulcy
Head subovoidal, its narrow base arcuately rounded with sides; antennal segments 1-9 elongated, 10 subquadrate, 11 twice as long as broad; smaller species (length, 2.1 mm.); often bicolored (head and tip of abdomen dark) ..... *Meronera* Sharp

126 (15). Scutellum with two complete carinae separated by smooth interval
*Falagria* Leach
Scutellum without distinct paired carinae (smooth area not bordered by carinae or single median carina—complete or incomplete—may be present) ..... 127

127 (126). The pronotal hypomera distinctly delimited from deflexed dorsum by raised line; eighth tergite without apical comb of fine denticules .. 128
Pronotal hypomera—distinguished from dorsum by different texture—not delimited from strongly deflexed flanks of dorsum by raised line; apex of eighth tergite with arcuate comb of minute "denticles" (fig. 38A) ..... 130

128 (127). Pronotal sulcus very faint and ill-defined (but evident); peritremes small, triangular, weakly sclerotized ..... *Falagriota* Casey
Pronotal sulcus well defined and moderately deep; peritremes large and well sclerotized ..... 129

129 (128). Pronotum longer than broad, antennal segments elongated (a few may be subquadrate) ..... *Stenagria* Sharp
Pronotum broader than long; antennal segments 5-10 transverse (a few may be subquadrate) ..... *Anaulacaspis* Ganglbauer

130 (127). Mesosternum and metasternum not on same plane—metasternum depressed and with mesocoxal foramina opening caudad; mesocoxal ace-

tabula margined on medial side ..... *Aleodorus* Say

Mesosternum and metasternum on same plane ..... 131

131 (130). Elytra in vicinity of scutellum densely punctate and pubescent ..... 132

Elytra not more densely punctate in region of scutellum than elsewhere *Cordalia* Jacobs

132 (131). Head exceptionally large (subquadrate in outline, its sides almost parallel for a distance before curving to broad, transverse base); vertex of head longitudinally impressed ..... *Borboropora* Kraatz

Head relatively oval, its sides converging evenly to narrow base; vertex of head not impressed ..... 133

133 (132). Mesosternal process attaining middle of mesocoxae and separated from metasternal process by isthmus; pronotum moderately narrowed behind (base three-fourths maximum pronotal width), and only moderately sulcate; head not transverse ..... *Lissagria* Casey

Mesosternal process short, only attaining anterior one-third of mesocoxae and overlapping metasternal process; isthmus absent; pronotum strongly narrowed basally and deeply sulcate; head strongly transverse ..... *Omoschema* Notman

134 (9). Pronotum very broad, expansive, almost three-fourths broader than long *Dinardilla* Wasmann

Pronotum at most one-fourth broader than long, and usually somewhat less ..... 135

135 (134). Length of elytral suture more than one-half pronotal length; apices of elytra only moderately oblique; second tergite covered by elytra and not exposed ..... *Symbiochara* Fenyes

Length of elytral suture not more than two-fifths, and usually not more than one-third, as long as pronotum; second tergite clearly exposed to view ..... 136

136 (135). Pronotum about one-eighth longer than broad; elytra small and narrow (subequal in width to pronotum); eyes very small (with about 10 facets) and only about one-seventh head length ... *Apteronina* Wasmann

Pronotum one-tenth to one-fifth broader than long; elytra very broad (two-fifths broader than pronotum); eyes about one-fourth head length *Sceptobius* Sharp

137 (16). Abdomen with prominent golden-yellow tufts of glandular hairs (trichomes) ..... *Xenodusa* Wasmann

Abdomen without trichomes ..... 138

138 (137). Eyes extremely large and coarsely faceted (occupying almost entire side of head); species probably associated with army ants in Texas and Louisiana (also attracted to lights) ..... *Tetradonia* Wasmann

Eyes moderate in size and finely faceted ..... 139

139 (138). Head and pronotum with prominent carinae (see figs. 12-15, Seevers, 1959) ..... *Ecitoxenidia* Wasmann

Head and pronotum without carinae ..... 140

140 (139). Pronotum with extremely deep median sulcus .... *Ecitonidia* Wasmann

Pronotum with shallow sulcus at most ..... 141

141 (140). Head with relatively narrow neck (not more than one-third to one-half as broad as head); head partially covered by apex of pronotum .... 142

Head without neck or with short, indistinct neck (at least one-half as broad as head); head partially covered by apex of pronotum ..... 143

142 (141). Small species, not over 1.5 mm. in length; integuments very shiny and subglabrous; pronotum broader than long (one-twentieth to one-sixth), convex, and without broad median impression ..... *Apalonia* Casey

Larger species, 4-5 mm. in length; foreparts moderately pubescent, abdomen less so, moderately shiny; pronotum longer than broad, with broad shallow median impression ..... *Drusilla* Leach

143 (141). Antennal segments 1-6 very slender and small; 4-6 subquadrate to feebly transverse; 7-10 transverse and incrassate; 11 as long as 8, 9, and 10 combined; upper surface shiny, almost without sculpture and with very sparse pubescence; elytra one-fourth longer than pronotum; pronotum one-fourth broader than long ..... *Xesturida* Casey

Not having above combination of characters ..... 144

144 (143). Small, slender species not over 2.25 mm. in length and 0.7 mm. in width 145[1]

Larger more robust species, more than 2.5 mm. in length (usually more than 2.8 mm. in length) ..... 146

145 (144). Antennae moderate in size, segments not compactly arranged, their pedicels visible; sternites without vestiture of long bristle-like setae *Microdonia* Casey

Antennae robust (relative to body size); cylindrical segments compactly arranged, pedicels not visible; sternites bristling with long fine setae *Dinocoryna* Casey

146 (145). Fourth and fifth tergites unmodified ..... *Zyras* Stephens

Fourth and fifth tergites with massive eminences in both sexes *Myrmoecia* Mulsant and Rey

147[2]

148 (19). Mesosternal process broad and long, overlapping shorter metasternal process and bearing strong median carina ..... *Tinotus* Sharp

Mesosternal process not carinate ..... 149

149 (148). Mesocoxae narrowly separated, slender mesosternal process longer than metasternal process ..... 150

Mesocoxae broadly separated, large metasternal process as long as or longer than mesosternal process ..... 152

[1]Some species of *Microdonia* (e.g., *M. kansana*) are larger than 2.25 mm. (See Seevers, 1959, pp. 67-70.) [L.H.].

[2]Couplet 147 was superfluous and therefore deleted [L.H.].

150 (149). Small species, about 1.5 mm. in length; seventh male tergite without carina ..... *Nosora* Casey

Larger species, about 3-4 mm. in length; seventh male tergite with moderate carina ..... 151

151 (150). Mesosternal and metasternal processes contiguous, isthmus absent *Platandria* Casey

Mesosternal and metasternal processes not contiguous; isthmus present *Tetrallus* Bernhauer

152 (149). Male with strong spine near outer apical angle of elytron; parasternites of third abdominal segment prolonged as acute spines; fourth male tergite unmodified; seventh male tergite with very strong median spine ..... *Genosema* Notman

Male with short spine near inner apical angle of elytron; parasternites of third abdominal segment never prolonged; fourth male tergite with parallel carinae or low eminence; seventh male tergite with moderate spine ..... 153

153 (152).[1] *Hoplandria* Kraatz

*Lophomucter* Notman

154 (18). Pronotal hypomera distinctly visible in lateral view ..... 171

Pronotal hypomera not visible in lateral view ..... 177

155 (14). Pronotum glabrous or with very sparse pubescence ..... 156

Pronotal pubescence moderate to dense ..... 160

156 (155). Eyes extremely large and coarsely faceted (distance between eyes less than three-fifths head width); postgenal carinae absent *Phanerota* Casey

Eyes moderate in size (distance between eyes about three-fourths head width) and facets medium-sized; postgenal carinae present although incomplete in some cases ..... 157

157 (156). Body compact, subovate in dorsal view; broadest at abdominal level; apex of pronotum distinctively deflexed; hypomera not visible in lateral view; anteroposterior profile convex in lateral view; head deflexed and incompletely visible from above ..... *Encephalus* Kirby

Body less compactly organized (elongate, form not ovoidal); pronotal hypomera visible in lateral view ..... 158

[1]Characters for couplet 153 did not appear in the original manuscript.

153. Male without midlongitudinal carina on anterior portion of clypeus *Hoplandria* Kraatz

Male with midlongitudinal carina on anterior portion of clypeus *Lophomucter* Notman

The above characters were mentioned along with several others by Notman (1920). Seevers did not describe *Lophomucter* and provided no characters for separation of this genus and *Hoplandria*. Until something better is found, these characters are suggested for couplet 153 [L.H.].

158 (157). Pronotum twice as broad as long, or nearly so; mesosternal process reaching to middle of mesocoxae ..... 159

Pronotum never more than two-thirds broader than long, and usually considerably less; mesosternal process reaching considerably beyond middle of mesocoxae ..... *Gyrophaena* Mannerheim

159 (158). Fifth antennal segment considerably larger than fourth; segments 5-10 not or very slightly incrassate ..... *Eumicrota* Casey

Antennal segments 4-10 incrassate ..... *Agaricochara* Kraatz

160 (155). Labial palpi extremely long and filiform (fig. 31D,G); sutures between segments of palpi often indistinct (palpi sometimes described as one or two segmented); eighth male tergite with 6-9 processes (fig. 38E) . 161

Labial palpi more nearly generalized (if subfiliform, not as in fig. 31D,G), two basal segments may be fused in some cases; eighth male tergite never modified as above ..... 163

161 (160). Pronotal pubescence directed caudad (pattern D[1]); mesocoxae moderately separated; slender mesosternal process longer than metasternal process; metasternal process subtriangular, its narrow apex rounded; ligula entire; galea long and slender ..... *Silusa* Erichson

Pronotal pubescence directed cephalad in midline (pattern E) (fig. 24I); mesocoxae relatively widely separated; both processes broad and subtruncate; metasternal process longer than mesosternal; ligula bifid; galea variable ..... 162

162 (161). Intercoxal processes subequal in length; pronotum one-third broader than long ..... *Apheloglossa* Casey

Metasternal process distinctly longer than mesosternal process; pronotum only a little less than twice as broad as long
*Elachistrarthron* Notman, *Orthodiatelus* Notman

163 (160). Small species (1.4 mm. long, 0.4 mm. broad); head subtriangular, one-fifth broader than long, with coarse umbilicate punctures; neck one-half as broad as head; pronotum one-half broader than long; elytra one-half longer than pronotum; antennae with segments 5-10 very short, transverse ..... *Euvira* Sharp

Species without above combination of characters ..... 164

164 (163). Pronotum two-thirds broader than long; head one-third broader than long; head punctures fine; elytra only one-tenth longer than pronotum; antennae short, strongly incrassate, segments 4-10 short, transverse; third tergite slightly impressed, 4 and 5 not impressed
*Schistacme* Notman

Not having above combination of characters ..... 165

165 (164). Eighth tergite (both sexes) produced at middle as long spine
*Anomognathus* Solier

Eighth tergite not produced at middle ..... 166

[1]Pattern D pubescence is described under "Pronotal pubescence pattern" in "Taxonomic Morphology" [L.H.].

166 (165). Body dorsoventrally compressed; pronotum flat; integuments not asperate (or at most very feebly so); body with "subcortical" facies ..... 167

Body moderately convex; integuments with numerous asperities (often coarse); facies not as above ..... 169

167 (166). Pronotum one-half or more broader than long; mesosternal and metasternal processes short; mesocoxal acetabula broadly connected by isthmus longer than either intercoxal process ..... *Placusa* Erichson

Mesosternal and metasternal process longer than isthmus between mesocoxal cavities; pronotum somewhat less than one-half broader than long ..... 168

168 (167). Larger species (length 2.1-2.8 mm.; width, 0.6-0.7 mm.); pronotum with appearance of granulation resulting from coarse close-meshed reticulation; pronotum about two-fifths broader than long; eyes large, their length greater than distance from base of head *Homalota* Mannerheim

Smaller, more slender species (length 1.12-1.16 mm.; width 0.3-0.35 mm.); pronotum without raised reticulation; pronotum about one-fourth broader than long; eyes small, their length less than distance from base of head ..... *Thecturota* Casey

169 (166). Elytra not longer than pronotum, and usually a little shorter *Sipalia* Mulsant and Rey (not Casey)

Elytra distinctly longer than pronotum, and usually considerably so 170

170 (169). Basal segment of hind tarsi relatively short, usually little longer than second, and never equal to second and third combined ..... *Leptusa* Kraatz (including *Eucryptusa* Casey)

Basal segment of hind tarsi longer, at least equal to second and third segments combined ..... *Bolitochara* Mannerheim (including *Silusida* Casey, *Ditropalia* Casey, *Stictalia* Casey, *Venusa* Casey)

171 (154). Middle coxae widely separated; mesosternum not carinate; species large (10-13 mm.) or smaller (4-5.6 mm.). Southwestern United States and Mexico ..... *Maseochara* Sharp

Middle coxae narrowly separated ..... 172

172 (171). Four tergites (segments 3-6) impressed at base ..... 176

Fewer than four tergites impressed at base ..... 173

173 (172). Elytra and pronotum subequal in length; elytral apices not bisinuate and not incised. Arizona ..... *Pinalochara* Casey

Elytra at least one-sixth longer than pronotum; elytral apices bisinuate, incised near outer apical angles ..... 174

174 (173). Pronotum one-half broader than long, very strongly convex; hypomera narrowly exposed in lateral view; pronotum broadest near base and with sides strongly converging to relatively narrow apex; tergites 3 and 4 impressed at base ..... *Rheochara* Mulsant and Rey

Pronotum somewhat less than one-half broader than long; pronotal form not as above; tergites 3-5 impressed ..... 175

175 (174). Intercoxal processes contiguous ..... *Rheocharella* Casey

Intercoxal processes not contiguous; isthmus longer than very short metasternal process ..... *Rheobioma* Casey

176 (172). Hind tarsi relatively short, basal segment scarcely longer than second segment; coloration brown; species not cavernicolous ..... *Emplenota* Casey

Hind tarsi relatively long, basal segment longer than two and three combined; coloration rufoflavate; species cavernicolus ..... *Echochara* Casey

177 (154). Mesosternum without trace of carina ..... 178

Mesosternum carinate, at least in part ..... 179

178 (177). Tergites 3-5 impressed at base ..... *Aleochara* Gravenhorst

Tergite 3 shallowly impressed, but not 4 and 5 ..... *Aidochara* Casey

179 (177). Pronotum with two longitudinal rows of punctures, area between the rows usually glabrous ..... 185

Pronotum without rows of punctures; pronotal pubescence pattern B (hairs directed caudad, figs. 24C,D) ..... 180

180 (179). Tergites 3-5 deeply impressed; impressions with very large punctures (not more than 14 in transverse series and punctures in some degree confluent); intervals between punctures somewhat ridge-like *Isochara* Bernhauer (in part); Casey's group 3 of *Baryodma* Thomson

Tergites 3-5 often impressed but not punctate as above ..... 181

181 (180). Tergites with strong imbricated sculpture ..... *Isochara* Bernhauer (in part); Casey's group 4 of *Baryodma* Thomson

Tergites generally without pronounced sculpture, not imbricated ... 182

182 (181). Entire medial part of mesosternum elevated as strong carina (setose at tip); metasternal process very short ..... *Xenochara* Mulsant and Rey

Mesosternum flat except for fine raised line (carina) in midline; metasternum moderately long ..... 183

183 (182). Fourth segment of maxillary palpi conical ..... *Oreochara* Casey

Fourth segment of maxillary palpi awl-shaped ..... 184

184 (183). Elytra with numerous coarse umbilicate punctures; pronotum similarly punctate except that punctures become smaller toward apex; integuments of pronotum and elytra smooth, non-reticulate; mesosternal process acuminate at apex; third segment of maxillary palpi obconical, not twice as long as broad ..... *Calochara* Casey

Elytra finely punctate; integuments frequently reticulated although not necessarily; mesosternal process truncate; third maxillary palpomere long, slender, not obconical, and twice as long as broad *Polychara* Mulsant and Rey; *Isochara* Bernhauer (in part); groups 1 and 2 of Casey's *Baryodma* Thomson

185 (182). Punctures of pronotal rows very coarse and broad, often confluent; elytra rugose, very coarse punctures confluent ..... *Funda* Blackwelder (=*Eucharina* Casey)

Pronotal punctures relatively fine and not as above; elytra with distinct punctures, usually fine ..... *Baryodma* (Thomson); Casey groups 5,6

186 (46). Pronotum one-half broader than long; hind tarsi about nine-tenths as long as tibia; aedeagus distinctive (fig. 3C,D); third segment of maxillary palpi spindle-shaped ..... *Crataraea* Thomson

Pronotum two-fifths broader than long; hind tarsi slightly more than three-fourths as long as tibia; aedeagus distinctive (figs. 31I,J); American species collected from nest of bank swallow, in Virginia *Haploglossa* Kraatz

## Tribe OXYPODINI

Oxypodides Thomson, 1859, p. 36; 1861, p. 14; 1867, p. 243 (subtribe).
Oxypodates Mulsant and Rey, 1874a, pp. 2, 199 (rameau of Aleocharaires); Ganglbauer, 1895, p. 22 (subtribe of Aleocharini).
Oxypodini Fenyes, 1918, p. 19, 1920, p. 315; Hatch, 1957, p. 135.
Oxypodae Bernhauer and Scheerpeltz, 1926, p. 740 (subtribe of Aleocharini).
Caloderates Mulsant and Rey, 1874a, p. 2 (rameau of Aleocharaires).
Caloderae Bernhauer and Scheerpeltz, 1926, p. 718 (subtribe of Aleocharinae).
Decusini Fenyes, 1918, p. 19; 1920, p. 312; Bernhauer and Scheerpeltz, 1926, p. 517.
Dinardaires Mulsant and Rey, 1873, p. 8.
Dinardae Bernhauer and Scheerpeltz, 1926, p. 736 (subtribe of Aleocharini).
Homoeusates Mulsant and Rey, 1874a, p. 2 (rameau of Aleocharini); Ganglbauer, 1895, p. 22.
Phloeoporides Thomson, 1859, p. 33; 1860, p. 287.
Phloeoporini Cameron, 1939, p. 562 (for Oxypodini, believed preoccupied).
Phloeporates Mulsant and Rey, 1874a, p. 2 (rameau of Aleocharaires); Ganglbauer, 1895, p. 23.
Tachyusides Thomson, 1859, p. 33; 1860, p. 296.
Tachyusates Mulsant and Rey, 1873, p. 8 (rameau of Myrmedoniaires); Ganglbauer, 1895, p. 107 (subtribe of Myrmedoniini).
Tachyusae Casey, 1906, p. 183 (subtribe of Myrmedoniini); Fenyes, 1918, p. 18.

The Oxypodini are characterized as follows: Antennae 11 segmented; reduced to 10 segments in *Decusa*. Terminal antennal segment with pair of coeloconic sensilla in many genera; absent in others. Frontal suture present in *Oxypoda* and close allies; absent in many others. Mouthparts generalized. Mesocoxae narrowly separated and set in margined acetabula (moderately separated in some cases); intercoxal processes slender, mesosternal process almost always longer. Pronotum convex; its hypomera not visible in lateral view in *Oxypoda* and close allies, visible in others. Head without neck as rule, but with broad neck in some genera. Eighth male tergite rarely modified. Ninth tergite subdivided but its two halves narrowly separated at base (fig. 25A). Parameres with striated velums. Median lobe of aedeagus without "athetine bridge" (fig. 10M). Compressor plate elongated. Tarsi 5,5,5 or 4,5,5 or 4,4,4 segmented.

The tribe Oxypodini cannot be characterized by any one distinctive trait. It contains *Oxypoda* and other genera that seem to be

generalized in important respects. There is considerable diversity within the tribe, but few groups that could be removed easily. The Tachyusae could be accorded tribal status on the basis of their 4,5,5 tarsal segmentation but this would obscure the relationship of genera such as *Gnypeta* to this tribe. *Blepharhymenus* is a distinctive genus, but I doubt if it should be separated. The Meoticae have distinctive genera but the group as a whole should be left in the Oxypodini. Separation of *Decusa* into the Decusini because of 10 segmented antennae and *Alisalia, Bamona, Gyronycha,* and *Leptobamona* into the Hygronomini because of 4,4,4 segmented tarsi are indefensible on numerous other grounds.

## Groups of Oxypodini

For purposes of this review the genera are grouped as follows:

### Subtribe OXYPODAE

*Oxypoda* group: *Oxypoda, Devia, Moluciba, Melanalia, Pentanota, Calodera, Tetralaucopora, Ocyusa.*
*Gnathusa* group: *Gnathusa*
*Dexiogyia* group: *Dexiogyia, Crataraea, Thyasophila, Haploglossa.*
*Ocalea* group: *Ocalea, Longipeltina, Ilyobates.*
*Amarochara* group: *Amarochara, Phloeopora, Pachycerota.*
*Acrimea* group: *Acrimea.*

### Subtribe DINARDAE

*Dinarda* (Palaearctic), *Myrmobiota, Decusa, Losiusa,* and *Euthorax.*

### Subtribe MEOTICAE

*Meotica* (Palaearctic), *Alisalia, Gyronycha, Apimela, Bamona, Leptobamona.*

### Subtribe BLEPHARHYMENI

*Blepharhymenus*

### Subtribe TACHYUSAE

*Gnypeta, Tachyusa, Trachyota, Meronera, Teliusa, Brachyusa, Gnypetella.*

### Subtribe OXYPODAE

*Oxypoda* group

Distinguished from all other Oxypodini by the presence of frontal suture.

**OXYPODA** Mannerheim. Figures 1A-D; 24B; 25A; 27A-F; 36A.

*Oxypoda* Mannerheim, 1831, p. 483. Type species: *Oxypoda spectabilis* Maerkel (Fixed by International Commission on Zoological Nomenclature, 1957. Opinion 463).

*Hylota* Casey, 1906, p. 318, **NEW SYNONYM.** Type species: *Hylota ochracea* Casey.

A cosmopolitan genus with more than 350 recorded species. A predominantly temperate climate genus with 160 Palaearctic species (Scheerpeltz, 1940), and 97 Nearctic species. Even most of the Neotropical species (30 species, Blackwelder, 1944) are recorded from Chile, Argentina, and high elevations in Guatemala.

In North America, the 83 Casey species and seven Bernhauer species are widely scattered (41 east of the 100th meridian, 56 in the west). Casey reported that most of the species have local distributions, but this requires verification. It is true that large samples of species are infrequently collected, so it may be that populations are not as large as in the Athetae. But they may be more evenly spread through large habitats. Most of the American species have been reported only once, so it is not possible at present to give the distribution for a single species.

Species of *Oxypoda* live in damp leaf mold, moss, and similar situations, but do not seem to occur frequently in such organic matter as dung, carcasses, and putrid plant materials. A few species have been reported from ant nests but this may be a facultative condition.

Few, if any, of the 97 named American species can be identified with certainty from descriptions. It is doubtful if the taxonomy of the genus can be placed on a sound basis without extensive studies on the genitalia.

*Diagnosis.*—*Oxypoda* may be distinguished from all other Aleocharinae by the following combination of characters: the frontal suture is present; the infraorbital carina is present; the neck is absent; the mandibles are simple except for a median tooth on the right one; the pronotum is more than one-third broader than long, strongly convex, and the hypomera not visible in lateral view; the mesosternal process is slender and acute; the tarsi are 5,5,5 segmented; the tenth tergite has a narrow base; and the abdomen lacks secondary sexual modifications.

*Descriptive features.*—Most of American species of *Oxypoda* small (usually not more than 2 mm. in length). Body form variable due chiefly to abdomen which may be parallel sided or acuminate. Pilosity variable, although as a rule setae short and

sparse. Many species clothed with dense silky pubescence—which is often cited as typical of genus—but some with fine, needle-like hairs, and some with sparse fine abdominal hairs set in asperulate punctures. Head and mouthparts generalized (fig. 27A-C). Antennae variable: segments 4-10 transverse, incrassate, and moderately compact, or some segments subquadrate to feebly elongated. Terminal antennal segment with several small round sensilla (coeloconic ?). Thorax and abdomen generalized in most respects and with few distinctive characteristics. Pronotal pubescence of pattern B (fig. 24B). Aedeagus and spermatheca interspecifically variable.

Taking all of its characteristics into consideration, *Oxypoda* is perhaps the most generalized genus in the subfamily. As it serves well as the "prototype" of the Aleocharinae, *Oxypoda* is the first genus considered in this review.

*Remarks.*—Based on a single species collected near New York City, *Hylota* is doubtfully distinct from *Oxypoda*. Because only the type specimen of this genus has been available, a slide preparation has not been possible. The only criterion that the writer has found for separating *Hylota* from *Oxypoda* is the slight visibility of the pronotal hypomera from the side, an indication that the pronotum is less convex and its sides less deflexed.

**DEVIA** Blackwelder. Figures 1E-F; 24G; 37D; 38C.

*Devia* Blackwelder, 1952, p. 122 (new name for *Dasyglossa* Kraatz). Type species: *Devia prospera* Erichson.

*Dasyglossa* Kraatz, 1856, p. 130 (junior homonym of *Dasyglossa* Illiger).

This genus contains a single species in the Palaearctic Region (Europe, Siberia) and in the Northern Nearctic Region.

*Devia prospera* Erichson was first recorded in the Nearctic Region (Montana, Michigan) as *Oxypoda congruens* Casey. Casey recognized the synonymy in 1906 (p. 318). He stated that this species is abundant in the northern Rocky Mountain Region and extends east to Lake Superior. In the Fenyes collection there are specimens from Alberta, New Hampshire, and Massachusetts. *Devia prospera* may occur throughout the northern Nearctic Region and may be a true Holarctic species. Its distribution does not seem to be that of an introduced species.

*Diagnosis.*—*Devia* is very closely allied to *Oxypoda,* and is distinguished by little more than the structure of the mandibles. Simple in *Oxypoda,* except for the median tooth of the right mandible, the mandibles of *Devia* are bifid apically (fig. 38C). Bearing a strong resemblance to the type species of *Oxypoda—spectabilis* of the Palaearctic Region—*Devia prospera* is larger (3 mm.) broader, and

more robust than the large majority of American species of *Oxypoda* (about 2 mm.) The aedeagus of *Devia* is distinctive (fig. 1E, F).

*Descriptive features.*—Finely and densely punctate throughout; pronotum reticulated; elytral punctation finely asperulate; abdomen with fine dense silky pubescence; antennae moderately long and loosely organized, segments 1-5 elongated, 6-7 subquadrate, 8-10 slightly transverse; head capsule as in *Oxypoda;* mandibles (fig. 38C) bifid at apex; pronotum slightly more than one-third broader than long; large, strongly convex, hypomera not visible in lateral view; apex straight, sides arcuate, converging more in front, base strongly arcuate, basal angles obsolescent. Abdomen generalized.

## MELANALIA Casey

*Melanalia* Casey, 1911, p. 10. Type species: *Melanalia tabida* Casey.

*Distribution.*—A single species in California. Another species, *tetricula* Casey (=*larvalis* Casey), is herein transferred to *Oxypoda.*

*Diagnosis.*—Distinguished from *Oxypoda* by having the pronotal hypomera slightly visible in lateral view, the pronotal pubescence pattern F, with hairs in midline directed cephalad in apical half and caudad in basal half, (fig. 24J, K) and sternites 3-5 distinctly impressed at base (impressions densely, coarsely, asperately punctate).

*Descriptive features.*—Pronotum more than two-fifths broader than long; broadest in basal half, sides converging appreciably in front; dorsum with shallow (variable) median impression. Elytra almost one-half longer than pronotum. Head finely reticulated, with dense fine asperate punctation. Elytra coarsely asperately punctate. Tergites with coarse but sparse asperate punctation. Pubescence on foreparts fine, coarser on abdomen, not densely pilose as in some *Oxypoda.* Antennae with segment 4 subquadrate, 5-10 transverse, incrassate. Length, 2-4 mm.

## MOLUCIBA Casey

*Moluciba* Casey, 1911, p. 156. Type species: *Moluciba grandipennis* Casey.

*Distribution.*—A single species in British Columbia.

*Diagnosis.*—Distinguished from *Oxypoda* by having a visible hypomera, the pronotum only one-fourth broader than long, the mesosternal process very long and spinose and on a different plane from the much shorter metasternal process, the intercoxal processes contiguous (no isthmus), and the three basal sternites impressed at the base.

## OCYUSA Kraatz. Figures 1G; 35J.

*Ocyusa* Kraatz, 1856, p. 156. Type species: *Ocyusa maura* Erichson.

Although more than 40 species have been placed in this genus, only the type species, *maura,* and the two American species are placed in *Ocyusa* (*sensu stricto*); there are six other subgenera. The species of *Gnathusa* Fenyes, placed by Bernhauer and Scheerpeltz in *Ocyusa* (*Mniusa*), are herein accorded separate generic rank. In my opinion, *Mniusa* does not belong in *Ocyusa* either, but that problem does not fall within the scope of this work.

*Diagnosis.*—*Ocyusa* and *Moluciba* run to the same couplet in the key. Whether or not they are as closely allied as this might indicate, is not known at this time. Material for slide mounts has not been available.

*Descriptive features.*—Frontal suture present; hypomera visible; pronotum less than three-tenths broader than long; postgenal carina present; antennal segments 1-5 elongated, 6-7 quadrate, 8-10 slightly transverse; gular sutures converging apically from broad base; right mandible with small median tooth, left mandible edentate; tergites 3-5 impressed; sternites not impressed; aedeagus as in Figure 1G (apical processes of parameres long).

*Remarks.*—There is considerable variation in the intercoxal processes among the species. In all cases the mesosternal and metasternal processes are long, but there are differences in the width and acuity of the mesosternal process. The two American species may be separated as follows:

Elytra sutural length three-fourths pronotal length (Iowa, Rhode Island)
*asperula* Casey (=*brevipennis* Bernhauer)

Elytra sutural length subequal to pronotal length (California)
*californica* Bernhauer

**CALODERA** Mannerheim Figures 1H, K; 24H; 36G.

*Calodera* Mannerheim, 1831, p. 499. Type species: *Calodera nigrita* Mannerheim.

*Distribution.*—Bernhauer and Scheerpeltz (1926) list 61 species from many parts of the world (36 from Australia and New Zealand). Scheerpeltz (1940) records nine Palaearctic species, including one each in China and Japan. Blackwelder (1944) lists 19 Neotropical species, of which 18 are from Argentina and Chile. It seems clear that *Calodera* is essentially a temperate climate genus, and is rare in the tropics. A single Nearctic species has been reported (*infuscata* Blatchley, Indiana) and two new species are at hand—one from the New England states, one from California.

*Diagnosis.*—*Calodera* is herein grouped with the genera having a frontal suture, but it is distinctive (along with *Tetralaucopora*) in being relatively long and narrow, and in having a subquadrate

pronotum (no wider than long). From all genera of the *Oxypoda* group it differs in having four tergites (3-6) impressed at the base, and in having a neck (about two-thirds as broad as head).

*Descriptive features.*—Length about 2.5 mm.; form slender; abdomen parallel-sided; head and pronotum clearly narrower than elytra (pronotum no more than two-fifths as broad). Species relatively pubescent. Head pubescence directed cephalad; pronotal pubescence pattern C (fig. 24H). Frontal suture present. Postgenal carinae absent or faint. Sides of head converging evenly to neck, basal angles obsolete. Antennae variable in American species, of moderate length; segments 4-10 transverse; 5-10 scarcely incrassate (10 very slightly broader than 5) and not increasing much in length. Ligula short, bifid at apex. First and third segments of labial palpi subequal and longer than second. Hypomera fully visible. Middle coxae narrowly separated; mesosternal process long and spine-like; metasternal process short, rounded. Tarsi short; hind tarsi with basal segment longer than two following segments combined. No secondary sex characters evident. Parameres of aedeagus with very long apical processes (fig. 1K).

## **TETRALAUCOPORA** Bernhauer. Figure 37E.

*Tetralaucopora* Bernhauer, 1928, p. 20. Type species: *Tetralaucopora lebedevi* Bernhauer.
*Chilopora* Kraatz, 1856, p. 146 (junior homonym of *Chilopora* Haime, 1854).
*Chiloporata* Strand, 1935, p. 285.

*Distribution.*—A Holarctic genus with eight Palaearctic and two Nearctic species. Bernhauer (1929) recorded a Mexican species.

*Diagnosis.*—Allied to *Calodera,* the species of this genus tend to be more elongated and to have their parts so modified. *Tetralaucopora* is distinguished from *Calodera* by having only three tergites impressed, the pronotum longer than broad (almost one-tenth longer), by very long tarsi (hind tarsi two-thirds to nine-tenths as long as hind tibiae), and by longer antennae—almost all segments elongated.

*Descriptive features.*—Length about 3.5 mm.; width, 0.7-0.9 mm.; slender in form and somewhat compressed dorsoventrally. Pronotum with fine dense, asperate punctation. Pubescent throughout. Head capsule longer than broad; neck scarcely developed. Frontal suture present. Postgenal carina weak in places. Gular sutures converging considerably; submentum short and narrow, less than one-half gular length. Antennae moderate to rather long, except for a few segments in *fuliginosa,* segments all elongated. Coeloconic sensilla absent. Ligula elongated, very slightly incised at apex. Right mandible with prominent median tooth, left edentate. Pronotum about one-tenth longer than broad; form as in *Calodera.* Meso-metasternal relationships as in *Calodera.* Metasternum surprisingly short considering elongated nature of species (three-fourths as long as mesocoxae).

The American species may be separated as follows:

Head with close-meshed reticulation and dense subumbilicate punctation throughout; antennal segments 8-10 subquadrate to distinctly transverse (tenth); hind tarsi about two-thirds to three-fourths as long as hind tibiae ..... *fuliginosa* Casey

Head without reticulation, densely, coarsely, and asperately punctate in occipital region; antennal segments 8-10 distinctly elongated; hind tarsi about nine-tenths as long as hind tibiae ..... *americana* Casey

**PENTANOTA** Bernhauer

*Pentanota* Bernhauer, 1905a, p. 591. Type species: *Pentanota meuseli* Bernhauer.

For the characters of this genus refer to the key and to the original description [L.H.].

*Gnathusa* group

**GNATHUSA** Fenyes. Figures 1I-J; 27H.

*Gnathusa* Fenyes, 1909, p. 197. Type species: *Gnathusa eva* Fenyes.

*Distribution.*—Three species are known to occur in California and British Columbia. An extensive series of a new species, was collected in the forest floor litter of a redwood forest near Humboldt, California.

*Diagnosis.*—*Gnathusa* may be the most closely allied to *Ocyusa;* it was placed in the subgenus *Mniusa* of *Ocyusa* by Bernhauer and Scheerpeltz (1926). I have not placed *Gnathusa* in *Ocyusa* because it lacks a frontal suture. Among the Oxypodini *Gnathusa* is distinctive for these qualities: the mandibles are extremely long, and sickle-shaped (fig. 27H), and their apices very slender; the gular sutures are parallel; and the labrum has spinose processes (fig. 27H) in most species.

*Dexiogyia* group

Four genera—*Dexiogyia, Crataraea, Thyasophila,* and *Haploglossa*—seem to be allied. They do not share one particular distinctive trait, but as a group have these characteristics: the frontal suture is absent; the hypomera are exposed; the mandibles are generalized; the mesosternum is not carinate; the mesosternal process is slender and somewhat elongated; and the pronotum is from one-fifth to one-half broader than long. Except for *Dexiogyia,* the eighth sternite of the male is triangularly produced.

**DEXIOGYIA** Thomson. Figures 3A, B; 25H; 35L.

*Dexiogyia* Thomson, 1858, p. 34. Type species: *Dexiogyia corticina* Erichson.

In Fenyes (1918, 1920, 1921) and Bernhauer and Scheerpeltz (1926), *Dexiogyia*—with *corticina* and its American allies—was considered a subgenus of *Stichoglossa* Fairmaire and Laboulbene, as was *Ischnoglossa* Kraatz. In Leng's catalogue, the species of this genus were placed in *Stichoglossa* (*Ischnoglossa*). In more recent years (Cameron, 1939; Scheerpeltz, 1940) the subgenera have been given generic rank.

*Dexiogyia* is distinguished from *Ischnoglossa,* a Palaearctic genus with a single species, by having only three tergites (3-5) deeply impressed instead of four. *Dexiogyia* lacks the median keel present on the seventh tergite of *Stichoglossa,* has the eighth tergite denticulate only in the male, has a more convex pronotum with less of the hypomera visible from the side, and has a dense grizzled pubescence on the foreparts. There is no evidence of the occurrence of either *Stichoglossa* or *Ischnoglossa* in the Nearctic fauna.

*Diagnosis.*—The integuments have a fine, close-meshed reticulation; the pronotum and elytra have numerous asperate punctures. The antennae are incrassate; segment 4 is quadrate; 5-10 are short, and transverse. The mesosternal process is exceptionally long (fig. 35L). The eighth male tergite is dentate and the eighth male sternite unmodified. The abdomen is narrower than the foreparts, its base only four-fifths as broad as the elytra. The aedeagus is as in Figure 3A, B. The spermatheca is as in Figure 25H.

*Habitat.*—Under bark, especially pine; in burrows of wood-boring insects.

*Species of Dexiogyia.*—The Palaeartic *D. corticina,* the type species of the genus, was recorded in North America by Bernhauer and Scheerpeltz (1926). Although Fenyes (1918, 1920, 1921) did not list *corticina* as an American species, he evidently considered all six Casey species to be synonyms of it for all the specimens in his collection—from Massachusetts to California—are identified as that species. Casey clearly regarded the American counterparts of *corticina* as distinct species, although closely related.

The American species are probably distinct from *corticina,* although the differences are slight. The eighth male tergite of *anguliventris* Casey and its close allies have acute teeth; those of *corticina* are short and blunt. The number and distribution of American species can be determined only through the study of much more material from many localities in North America. The genus clearly has a very broad distribution in the Nearctic Region. Casey's spe-

cies appear in the literature under the names *Thiasophila* or *Ischnoglossa*. I find no basis for separating *abscissa* from *angulicollis*, or *alticola* from *asperata*.

**THYASOPHILA** Fairmaire and Laboulbene, Figures 3E-H, 36E.

*Thyasophila* Fairmaire and Laboulbene, 1856, (June), p. 461. Type species: *Thyasophila angulata* Erichson.
*Thiasophila* Kraatz, 1856, (July-December), p. 69.

*Distribution.*—A Holarctic genus, with nine recorded Palaearctic and four Nearctic species (Massachusetts, New York, Iowa).

*Habitat.*—The species are myrmecophilous in societies of *Formica, Camponotus,* and *Lasius*.

*Diagnosis.*—The pronotum and elytra are asperately punctate as in *Dexiogyia,* but the dense, golden pubescence is shorter. The antennae are much less incrassate and the form of the segments distinctive: segments 4-6 are elongated and 7-10 subquadrate to feebly transverse. The ligula is as long as the basal palpal segment and bifid only at the tip. The middle coxae are more widely separated than in the other two genera of this subgroup (fig. 36E); the mesosternal process is broad and rounded, the metasternal process short and arcuate. The abdomen is almost as broad as the elytra. The eighth male tergite is not denticulate. The eighth male sternite is produced.

**CRATARAEA** Thomson. Figure 3C, D.

*Crataraea* Thomson, 1858, p. 34. Type species: *Crataraea suturalis* Mannerheim.

*Distribution.*—Three species are in the Palaearctic Region; one of these, *C. suturalis,* is also widely distributed in North America (Vermont, Massachusetts, Pennsylvania, Illinois, Iowa, California). This species was probably introduced into the Nearctic Region.

*Habitat.*—Under plant and animal refuse in stables, granaries, etc., and occasionally in ant nests (*Formica* and *Lasius*).

*Diagnosis.*—The head and pronotum have a moderately coarse, small-meshed reticulation, but the fine punctation is not asperate. *Oxypoda*-like in form, the coloration is dark reddish brown with a tendency for the sutural region and apices of elytra, as well as apical regions of tergites and sternites, to be lighter. The right mandible has a strong median tooth, left mandible an obtuse subapical tooth. The ligula is distinctive—rounded, not bifid. The pronotum is relatively broad, about one-half broader than long; the

hypomera are slightly visible. The intercoxal processes are somewhat as in *Dexiogyia,* except that the mesosternal process is broader and less spine-like. The tenth tergite is exceptionally broad. The eighth sternite of the male is produced as in *Thyasophila.* The aedeagus is as in Figure 3C, D. The spermatheca is distinctive.

**HAPLOGLOSSA** Kraatz. Figures 3I, J; 35I.

*Haploglossa* Kraatz, 1856, p. 78. Type species: *Haploglossa pulla* (Gyllenhal).
*Microglotta* Kraatz, 1862a, p. 300

*Distribution.*—Holarctic Region and Mexico (not verified). Bernhauer and Scheerpeltz (1926) list eight Palaearctic species. Only one recorded Nearctic species, *barberi* Fenyes, belongs here *(grandiceps* Casey, placed here or in *Crataraea,* belongs in *Gnathusa*).

*Habitat.*—Many, if not all, of the species of *Haploglossa* inhabit bird nests. The American species, *barberi* was collected from the nests of a bank swallow in Virginia. As this is the only record in the Nearctic Region, it is evident that bird's nests have not been investigated for this genus.

*Diagnosis.*—Apparently related to *Crataraea,* the American species is distinguished by having a somewhat less broad pronotum, shorter hind tarsi, and distinctive aedeagus.

*Descriptive features.—H. barberi* is a slender species, 4.2 mm. in length. Coloration of head reddish brown, pronotum rufoflavate, elytra rufotestaceous, abdomen flovaotestaceous (tergites 6,7 reddish brown). Head evenly, moderately densely, umbilicately punctate, and reticulated; pronotum with moderately dense, finely umbilicate punctation and fine reticulation. Pronotal pubescence of pattern A (fig. 24A), with hairs transverse near base. Elytra with dense asperate punctation and dense yellow pubescence. Antennae short; segments 4-10 short transverse and moderately incrassate. Maxillary palpi short, third segment subtriangular. Labial palpi not filiform; basal segment moderately broad. Ligula not bifid. Mesosternal process spinose, somewhat longer than short rounded metasternal process. Tergites 3-5 shallowly impressed, sternites 4,5 feebly impressed at base. Eighth male sternite produced. Aedeagus as in Figure 3I, J.

*Ocalea* group

**OCALEA** Erichson. Figures 4I, J; 36B.

*Ocalea* Erichson, 1837, p. 298. Type species: *Ocalea picata* Stephens (through synonymy with *castanea* Erichson).
*Isoglossa* Casey, 1893, p. 304. Type species: *Isoglossa arcuata* Casey.

*Distribution.*—Bernhauer and Scheerpeltz (1926) list 29 species (not including the subgenus *Pachorhopala* Bernhauer, later ele-

vated to generic rank): 12 Palaearctic, seven Nearctic, five Neotropical, two in New Zealand, and three in Australia. Scheerpeltz (1940) states that there are 15 Palaearctic species. Blackwelder (1944) lists seven Neotropical species in Guatemala, Argentina, Chile, and Bolivia. It seems evident that *Ocalea* occurs in temperate climates, rarely in the tropics (if at all).

The seven named Nearctic species are all in the far west (Arizona, California, British Columbia). Material in the Fenyes collection indicates that the genus is frequent in the west and that there are somewhat more species than those described. The easternmost specimen seen by me is from Colorado.

*Diagnosis.*—No single character seems to provide a way of distinguishing *Ocalea*. The following combination of characters are diagnostic: The frontal suture is absent; the pronotal hypomera are visible; the pronotum is large and subelliptical—at least one-tenth but less than one-third broader than long; the mandibles are not sickle-shaped; the antennae are robust but of moderate length, feebly incrassate, and have segments 8-10 subquadrate to feebly elongated (in a few species, slightly transverse); tergites 3-5 are impressed; the sternites are not impressed; the eighth male sternite is angulate.

*Descriptive features.*—Length 3-5 mm.; width 0.8-1.4 mm. Color reddish brown (medium to dark). Head and pronotum strongly reticulate to completely smooth; elytra reticulate or not, in some species subrugulose. Punctation of head and pronotum fine (sparse to moderately dense), occasionally finely asperulate. Tergites, as a rule, shining, with minimum of sculpture (in form of very fine transverse strigulation, or more rarely reticulation) or none. Tergites sparsely punctate; impressions punctate or not. Pronotum and elytra with moderate to dense vestiture of golden yellow pubescence; abdomen not pubescent, and not especially hairy, although there is always vestiture of short setae. Frontal suture absent; postgenal carinae present. Labial palpi with all segments elongated. Ligula cylindrical. Gular sutures subparallel. Neck short and broad. Pronotum variable in form and proportions but with certain general properties: Large, robust, and subelliptical; rather convex, but with hypomera fully visible in lateral view; humeri depressed; apex feebly arcuate to almost straight; broadest in front of middle; sides arcuate, but differing in degree to which they converge in front and rear. Middle coxae narrowly separated; mesosternal process long and spine-like, somewhat more than one-half as long as mesocoxae; metasternal process short and subtriangular. Tergites 3-5 impressed. Sternites not impressed. Eighth male sternite produced in angulate fashion at middle. Aedeagus as in Figures 4I, J.

## LONGIPELTINA Bernhauer

*Longipeltina* Bernhauer, 1912, p. 682. Type species: *Longipeltina bakeri* Bernhauer.

For the characters of this genus refer to the key [L.H.].

**ILYOBATES** Kraatz. Figures 4E; H; 36K.

*Ilyobates* Kraatz, 1856, p. 133. Type species: *Ilyobates nigricollis* (Paykull).
*Gennadota* Casey, 1906, p. 308. Type species: *Gennadota puberula* (Casey). NEW SYNONYM.

For the characters of this genus refer to the key [L.H.].

*Amarochara* group

This group contains three genera—*Amarochara, Phloeopora,* and *Pachycerota.*

Frontal suture absent. Hypomera visible. Metasternal process exceptionally long; mesocoxae exceptionally widely separated for the Oxypodini (but only moderately so). No secondary sex characters noted.

**AMAROCHARA** Thomson. Figures 4A-D; 35F.

*Amarochara* Thomson, 1858, p. 32. Type species: *Amarochara umbrosara* Erichson.
*Nasirema* Casey, 1893, p. 307. Type species: *Nasirema humilis* Casey.
*Lasiochara* Ganglbauer, 1895, p. 99. Type species: *Lasiochara bonnairei* (Fauvel).

*Distribution.*—Bernhauer and Scheerpeltz (1926) listed 14 species in four subgenera: eight Palaearctic and three Nearctic species; two in Argentina, and one in East Africa. Scheerpeltz (1940) stated that there are nine Palaearctic species; Cameron (1939) added three northern Indian species. Four Nearctic species have been recorded (New England to Iowa).

*Habitat.*—In fallen leaves, moss, near fallen logs, in plant debris, in vicinity of water, and in some cases with ants.

*Diagnosis.*—The postgenal carina is absent; the pronotum is subequal in length and width or to one-sixth broader than long; the antennae are robust, segments 4-10 are short, strongly transverse, and incrassate. The mesosternal and metasternal (fig. 35F) processes are relatively broad (for the tribe); the intercoxal processes are subequal in length. The head and pronotum (and most other integuments) are smooth, shining, and non-reticulate. Tergites 3-5 are impressed, but not deeply. The species are small (1.8-2.5 mm. in length, 0.5 mm. in width). The aedeagus (fig. 4A-D) and spermatheca are distinctive.

Pronotum subequal in length and width ..... *umbrosa* (Europe), *fenyesi.*

Pronotum one-tenth to one-sixth broader than long
*humilis, inquilina, parviceps.*

**PHLOEOPORA** Erichson. Figures 3K, L; 36H.

*Phloeopora* Erichson, 1837, p. 311. Type species: *Phloeopora corticalis* Erichson.

*Distribution.*—Bernhauer and Scheerpeltz (1926) listed 46 species: nine Palaearctic, seven Nearctic, 23 Neotropical, one from Africa, one from Ceylon, two in Hawaii, two in Australia, one in the East Indies. Scheerpeltz reports 11 Palaearctic species, mostly European. Blackwelder (1944) lists the Neotropical species as follows: 12 in Guatemala and Mexico, four in the West Indies, three in Chile, two in Colombia, and two in Panama. Cameron (1939) added the Indian species, all from high altitudes.

Casey described seven species scattered from Pennsylvania to California. A European species, *corticalis,* was recorded (Bernhauer and Scheerpeltz, 1926) in Pennsylvania, but the specimens upon which the record was based do not belong to that species. Fenyes, in his collection, identified all western material as the European species, *testacea* Mannerheim, but in this I cannot agree. The occurrence of any European species of *Phloeopora* in the American fauna has yet to be demonstrated.

*Habitat.*—Subcortical.

*Diagnosis.*—Distinguished from the other two genera of this group by having four tergites (3-6) impressed (in this respect agreeing with *Calodera* and *Ilyobates*).

The integuments lack reticulation, and shining (*sublaevis*) or densely punctate, reticulate, and quite dull (other species). The punctation is sparse to dense; the pubescence is sparse to dense; the abdominal punctation is usually coarse, especially on the sternites. The postgenal carinae are absent (in the American species) or present (*corticalis*). The neck is broad. The antennae are short and compact; segments 4-10 are transverse and incrassate. The pronotum is subequal in length and width (*ferruginea, sublaevis*) or almost one-fifth broader than long (western species); the apex is moderately arcuatosinuate; it is broadest in front of the middle; the sides are nearly parallel in some species and more arcuate in others. The aedeagus is as in Figure 3K,L.

**PACHYCEROTA** Casey. Figures 4F, G; 35G.

*Pachycerota* Casey, 1906, p. 308. Type species: *Pachycerota duryi* Casey.

*Distribution*—A single species, known to range from Massachusetts to Iowa.

*Habitat*—Ant nests.

*Diagnosis—Pachycerota* is distinguished from *Amarochara* by the larger size (3.5 mm. in length; 0.9 mm. in width), distinctive form (more robust; the stout abdomen not much narrower than the elytra), distinctive integumental sculpture (a dense fine-meshed raised reticulation, intermixed with fine punctures—possibly umbilicate—which give the general effect of a fine beading), form of the pronotum (almost one-sixth broader than long, broadest subbasally; sides straight for a short distance from base and then converging arcuately to a marked degree to become more or less continuously arcuate with the apex; the apical width is less than that of the head), and presence of the postgenal carinae. The reticulation of the tergites is obsolescent. The head, pronotum and elytra have a dense clothing of short, fine, yellow hairs, and the abdomen a conspicuous vestiture of medium length, fine, yellow setae. The metasternum is shorter than in the other two genera of the group. Tergites 3-5 are impressed; the impressions are coarsely punctate. The parameres are distinctive (fig. 4F), the apical processes are short and incurved (not visible from the side).

### *Acrimea* group

The affinities of the genus *Acrimea* have not been determined. *Acrimea* is easily distinguished from other genera by its carinate mesosternum.

## **ACRIMEA** Casey

*Acrimea* Casey, 1911, p. 14. Type species: *Acrimea resecta* Casey.

*Distribution.*—Three species were recorded by Casey, one each from Washington, Oregon, and Idaho.

*Descriptive features.*—Length, 2.1-2.5 mm., moderately stout, 0.7 mm. broad. Coloration chestnut to light brown. Head a little broader than long. Frontal suture absent. Eyes medium sized. Sides of head slightly arcuate behind eyes. Postgenal carinae strong. Antennae short, segments 4-10 moderately incrassate; basal segment exceptionally short, little longer than 2, and shorter than 3 (the longest antennal segment) or at most subequal; 4 quadrate, 5-10 transverse. Pronotum transverse, one-half broader than long or nearly so. Hypomera not visible in lateral view. Elytra a little longer than pronotum; their apices bisinuate. Pronotal pubescence pattern B. (Figure 24B). Mesocoxae moderately widely separated; mesosternal process of medium width, tapering to subtruncate apex; metasternal process subtriangular; processes contiguous; m:i:m ratio—24:0:10. Mesosternum with complete carina. Tergites 3-5 deeply impressed; impressions moderately punctate; tergites asperately punctate. First segment of hind tarsi equal to 2 and 3 combined.

## Subtribe Dinardae

*Dinarda* group

A small group of limuloid or sublimuloid myrmecophiles seems to constitute a distinctive element in the tribe. Except by facies, the group is not easy to characterize or delimit. The limuloid body form is one in which the pronotum is broad and shield-like, and partially covers the base of the more or less deflexed head, and in which the abdomen is acuminate. Some of the Old World genera, such as *Dinarda,* have more extreme limuloid forms than do our genera.

The group is Holarctic and Neotropical and the species occur with such ants as *Formica, Aphaenogaster,* and *Lasius. Dinarda, Chitosa, Dinusa,* and *Homoeusa* are Palaearctic genera; *Myrmobiota, Decusa,* and *Losiusa* are Nearctic; *Euthorax* is Nearctic and Neotropical; *Fauvelia* and *Ecitodulus* are Neotropical.

Inasmuch as the genera of this group are rather widely scattered in the general key, a supplementary key is provided below for the Nearctic genera.

1. Antennae 10 segmented ..... *Decusa* Casey
   Antennae 11 segmented ..... 2
2. Pronotum only one-tenth broader than long; dorsum without lateral margin; hypomera not delimited ..... *Losiusa,* new genus
   Pronotum at least one-third broader than long; dorsum margined laterally, hypomera delimited ..... 3
3. Pronotum at least three-fourths broader than long; hypomera not visible from side; antennae long, slender, and only slightly incrassate; all antennal segments elongated; metasternum very short ... *Euthorax* Solier
   Pronotum one-third to one-half broader than long; hypomera visible from side; antennae claviform, strongly incrassate, segments 5-10 strongly transverse; metasternum of moderate length ..... *Myrmobiota* Casey

**MYRMOBIOTA** Casey. Figure 4L, M.

*Myrmobiota* Casey, 1893, p. 594. Type species: *Myrmobiota crassicornis* Casey.
*Soliusa* Casey, 1900, p. 53. Type species: *Soliusa crinitula* Casey.

*Distribution.*—Three species in the Nearctic Region (one in New England, one in the Middle West, one in California).

It has not been easy to decide whether to place the American species in *Homoeusa* Kraatz or in the endemic American genus *Myrmobiota* Casey. Wasmann and Casey participated in a mildly caustic debate in the literature over this point. There is little doubt in my mind that the American species are different enough from

*Homoeusa acuminata* Maerkel, the type species, to justify distinct generic status, but since I have not studied the eastern palaearctic species (Asia, Japan), I am uncertain about the range of variation within *Homoeusa.* A comparative study of all the species of this group throughout the Holarctic Region may result in combining *Myrmobiota* with *Homoeusa.*

The American species of *Myrmobiota* contrast with *Homoeusa acuminata* as follows:

Pronotum one-third to one-half broader than long; hypomera visible (completely in some species); pronotal base moderately arcuate; mesosternal process relatively short, metasternal process short but evident, isthmus long; basal segment of hind tarsi equal in length to second, but only three-fifths as long as fifth; parameres with short apical processes; tergal impressions absent or shallow ..... *Myrmobiota* Casey

Pronotum three-fifths to two-thirds broader than long; hypomera not visible; pronotal base feebly arcuate; mesosternal process very long, metasternal process almost absent, isthmus short; basal segment of hind tarsi almost twice as long as second and subequal to fifth; parameres with long apical processes; tergal impressions deep, smooth
*Homoeusa acuminata* Maerkel

*Descriptive features.*—Length, 3 mm. Sublimuloid in form; abdomen narrower than elytra and strongly acuminate (seventh tergite scarcely three-fifths as broad as third). Hirsute species, with dense short pubescence; abdomen with rows of long fine setae. Frontal suture absent. Postgenal carinae present. Antennae claviform; segments 1-3 moderately long (three only a little longer than broad); 4 subquadrate, 5-10 transverse and strongly incrassate (10 about two-thirds broader than 5); terminal segment with pair of spherical sensilla. Pronotum strongly convex and feebly explanate; apex straight; broadest about midpoint, sides strongly arcuate in front and slightly to moderately convergent basally; base arcuate, slightly sinuate laterally. Mesosternal process slender and spine-like but not attaining the posterior margins of the middle coxae; metasternal process short and rounded; isthmus present. Tergites 3-4 slightly impressed in *crassicornis,* not at all in *crinitula.* Aedeagus as in Figure 4L, M.

The species may be distinguished as follows:

Pronotum two-fifths to one-half broader than long; pronotal sides not converging much toward base; tergites not impressed (New England, New York) ..... *crinitula* Casey

Pronotum one-third to two-fifths broader than long; pronotal sides converging moderately toward base; tergites 3,4 slightly impressed (Iowa, Illinois) ..... *crassicornis* Casey

## LOSIUSA, new genus

*Type species.—Losiusa angusticollis,* new species.

Distinguished from *Myrmobiota* by its distinctive pronotum

which is only one-tenth broader than long and lacks a lateral margin (the very convex dorsum is rounded laterally and is continuous with the almost vertical hypomera which is not delimited). *Losiusa* differs in being non-limuloid; its distinctive pronotum is actually narrower than the elytra.

*Descriptive features.*—Head transverse, about one-fifth broader than long. Frontal suture absent. Postgenal carinae present. Eyes medium sized, and facets of medium coarseness. Antennae much as in *Myrmobiota* (robust, claviform, segments cylindrical; three basal segments only moderately elongated, 4 subquadrate, 5-10 transverse and strongly incrassate). Pronotum one-tenth broader than long; strongly convex; surface slightly explanate only near basal angles; apex broadly but not markedly arcuate; broadest near midpoint; sides only slightly sinuate laterally, basal angles distinct. Pronotum narrower than elytra. Elytra subequal in length to pronotum; elytral sides feebly and evenly arcuate, apices bisinuate. Hind tarsi about two-thirds as long as tibia; segments with following relative lengths—10:6:6:6:16. Abdomen robust, sternites strongly convex; only third tergite slightly impressed.

**Losiusa angusticollis,** new species

*Holotype.*—Forest Hills, Massachusetts, collected by F. X. Williams, from a nest of ants. Deposited in Field Museum of Natural History, Chicago, Illinois.

*Description.*—Length 3 mm. Coloration rufoflavate. Head reticulated, with sparse fine punctation and short pubescence. Pronotum with a close-meshed reticulation, medium-dense asperate punctation, and short pubescence. Elytra with coarse asperate punctation and faint reticulation (surface with general appearance of being broadly pitted). Tergites with relatively sparse punctation; 3 and 4 with coarse-meshed reticulation, others with fine, close sculpture of fine longitudinal lines. Sternites with moderately dense asperate punctation. Abdomen clothed with short to moderately long fine setae (shorter on basal segments and becoming longer on apical segments). Antennae with segments of following relative lengths—12:10:11:8:6:6:6:7:8:8:16.

**DECUSA** Casey

*Decusa* Casey, 1900, p. 54. Type species: *Decusa expansa* LeConte.

*Distribution.*—A single species occurs in the eastern United States (District of Columbia to Indiana).

*Diagnosis.*—Readily distinguished from the other genera of the group by its 10 segmented antennae. The body form is strongly limuloid, with the very broad pronotum (four-fifths broader than long) partially covering the somewhat deflexed head. The thorax is dorsoventrally thickened and the metasternum unusually convex.

*Descriptive features.*—Head short and moderately transverse, somewhat deflexed. Eyes small, with medium-coarse facets. Antennae 10 segmented, short, claviform

(segments 1-3 slightly elongated but relatively short; 4 subquadrate; 5-9 transverse and strongly incrassate). Pronotum four-fifths broader than long and broader than elytra; form similar to that of *Myrmobiota* (broadest behind midpoint, sides strongly arcuate, converging strongly in front and continuous with apex; base bisinuate). Integuments, as rule, without reticulation; punctation of pronotum and elytra asperate; head, pronotum, and elytra not setose, but with short, moderately dense pubescence. Strongly acuminate abdomen bristling with long setae. Tarsi short. Tergites not impressed; 3-7 tend to increase in length (5 and 6 subequal), so that 7 almost twice as long as 3. Length, 2.3-2.8 mm. Coloration rufoflavate.

**EUTHORAX** Solier. Figures 4K, N; 35K.

*Euthorax* Solier, 1849, p. 345. Type species: *Euthorax ruficornis* Solier.
*Myrmecochara* Kraatz, 1857, p. 40. Type species: *Myrmecochara pictipennis* Kraatz.
*Eurynotida* Casey, 1906, p. 343. Type species: *Eurynotida ornata* Casey.

*Distribution.*—An American genus with the greatest concentration of species (10) in the Neotropical Region. *Euthorax* may occur with ants throughout the Neotropical Region and extend into the Nearctic Region to a limited extent. Most of the Nearctic records are from the southwest (Arizona, Texas, Louisiana), but one species was recorded from the District of Columbia and one from Colorado.

*Diagnosis.*—*Euthorax* is distinguished by the following combination of characters: The pronotum is very broad and convex (from three-fourths broader than long to twice as broad); the hypomera are not visible from the side; the antennae are longer, more slender and less incrassate than in the other genera (segments 1-5 usually elongated, 6-10 about as broad as long, 4-10 scarcely incrassate); the elytra are relatively short (shorter than pronotum), each elytron is one-fourth broader at the apex than the base; the metasternum is extremely short, and its process (fig. 35K) very short; the integuments generally have a vestiture of dense, silky pubescence.

*Descriptive features.*—Length, 2.0-2.5mm. Integuments smooth, not reticulate; finely punctulate throughout. Dorsum sparsely setose (setae generally restricted to pronotal, elytral, and tergal borders); sternites with numerous long setae and dense pubescence. Tergites 3, 4, shallowly impressed; tergite 7 longer than others. Seventh sternite of male with emarginate apex and vestiture of exceptionally long, fine setae.

## Subtribe Meoticae

### *Meotica* group

This is a group of six genera as herein constituted; it may contain genera not known to me. These genera have not been brought

together before because of the arbitrary system of assigning genera to tribes by tarsal segmentation. *Meotica* and *Apimela,* having 5,5,5 tarsal segmentation, were placed in the Aleocharini (Oxypodae and Caloderae, respectively), while *Alisalia, Bamona, Leptobamona,* and *Gyronycha* were assigned to the Hygronomini because of 4,4,4 segmented tarsi (*Gyronycha* has 5,5,5). This is a noteworthy example of how a poor system can obscure relationships.

It seems that the group may be primarily holarctic in distribution with good representation *(Bamona, Apimela, Gyronycha)* in the Neotropical Region. *Meotica* is a Palaearctic genus that has been reported from Maine (probably an introduction), Guatemala, and Argentina. The generic placement of the two Neotropical species needs confirmation. Bernhauer's *Meotica bistriata* belongs to *Alisalia. Apimela* occurs in the Palaearctic Region, our western states (California, Nevada), as well as Argentina and Brazil. The Ceylonese record of *Apimela* should be confirmed. The ranges now known for the Meoticae must be considered tentative in view of the small size of the species and the little study devoted to the group.

*Group Characteristics.*—Size, 1.8-4.2 mm. Form slender, body dorsoventrally compressed, sides subparallel (except *Bamona*). Frontal suture absent. Postgenal carinae present or absent. Narrow neck present (about one-third head width). Antennae variable; terminal segment always bearing pair of large coeloconic sensilla (fig. 27G), visible only in slide preparations. Middle coxae narrowly separated; mesosternal process always very slender and very acute (not extending beyond middle of mesocoxae); metasternal process usually (but not always) very short (if present at all); mesocoxal acetabula usually weakly margined medially (except *Gyronycha*). Pronotum variable: subequal in length and width, and up to one-sixth broader than long. Hypomera always fully visible. Tarsi 5,5,5 or 4,4,4 segmented. Tarsal claws falcate (except in *Meotica*). Tergites 3-5 impressed (3-6 in *Leptobamona*). Aedeagus relatively short (figs. 5C, E, G).

**MEOTICA** Mulsant and Rey. Figures 5A-C; 36C; 37G; 38D.

*Meotica* Mulsant and Rey, 1873a, p. 176. Type species: *Meotica exilis* Erichson (through synonymy with *parasita* Mulsant and Rey).

*Distribution.*—Scheerpeltz (1940) states that there are 13 species in Europe and North Africa and two in the Transcaspian area. Bernhauer and Scheerpeltz (1926) record one species in Hawaii, one in Guatemala, and three in Argentina; these require confirmation. The record of *Meotica exilis* Erichson (a European species) in Maine (E. Machias, and Wales) is probably a valid one. I examined the specimens in the Bernhauer collection on which the record was based and found that they do belong to *Meotica,* and are probably *exilis.* These specimens probably represent an introduction. An

endemic species, *bistriata* Bernhauer, of our eastern states belongs to *Alisalia*. There is no evidence that endemic species of *Meotica* occur in North America.

*Characteristics.*—Minute, slender species (about 1.8 mm. in length and 0.4 mm. in width), light reddish brown in color. Head and pronotum slightly narrower than elytra and abdomen but general appearance one of uniform width, with parallel sides. Head subovate in outline, neck very short, gular sutures subparallel. Antennae moderately long, segments 4-10 transverse, uniformly incrassate. Pronotum slightly less than one-fifth broader than long. Mesocoxal acetabula not or feebly margined, metasternal process (fig. 36C) very short and scarcely delimited. Metasternum little longer than mesosternum and no longer than middle coxae. Tarsi 5,5,5 segmented and very short; claws simple. Four basal segments of hind tarsi subequal in length, fifth twice as long as fourth. Aedeagus as in Figure 5A-C.

**ALISALIA** Casey. Figure 5D-E.

*Alisalia* Casey, 1911, p. 219. Type species: *Alisalia brevipennis* Casey.

*Distribution.*—Eight named Nearctic species scattered from New England to California; two species recorded from Haiti.

*Characteristics.*—Closely resembling *Meotica* in form and size, but distinguished by having 4,4,4 segmented tarsi and falcate tarsal claws.

**GYRONYCHA** Casey. Figures 27I; 36J.

*Gyronycha* Casey, 1893, p. 372. Type species: *Gyronycha valens* Casey.

*Distribution.*—Nearctic Region (six Casey species in various localities in California, Texas, North Carolina, New York), and Neotropical Region (two species—Guatemala and Argentina).

*Diagnosis.*—The species of this genus are distinguished by: the relatively large size (2.5-4.2 mm. in length, 0.7 mm. in width); subquadrate pronotum; the elytra being longer than the pronotum; the long stout antennae with all segments elongated; the seventh tergite more than one-half longer than the sixth; the metasternum being exceptionally long (one-half as long as mesocoxae); the mesocoxal acetabula being margined; the male having a caudally directed tubercle arising from the margin of the third tergite, and a low median carina near base of seventh tergite. The tarsal claws are sickle-shaped (fig. 27I).

*Descriptive features.*—Head, pronotum and elytra densely pubescent; vestiture of elytra appearing grizzled. Tergal impressions glabrous, shining; tergites otherwise with sparse recumbent hairs. Tarsi although reported to be 4,4,4 segmented are in most instances 5,5,5. Admittedly, some species (or specimens) (fig. 27I), may have the fourth and fifth segments more or less fused.

**APIMELA** Mulsant and Rey. Figures 5F,G; 24K; 25E,F; 27G; 37F.

*Apimela* Mulsant and Rey, 1874, p. 36. Type species: *Apimela macella* Erichson.
*Gyronychina* Casey, 1911, p. 218. Fenyes, 1920, p. 319; Bernhauer and Scheerpeltz, 1926, p. 727. Type species: *Gyronychina attenuata* Casey.
*Gampsonycha* Bernhauer, 1912b, p. 109. Type species: *Gampsonycha pallens* Mulsant and Rey.

*Distribution.*—Five species in Palaearctic Region (Scheerpeltz 1940), one in Ceylon, three in California and Nevada, and three in Argentina and Brazil.

*Diagnosis.*—Small, slender, compressed species (2 mm. in length; 0.5 mm. in width) that bear a resemblance to *Meotica* but are evidently most closely allied to *Gyronycha* (as indicated by the elongated elytra and metasternum, and by the distinctive form of the spermatheca (fig. 25E). *Apimela* is distinguished from *Gyronycha* by the smaller size, more slender form, transverse pronotum, and incrassate antennae (with segments 4-10 transverse). *Apimela* may be differentiated from *Meotica* and *Alisalia*, with which it is more likely to be confused, by the elongated metasternum and elytra, and by the very different spermatheca.

**BAMONA** Sharp. Figure 24N.

*Bamona* Sharp, 1883, p. 287. Type species: *Bamona gracilis* Sharp.

*Distribution.*—Probably restricted to the New World. Eight species, including the type species, have been recorded from the Neotropical Region, and three from North America (North Carolina, California).

*Diagnosis.*—Small, slender species less than 2.5 mm. in length, which are distinguished from the other member of the group by their body form (head and pronotum somewhat narrower than elytra and abdomen so that the sides of body do not appear parallel). The head is as broad as the pronotum, and has a narrow, short (but conspicuous) neck, about one-half the head width. The antennae are moderate in length, with the segments moderately robust, and compactly arranged; segments 5-10 are feebly transverse, and very slightly incrassate. The pronotum is very slightly longer than broad; it is broadest subapically, with the sides converging in front and only slightly behind. The subapical portion is about two-thirds the basal width, and about as broad as the neck. The pronotum is only about two-thirds as broad as the elytra. The tarsal claws are

falcate. The tarsi are 4,4,4 segmented. Tergites 3-5 are impressed and the impressions glabrous.

**LEPTOBAMONA** Casey.

*Leptobamona* Casey, 1911, p. 216. Type species: *Leptobamona pertenuis* Casey.

*Distribution.*—A single species was recorded from New Jersey.

*Diagnosis.*—This genus is distinguished from its close allies by having four tergites (3-6) deeply impressed and by having the impressions coarsely punctate.

*Descriptive features.*—Length, 1.6 mm.; width, 0.28-0.35 mm.; very small and slender. Head a little longer than broad; sides subparallel, form subquadrate; eyes medium-sized (their length less than distance from base of head); basal angles obsolescent, base oblique on each side to the slender neck (about one-third as broad as head). Pronotum one-eighth longer than broad; pronotal pubescence pattern C (as in fig. 24F-H). Elytra more than one-fifth longer than pronotum. Antennal segments 5-10 transverse, incrassate. Metasternum long.

## Subtribe Blepharhymeni

**BLEPHARHYMENUS** Solier. Figure 29A, B.

*Blepharhymenus* Solier, 1849, p. 339. Type species: *Blepharhymenus sulcicollis* Solier.

*Echidnoglossa* Wollaston, 1864, p. 530. Type species: *Echidnoglossa constricta* Wollaston.

*Colusa* Casey, 1885, p. 288. Type species: *Colusa gracilis* Casey.

The following description of *Blepharhymenus* was found among some of Dr. Seevers' notes [L.H.]:

Length, 2-4.2 mm. Form distinctive: Head and pronotum subequal in width (the former may be slightly broader) (fig. 29A); elytra at least one-half broader than pronotum as well as base of abdomen; abdomen thickens (dorsoventrally as well as laterally) beyond the fifth segment to become almost as wide as elytra.

Pronotal pubescence type E.

Abdomen very much like that of many *Tachyusa:* tergites 3-5 deeply impressed and with very coarse punctures in impressions; intervals between punctures ridge-like; with a strong median carina (fig. 29B).

## Subtribe Tachyusae

The genera of this group have always been closely associated with *Falagria* and allies, and have been placed in the tribe Myrmedoniini because of their 4,5,5 segmented tarsi. Bernhauer and

Scheerpeltz (1926) do not separate the Tachyusae from the Falagriini and group them together as the subtribe Falagriae of the Myrmedoniini. In my opinion, the specialized parameres of the Falagriini clearly set them apart from the Tachyusae (compare figs. 5J-O, 6 and 17, 18A-D). In my revised tribal system, in which the tribe Myrmedoniini is a much more restricted taxon and in which the Falagriini are accorded tribal status, the Tachyusae are assigned to the Oxypodini. If it were not for their four-segmented anterior tarsi, many of the Tachyusae would be difficult to separate from the Oxypodae. I do not consider the tarsal character sufficient ground for separation. *Gnypeta,* which is probably the most generalized genus of Tachyusae, is particularly close to some Oxypodae.

As for the precedent of classifying the Tachyusae with the Falagriae, I believe it to be unwarranted. The Tachyusae lack the following specialized features of the Falagriini: Condylite velum separated from the paramerite velum (figs. 17A, C, E, G, I; 18A); pronotum much narrower at base than apex and with a distinct medium sulcus; peritremes enlarged, and contiguous with (or fused to) the elongated prosternum; procoxal cavities "closed" by peritremes, prosternum, and inflexed hypomera.

The Tachyusae are distinguished from other Oxypodini by 4,5,5 segmented tarsi, and by a character of the median lobe of aedeagus (fig. 5J, L, N; 6C, E).

*Descriptive features.*—Frontal suture absent; terminal antennal segment without coeloconic sensilla; mesocoxae moderately widely separated, and intercoxal processes moderately broad (relatively broad for the Oxypodini); pronotal pubescence directed caudad (except in *Teliusa*).

*Distribution.*—The subtribe may prove to be cosmopolitan.

**GNYPETA** Thomson. Figures, 5 J,K; 24F; 36I.

*Gnypeta* Thomson, 1858, p. 33. Type species: *Gnypeta carbonaria* Mannerheim (through synonymy with *labalis* Erichson).
*Euliusa* Casey, 1906, p. 215. Type species: *Euliusa lucens* Bernhauer.
*Gnypetoma* Casey, 1906, p. 196. Type species: *Gnypetoma baltifera* LeConte.

*Distribution.*—The genus is evidently widespread. Forty Nearctic species have been named (33 in the western states); eight have been reported in the Palaearctic Region, 11 in the Neotropical Region, and a scattering of species in Ceylon, Formosa, Sumatra, and Africa.

Probably the most generalized of the Tachyusae, *Gnypeta* does

not differ appreciably from some Oxypodae, such as *Ocalea,* except in the 4,5,5 segmented tarsi and an aedeagal character (fig. 5K).

*Descriptive features.*—Length, 2.8-3 mm.; moderately stout species with broad elytra and abdomen (elytra up to two-fifths broader than pronotum). Antennae long, slender, and feebly incrassate; segments 1-6 elongated; 7-10 subquadrate or slightly elongated. Postgenal carinae incomplete or absent. Pronotum one-tenth to one-fifth broader than long (usually less than one-sixth); sides subparallel (rounded toward apex), base feebly sinuate, apex slightly arcuate; or broadest in front of middle, sides converging sinuately behind middle, and base and apex arcuate. Both intercoxal processes long; mesosternal process moderately broad, attaining middle of coxae, its apex truncate; metasternal process broadly rounded, somewhat declivous. Legs slender. Hind tarsi three-fourths as long as tibiae; segments 1-4 decreasing in length, first shorter than fifth. Tergites 3-5 deeply impressed; impressions with coarse deep punctures, resulting in ridges being present, but never with median carina. Sternites 3-5 impressed at base and coarsely punctured. Integuments finely punctulate and pubescent (not reticulate). Pubescence may be moderately long and silky.

## TACHYUSA Erichson. Figures 6A-E; 35C.

*Tachyusa* Erichson, 1837, p. 307. Type species: *Tachyusa constricta* Erichson, (Opinion 600, Internation Commission on Zoological Nomenclature).

*Distribution.*—Taken in the broad sense of Bernhauer and Scheerpeltz (1926), with six subgenera, *Tachyusa* is almost cosmopolitan. The genus should probably be subdivided. *Tachyusa* (*sensu stricto*), the only subgenus in North America, has been recorded also in the Palaearctic Region, Oriental Region, Neotropical Region, Africa, and New Guinea. Twenty-one names have been proposed for Nearctic species. The genus has been reported from Massachusetts to California but not from the northwestern states, the southwestern states (except Texas) or the southeastern states (south of North Carolina).

*Diagnosis.*—Species of *Tachyusa* are easily distinguished by the abdomen which has the deep impressions of tergites 3-5 carinate (the coarsely punctate impressions, with ridge-like intervals between punctures, have a median carina that joins a raised basal line). The abdomen appears somewhat claviform, with very narrow base (no broader than pronotum, and even narrower) and with segments 5-7 swollen (relatively broad as well as thickened dorsoventrally). The carinate condition of the impressions is very similar to that of *Blepharhymenus;* whether or not it connotes relationship is difficult to say. Some species of *Tachyusa* are very slender.

## TRACHYOTA Casey

*Trachyota* Casey, 1906, p. 190. Type species: *Trachyota cavipennis* (LeConte).

*Distribution.*—An endemic genus, with two species reported from California.

*Diagnosis.*—Easily distinguished from other genera of the subtribe by the distinctive elytra, which are about equal to the pronotum in length and have a submarginal longitudinal impression extending almost the length of each elytron. Compared to the convex pronotum, the elytra are flat; their apices are feebly bisinuate. Wings are probably absent. The antennae are elongated (all segments longer than broad), with segments 1-4 slender, 5-10 feebly incrassate. The pronotum is subquadrate, its apex is straight, and sides and base moderately arcuate. The intercoxal processes are moderately broad (m:i:m ratio—12:4:18). The mesosternal process is rounded, the metasternal process truncate. The tergal impressions are smooth, shining, and almost impunctate. The third tergite has a broad smooth eminence. The seventh tergite has a moderately long median spine. Whether or not the above eminences are characteristic of the male only could not be determined. The length is 2.8-3.0mm.

## **TELIUSA** Casey

*Teliusa* Casey, 1906, p. 203. Type species: *Teliusa alutacea* Casey.

*Distribution.*—An endemic genus, with species recorded in Texas.

*Diagnosis.*—Among the Tachyusae, *Teliusa* may be recognized by its distinctive pronotal pubescence pattern (type C, fig. 24G), with the hairs in the midline directed caudad in the apical half and cephalad in basal half. The head has no neck.

## **GNYPETELLA** Casey

*Gnypetella* Casey, 1906, p. 214. Type species: *Gnypetella laticeps* (Casey).

*Distribution.*—An endemic genus with two species reported from California.

*Diagnosis.*—In appearance very similar to *Falagriota* Casey (of the Falagriini) but distinguished by: the absence of any trace of pronotal sulcus; the base of the pronotum which is more than four-fifths the pronotal width; the transverse antennal segments 5-10; and (presumably) by the parameres. From other Tachyusae they are identified by: The small size and slender form; the subquadrate head, with the sides scarcely converging behind; the narrow neck (only one-third head width); the relatively short antennae with

segments 5-10 transverse; the narrowly separated mesocoxae; the relatively short metasternal process (no longer than isthmus) (m:i:m ratio—10:4:4); and the subparallel sides of the abdomen.

**MERONERA** Sharp. Figures 6F,G; 36D.

*Meronera* Sharp, 1887, p. 779. Type species: *Meronera venustula* Erichson.

*Distribution.*—Seven species in the Neotropical Region, and one widespread species, *venustula* Erichson, in North America.

*Diagnosis.*—*Meronera* is not unlike a small falagriine in appearance, especially since it has a narrow neck, but it is distinguished by having a non-sulcate pronotum, non-falagriine parameres, generalized procoxal region (prosternum not elongated; peritremes very small; and hypomera not inflexed).

*Descriptive features.*—Small species, 1.8-2.2 mm. in length. Head transverse; sides behind medium sized eyes arcuate to straight base, basal angles obsolete; neck about one-third as broad as head; vertex umbilicately punctate. Antennae elongated, reaching middle of elytra, with all segments elongated (possibly a few quadrate); terminal segment longer than nine and ten combined. Pronotum very slightly broader than long; broadest subapically, sides converging to arcuate base which is four-fifths as broad as maximum width; dorsum densely, umbilicately punctate. Elytra somewhat broader than pronotum and one-sixth longer. Tergites 3-5 slightly impressed; impressions not punctate. Mesocoxae moderately widely separated; m:i:m ratio—6:4:14; mesosternal process short, broad, truncate; metasternal process broad and long, and vaguely delimited apically. Aedeagus as in Figures 6F,G.

**BRACHYUSA** Mulsant and Rey. Figures 5L,M,O; 29C-F.

*Brachyusa* Mulsant and Rey, 1874, p. 38. Type species: *Brachyusa concolor* (Erichson).

*Tetralina* Casey, 1911, p. 224. Type species: *Tetralina helenae* Casey. NEW SYNONYM.

The Nearctic species of this genus were assigned by Casey to *Tetralina*. *Brachyusa* has not heretofore been recorded in the Nearctic Region. Because Casey incorrectly determined the tarsal formula of *Tetralina* as 4,4,4, that genus has been placed in the Hygronomini (Bernhauer and Scheerpeltz, 1926, p. 522). There is no doubt, though, that *Tetralina* is a synonym of *Brachyusa,* and that the tarsi are 4,5,5. *Brachyusa,* too, in my opinion, has been placed incorrectly. Bernhauer and Scheerpeltz (1926, p. 589) assign *Brachyusa* to the subtribe Athetae (Myrmedoniini). The median lobe of the aedeagus is not of the athetine type but shows characteristics of the Tachyusae. It seems not unlikely that the record of *raptoria* Wollaston (*Ischnopoda,* in Bernhauer and Scheerpeltz, 1926, p. 583) in Colorado is the record of a species of *Brachyusa.*

*Distribution.*—In addition to the four Nearctic species herein added to *Brachyusa,* there is a single Palaearctic species (*concolor*).

*Diagnosis.—Brachyusa* may be identified by the peculiarly deflexed clypeus (fig. 29C) and by fine pale pubescence (nearly pilose). The pronotum is one-fifth broader than long; the elytra are almost one-fourth longer than broad. Antennal segments 4-10 are transverse; 7-10 are quadrate to slightly elongated. The aedeagus is as in Figure 5L-N.

*Species characteristics.*—Antennal segments 4-10 with following proportions—width (length):

| (Segment) | 4 | 5 | 6 | 7 | 8 | 9 | 10 |
|---|---|---|---|---|---|---|---|
| *helenae* | 6(5) | 6(5) | 6(5) | 5(5) | 6(6) | 6(6.5) | 6(7) |
| *filitarsis* | 8(4.5) | 6(4.5) | 7(5) | 7(6) | 6(5) | 7(5) | 7(6) |
| new species | 6(4.5) | 6(5) | 6(5) | 6(5) | 6(6) | 5(6) | 6(7) |
| *alutacea* | 8(5) | 8(6) | 8(6) | 8(6) | 7(6) | 8(7) | 8(8) |

Relative lengths of segments of hind tarsi:

| (Segment) | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|
| *helenae* | 20 | 8 | 6 | 6 | 8 |
| *filitarsis* | 16 | 8 | 6 | 6 | 6 |
| new species | 18 | 10 | 6 | 6 | 8 |
| *alutacea* | 24 | 12 | 8 | 8 | 9 |

### A Key to the Species of *Brachyusa*

1. Fourth antennal segment longer than fifth and subsequent segments; segments 4-10 broader than long; terminal segment of hind tarsi subequal in length to 3 or 4 ..... *filitarsis* Casey

   Fourth antennal segment not longer than fifth segment (and not longer than more than one of subsequent segments); at least one of segments 4-10 quadrate and several usually a little longer than broad; terminal segment of hind tarsi longer than either 3 or 4 ..... 2

2. First segment of hind tarsi more than twice as long as any other segment *helenae* Casey

   First segment of hind tarsi not more than twice as long as any other segment ..... 3

3. Pronotal pubescence pattern C (figs. 24F-H); hairs very short and dense new species

   Pronotal pubescence pattern A (fig. 24A), but with some hairs at base curving outward ..... *alutacea* Casey

## Tribe COROTOCINI

Corotocini Fenyes, 1918, p. 61; Seevers, 1957, p. 63.
Corotocae (subtribe of Hygronomini) Bernhauer and Scheerpeltz, 1926, p. 518.

*Diagnosis.*—The mentum and submentum are fused (no suture present). The terminal antennal segment has a pair of coeloconic sensilla. The mesocoxae are not set in margined acetabula. The hind coxae are triangular. The abdomen is usually, but not always, physogastric. The tarsi are 5 segmented.

### EBURNIOGASTER Seevers

*Eburniogaster* Seevers, 1938, p. 424. Type species: *Eburniogaster termitocola* Seevers.

For a discussion and description of this genus see Seevers, 1957, p. 135 [L. H.]

### TERMITONIDIA Seevers

*Termitonidia* Seevers, 1938, p. 428. Type species: *Termitonidia lunata* Seevers.

For a discussion and description of this genus see Seevers, 1957, p. 136 [L. H.].

## Tribe ATHETINI

Athetae Casey, 1910, p. 2 (subtribe of Myrmedoniini); Fenyes 1918, p. 19 (group of Myrmedoniini); Bernhauer and Scheerpeltz, 1926, p. 589 (subtribe of Myrmedoniini).

Athetini Fenyes, 1921a, p. 34 (as substitute for Myrmedoniini); Borgmeier, 1949, p. 110 (in above sense).

Ischnopodini Hatch, 1957, p. 141 (=Myrmedoniini).

Fenyes, (1921a) in substituting Athetini for Myrmedoniini, stated "The largest tribe the Athetini (type *Atheta* Thomson) contains to a certain extent the elements of the time-honored tribe Myrmedoniini, but as *Myrmedonia* Erichson is neither the largest, nor the most representative, genus of the tribe, it seems proper to substitute for it Athetini, this latter name suggesting the scope of the tribe more appropriately."

In substituting one name for another, Fenyes made no change in the system; his tribe was as heterogeneous as before. The tribe Athetini of this monograph is comparable to Bernhauer and Scheerpeltz' subtribe Athetae.

The tribe Athetini is the largest of the major groups of Aleocharinae, numbers thousands of species and occurs in every zoogeographic region. Dominant predators in many microhabitats, they occur in great abundance in decaying animal and vegetable materials—carcasses, dung, decaying fungi, rotting fruit, and vegetation. They may occupy such habitats as flowers, stream and pond

shores, bird and mammal nests, and ant nests. Without doubt, the athetines are among the most successful of small beetles.

The taxonomy of the tribe is the most difficult in the Aleocharinae, largely because of the seemingly endless number of species and the close superficial resemblance to one another. Some genera are distinctive in appearance, but many species groups of the large *Atheta* complex are difficult to associate with generic names, if one lacks either experience or an unusually perceptive awareness for facies differences.

*Tribal characteristics.*—Because of the generalized characteristics of the Athetini it is difficult to diagnose and delimit the group. After considerable study I have decided that the median lobe of the aedeagus offers the most promising characters. The compressor plate of the median lobe is an oval sclerite (not elongated as in the Oxypodini), and in front of the plate (on the morphologically dorsal surface) there is a transverse strip that I have designated the "athetine bridge" (fig. 10M). Whether or not it is restricted to the Athetini, only a detailed comparative study can reveal. It seems to be limited to this group, but I am not certain.

The Athetini have the following characteristics which may be subject to modification in isolated genera or groups of species.

Antennae 11-segmented (all). Maxillary palpi 4 segmented (all). Tarsi 4,5,5 segmented (all). Labial palpi 3 segmented (occasional fusion of segments). Frontal suture absent (all). Coeloconic antennal sensilla absent (all). Head capsule generalized and without ornamentation (exceptions very rare). Mouthparts generalized. Galea and lacinia of moderate length; length of galea shorter than its distance from base of cardo. Head without neck. Pronotum broader than long; hypomera visible or not. Pronotum very rarely impressed. Mesocoxae narrowly separated (rarely moderately widely separated); intercoxal processes highly variable. Procoxal region generalized. Abdomen generalized in form; parallel-sided or with apex slightly acuminate. Apical border eighth male tergite subject to great variation. Parameres highly variable; condylite velum never separated from paramerite velum; velum striated.

In spite of an apparent uniformity of structural pattern, the Athetini have speciated to a remarkable degree. A relatively few parts of the body are subject to extensive variation, and it is combinations of these variations that reflect species differentiation. Many slight variations of nearly all parts of the body are often difficult to analyze. The following are generally of greatest diagnostic value: The proportions of the antennal segments; size of the eyes and their facets; proportions of the head, pronotum, and elytra; ground sculpture of the integuments; convexity of the pronotum, and condition of the hypomera (visible or not); pubescence patterns of the pronotum and elytra; elytral size and emargination of the apices; relative lengths of the mesosternal process, isthmus, and metasternal process (m:i:m ratio); length of the metasternum behind the

coxae; impressions of the abdominal tergites; modifications of the eighth male tergite and sternites; modifications of the female abdomen; form of the spermatheca; characters of the median lobe and parameres of the aedeagus; and chaetotaxy.

## Generic Classification of the Athetini

The nature of the genus within the Athetini is doubtless the most thorny problem in the taxonomy of the Aleocharinae. The numerous opinions on the status of various species groups attest to the inherent difficulties. Thomson, Rey, and Casey subdivided the vast *Atheta* complex into a number of genera, but Ganglbauer, Bernhauer, Scheerpeltz, Fenyes, and Cameron regarded these taxa as subgenera of *Atheta.* As the latter workers have been the cataloguers of the Aleocharinae (Genera Insectorum, Coleopterorum catalogus, etc.) their views have prevailed. Many inconsistencies in their classification system will be brought out later. In this monograph I shall return to a system which, more nearly in the tradition of Thomson, Rey, and Casey, recognizes a reasonably large number of athetine genera. As an introduction to the classification of the tribe, a brief history of the ideas on this subject may be reviewed.

### *Resumé of practices followed in the classification of* Atheta

Erichson (1837, 1839) did not use a type species concept, and he placed a large number of species in *Homalota* Mannerheim, 1831 (a genus of Gyrophaenini). This precedent unfortunately influenced workers until the end of the nineteenth century. Thomson (1859-1867) attempted to correct Erichson's practice and properly restricted *Homalota* to the species *plana.* He proposed *Atheta* and a dozen other genera to receive European species of the *Atheta* complex. If Thomson's views had been more widely adopted and expanded there is less likelihood that *Atheta* of later authors would have become so large and unwieldy. Sharp (1869) recognized *Homalota* in the Erichsonian sense in his revision of the British species.

Mulsant and Rey (1873, 1873a, 1874): Rey (the staphylinid specialist) was an excellent taxonomist and offered numerous positive suggestions, but unwisely returned to an Erichsonian view of *Homalota,* instead of following Thomson. Considering that Mulsant and Rey proposed a substantial number of athetine genera, this position is difficult to understand. Ganglbauer (1895) in his treatment of the Staphylinidae of Middle Europe was no doubt faced

with the problems of reconciling the several classifications that had been proposed. He agreed with Thomson that *Homalota* does not belong in the Athetae, and was the first to favor a broad view of *Atheta* with almost all of the Thomson and Rey athetine genera reduced to subgenera. This was no doubt a clever expedient and seemed to resolve a difficult problem very neatly. Thus, the extremely broad "*Homalota*" of the nineteenth century became the broader "*Atheta*" of the twentieth.

Bernhauer, a protegé of Ganglbauer, adhered to the precedent set by his mentor, and did much to "stabilize" *Atheta* (*sensu lato*) in our catalogues. He described hundreds of species of "*Atheta*" and proposed several subgenera. The *Coleopterorum Catalogus* (Bernhauer and Scheerpeltz, 1926; Scheerpeltz, 1934) doubtless provided an "authoritarian" touch that strengthened the case for a broadly conceived *Atheta*. With several thousand species of *Atheta* to contend with, potential students have doubtless avoided dealing with the group except on a local basis.

Fenyes, a proponent of an acknowledged artificial classificatory system, did much to support the Ganglbauer-Bernhauer-Scheerpeltz system of *Atheta*. Because he was generally recognized as an outstanding world authority on the Aleocharinae, his *Genera Insectorum* monograph (1918, 1920, 1921) on the subfamily was influential. Fenyes proposed no new ideas on the classification of the group and proceeded to make it more artificial than before. His *Genera Insectorum* treatment can hardly be called a generic revision since it did little more than publish original generic descriptions in English.

Cameron described numerous species of *Atheta* (*sensu lato*) from many parts of the world, but offered no new ideas on the classification of the group. His support of the Ganglbauer tradition was important, especially in his aleocharine volume of the *Fauna of British India* (Cameron, 1939).

Casey (1906, 1910, 1911) was the only twentieth-century specialist to dissent on the matter of aleocharinae classification. In the tradition of Thomson and Rey, he suggested a far more logical treatment of the Athetae than did his contemporaries, but his *Atheta* was still a broad category. Casey, in my opinion, was the only specialist to make notable contributions to the classification of the North American Aleocharinae.

*Generic classifications of American Athetini*

Thomson (1867) recognized 12 genera that probably occur in our fauna:

*Aloconota* Thomson, *Dilacra* Thomson (doubtful), *Hydrosmecta* Thomson, *Acrotona* Thomson, *Coprothassa* Thomson, *Dinaraea* Thomson, *Amischa* Thomson, *Halobrecta* Thomson, *Liogluta* Thomson, *Schistoglossa* Fairmaire and Laboulbene, *Atheta* Thomson, *Geostiba* Thomson.

Mulsant and Rey (1871, 1873, 1873b, 1874a, 1875) recognized many athetine genera but placed some as subgenera.

Ganglbauer (1895) set the precedent that has held for 70 years; he placed 26 groups of species as subgenera of *Atheta* Thomson:

*Acrotona, Coprothassa, Chaetida, Datomicra, Badura, Dimetrota, Thinobaena, Megista, Liogluta, Earota, Atheta (sensu stricto), Ceritaxa, Microdota, Philhygra, Traumoecia, Anopleta, Dinaraea, Halobrectha, Amischa, Geostiba, Ousipalia, Metaxya, Parameotica, Hygroecia, Hydrosmecta, Aloconota.*

Casey's classification of the Athetini was as follows:

*Acrotona* (Thomson), Casey; subgenera: *Achromota* Casey, *Eurypronota* Casey, *Neada* Casey.

*Aloconota* (Thomson), Casey; subgenera: *Taphrodota* Casey, *Terasota* Casey.

*Amischa* (Thomson), Casey; subgenus: *Colposura* Casey.

*Ancillota* Casey.

*Arisota* Casey.

*Asthenasita* Casey.

*Atheta* (Thomson), Casey; subgenera: *Adota* Casey, *Anepsiota* Casey, *Athetalia* Casey, *Crephalia* Casey, *Delphota* Casey, *Donesia* Casey, *Halobrechtina* (Bernhauer) Casey, (=*Rovalida* Casey), *Hilara* (Mulsant and Rey) Casey, *Homalotusa* Casey, *Lamiota* Casey, *Liogluta* (Thomson) Casey, *Macroterma* Casey, *Megista* (Mulsant and Rey) Casey, *Micratheta* Casey, *Microrearota* Casey, *Microdota* (Mulsant and Rey) Casey, *Nemota* Casey, *Panalota* Casey, *Phasmota* Casey, *Philhygra* (Mulsant and Rey) Casey, *Stethusa* Casey, *Traumoecia* (Mulsant and Rey) Casey.

*Athetota* Casey.

*Clusiota* Casey.

*Colpodota* (Mulsant and Rey) Casey.

*Coprothassa* (Thomson) Casey.

*Datomicra* (Mulsant and Rey) Casey; subgenera: *Hilarina* Casey, *Micromota* Casey, *Monadia* Casey, *Oligomia* Casey.

*Dimetrota* (Mulsant and Rey) Casey; subgenera: *Dalotia* Casey, *Dimetrotina* Casey, *Engamota* Casey.

*Dinaraea* (Thomson) Casey.

*Dolosota* Casey; subgenera: *Aremia* Casey, *Microlia* Casey, *Reania* Casey.

*Euromota* Casey.

*Gaenima* Casey.

*Goniusa* Casey.

*Hydrosmecta* (Thomson) Casey.

*Iotota* Casey.
*Metaxya* (Mulsant and Rey) Casey; subgenus: *Valenusa* Casey.
*Noverota* Casey.
*Omegalia* Casey.
*Ousipalia* (des Gozis) Casey.
*Pancota* Casey.
*Paradilacra* (Bernhauer) Casey.
*Pontomalota* Casey.
*Pseudota* Casey.
*Rhodeota* Casey.
*Sableta* Casey; subgenera: *Anatheta* Casey, *Canastota* Casey, *Fusalia* Casey, *Taxicerella* Casey.
*Sipalia* (Mulsant and Rey) Casey; subgenera: *Sibiota* Casey, *Sipaliella* Casey, *Sonomota* Casey.
*Strigota* Casey; subgenus: *Eustrigota* Casey.
*Synaptina* Casey.
*Tarphiota* Casey.
*Trichiusa* Casey.

Fenyes (1918, 1920, 1921) classification: Fenyes synonymized 35 of Casey's genera and subgenera. He recognized 23 genera of Athetae and 36 subgenera of *Atheta:*

*Adota* Casey.
*Aloconota* Thomson, subgenera: *Taphrodota, Terasota*
*Amischa* Thomson.
*Asthenasita* Casey.
*Atheta* Thomson, subgenera: *Acrotona, Anepsiota, Anopleta, Arisota, Badura, Ceritaxa, Coprothassa, Crephalia, Datomicra, Dilacra, Dimetrota, Dralica, Earota, Euromota, Halobrecta, Halobrecthina, Homalotusa, Hygrocecia, Liogluta, Metaxya, Megista, Micratheta, Microdota, Moluciba, Noverota, Omegalia, Pancota, Parameotica, Phasmota, Philhygra, Pseudomegista, Sableta, Synaptina, Traumoecia, Walenusa.*
*Daya* Fauvel.
*Dinaraea* Thomson.
*Donesia* Casey.
*Gaenima* Casey.
*Goniusa* Casey.
*Hydrosmecta* Thomson.
*Hydrosmectina* Ganglbauer.
*Iotota* Casey.
*Lypoglossa* Fenyes
*Panalota* Casey.
*Paradilacra* Bernhauer.
*Pontomalota* Casey.
*Rhodeota* Casey.
*Schistoglossa* Fairmaire and Laboulbene.
*Sipalia* Mulsant and Rey.
*Strigota* Casey.
*Tarphiota* Casey.
*Trichiusa* Casey.

## *Status of athetine names as used in this monograph*

*Achromota Casey,* (in *Acrotona*).
*Acrotona* Thomson, (genus).
*Adota* Casey, (in *Xenota*).
*Aloconota* Thomson, (genus).
*Amischa* Thomson, (genus).
*Amphibitherion* Notman (in *Philhygra*).
*Anaduosternum* Notman, (genus).
*Anatheta* Casey, (genus).
*Ancillota* Casey, (in *Acrotona*).
*Anepsiota* Casey, (genus).
*Anopleta* Mulsant and Rey, (genus).
*Aremia* Casey, (in *Acrotona*).
*Arisota* Casey, (in *Acrotona*).
*Asthenesita* Casey, (genus).
*Atheta* Thomson, (genus).
*Athetalia* Casey, (genus).
*Athetota* Casey, (genus).
*Badura* Mulsant and Rey, (probably not North American).
*Brachyusa* Mulsant and Rey, (in Tachyusae, Oxypodini).
*Brundinia* Tottenham, (name for *Metaxya* Mulsant and Rey, preoccupied).
*Canastota* Casey (genus).
*Ceritaxa* (Mulsant and Rey as used by Bernhauer), (in *Xenota*).
*Clusiota* Casey, (genus).
*Colpodota* Mulsant and Rey, (in *Acrotona*).
*Colposura* Casey, (synonym of *Amischa*).
*Coproceramius* Gistel, (synonym of *Dimetrota*).
*Coprothassa* Thomson, (in *Acrotona*).
*Crephalia* Casey, (genus).
*Dalotia* Casey, (synonym of *Dimetrota*).
*Datomicra* Mulsant and Rey, (genus).
*Daya* Fauvel, (synonym of *Homia*).
*Delphota* Casey, (in *Xenota*).
*Dilacra* Thomson, (not North American).
*Dimetrota* Mulsant and Rey, (genus).
*Dimetrotina* Casey, (in *Dimetrota*).
*Dinaraea* Thomson, (genus).
*Doliponta* Blackwelder, (genus; = *Lipodonta* Fenyes).
*Dolosota* Casey, (in *Acrotona*).
*Donesia* Casey, (in *Xenota*).
*Dralica* (Mulsant and Rey as used by Bernhauer), (in *Xenota*).
*Earota* Mulsant and Rey, (genus).
*Elytrusa* Casey, (synonym of *Atheta*).
*Engamota* Casey, (synonym of *Dimetrota*).
*Euromota* Casey, (genus).
*Eurypronota* Casey, (in *Acrotona*).
*Eustrigota* Casey, (synonym of *Strigota* Casey).
*Evanystes* Gistel, (synonym of *Geostiba* Thomson).
*Fusalia* Casey, (genus).

*Gaenima* Casey, (genus).
*Geostiba* Thomson, (genus).
*Glossola* Fowler, (synonym of *Geostiba*).
*Goniusa* Casey, (genus).
*Halobrecta* Thomson, (genus).
*Halobrecthina* Bernhauer, (in *Xenota*).
*Hilara* Mulsant and Rey, (in *Microdota*).
*Hilarina* Casey, (in *Datomicra*).
*Homia* Blackwelder, (not North American; see *Amischa*).
*Homalotusa* Casey, (genus).
*Hydrosmecta* Thomson, (genus).
*Hydrosmectina* Ganglbauer, (genus).
*Hygroecia* Mulsant and Rey, (synonym of *Philhygra*).
*Hypatheta* Fenyes, (synonym of *Stethusa*).
*Iotota* Casey, (genus).
*Ischnopoda* Stephens (see Blackwelder, 1952, p. 200. Cannot be used in sense of *Atheta* (sensu lato). Type species fixed as *atra* (Gravenhorst) by International Commission).
*Lamiota* Casey, (genus).
*Lipodonta* Fenyes, (synonym of *Doliponta*).
*Liogluta* Thomson, (genus).
*Lypoglossa* Fenyes, (genus).
*Macroterma* Casey, (synonym of *Earota*).
*Megista* Mulsant and Rey, (synonym of *Atheta*).
*Metaxya* Mulsant and Rey, (synonym of *Brundinia* Tottenham; not North American).
*Metaxya* (Mulsant and Rey as used by Casey), (see *Philhygra*).
*Micratheta* Casey, (genus).
*Microrearota* Casey, (genus).
*Microdota* Mulsant and Rey, (genus).
*Microlia* Casey, (in *Acrotona*).
*Micromota* Casey, (in *Datomicra*).
*Moluciba* Casey, (in Oxypodini).
*Monadia* Casey, (in *Datomicra*).
*Mycota* Mulsant and Rey, (in *Xenota*).
*Neada* Casey, (in *Acrotona*).
*Nemota* Casey, (in *Xenota*).
*Noverota* Casey, (genus).
*Oligomia* Casey, (in *Datomicra*).
*Omegalia* Casey, (genus).
*Ousipalia* des Gozis, (not North American).
*Panalota* Casey, (genus).
*Pancota* Casey, (genus).
*Paradilacra* Bernhauer, (genus).
*Parameotica* Bernhauer, (genus).
*Phasmota* Casey, (genus).
*Philhygra* Mulsant and Rey, (genus; = *Hygroecia* (M. & R.) Brundin, and *Metaxya* (M. and R.) Casey, in part).
*Philhygra* (Mulsant and Rey as used by Casey), (in *Xenota*).
*Pontomalota* Casey, (genus).

*Pseudomegista* Bernhauer, (genus).
*Pseudota* Casey, (genus).
*Reania* Casey, (in *Acrotona*).
*Rhodeota* Casey, (*Synaptina*).
*Rovalida* Casey, (synonym of *Halobrecthina*).
*Sableta* Casey, (genus).
*Schistoglossa* Fairmaire and Laboulbene, (genus).
*Sibiota* Casey, (genus).
*Sipalia* Mulsant and Rey, (in Gyrophaenini).
*Sipalia* (Mulsant and Rey as used by Casey), (in *Geostiba*).
*Sipaliella* Casey, (genus).
*Sonomota* Casey, (in *Geostiba*).
*Stethusa* Casey, (genus).
*Strigota* Casey, (genus).
*Synaptina* Casey, (genus).
*Taphrodota* Casey, (in *Aloconota*).
*Tarphiota* Casey, (genus).
*Taxicerella* Casey, (in *Datomicra*).
*Teliusa* Casey, (in Tachyusae, Oxypodini).
*Terasota* Casey, (in *Aloconota*).
*Tetropla* Mulsant and Rey, (synonym of *Xenota*).
*Thamiaraea* Thomson, (genus).
*Traumoecia* Mulsant and Rey, (in *Xenota*).
*Trichiusa* Casey, (genus).
*Valenusa* Casey, (genus).
*Xenota* Mulsant and Rey, (genus; = *Atheta* (Thomson *sensu stricto* as used by Ganglbauer, Casey, Bernhauer, Fenyes, etc.)

### *Revised generic classification of Athetini*

Inasmuch as *graminicola* (Gravenhorst) has been fixed as the type species of *Atheta* Thomson by the International Commission on Nomenclature (1961, opinion 600), a few generic name changes are required. In my opinion the congeners of *graminicola* are relatively few—probably less than a dozen species in the boreal and north temperate zones. The former *Atheta* (*sensu stricto*) of Ganglbauer, Bernhauer, Fenyes, Casey, Scheerpeltz, Cameron, and others now requires a new name. Of the several that are available, I have selected *Xenota* Mulsant and Rey, which has strict (position) priority. As none of the names has been used to any extent since Mulsant and Rey proposed them, there can be no preference based on usage.

The proposal by Blackwelder (1952) that *Ischnopoda* Stephens replace *Atheta* (*sensu lato*) because of priority can now be dismissed because the International Commission has fixed the type species of *Ischnopoda* as *atra* (Gravenhorst) which belongs in the Oxypodini.

The generic revision herein proposed is somewhat in the tradition of Thomson, Rey, and Casey and recognizes species groups that can be delimited as genera. The elevation of species groups to generic rank does not require new names; many are available. The retention of the genus *Atheta* as a monstrous category of more than 2,000 is no longer feasible.

The following classification of the Athetini begins with the *Acrotona* which may be the most generalized genus in the group. Although there do not appear to be many criteria for judging the degree of specialization in the Athetini, *Acrotona* does bear resemblances to *Oxypoda* of the Oxypodini and could conceivably have been derived from *Oxypoda*-like ancestors. Except for its 4,5,5 segmented tarsi, lack of a frontal suture, and certain specialized features of the aedeagus, *Acrotona* would be difficult to distinguish from *Oxypoda*. Its convex pronotum, with inflexed, invisible hypomera, is quite *Oxypoda*-like. After the *Acrotona* group of genera, I consider the *Dimetrota* group, *Atheta* group, *Xenota* group, *Geostiba* group, etc. These groups are not necessarily very well defined at this time, and will require considerable additional study, especially of the aedeagi.

*Acrotona* group (Acrotonae)

Distinguished from other Athetini by the relatively convex pronotum with the hypomera inflexed so as to be invisible in lateral view. Represented in the Nearctic Region by *Acrotona* and *Strigota*. *Strigota* occupies a borderline position with the *Dimetrota* group (about one-half of its species seem to belong here and the others to the *Dimetrota* group). Studies on the aedeagi are needed. The species of the *Acrotona* group have an *Oxypoda*-like facies.

Although I do not favor the use of subgeneric names—and shall not propose new ones—some of the Casey names may be used to indicate species groups in *Acrotona*. The following key may help to identify the species groups of Acrotonae.

1. Pronotal pubescence pattern modified type E—with all hairs oriented transversely except a few in the midline directed cephalad *Acrotona (Arisota)*

   Pronotal pubescence pattern B or C (possibly an occasional E), with most hairs directed caudad or laterocaudad (see fig. 24) ..... 2

2. Elytra subequal in length to pronotum (up to one-sixth longer in a few *Acrotona* [*sensu stricto*]) ..... 3

   Elytra one-fourth to one-third longer than pronotum ..... 8

3. Elytra only three-fourths as long as pronotum ... *Acrotona (Eurypronota)*
   Elytra at least as long as pronotum ..... 4

4. Metasternal process moderately long, isthmus very short
   *Acrotona (Neada)*
   Metasternal process very short; isthmus long, at least one half as long as mesosternal process ..... 5

5. Pubescence dense, white, pilose; mesosternal process short, isthmus only slightly shorter; postgenal carinae feeble; basal segment of hind tarsi equal to 2 and 3 combined ..... *Strigota*
   Pubescence often dense but not pilose; mesosternal process moderately long, the isthmus only one-half as long; postgenal carinae distinct; first four segments of hind tarsi equal ..... 6

6. Smaller species (1.4-2.0 mm. in length) ..... 7
   Larger species (2.1-2.7 mm. in length) ..... *Acrotona (sensu stricto)*

7. Antennae feebly incrassate (segments 5-8 quadrate to feebly transverse, 9-10 slightly transverse) ..... *Acrotona (Dolosta)*
   Antennae more strongly incrassate (segments 5-10 transverse, 5 may be quadrate ..... *Acrotona (Colpodota)*

8. Pronotum about one-fourth broader than long, broadest behind middle, elytral apices strongly bisinuate ..... *Acrotona (Ancillota)*
   Pronotum at least one-third broader than long
   *Acrotona (Microlia, Aremia, and Reania)*

## **ACROTONA** (Thomson) Casey.

*Acrotona* Thomson, 1859, p. 38. Type species: *Acrotona aterrima* Gravenhorst.

*Achromota* Casey, 1893, p. 300 (as subgenus). Type species: *Achromota fusiformis* Casey.

*Ancillota* Casey, 1910, p. 165 (as subgenus). Type species: *Ancillota sollemnis* Casey.

*Aremia* Casey, 1910, p. 146 (as subgenus of *Dolosota*). Type species: *Aremia reclusa* Casey.

*Colpodota* (Mulsant and Rey, 1873a, p. 175) Casey, 1910, p. 153 (as genus). Type species: *Colpodota parens* Mulsant and Rey.

*Coprothassa* (Thomson, 1859, p. 38) Casey, 1910. Type species: *Coprothassa melanaria* (Mannerheim); through synonymy with *testudinea* (Erichson).

*Dolosota* Casey, 1910, p. 136 (as genus). Type species: *Dolosota scopula* Casey.

*Eurypronota* Casey, 1893, p. 334 (genus); 1910, p. 137, 151 (as subgenus). Type species: *Eurypronota discreta* Casey.

*Microlia* Casey, 1910, p. 144 (as subgenus of *Dolosota*). Type species: *Microlia pernix* Casey.

*Neada* Casey, 1910, p. 153 (as subgenus). Type species: *Neada lubricans* Casey.

*Reania* Casey, 1910, p. 146 (as subgenus of *Dolosota*). Type species: *Reania fontinalis* Casey.

*Arisota* Casey 1910, p. 133. Type species: *Arisota tetricula* Casey.

*Distribution.*—Bernhauer and Scheerpeltz (1926) list 95 species. Predominantly a Holarctic group—with 29 species in Palaearctic

Region and more than 50 in Nearctic Region—the species occur less frequently in Africa, Madagascar, and the Oriental Region. Cameron (1939) recorded 24 species in India but most of these are from the high altitudes in the north. The number of species in the Neotropical Region has not been determined (Blackwelder, 1944, does not indicate the subgenera of *Atheta*). In the most recent, and best, study of *Acrotona,* Brundin (1952) records 29 Palaearctic species in 11 species groups. Hansen (1954) records 17 species in Denmark.

**ACROTONA** (*sensu stricto*) (Thomson) Casey.

The species assigned to *Acrotona* (*sensu stricto*) by Casey are from 2.1-2.7 mm. in length and are larger than the species of most other subgenera. They seem to conform rather well to the characteristics of the type species, *aterrima,* of Europe. They do, however, lack one interesting feature of *aterrima,* observable only in slide mounts—a circle of stout rod-like sensilla around the apex of the ninth antennal segment.

*Descriptive features.*—Head subequal in length and width, broadest at eye level. Eyes prominent, medium-sized. Postgenal carina complete. Ligula bifid. Antennae with segments 1-3 elongated, 4 subquadrate, 5 subquadrate to slightly elongated, 6-8 subquadrate to feebly elongated, 9-10 slightly transverse; antennae only slightly incrassate (segments 6-10). Pronotum one-third broader than long (*subpygmaea* Bernhauer, *digesta* Casey, *adjuvans* Casey), two-fifths broader than long (*lividula* Casey, *shastanica* Casey, *bakeri* Bernhauer) and almost one-half broader than long (*modesta* Melsheimer, *luteola* Erichson). Elytra subequal in length to pronotum (*severa* Casey, *subpygmaea* Bernhauer, *digesta* Casey); up to one-sixth longer (*adjuvans* Casey, *lividula* Casey). Pronotal pubescence pattern of type C (figs. 24F-H) (rarely B). Mesosternal process reaching beyond middle of mesocoxae, its apex acute; metasternal process short. Segments 1-4 of hind tarsi subequal in length. Length 2.1-2.7 mm.

Subgenus **EURYPRONOTA** Casey

Distinguished by having the elytra only three-fourths to four-fifths as long as pronotum; pronotal punctules very finely asperate; head punctules very fine; antennal segments 4-6 slightly elongated, 7-10 subquadrate (no distinctly transverse segments); pronotum only one-fourth broader than long.

Subgenus **NEADA** Casey

Distinguished by having the pronotum one-sixth broader than long; pronotal pubescence pattern B (fig. 24B-E); elytra subequal to pronotal length (or slightly less); pronotal and elytral pubescence

very sparse; integuments semiglabrous; pronotum very feebly arcuate; metasternal process obtusely rounded, isthmus very short.

Subgenus **ANCILLOTA** Casey

Distinguished by having the pronotum—which is one-third broader than long—broadest behind middle and sides converging in front; pronotal pubescence dense; elytra one-fourth longer than pronotum; elytral apices strongly bisinuate; metasternal process reaching mesosternal, isthmus absent.

Subgenus **COLPODOTA** (Mulsant and Rey) Casey

There is considerable doubt that this is a delimited group. It contains a majority of the North American *Acrotona* species, which are smaller (length 1.4-2.0 mm.) than those of *Acrotona* (*sensu stricto*). The pronotum is about one-third broader than long and the elytra subequal in length to pronotum. Pronotal pubescence is relatively dense and the pattern is usually B (figs. 24B-E) (occasionally C). The antennae tend to be shorter than those of *Acrotona* (*sensu stricto*), to have segments 5-10 transverse (5 may be quadrate), and to be more incrassate.

Subgenus **COPROTHASSA** Thomson

Brundin (1952) considers this is no more than a species group of *Acrotona.*

Subgenus **ARISOTA** Casey

Distinguished by its pronotal pubescence pattern which is a modified type E—with only a few hairs in the mid-line directed cephalad, and the great majority transverse. The antennae are short and have segments 5-10 transverse. The tergites are coarsely asperately punctate.

Subgenus **DOLOSOTA** Casey

Although Casey regarded this as a genus, it seems to be questionably distinct; in fact, it may be difficult to distinguish from *Colpodota.* The pronotum is more than one-third broader than long, and the elytra are subequal in length to pronotum. The pronotal pubescence pattern is B (figs. 24B-E). Species are small (1.4-2.0 mm.).

Subgenus **MICROLIA** Casey

Described as a subgenus of *Dolosota,* the single species from New

Jersey falls in *Acrotona*. The antennae are moderately robust and not strongly incrassate (segments 5-10 are short and transverse). The pronotum is two-fifths broader than long and the elytra more than one-fourth longer than pronotum. The size is small (1.5 mm. in length) and the coloration uniformly pale flavate.

Subgenus **AREMIA** Casey

A single small species from New York (1.6 mm.), with pale rufoflavate coloration, long elytra (one-fourth longer than pronotum), dense pronotal pubescence, coarse asperate punctation on the pronotum and elytra, and long mesosternal and metasternal processes (metasternal process two-thirds as long as mesosternal process and contiguous with it; isthmus absent).

Subgenus **REANIA** Casey

One species from Colorado with the elytra one-fourth longer than pronotum, sparse pronotal pubescence, fine pronotal punctures (neither asperate nor umbilicate), obsolescent pronotal reticulation, very fine head punctules, short antennae with segments 5-10 transverse, and distinctive setigerous carinulate punctures on tergites 6 and 7.

Some of the above groups may deserve generic status, but I do not believe that enough study has been devoted to the problem to make decisions feasible at this time.

**STRIGOTA** Casey

*Strigota* Casey, 1910, p. 176. Type species: *Strigota oppidiana.*
*Eustrigota* Casey, 1911, p. 165 (as subgenus). Type species: *Eustrigota seclusa* Casey.

*Distribution.*—An endemic genus with 15 Nearctic species.

*Diagnosis.*—Distinguished by dense, white, pilose pubescence and by the following combination of characters: elongate subfusoid form (somewhat *Oxypoda*-like); fine and dense, not asperate punctation; antennae rather long and stout; pronotum three-tenths broader than long; pronotum and elytra subequal in length; mesosternal process relatively short, and metasternum very short, isthmus almost as long as mesosternal process; m:i:m ratio—18:14:1; hind tarsi very slender, the basal segment equal to the following two; length, 1.75-2.3 mm.

*Remarks.*—The following species have the pronotal hypomera not visible from the side (*impiger, intrudens, obliquata, seclusa,*

*seducens,* and *vapida*). The hypomera are slightly visible in *assueta, gnava, oppidiana, recta, perplexa,* and *placata;* doubtfully so in *verecunda, inculta,* and *mediocris.*

### Subtribe Dimetrotae

This group includes those species that have the pronotum less convex than in *Acrotona* and have the hypomera partially exposed in lateral view. As Casey stated it, the hypomera are "warped" so that the basal part is covered by the pronotal disk and only the apical two-thirds or so is narrowly exposed (fig. 28F).

Whether or not this grouping of genera is justifiable on phylogenetic grounds is doubtless open to question; perhaps comparative aedeagal studies may help in resolving the problem.

*Dimetrota* has many features in common with *Xenota*, and *Datomicra* many similarities to *Microdota.*

*Dimetrota, Datomicra,* and *Amischa* occur in the Palaearctic Region, the other genera do not. The American species that have been placed in *Dimetrota* by Casey are almost all in the western states; whether or not they really belong to this genus may be questionable.

**DIMETROTA** (Mulsant and Rey) Casey. Figures 28F; 37A.

*Dimetrota* Mulsant and Rey, 1873a, p. 165, Casey, 1910, p. 100. Type species: *Dimetrota cadaverina* (Brisout), through synonymy with *tristicula* Mulsant and Rey, 1873b, p. 9; Blackwelder, 1952, p. 105.

*Dalotia* Casey, 1910, p. 106 (as subgenus). Type species: *Dalotia pectorina* Casey.

*Engamota* Casey, 1910, p. 151 (as subgenus of *Acrotona*); 1911, p. 143 (as subgenus of *Dimetrota*). Type species: *Engamota absona* Casey.

*Dimetrotina* Casey, 1911, p. 143 (as subgenus). Type species: *Dimetrotina vaniuscula* Casey.

According to Blackwelder (1952) *Coproceramius* Gistel is the correct name for this genus, but the name has not been used for 100 years and I do not propose to substitute it.

Very little can be done with the Nearctic *Dimetrota* at this time. I am not at all certain that the species assigned here by Casey belong to *Dimetrota.* Except for the hypomeral conditions, I can find no substantial reasons for separating the group from *Xenota.*

**PSEUDOTA** Casey

*Pseudota* Casey, 1910, p. 114. Type species: *Pseudota dissensa* Casey.

*Distribution.*—An endemic American genus.

Very close to *Dimetrota* and doubtfully distinguishable. The characteristics given below will not separate *Pseudota* from *Dimetrota*.

*Descriptive features.*—Pronotum three-tenths to two-fifths broader than long. Pronotal pubescence pattern B or C in *dissensa, sitiens, cornicula, formalis, nescia,* and *praesaga* or pattern E in all others. Elytra one-fourth to two-fifths longer than pronotum. Eyes large. Postgenal carinae complete but weak. Antennai segments 5-10 transverse (5 sometimes quadrate), moderately to strongly incrassate. m:i:m ratios: *dissensa*—14:5:8; *sitiens*—12:3:8; *praesaga*—14:4:4; *nescia*—13:6:4; *irrupta*—14:6:5; *puricula*—16:4:4; *pimalis*—12:5:4; *miscella*—14:2:12. Pronotum and elytra asperately punctate. Eighth male tergite frequently modified.

## FUSALIA Casey

*Fusalia* Casey, 1911, p. 145 (as subgenus of *Sableta*). Type species: *Fusalia brittoni* (Casey).

*Distribution.*—A single species from Connecticut.

*Fusalia brittoni* (Casey) seems to be more closely allied to *Dimetrota* than to *Sableta*. It is a large species (3.5 mm.) for this group with a relatively broad head and pronotum (two-fifths broader than long), elytra less than one-fifth longer than the pronotum, eyes extremely large (their length more than twice their distance from base of head), relatively short antennae (segments 1-3 moderately long; 4 not broader than 3 and very short and subquadrate, 5-10 transverse, 5 more than twice as broad as 4, 6-11 not incrassate), the meso-metasternal processes long and subequal in length, and the isthmus absent.

## SABLETA Casey

*Sableta* Casey, 1910, p. 112. Type species: *Sableta influlata* Casey.

*Distribution.*—A single specimen from Mississippi.

*Diagnosis.*—The coloration is distinctive (ground color pale flavous, apical one-third of elytra, as well as sixth and eighth tergites, black), the mesosternal process relatively short, the metasternal process exceptionally long (m:i:m ratio—9:3:12), and the eighth male tergite distinctive.

*Descriptive features.*—Head with small sparse umbilicate punctures and fine reticulation. Eyes large—their length more than twice their distance from base of head. Antennae with fourth segment quadrate, 5-10 transverse, but not strongly incrassate (tenth segment one-third broader than long). Pronotum more than one-third broader than long; hypomera not warped at base as much as in *Dimetrota*. Elytra less than one-sixth longer than pronotum. Seventh male tergite with slight medium eminence. Length 2 mm.

*Remarks.*—Casey assigned a number of species to this genus, but I am retaining only the type species.

## CANASTOTA Casey

*Canastota* Casey, 1910, p. 108. Type species: *Canastota canadensis* Casey.

Species of this genus were placed in *Sableta* by Casey. *Canastota* is rather heterogeneous and itself seems to comprise four groups. The genus is distinguished by characters of the general key. The groups are keyed out below. All species are pale flavate or rufoflavate.

1. Pronotal pubescence pattern type A (hairs directed caudad, subparallel, slightly shaggy in appearance); pronotum one-fourth broader than long; elytra almost one-fourth longer than pronotum; hypomera almost fully exposed; m:i:m ratio—18:4:10; length 2.8 mm. ..... *flaviventris* Casey

   Pronotal pubescence patterns B or C, many hairs laterocaudad as well as caudad ..... 2

2. Pronotum only three-tenths broader than long; elytra only about one-tenth longer than pronotum; m:i:m ratio—10:4:6 ..... *phrenetica* Casey

   Pronotum two-fifths broader than long (slightly less in *longiclava*); elytra at least one-fifth longer than pronotum and usually somewhat more .. 3

3. Metasternal process two-fifths (*flaveola*) to three-fifths (*canadensis*) as long as mesosternal process; isthmus very short or absent (m:i:m ratios —*canadensis* 16:2:10), *flaveola* (20:0:8) ..... *Canastota (sensu stricto)*

   Metasternal process only one-fourth as long as mesosternal process; isthmus subequal to metasternal process (m:i:m ratio—12:4:4) *nanella* group

## ANATHETA Casey

*Anatheta* Casey, 1910, p. 112 (as subgenus of *Sableta*). Type species: *Anatheta planulicollis* Casey.

*Anatheta* is retained as an expediency. Its type species, *planulicollis,* is difficult to separate from *Canastota,* but *curata* does not seem to belong to either *Sableta, Canastota,* or *Anatheta.* I do not choose to propose another generic category for it.

*A. planulicollis* Casey (Kansas): Antennae with segments 5-10 transverse; eyes large; postgenal carinae present; pronotum three-tenths broader than long, its surface dull, reticulate and having small asperities; pronotal pubescence pattern C (hairs longer than usual and densely arranged); elytra one-fourth longer than pronotum; meso-metasternal processes hidden in type.

*A. curata* Casey (Virginia): Coloration dark; eyes relatively small (length less than their distance from base of head); antennal segments 4-10 transverse, robust, third segment obtrapezoidal (ap-

ical width equals length); pronotum almost one-third broader than long; pubescence pattern C (hairs fine); elytra only slightly longer than pronotum; hypomera almost invisible (in general key, this species is keyed out both ways, hypomera visible or invisible).

## **SYNAPTINA** Casey

*Synaptina* Casey, 1910, p. 131. Type species: *Synaptina merica* Casey.
*Rhodeota* Casey, 1911, p. 147. Type species: *Rhodeota tartarea* Casey. NEW SYNONYM.

*Distribution.*—An endemic genus with three eastern and one western species.

*Diagnosis.*—Distinguished by having elongated carinules (about eight) on the eighth tergite (possible male only) and by the following combination of characters: antennae slender; segment 4 quadrate, very feebly transverse, 6-10 transverse but not strongly incrassate; eyes small (length equal to or less than distance from base of head) and coarsely faceted (but not as strongly as Casey implies); postgenal carinae incomplete; pronotum from one-fourth (*consonens*) to one-third (*merica, tartarea*) broader than long; elytra one-sixth to one-fifth longer than pronotum; pronotal pubescence pattern type B (hairs sparse); m:i:m ratios: *merica*—12:10:2; *tartarea*—14:8:3; *consonens*—12:8:2; *quaesita*—14:8:4; seventh tergite one-half longer than sixth; length, 1.5-2.1 mm.

The type of *quaesita* lacks carinules on the eighth tergite (it may be a female).

## **PANCOTA** Casey

*Pancota* Casey, 1906, p. 345. Type species: *Pancota collaris* Casey.
*Dolosota* Casey, 1910, p. 136 (in part); 1911, p. 154 (synonym of *Pancota*). Type species: *Dolosota scopula* Casey.

Five of the species originally assigned to *Dolosota,* including the type, have invisible hypomera and are herein place in *Acrotona.* Eleven others seem to belong here. In 1911, Casey synonymized *Dolosota* with *Pancota.*

*Distribution.*—All known species occur in the eastern United States.

*Diagnosis.*—Distinguished by coarse umbilicate punctation of the head (unusual in Athetini); pronotal pubescence pattern A; strongly transverse pronotum (almost one-half broader than long);

elytra subequal to the pronotum in length; the body subequal in width throughout.

*Descriptive features.*—Length 2 mm.; coloration pale flavate, head and terminal abdominal segments flavotestaceous to brown; eyes moderately large; postgenal carinae complete; antennal segments 5-10 short and distinctly transverse; m:i:m ratio—10:2:4; tarsi extremely short.

**DATOMICRA** (Mulsant and Rey) Casey. Figure 10I, J.

*Datomicra* Mulsant and Rey, 1874, p. 387; Casey, 1910, p. 119 (genus); Bernhauer and Scheerpeltz, 1926, p. 666 (subgenus of *Atheta*). Type species: *Datomicra celata* (Erichson).

*Hilarina* Casey, 1910, p. 128 (as subgenus). Type species: *Hilarina particuala* Casey.

*Micromota* Casey, 1910, p. 127 (as subgenus). Type species: *Micromota filiformis* Casey.

*Oligomia* Casey, 1910, p. 129 (as subgenus). Type species: *Oligomia scintilla* Casey.

*Taxicerella* Casey, 1910, p. 113 (as subgenus of *Sableta*). Type species: *Taxicerella remissa* Casey.

*Monadia* Casey, 1910, p. 130. Type species: *Monadia lucana* Casey.

*Distribution.*—Bernhauer and Scheerpeltz (1926) listed 49 species of *Datomicra*. Most are recorded from the Holarctic Region, but a few species are from Africa and the Neotropical Region.

*Diagnosis.*—The species of *Datomicra* are not easy to differentiate from those of *Dimetrota* except by their small size (1.6 mm.). They are also difficult to distinguish from *Microdota* except by their partially concealed hypomera. Careful comparative studies are needed.

The pronotum is one-third to two-fifths broader than long, the pronotal pubescence pattern of type E, and antennal segments 5-10 are transverse.

**AMISCHA** (Thomson) Casey. Figure 10A-E.

*Amischa* Thomson, 1858, p. 33; Casey 1910, p. 87. Type species: *Amischa analis* (Gravenhorst).

*Colposura* Casey, 1893, p. 336. Type species: *Colposura praelonga* Casey.

*Amischa* is herein placed in the *Dimetrota* group because of its hypomeral condition; perhaps it does not belong here. *Amischa* has generally been accorded generic status, even by those who accepted a broad concept of *Atheta*. It seems to me that it is scarcely more distinct than many other athetine species groups.

*Distribution.*—Bernhauer and Scheerpeltz listed 28 species of *Amischa,* which they considered a genus. A majority of these (19)

are in the Holarctic Region, and there is a scattering of species in the Neotropical Region, Java, Ceylon, and the Aru Islands.

*Diagnosis.*—Species of *Amischa* are characterized by an oval head, small eyes (two-thirds as long as their distance from base of head), transverse antennal segments 5-10, a pronotum one-eighth to one-fourth broader than long, elytra up to one-sixth longer than pronotum, mesocoxal acetabula that are not margined medially or caudally (*Amischa*) or are completely margined (*Colposura*), a metasternal process (unmargined) that is long and slender, an eighth tergite that is more or less triangularly emarginate (both sexes), and pronotal pubescence of patterns B or C.

*Remarks.*—After an examination of the type specimen of LeConte's *Thinobius gigantulus* in the Museum of Comparative Zoology, I have decided that it should be placed in *Amischa.* In recent catalogues this species has been carried as *Daya gigantula* (probably placed in *Daya* by Fenyes). *Daya* is not an American genus. In 1952, Blackwelder substituted *Homia* for *Daya* Fauvel, which is preoccupied.

*Colposura* is a doubtfully useful subgenus. It has been used for several species with margined mesocoxal acetabula, relatively short elytra, and less broad pronotum.

## Subtribe Athetae

**ATHETA** Thomson. Figures 7A-E; 8M,N; 24L; 25M; 28E; 37H,I.

*Atheta* Thomson, 1858, p. 36. Type species: *A. graminicola* (Gravenhorst), fixed by the International Commission on Zoological Nomenclature, 1961, Opinion 600.

*Megista* Mulsant and Rey, 1874, p. 623. Type species: *Megista graminicola* (Gravenhorst).

*Elytrusa* Casey, 1906, p. 334. Type species: *Elytrusa granulata* (Mannerheim).

*Distribution.*—The scope of *Atheta* has been greatly limited by the acceptance of *graminicola* as the type species. It now comprises less than a dozen species of boreal and north temperate species extending across Europe and Asia and into Alaska and western Canada. In Europe the genus occurs from Lapland south to Bosnia and the Caucasus. In the Nearctic Region, *Atheta* is most frequently found in Alaska where it is abundant locally. Records indicate the genus as far east as Manitoba and in the Rocky Mountains of Colorado (Leadville).

*Remarks.*—The broad concepts of *Atheta* as accepted by Casey, Bernhauer, Fenyes and others were based on incorrect type spe-

cies; Casey accepted *trinotota* (Erichson); others utilized *nigritula* (Gravenhorst). The *Atheta* (*sensu stricto*) of those specialists is *Xenota* in this work.

*Descriptive features.*—Relatively large species, 3.5-4.8 mm. in length. Coloration black; abdomen usually with reddish tinge, and with elytra dark rufopiceus. Form subparallel throughout. Surface sculpture generally weak (shining); head, pronotum and elytra with a fine, close-meshed reticulation, obsolescent in places; pronotum often duller; abdomen shining; tergites with very fine transverse strigulation, becoming finely reticulate on 7, and more coarsely reticulate on 8. Head very finely and sparsely punctulate (with some fine asperities); pronotum finely, sparsely and aciculately punctate; elytra densely, coarsely, and aciculately punctate; abdomen very sparsely punctulate, with some asperities. Seventh and eighth tergites with elongated asperities toward apex. Abdomen exceptionally free of sculpture, punctures and hairs. Pronotal pubescence of pattern E. Head about as broad as long; sides feebly arcuate. Eyes medium-sized. Postgenal carina present although incomplete. Antennae long and relatively stout, extending beyond elytral apices; moderately incrassate; all segments elongated, except quadrate tenth. Pronotum one-fifth to one-fourth broader than long; apex almost straight, broadest in anterior half; side margins in basal half very feebly sinuate; base broadly arcuate; hypomera completely visible; dorsum with shallow subtriangular median impression in basal half. Elytra almost one-third longer than pronotum. Mesosternal process slender, attaining middle of mesocoxae; metasternal process short, obtusely subtriangular; isthmus about equal to metasternal process. Tergites 3-5 relatively deeply impressed (impressions glabrous); 6 and 7 shallowly so. Male eighth tergite crenate, (fig. 37I) with about 8 rounded denticles (in some instances very feeble), eighth sternite conspicuously emarginate (fig. 37H). Female abdomen unmodified. Aedeagus as in figures 7A-E. Spermatheca distinctive (fig. 25M). Four basal segments of hind tarsi short.

## ATHETALIA Casey

*Athetalia* Casey, 1910, p. 14 (as subgenus). Type species: *Athetalia bicariniceps* Casey.

*Distribution.*—An endemic genus of six species distributed from California to Alaska.

*Diagnosis.*—The species are relatively large (2.8-4.2 mm.) (including the largest American athetine, *nimia* Casey). The basal segment of the hind tarsi is twice as long as the second segment; the ratio of segment lengths is as follows: *bicariniceps*—20:10:8:9:18; *nimia*—20:10:10:10:20. The eighth tergite of the male is not crenate as in *Atheta*.

*Descriptive features.*—Antennae robust; segments 1-4 elongated, 5-6 subquadrate, 7-10 slightly transverse. Postgenal carinae complete, strong. Pronotum one-fifth broader than long; subelliptical, apex almost straight, sides and base strongly arcuate, basal angles obsolescent, dorsum strongly convex; hypomera subhorizontal, relatively narrow in lateral view although fully exposed. Pronotal pubescence sparse, with a few hairs in midline directed cephalad. Elytra one-fourth longer than

pronotum. Mesocoxae contiguous; mesosternal process long and extremely slender; metasternal process short, isthmus twice as long as latter; m:i:m ratio—22:10:5. Abdomen moderately tapering—seventh segment only seven-ninths as broad as third. Tergites 3-5 impressed. Eighth male tergite emarginate in *nimia;* other species represented only by females.

## ANEPSIOTA Casey

*Anepsiota* Casey, 1893, p. 329; 1906, p. 335; 1910, p. 12. Type species: *Anepsiota quadricollis* Casey.

Distinguished by the characters of the key.

*Descriptive features.*—Size moderate (2.5-3 mm.). Pronotum only one-sixth to one-fifth broader than long; hypomera in semivertical position, fully exposed; dorsum less convex than in *Athetalia* and its sides less arcuate; base arcuate, basal angles obsolescent. Pronotal pubescence directed caudad. Postgenal carina incomplete. Abdomen not tapering—seventh segment about as broad as third. Tergites 3-5 moderately impressed; impressions without large punctures. Eighth male tergite modified. The species differ in the m:i:m ratio, *terminalis* Casey—20:14:6; *quadricollis* Casey—20:6:14.

*Distribution.*—Two species in British Columbia (two Casey species are transferred to *Athetota*).

## ATHETOTA Casey

*Athetota* Casey, 1906, p. 336. Type species: *Athetota insignis* Casey.

*Distribution.*—Five species—California to British Columbia.

*Descriptive features.*—Robust species (3-3.9 mm.). Antennae stout; fourth segment elongated; fifth subquadrate to slightly transverse; 6-10 feebly transverse; antennae weakly incrassate. Postgenal carinae incomplete. Pronotum one-fifth to one-fourth broader than long. Pronotal pubescence directed caudad. Elytra only one-sixth longer than pronotum. m:i:m ratios: *insignis*—13:12:2; *atriventris*—18:16:3; *torpens*—18:14:2; *shastana*—18:12:4; metasternal process very short, and isthmus exceptionally long. Two basal segments of hind tarsi subequal. Eighth male tergite much as in *Anepsiota* (slightly crenulate).

*Remarks.*—Two Casey species—*torpens* and *shastana*—are transferred here from *Anepsiota*.

## PSEUDOMEGISTA Bernhauer[1]

*Pseudomegista* Bernhauer, 1907, p. 390. Type species: *Pseudomegista nigropolita.*

*Distribution.*—A single species is recorded from Mt. Washington, New Hampshire.

Named for its superficial similarity to *Atheta* (= *Megista*) *gram-*

[1]*Pseudomegista* does not appear in the key [L.H.].

*inicola,* this genus seems to be more closely allied to *Athetota* Casey, from which it is distinguished by longer elytra (two-fifths longer than pronotum).

Other features: Length, 3-3.2 mm. Coloration piceus, shining. Eyes large. Antennae robust with segments 5-10 quadrate to slightly transverse, 8-10 quadrate to slightly transverse. Pronotum only one-sixth broader than long. Pronotal pubescence pattern with all hairs directed caudad or laterocaudad (type B).

**ALOCONOTA** Thomson. Figures 7I-J; 28D; 37C, K.

*Aloconota* Thomson, 1858, p. 33; Casey, 1906, p. 337; 1910, p. 84. Type species: *Aloconota gregaria* Erichson (through synonymy with *immunita* Erichson).

*Taphrodota* Casey, 1906, p. 338 (genus); 1910, p. 84 (subgenus). Type species: *Taphrodota ventralis* Casey.

*Terasota* Casey, 1906, p. 337 (genus); 1910, p. 84 (subgenus). Type species: *Terasota brunneipes* Casey.

*Distribution.*—Apparently more abundant in the Palaearctic Region (with more than 30 species), *Aloconota* has six recorded Casey species in North America. Only one (*incertula*) seems to be in *Aloconota* (*sensu stricto*); one species is in the subgenus *Taphrodota* and three in *Terasota.* The species *admista* does not seem to be an *Aloconota.* Outside of the Holarctic Region, species have been recorded from Africa, Ceylon, and Mexico.

*Diagnosis.*—Species of *Aloconota* may be recognized by the greatly elongated empodial bristles, which are longer than the tarsal claws (fig. 28D).

*Descriptive features.*—The basic characters of the genus as shown by *gregaria, insecta,* and their European congeners are: Length, 3-3.8 mm. Antennae with segments 1-4 (or 5) elongated; 5 and 6 (or 6 and 7) subquadrate; 7-10 (or 8-10) feebly transverse; 5-10 feebly incrassate but not increasing in length. Pronotum only one-tenth broader than long (or less). Pronotal pubescence pattern E with hairs directed cephalad in midline (*insecta, sulcifrons*) or questionably caudad (*gregaria*). Mesosternal process very short, and isthmus very long. Seventh tergite with median cariniform tubercle (*insecta*) or not (*gregaria*).

*A. incertula* (Virginia) has long empodial bristles but is discordant in these respects: pronotum one-fifth broader than long; mesosternal process long and acuminate, the isthmus short; eighth tergite obtusely angulate.

Subgenus **TAPHRODOTA** Casey

The single species, *ventralis* Casey (New York), bears similarities to *A. insecta* of Europe. It agrees with that species in the

antennal structure (segments 1-4 elongated; 5 and 6 subquadrate; 7-10 slightly transverse); the pronotum (one-tenth broader than long); and the m:i:m ratio (14:10:10, mesosternal process not attaining middle of mesocoxae and isthmus as long as metasternal process). It differs from *insecta* in being more slender, in having deeper and more conspicuous pronotal impressions (impressions about one-fourth as broad as pronotum) that are moderately deep in the basal half but faint and shallow in the apical half, in having more pronounced male characters (seventh tergite with cariniform process, and eighth tergite with two smooth "bosses" and two denticles), and in having the pronotal pubescence directed caudad.

Subgenus **TERASOTA** Casey

Very similar to *Taphrodota;* distinguished by having the pronotal pubescence directed cephalad (pattern E), and by having all antennal segments elongated (tenth about one-fourth longer than broad). Pronotal proportions, m:i:m ratio, and male abdominal characters are as in *Taphrodota.*

*A. admista* Casey has short empodial bristles (shorter than claws) and presumably does not belong in *Aloconota;* in addition, antennal segments 5-10 are transverse and pronotum is one-fifth broader than long.

**SCHISTOGLOSSA** Kraatz. Figure 7F-H.

*Schistoglossa* Kraatz, 1856, p. 344. Type species: *Schistoglossa viduata* Erichson.

*Distribution.—Schistoglossa* comprises a single European species *viduata* Erichson, and several Nearctic species.

In 1943, Brundin described two American species (*aubeiodes*[1] [Massachusetts] and *holmbergi*[2] [Alaska]) and assigned them to this genus. In reviewing the Casey species assigned to *Atheta* (*sensu stricto*), it seems to me that *reticulata* Casey (Virginia) probably belongs here also.

The species are characterized by having all segments of the antennae elongated, the pronotum one-fifth to one-fourth broader than long, the pronotal pubescence directed caudad, the empodial bristles shorter than the tarsal claws, and the m:i:m ratio—20:10:10 (*reticulata*).

[1,2]I am unable to find descriptions of these species in either Brundin's 1943 paper or listed in any Zoological Record from 1943 to 1965 [L.H.].

## LAMIOTA Casey

*Lamiota* Casey, 1910, p. 17 (as subgenus of *Atheta*); 1911, p. 82; Fenyes (1920) and Bernhauer and Scheerpeltz (1926), as synonym of *Liogluta*. Type species: *Lamiota keeni* (Casey).

*Distribution.*—Three species in British Columbia (a fourth species does not seem to be congeneric).

*Diagnosis.*—Relatively large species (3-3.4 mm), with the pronotum broader than in the preceding genera of this group (three-tenths to more than one-third broader than long), coarsely reticulated pronotum, the pronotal pubescence directed cephalad (type E), the elytra one-fourth longer than the pronotum, the hind tarsi very slender, the eighth tergite of the male distinctive for this group of genera, and the antennae robust with the fourth segment subquadrate (not elongated), the fifth feebly transverse, 6-10 slightly transverse and feebly incrassate.

Casey's *concessa* apparently does not belong here; the pronotum has strong asperities, caudally directed pubescence, and is impressed in the male; the eighth male tergite is more like that of *Anepsiota* or *Athetota*.

## LIOGLUTA (Thomson) Casey[1]

*Liogluta* Thomson, 1858, p. 35; Casey 1910, p. 16 (as subgenus of *Atheta*). Type species: *Liogluta longiuscula* Gravenhorst (through synonymy with *umbonata* Erichson).

The *Liogluta* of Bernhauer and Scheerpeltz (1926) is a subgenus of *Atheta* and includes Casey's *Anepsiota, Athetota,* and *Lamiota.* The genus is Holarctic in distribution with a few species from other regions (Africa, Jamaica). As herein constituted, *Liogluta* contains three species: *aemula* (Erichson)—Pennsylvania; *abdominalis* Bernhauer—California; and *insolens* Casey—British Columbia.

*Liogluta* is distinguished by the characters of the key.

## EUROMOTA Casey

*Euromota* Casey, 1906, p. 338. Type species: *Euromota lucida* Casey.

*Distribution.*—A single species occurs in the eastern states (Virginia to New York).

*Diagnosis.*—This distinctive genus may or may not belong in the

[1]*Liogluta* does not appear in the key [L.H.].

*Atheta* group. It may be recognized by the deeply impressed tergites of segments 4-6; the antennae with almost all segments elongated but with 4-10 decreasing in length; the integuments with almost no ground sculpture; and the relatively broad pronotum (two-fifths broader than long).

*Descriptive features.*—Length 3.2 mm. Coloration chestnut, head darker. Head broad (subequal in length and width), almost as wide as pronotum. Antennae elongated; segments 4-10 decreasing in length, 6-10 slightly incrassate; segments 1-3 slender, 4-5 elongated, 6-7 less so, 8-10 subquadrate or feebly elongated. Pronotum two-fifths broader than long; its pubescence pattern type E. Pubescence of head, pronotum, and elytra distinctively longer than is rule for tribe (almost sub-setose) and sparse. Tergites and sternites without pubescence but setose (each tergite with 25-35 fine, moderately long setae). Integuments smooth, shining (without sculpture). Tergal impressions with relatively coarse punctures. Elytra one-half longer than pronotum and one-third to two-fifths broader. M:i:m ratio—14:8:10; processes subtriangular. Abdomen narrower than elytra.

## Subtribe Xenotae

**XENOTA** Mulsant and Rey. Figures 8A-F; 25I.

*Xenota* Mulsant and Rey, 1874, p. 429. Type species: *Xenota myrmecobia* Kraatz.
*Tetropla* Mulsant and Rey, 1874, p. 524. Type species: *Tetropla nigritula* Gravenhorst.
*Mycota* Mulsant and Rey, 1874, p. 534. Type species: *Mycota humeralis* Kraatz.
*Atheta* s.s. (Thomson) Ganglbauer, 1895; Casey, 1910, 1911; Bernhauer and Scheerpeltz, 1926; Fenyes, 1920, and others.
*Adota* Casey, 1910, p. 67 (subgenus). Type species: *Adota massettensis* Casey.
*Ceritaxa* (Mulsant and Rey, 1873a, p. 164) Bernhauer, 1909, p. 519.
*Delphota* Casey, 1910, p. 17 (subgenus). Type species: *Delphota cephalina* Casey.
*Donesia* Casey, 1910, p. 48 (subgenus). Type species: *Donesia temporalis* Casey.
*Halobrecthina* Bernhauer, 1909, p. 519. Type species: *Halobrecthina opaciceps* (Bernhauer).
*Nemota* Casey, 1910, p. 56 (subgenus). Type species: *Nemota paganella* Casey.
*Philhygra* Mulsant and Rey as used by Casey, 1910, p. 65, not as used by Brundin, 1944.
*Traumoecia* (Mulsant and Rey) Bernhauer, 1909, p. 519.
*Dralica* (Mulsant and Rey, 1874, p. 37) Bernhauer, 1907. p. 386.

This is the *Atheta* (*sensu stricto*) of authors. Among the available names, *Xenota* Mulsant and Rey (which has strict position priority) was chosen as a name for this group by Jeannel and Paulian (1945, p. 103).

Seven or more European species have been reported in North America, but none of the records is convincing. I examined a majority of the specimens upon which Fenyes and Bernhauer based their records, and found that they were not the European species. Considering the habitats in which the species of *Xenota* live, it would

be surprising if some have not been introduced into North America. Whether or not European species have become established in our fauna has yet to be determined.

*Distribution.*—*Xenota* is probably cosmopolitan and is doubtless the largest genus in the Aleocharinae, with perhaps 500 named species. More than 175 species have been reported in the Nearctic Region and they are fairly evenly divided between the eastern and western states.

*Characteristics.*—With a genus as large as *Xenota,* there is inevitably a great deal of variation. The genus has not been studied well enough to be diagnosed in a definitive way or properly delimited.

Head capsule generalized, without impressions or ornamentation. Eyes moderately large to large; length always greater than distance from base of head. Antennae usually robust; segments 5-10 feebly to moderately strongly incrassate; segment 4 subquadrate to slightly transverse, 5-10 usually moderately transverse, although penultimate segments may be subquadrate or feebly transverse. Pronotum varies from one-fifth to two-fifths broader than long, but large majority of species fall within one-fourth to one-third range. A few species of Casey's *Adota* with pronotum only one-sixth broader than long. Shape of pronotum rather variable. Pronotal hypomera always fully exposed in lateral view. Postgenal carinae strong. Elytra one-fourth to one-half longer than pronotum (with most species in the one-third to one-half range).

The intercoxal processes are always slender but there is great variation in the m:i:m ratio. The extent of the variability is shown in the following summary:

Ratio of the metasternal process to the mesosternal process—56 species (extremes—metasternal process one-sixth to two-thirds as long as mesosternal process)—one-sixth to three-tenths as long (13 species); one-third to two-fifths as long (14 species); two-fifths to one-half as long (13 species); one-half to three-fifths as long (14 species); three-fifths as long (1 species); two-thirds as long (1 species).

Ratio of the isthmus to the metasternal process—56 species (extremes—one-fourth as long to four times as long)—isthmus shorter than metasternal process (29 species); isthmus as long as metasternal process (9 species); isthmus longer than metasternal process (18 species).

The pronotal pubescence pattern is also rather variable and patterns C, E, and F are frequent. The elytral pubescence pattern is variable, also, with at least two types. The following summary groups most of the Nearctic species by pronotal pubescence pat-

tern, elytral pubescence pattern, and by general locality; the m:i:m ratios are given in parenthesis.

1. Pronotal pubescence pattern E (hairs in midline directed cephalad).
   A. Elytral hairs directed caudad, subparallel.
      a. Eastern species: *catula* (18:2:8), *dama, disjuncta, limulina* (12:4:8), *ordinata, rusticula* (14:4:6), *tractabilis.*
      b. Western species: *civica, claricella, districta* (22:10:6), *dunni, esmeraldae* (14:6:8), *rurigena* (20:5:10), *reposita* (20:6:6), *bidenticulata, occidentalis, obsoleticollis, sublucens, truncativentris.*
   B. Elytral hairs in a curving pattern.
      a. Eastern species: *bucolica* (20:6:8), *discipula, iterans* (16:10:6), *nexa, nupera, promota, reformata, replicans, sibylla* (24:12:4), *strigulosa, spadix.*
      b. Western species: *arizonica, aperta, audens, brumalis* (22:6:8), *carlottae* (20:6:6), *fugitans, intacta, lepidula, morbosa, ostenta, prolata, remulsa, repexa, socors, stoica, wrangelica* (24:4:6).
2. Pronotal pubescence pattern C (hairs in midline directed caudad). Elytral pubescence subparallel, hairs not curving.
      a. Eastern species: *amens* (10:4:6), *annexa* (18:6:8), *burra* (16:8:6), *capella* (16:8:6), *citata* (16:6:6), *discreta* (16:4:8), *evecta* (16:4:8), *franklini* (16:5:9), *freta, kansana* (18:13:8), *nacta* (17:7:6), *nympha* (16:4:6), *palpator* (16:10:7), *propitia* (18:4:8), *temperans, umbonalis* (14:4:8), *villica, aspericauda, fulgens, georgiae, klagesi, tubericauda, ventricosa, virginica.*
      b. Western species: *apposita* (16:10:6), *blandita* (16:12:4), *concussa* (16:10:4), *loquax* (17:3:8), *luscitiosa* (12:10:6), *marinica* (16:4:7), *mollicula* (18:2:8), *mordax* (20:14:4), *novicia, neutralis* (10:2:10), *nevadensis* (22:12:3), *postulans, relicta* (20:9:7), *sumpta* (16:6:9), *subretracta* (12:12:4), *vacunalis, crenulata.*
3. Pronotal pubescence pattern type F (hairs in midline directed cephalad in apical half, and caudad in basal half).
   A. Elytral hairs subparallel, not curving.
      a. Eastern species: *auguralis, candidula, ducens* (16:4:6), *fenisex* (16:8:8), *rhodeana* (16:4:7), *tradita, viericki* (16:6:6).
   B. Elytral hairs in curving pattern.
      a. Eastern species: *comitata, diffisa* (12:4:6), *elota, gnoma*

(16:4:8), *insidiosa, nata, pocohontas* (20:4:6), *enitescens* (14:8:2), *modiella* (16:4:7), *vacillans* (19:5:6).

b. Western species: *alaskana* (22:6:6), *barbarae* (18:4:8), *fanatica, importuna, vaticina.*

The species groups that follow were designated by subgeneric names. The characteristics that are mentioned fall within the range of variation of *Xenota,* and are not given to indicate that the species group deserves subgeneric rank.

### Subgenus **DELPHOTA** Casey

(a). *Cephalina* group, including *lymphatica, callens,* and *delumbis:* pronotal pubescence pattern C; antennal segments 4-10 (6-9 short, strongly transverse); m:i:m ratios—*cephalina* (15:12:4); *delumbis* (16:5:4).

(b). *Perspicua* group, including *regenerans, logica,* and *oscitans:* pronotal pubescence pattern E; antennal segments not strongly transverse (5 and 6 subquadrate, 6-10 slightly transverse); m:i:m ratios—*perspicua* and *regenerans* (16:7:4); *logica* and *oscitans* (16:6:5).

Eighth male tergite with widely separated, rounded denticles; the truncate interval with a series of fine round denticles.

### Subgenus **ADOTA** Casey

Proposed for nine western species, this group may be considered a species group of *Xenota,* although it is not easy to delimit.

*Descriptive features.*—Distinguished by the relatively narrow, obtrapezoidal pronotum—one-sixth broader than long (*massettensis*), one-fifth broader (*gnypetoides*), and one-fourth broader (*pavidula*). Elytra one-third longer than pronotum (*pavidula*) to one-half longer (*massettensis*). Pronotal pubescence pattern E. Postgenal carinae absent. Antennae with segment 4 quadrate, and 5-10 short, transverse and moderately incrassate (*massettensis*); 5-6 very slightly transverse, 7-10 only slightly transverse and feebly incrassate (*insons*). M:i:m ratio—12:3:9 (*massettensis*).

### Subgenus **DONESIA** Casey

Proposed for two eastern species, *temporalis* and *restricta.*

*Descriptive features.*—Pronotum one-third broader than long; elytra little more than one-fourth longer than pronotum. Postgenal carina present only at base. Antennae with segment 4 quadrate, 5-10 moderately transverse and not strongly incrassate. M:i:m ratio—15:8:4 (*temporalis*); isthmus broadly convex.

### Subgenus **NEMOTA** Casey

Proposed for eight California species.

*Descriptive features.*—Small species (2.5 mm.); antennae with segment 4 quadrate, segments 5-10 transverse (5 usually feebly), but only moderately and not strongly incrassate. Postgenal carinae usually absent (may be complete in *perpera* and *meticulosa*). Pronotal pubescence type E: *paganella, filiola, informalis, timida.* Pronotal pubescence C: *perspecta, perpera, meticulosa, marcescans.* Pronotum one-fourth to three-tenths broader than long; *informalis* and *perspecta* almost one-third broader. Elytra one-fourth longer than pronotum (*perspecta*) to two-fifths longer (*informalis, filiola*). Metasternal process very short—m:i:m ratio: 14:8:2 (*perspecta*) to moderately long—14:8:4 (*paganella*).

### Subgenus **PHILHYGRA** (Mulsant and Rey) Casey

The five eastern species—*astuta, frugalis, leviceps, houstoni* and *repanda*—placed by Casey in *Philhygra* fall within *Xenota.* On the basis of the small size (2.1-2.4 mm.), relatively long metasternal process and short isthmus and short and transverse antennal segments 5-10, these species may constitute a group in *Xenota.*

*Descriptive features.*—Pronotum about one-third broader than long; elytra one-third longer than pronotum; pronotal pubescence pattern type E; antennae with segment 4 quadrate, 5-10 short, transverse and only moderately incrassate. M:i:m ratios: *repanda*—16:2:8; *astuta*—14:2:7; *frugalis* and *leviceps*—16:2:8.

### Subgenus **TRAUMOECIA** (Mulsant and Rey) Casey

Casey placed six eastern species in this group: *aspericola, ithacana, obsequens, orbiceps, subdola,* and *tenicula.* It may be difficult to justify this as a species group.

*Descriptive features.*—Species small (2-2.3 mm.) and slender (width, 0.63 mm.); pronotum about one-fifth to one-fourth broader than long; elytra about one-third longer than pronotum; antennae having segment 4 quadrate, 5-10 transverse but not strongly incrassate; postgenal carina present; pronotal pubescence of pattern E; isthmus longer than in preceding group (*ithacana*—18:5:5; *aspericola*—14:5:5) and about as long as metasternal process; eighth male tergite without pronounced characters; eighth tergite usually with moderately strong asperities.

### Subgenus **CERITAXA** (Mulsant and Rey) Bernhauer

The species *militaris* Bernhauer (California) was assigned to *Atheta (Ceritaxa)*; it runs to *Xenota* in my key and I do not know of any basis for differentiating it.

### Subgenus **DRALICA** (Mulsant and Rey) Bernhauer

The single species, *pseudovilis* Bernhauer, was placed in *Dralica* by Bernhauer. Some of its characters are: Length, 1.16 mm.; coloration reddish brown; eyes small (their length less than their distance from base of head); pronotum one-fourth broader than long; pronotal pubescence pattern C; elytra one-fourth longer than pronotum.

This species runs to *Xenota* in my key.

## Subgenus **HALOBRECTHINA** Bernhauer

*Halobrecthina* Bernhauer, 1909, p. 519 (subgenus of *Atheta*). Type species: *Halobrecthina opaciceps* Bernhauer.

*Rovalida* Casey, 1910, p. 69. Type species: *Rovalida cribraticeps* (Casey).

This group is difficult to differentiate from *Xenota*.

*Descriptive features.*—Antennae with segments 4-10 short, strongly transverse (different from most *Xenota*); pronotum one-third broader than long, elytra three-tenths longer than pronotum, pronotal pubescence pattern E; m:i:m ratio—12:8:6; male 8th tergite modified.

## **DINARAEA** (Thomson) Casey, Bernhauer. Figure 8G,H.

*Dinaraea* Thomson, 1858, p. 33; Casey, 1910, p. 96; Bernhauer, 1907, p. 386. Type species: *Dinaraea aequata* Erichson.

One species from Alaska (*nomensis* Casey) and one from New Hampshire (*subdepressa* Bernhauer) seem to be congeneric; whether or not they belong to *Dinaraea* should be carefully considered.

*Distribution.*—Bernhauer and Scheerpeltz (1926) list four Palaearctic species, one Neotropical species, and one Nearctic species [*nomensis* is placed in *Atheta* (*sensu stricto*)].

*Descriptive features.*—Pronotum narrow, only one-eighth broader than long; pronotal pubescence pattern E; elytra only one-sixth longer than pronotom; eyes small, their length less than distance from base of head. Separated by characters of key.

## **PARADILACRA** Bernhauer. Figure 37J.

*Paradilacra* Bernhauer, 1909, p. 517 (as subgenus of *Atheta*); Casey, 1910, p. 72 (genus); 1911, p. 127. Type species: *Paradilacra densissima* Bernhauer.

*Dilacra* (Thomson 1858, p. 35) Casey. All of the species in the Casey collection have this generic name.

*Distribution.*—Thirteen names of Nearctic species have been proposed (all 11 Casey species were synonymized with *densissima* by Fenyes and Bernhauer. Whether or not this action was justifiable needs to be considered). An additional species was recorded from Tunis.

*Diagnosis.*—The integuments are distinctively sculptured with dense minute asperulate punctules and fine microreticulation. The pubescence is dense, fine and pale; the pronotal pubescence pattern is distinctive (type G, fig. 24M); the elytral pubescence is subparallel except for the apical rows which are transverse. Antennal seg-

ments 4-6 (or 4-7) are elongated (occasionally 5,6 quadrate), 7-10 subquadrate. The antenna is feebly incrassate. The pronotum is two-fifths broader than long; the elytra are one-fourth longer than the pronotum; the m:i:m ratio is 16:6:8.

**MICREAROTA** Casey

*Micrearota* Casey, 1910, p. 49 (as subgenus of *Atheta*). Type species: *Micrearota loricula* Casey.

This group of nine species was given subgeneric status by Casey but it may deserve a higher rank. A study of aedeagal structure is needed.

*Distribution.*—Nine species from the eastern United States (Rhode Island to Iowa and Texas).

*Diagnosis.*—If this group is differentiated from *Xenota,* it is by a combination of characters. The species are small (1.65-2 mm.), and have eyes smaller than in *Xenota* (but variable)—length about two-thirds the distance from base of head up to subequal to it; antennal segments 5-10 are transverse; the postgenal carinae are present or absent; the pronotum is three-tenths to two-fifths broader than long (*loricula, sana, tincta*), or one-fifth to one-fourth broader than long (other species). The elytra are from one-sixth to one-third longer than the pronotum. The metasternal process is rather short (m:i:m ratios: *loricula*—10:10:4; *reperta*—12:6:6), and isthmus subcarinate.

**PHASMOTA** Casey

*Phasmota* Casey, 1910, p. 5. Type species: *Phasmota ingratula* Casey.

*Distribution.*—One species in Mississippi.

*Diagnosis.*—This genus was proposed for a small species (1.5 mm.) of pale flavorufous coloration. Seemingly allied to *Micrearota* Casey, as indicated by the meso-metasternal relationships (m:i:m ratio—7:7:3), and the subcarinate isthmus and being on a different plane from the metasternal process. The head has dense erect pubescence. The eyes are medium-sized, equal in length to the distance from the base of the head. The antennae are short, compact, and strongly incrassate. The pronotum is slightly more than one-fourth broader than long. The pronotal pubescence is of pattern type C (sparse). The elytra are one-third longer than the pronotum.

**MICRATHETA** Casey

*Micratheta* Casey, 1910, p. 53. Type species: *Micratheta caudex* Casey.

*Distribution.*—One species from Virginia.

*Diagnosis.*—The small species, *caudex* Casey, is about 1.5 mm. long, and has a distinctive pronotal pubescence pattern (type D)—the sparse hairs are subparallel and directed caudad, except for several rows of transverse hairs at the base. The pronotum is one-fourth broader than long; the elytra are only slightly longer than the pronotum; antennal segments 5-10 are transverse; the eyes are small (length less than distance from base of head); the mesosternal and metasternal processes are contiguous, and the m:i:m ratio is 12:0:10.

**OMEGALIA** Casey

*Omegalia* Casey, 1910, p. 94. Type species: *Omegalia abjecta* Casey.

*Distribution.*—Two species from California.

*Diagnosis.*—The species of this group seem to fall outside the range of variation of *Xenota,* and perhaps to be most closely allied to *Micratheta.* The species are small, 1.8 mm. in length, 0.45 mm. in width. The pronotal pubescence pattern (type D) is similar to that of *Micratheta* except that the hairs are sparser and the basal hairs less transverse. The eyes are small; the postgenal carinae are absent; the pronotum is one-sixth broader than long; the elytra are three-tenths longer than the pronotum; the m:i:m ratio is 10:10:1. The metasternal process is very short, and the isthmus as long as mesosternal process.

**ANOPLETA** Mulsant and Rey.[1] Figure 7K, L.

*Anopleta* Mulsant and Rey, 1874, p. 36. Type species: *Anopleta corvina* Thomson (through synonymy with *lepida* Kraatz).

This is primarily a Palaearctic genus. There is an undescribed species from Washington and Alberta in the Bernhauer collection that is seemingly related to *Anopleta arcana* Erichson, a European species.

**CLUSIOTA** Casey

*Clusiota* Casey, 1910, p. 119 (genus). Type species: *Clusiota claviventris* Casey.

*Diagnosis.*—The species *claviventris* Casey from British Columbia is probably most closely allied to *Anopleta.* Its most important characteristics are: The length is 1.75 mm. The antennae are

[1]This genus does not appear in the key [L.H.].

distinctive—the basal segment is "obtriangular," slender at the base, swollen distally, and moderately compressed; 2 is slender at the base, thickened apically and appreciably broader than the following segments; 3 is subquadrate; 4-10 are transverse and incrassate (10 three-fourths broader than 4 but not much longer). The pronotum is almost one-fourth broader than long, is broadly and shallowly impressed in the apical half with the impression narrower and shallower in the basal half; the hypomera are seemingly fully exposed although they might be construed as slightly warped. The elytra are two-fifths longer than the pronotum. The abdomen is distinctive; it is broadest and thickest at the seventh tergite which is distinctly impressed—the smooth, shining impression is partially divided by a narrow medial elevation; the seventh tergite exceptionally long (twice as long as the sixth).

## **HALOBRECTA** (Thomson) Fenyes

*Halobrecta* Thomson, 1858, p. 35; Fenyes, 1909b, p. 419. Type species: *Halobrecta puncticeps* Thomson.

*Distribution.*—Three Palaearctic species and one species *(algophila* Fenyes) in California (San Diego).

*Diagnosis.*—Similar to *Xenota* and possibly not distinct from it. The length is 2.8 mm.; the antennae are short, with segments 5-10 transverse; the pronotum is one-sixth broader than long; the elytra are one-fourth longer than the pronotum; the pronotal pubescence pattern is of type C; the elytral pubescence pattern is of type T[1]; the elytral apices are sinuate.

## **MICRODOTA** (Mulsant and Rey) Casey

*Microdota* Mulsant and Rey, 1873a, p. 160; Casey, 1910, p. 58 (subgenus of *Atheta*). Type species: *Microdota amicula* (through synonymy with *sericea* Mulsant and Rey).

*Hilara* Mulsant and Rey, 1873a, p. 160. Type species: *Hilara fulva* (Mulsant and Rey).

*Distribution.*—A large genus of more than 100 species recorded from many zoogeographic regions. The genus may be cosmopolitan.

*Diagnosis.*—Composed of small species (1.42 mm. in length), *Microdota* is difficult to diagnose and delimit. Without any striking distinctive characteristic, *Microdota* may easily be confused with

[1]For type T elytral pubescence see the section entitled "Elytral pubescence patterns" under "Taxonomic Morphology" [L.H.].

*Datomicra*. Its hypomera are completely exposed in contrast to *Datomicra,* which has the basal part obscured. Antennal segments 5-10 are short and transverse; the pronotal pubescence pattern is of type E.

**HYDROSMECTA** (Thomson) Casey. Figure 9C, D.

*Hydrosmecta* Thomson, 1858, p. 33; Casey, 1910, p. 86. Type species: *Hydrosmecta longula* Heer.

*Distribution.*—Twenty-one species (at least) have been recorded in the Palaearctic and Neotropical Regions, 12 in the Nearctic (five of uncertain affinities).

*Descriptive features.*—Small species (about 2 mm. in length) with exceptionally long antennae (0.9 mm.). All antennal segments may be elongated (or 7-10 may be subquadrate). Pronotum one-tenth (*longula*) to one-fifth broader than long; elytra one-fourth to two-fifths longer than pronotum; pronotum with broad shallow impression; mesosternal and metasternal processes short; pronotal pubescence pattern type E.

*Remarks.*—The species *benigna, jugalis, fastidiosa, rarula,* and *salinasica,* with antennal segments transverse, do not seem to belong here.

**HYDROSMECTINA** (Ganglbauer) Fenyes[1]

*Hydrosmectina* Ganglbauer, 1895, p. 145. Type species: *Hydrosmectina subtilissima* Kraatz.

*Distribution.*—Seven Palaearctic, one Neotropical, and one Nearctic species have been reported.

*Descriptive features.*—Whether or not *macra* Fenyes (California) belongs here is yet to be determined. A small species with antennal segments 5-10 transverse; eyes only five sevenths as long as distance to base of head; pronotum only a little more than one-twentieth broader than long; elytra one-third longer than pronotum; pronotal pubescence pattern E.

**NOVEROTA** Casey

*Noverota* Casey, 1910, p. 90. Type species: *Noverota ornatella* Casey.

*Distribution.*—The genus comprises seven Nearctic species.

*Diagnosis.*—Resembling *Hydrosmecta,* the species are smaller (1.6-2.3 mm. in length, 0.45-0.5 mm. in width), have antennae with segments 5-10 transverse, and distinctive pronotal pubescence pat-

[1]*Hydrosmectina* does not appear in the key [L.H.].

terns. The pattern of fine dense hairs varies: *ornatella, decora,* and *improvisa* have type A (modified) with many of the caudally-directed hairs curving toward the midline; *personata* has type B; and *scenica, clemens,* and *finitima* have type E (hairs in midline directed cephalad). The pronotum is one-fourth to three-tenths broader than long. The metasternal process is very short, the isthmus long and the keeled mesosternal process on a different plane (m:i:m ratios: *ornatella*—10:14:2; *scenica*—10:19:2).

## PANALOTA Casey

*Panalota* Casey, 1910, p. 71 (subgenus of *Atheta*); Bernhauer and Scheerpeltz, 1926, p. 611. Type species: *Panalota setositarsis* Casey.

*Distribution.*—*Panalota* was based on a California species *(setositarsis)* that is questionably distinct from *maritima* Mannerheim (Alaska). This is the extent of the known range.

*Descriptive features.*—Genus characterized by exceptionally long, loosely organized, antennae; segment 4 subquadrate, 5-6 subquadrate to very feebly transverse; 7-10 slightly transverse; feebly incrassate. Pronotum one-sixth to one-fourth broader than long; elytra one-half longer than pronotum. Eighth male tergite modified.

## PHILHYGRA[1] (Mulsant and Rey) Brundin. Figures 8I, J; 25J, L.

*Philhygra* (Mulsant and Rey, 1873a, p. 160); Brundin, 1944; Hansen, 1954, p. 152; not Casey, 1910, 1911.

*Hygroecia* (Mulsant and Rey, 1873a, p. 187); Brundin, 1944.

*Metaxya* (Mulsant and Rey) Casey, 1910, p. 77; 1911, p. 131; Bernhauer and Scheerpeltz, 1926, p. 612.

*Amphibitherion* Notman, 1921, p. 155 (near *Metaxya*).

It seems likely that some of Casey's *Metaxya* (of which he named 23)—as well as those of Bernhauer (7), Fenyes (1), Notman (1), Gravenhorst (1), and Maeklin (2)—belong in *Philhygra. Metaxya* (= *Brundinia* Tottenham, 1949, p. 78, for *Metaxya,* preoccupied) based on *meridionalis* Mulsant and Rey is a palaearctic genus. Brundin (1944), in an excellent revision of European *Philhygra* (= *Hygroecia*), characterized and figured the male and female genitalia of many species. He demonstrated that modifications of the female reproductive tract (spinules and other sclerotizations in the vulva and vagina) characterize species of this genus (fig. 25J, L). The spermatheca is either poorly sclerotized or very small. It is clear from slide mounts that I have prepared that some of Casey's *Metaxya* are *Philhygra.* Unfortunately, most of Casey's species of

[1]This name also appears as a subgenus in *Xenota* [L.H.].

*Metaxya* are represented by one or a very few specimens, so that slide preparations are not now feasible. Until a careful comparative study can be made, the generic positions of the American *Metaxya* must remain in doubt.

The problem is complicated by the marked similarities between Casey's *Metaxya* and *Homalotusa*. It is not clear now where a line should be drawn, although the two groups may be delimited by size ranges: species of *Homalotusa* are larger, more robust, and between 3.5-4.2 mm. in length; those of Casey's *Metaxya* are more slender and only 2-3 mm. in length. The female reproductive tracts of those *Homalotusa* that I have examined do not have modifications.

Casey's *Metaxya* and *Homalotusa* have these characters in common: The pronotum is subquadrate to one-fourth broader than long (one-eighth to one-fourth in *Homalotusa*); the pronotal pubescence pattern is E; the postgenal carina is complete; the metasternal process is short, angulate, and less than one-half mesosternal process; the isthmus is long (often as long or longer than the mesosternal process); the antennae are robust with segments 4 and 5 elongated or quadrate and 6 feebly transverse; the antennae are feebly incrassate. The eighth male tergite is not modified. The eighth sternite (sex undetermined) is often produced and subtriangular, broadly truncate, or incised.

*Amphibitherion* is placed by Bernhauer and Scheerpeltz (1926) in *Atheta* (*sensu lato*), near the subgenus *Metaxya*. As indicated above, *Brundinia* (= *Metaxya* Mulsant and Rey) is not a New World group, but that for the present it is desirable to retain Casey's "*Metaxya*" until its species can be studied. *Amphibitherion demissum* Notman (type in Staten Island Museum of Arts and Sciences) runs to Casey's *Metaxya* in the generic key, and I have found no way of distinguishing it from that species complex.

*Descriptive features.*—Length, 2.1 mm. Pronotum one-fifth broader than long; elytra little longer than pronotum; hypomera fully visible; pronotal pubescence pattern of type E; antennae with fourth segment slightly elongated, 5-10 somewhat broader than four; 5 slightly elongated, 6-10 subquadrate and not strongly incrassate; hind tarsi with all segments short; eighth tergite crenulate; tergites 3-4 impressed but not punctate.

## HOMALOTUSA Casey

*Homalotusa* Casey, 1906, p. 340. Type species: *Homalotusa helenica* Casey.

*Distribution.*—Ten Nearctic species were described by Casey, all

in northern and western states (California to Oregon and east to Manitoba and Wisconsin).

This genus is very close to the species of Casey's *Metaxya,* tentatively placed in *Philhygra* (see discussion under that genus).

**VALENUSA** Casey

*Valenusa* Casey, 1906, p. 342. Type species: *Valenusa parallela* Casey.

*Distribution.*—One species in California.

Although placed in *Metaxya* by Casey, the single species of this genus seems to be distinct. It is long and slender, 3.2 mm. in length and 0.58-0.64 mm. in width; rufotestaceous in color; has a narrow pronotum (one-sixth broader than long) and short elytra (less than one-tenth longer than the pronotum); the antennae have segment 4 quadrate and 5 and 6 slightly transverse (7-11 missing in type); the eyes are small, length little more than one-half distance to base of head; the m:i:m ratio is 18:14:2, with the metasternal process very short, and the isthmus long and subcarinate; the impressions of tergites 3-5 are relatively shallow.

**STETHUSA** Casey. Figures 28A, B; 37B.

*Stethusa* Casey, 1910, p. 4. Type species: *Stethusa irvingi* Casey.
*Hypatheta* Fenyes, 1918, p. 23; 1920, p. 206 (in part). Type species: *Hypatheta castanoptera* (Mannerheim).

Bernhauer and Scheerpeltz (1926, p. 652) placed *Athetalia* Casey, *Micrearota* Casey, *Nemota* Casey, and *Stethusa* Casey in *Hypatheta* with very little justification. Thirteen species are now placed in *Stethusa,* and four transferred to *Xenota* (*mendosa, texana, spuriella,* and *subdebilis*).

*Distribution.*—The 61 species list in *Hypatheta* by Bernhauer and Scheerpeltz constitute a mixed lot, mostly from the Holarctic Region. The species that I have verified as belonging to *Stethusa* are North American (Maine, Rhode Island, New York, Virginia, Louisiana, Texas). I have not examined the European species included in *Hypatheta* and do not know whether or not they belong here.

*Diagnosis.*—Allied to *Xenota,* the species of *Stethusa* are distinguished by an interesting antennal character (not heretofore reported). The terminal antennal segments bear oval pale areas near the base; these are evidently sensilla (fig. 28A, B). It is relatively easy to identify dry specimens of *Stethusa* by this character.

*Other characters:* Antennae with segments 4-6 subquadrate, 7-10 subquadrate to slightly transverse, 5-10 slightly incrassate. Eyes very large. Postgenal carinae complete. Head reticulated, pronotum feebly asperate and reticulated. Pronotum three-tenths to more than one-third broader than long. Mesosternal process broader than in *Xenota,* its apex rounded: m:i:m ratio—20:6:12. Eighth tergite as in figure 37B; processes shorter in some species.

*Remarks.*—*S. klimschi* Bernhauer has been assigned here even though it lacks the antennal sensilla; its pronotum is slightly less broad; antennal segments 5-10 are transverse; the m:i:m ratio is 22:5:10; the seventh male tergite has a median eminence; and the median denticles of the eighth tergite are more pronounced, larger and smoother.

**IOTOTA** Casey

*Iotota* Casey, 1910, p. 95. Type species: *Iotota tepida* Casey.

For the characters of this genus refer to the key and to the original description [L.H.].

## Subtribe Geostibae

*Geostiba* Thomson is used here in the sense of *Sipalia* (Mulsant and Rey) Fenyes, 1918; Bernhauer and Scheerpeltz, 1926; Casey, 1910, 1911. *Sipalia* Mulsant and Rey should be used in place of *Pisalia* Mulsant and Rey (Gyrophaenini) as given in Bernhauer and Scheerpeltz, 1926. The reasons for adopting this change are given below.

*Geostiba* and allies constitute a group of Athetini with small eyes, short elytra (and probably no wings), fully exposed hypomera, and incrassate antennae with segments 4-10 transverse. The group is best developed in the European Region, with a moderate number of Nearctic species. The species vary so much among themselves that grouping is difficult. A comparative study of aedeagi and spermathecae may help to improve generic placement.

**GEOSTIBA** Thomson. Figure 10K,L.

*Geostiba* Thomson, 1858, p. 33. Type species: *Geostiba circellaris* Gravenhorst.

*Evanystes* Gistel, 1856, p. 387 (six species listed; no description; type species not designated). Type species: *Evanystes circellaris* Gravenhorst, fixed by Blackwelder, 1952).

*Typhlusida* Casey, 1906, p. 263. Type species: *Typhlusida flava* (Kraatz).

*Sipalia* (Mulsant and Rey) Casey, 1910; 1911; Bernhauer and Scheerpeltz, 1926, not Mulsant and Rey, 1873.

*Sonomota* Casey, 1911, p. 158 (subgenus). Type species: *Sonomota lippa* Casey.

*Glossola* Fowler, 1888, p. 66. Type species: *Glossola gregaria* (Erichson).

In this revision *Geostiba* Thomson is used in the original sense, based on the athetine species *circellaris* Gravenhorst, and replaces *Sipalia* (Mulsant and Rey) as incorrectly used by Casey and many others. *Sipalia* Mulsant and Rey is returned to the Gyrophaenini (= Bolitocharini) and used in its original sense, based on *difformis* Mulsant and Rey. *Evanystes* Gistel is rejected in favor of *Geostiba* because it has not been used in more than 100 years while *Geostiba* has been in continual usage since 1858 in a valid sense (Mulsant and Rey, 1873; Ganglbauer, 1895, as a subgenus of *Atheta,* including *circellaris*) or as an erroneus synonym of *Sipalia* (Mulsant and Rey) *sensu* Casey (1910, 1911); Bernhauer and Scheerpeltz (1926). *Evanystes* was revived by Blackwelder, 1952, on nomenclatural grounds, but I do not find these impressive.

There should be little confusion as a result of the application of the names *Geostiba* and *Sipalia* in their original senses. There can be no doubt of the intention of Mulsant and Rey (1853, 1873) to use *Sipalia* for a bolitocharine genus with 4,4,5-tarsal segmentation. The confusion may have been introduced when Gemminger and Harold (1868) synonymized *Sipalia* Mulsant and Rey with *Homalota* (Mannerheim) *sensu* Erichson. Later, when the name *Atheta* was used to replace *Homalota sensu* Erichson, *Sipalia* was revived in the incorrect sense (Ganglbauer, 1895, placed *Sipalia* as a synonym of *Ousipalia* des Gozis—based on *caesula* Erichson—and Casey gave it generic status in the Athetae). *Sipalia* Mulsant and Rey may now correctly replace *Pisalia* (Mulsant and Rey) *sensu* Ganglbauer, 1895 and Bernhauer and Scheerpeltz, 1926, where it appears as a subgenus of *Leptusa* Kraatz. In my opinion the subgeneric position should not be continued (if so, *Leptusa* would become a subgenus of *Sipalia* and cause considerable confusion), but *Leptusa* and *Sipalia* (= *Pisalia*) should be recognized as genera.

*General Distribution.—Geostiba* and allies may be restricted to the Holarctic Region. Bernhauer and Scheerpeltz (1926) list more than 80 species from the Palaearctic Region and a few from the Nearctic Region. None is recorded from any other zoogeographic region. Cameron (1939) records only the widespread Palaearctic species, *circellaris,* from India. Blackwelder (1944) does not list the genus among the Neotropical Athetae.

*Nearctic distribution.*—In the accompanying catalog I list only 11 species in the *Geostiba* generic group. These are widely scattered through the United States—Florida, Rhode Island, Pennsylvania, Iowa, Colorado, California, and Oregon.

*Geostiba circellaris* Gravenhorst (type species).—Head oval in outline above, slightly longer than broad. Eyes small, length about one-half their distance from base of head. Antennae with segments 4-10 short, transverse, rather incrassate. Pronotum subquadrate, hypomera completely exposed. Elytra relatively short, distinctly shorter than pronotum. Mesosternal and metasternal processes short. Tergites 3-5 impressed. Seventh tergite of male with smooth eminence; elytra with small eminences.

The American species are a heterogenous lot, and difficult to place in a single category. I tentatively include in *Geostiba* three Casey species—*hesperica, pacifica,* and *turpicula*—assigned by Casey (1910) to *Ousipalia* and placed in his collection in *Sipalia* (*Sibiota*). They do not seem to belong to *Sibiota* and only *hesperica* is clearly a *Geostiba* (*pacific* and *turpicula* are included because this position is more appropriate than in *Ousipalia*). None of the American species seems to be very close to the European *circellaris,* but they are probably congeneric with it. They do agree in having small eyes, incrassate antennae, short elytra, exposed hypomera, oval heads, and short metasternum.

The American species of *Geostiba* have broader pronota than in *circellaris* in which it is subquadrate. No American species is known to have an eminence on the seventh male tergite or bosses on the elytra. Mesosternal and metasternal processes appear to be short in all species, the latter hardly advanced between the coxae in most cases.

### Subgenus **SONOMOTA** Casey

Casey exaggerated the distinctiveness of this subgenus. The metasternal process (the margined part) is not rather long as Casey stated but the mesocoxal acetabula are margined, the short metasternal process is margined, and the mesosternal process is short and acute. The postgenal carinae are not, as Casey stated, completely absent; they are present basally. The seventh tergite is one-fourth longer than the sixth (but this is not unusual). The pronotum is one-fourth broader than long and "not quite one-half broader" as Casey stated. *G. lippa* is about 1.65 mm. long and 0.4 mm. broad (Casey gives only 0.26 mm. for the width).

## **SIBIOTA** Casey

*Sibiota* Casey, 1906, p. 350 (genus); 1911 (subgenus of *Sipalia*). Type species: *Sibiota impressula* Casey.

*Sibiota* is here considered a genus with two Oregon species; it is distinguished by an impressed pronotum, and by male tergite characters. *S. impressula* Casey may be the female of *S. fossata* Casey.

The pronotum has a broad shallow impression (one-third as wide as pronotum) extending from base to near apex in male (*fossata*), and a shallower, less elongated impression in female (*impressula*).

*Descriptive features.*—Eye length less than one-half their distance from base of head. Pronotum less than one-tenth broader than long. Elytra three-fourths to four-fifths as long as pronotum; each with shallow impression. Sixth tergite five-sixths as long as seventh; seventh tergite with two low smooth oblique carinae.

## SIPALIELLA Casey

*Sipaliella* Casey, 1911, p. 159 (as subgenus of *Sipalia*). Type species: *Sipaliella filaria* Casey.

*Distribution.*—One species in New England.

*Diagnosis.*—A minute species, *filaria* Casey, is distinguished by its parallel sides (uniform width throughout), small slender body (1.42 mm. long, 0.36 mm. broad; given as 1.2 mm. and 0.22 mm. by Casey), pale coloration, and very small eyes.

*Descriptive features.*—Eyes very small, with 9 or 10 facets. Postgenal carinae absent. Antennae with third segment very small and short (subequal in length to fourth); 4-10 short, transverse, strongly incrassate (tenth twice as broad as long, and twice as broad as third). Head, pronotum, and elytra with moderately dense pale pubescence; sternites densely clothed with longer pubescence. Pronotum one-fifth broader than long; elytra about nine-tenths as long as pronotum. Mesosternum convex, mesosternal process unusual, being on different plane from moderately long metasternal process. Seventh tergite exceptionally long (three-fifths longer than sixth).

## ASTHENESITA Casey

*Asthenesita* Casey, 1893, p. 365; 1911, p. 160. Type species: *Asthenesita pallens* Casey.

*Distribution.*—One species in Florida.

*Diagnosis.*—Distinguished by the following combination of characters: The eyes have about 16 facets; their length is about one-third the distance from base of head. The antennae are relatively robust—segment 3 twice as long as 4; segments 4-10 are transverse (relatively slightly); the segments increase in length as well as width (10 almost twice as long as 4 and three-fifth broader). The postgenal carinae are faint but evident. The pronotum is only one-sixth broader than long; the elytra are one-twentieth longer than the pronotum. The mesosternal process is acute but scarcely reaching the middle of the coxae. The metasternal process is unusually long for this group (flat, acuminate, extending almost to middle of coxae). The pronotal disk is feebly impressed near the base. The

seventh tergite is very short, only a little more than one-half as long as the sixth.

## GAENIMA Casey

*Gaenima* Casey, 1911, p. 160. Type species: *Gaenima impedita* Casey.

*Distribution.*—A single species in California.

*Diagnosis.*—The eyes are relatively large (their length less than twice the distance to base of head); the antennae are strongly incrassate; the postgenal carinae are present; the pronotum is one-twentieth broader than long, with a distinctive oval form (broadest in front of middle; sides bisinuate; basal angles obsolescent; base very strongly arcuate; apex less arcuate). The elytra are one-twentieth longer than the pronotum and the apices truncate. The intercoxal process is subequal in length and the isthmus extremely short. The sixth tergite is longer than the seventh. The length is 1.75 mm. and the color is rufoflavate.

## CREPHALIA Casey

*Crephalia* Casey, 1910, p. 54. Type species: *C. recessa* Casey.

*Distribution.*—Three species in the eastern states (New York, Pennsylvania, Missouri).

Distinguished by the characters of the key. Length, 1.75-2 mm. Eye length less than distance from base of head. Pronotum one-fifth to one-fourth broader than long; elytra subequal to pronotum in length or slightly longer. Pubescence sparse. Antennae with segments 5-10 transverse. M:i:m ratios: *prolongata*—11:6:8; *recessa*—10:7:6.

## ANADUOSTERNUM Notman

*Anaduosternum* Notman, 1922, p. 106. Type species: *Anaduosternum brevipenne* Notman.

*Distribution.*—One species in New Jersey.

In the Coleopterorum catalogus (Bernhauer and Scheerpeltz, 1926), *Anaduosternum* is placed as a subgenus of *Atheta* (*sensu lato*), near *Acrotona*. After examining the type specimen of *brevipenne* (in the Staten Island Museum of Arts and Sciences), I am convinced that its affinities are with *Geostiba* and not *Acrotona*.

*Anaduosternum* runs to couplet 67 of the key: the pronotal hypomera are fully visible, the pronotum is one-third broader than

long, pronotal pubescence is of the B pattern, and the eyes are not extremely small.

But at couplet 67, this genus does not fit either alternative well. A third alternative—with the eyes equal in length to their distance from base of head, and the elytra only very slightly longer than pronotum—will distinguish *Anaduosternum*. It fits the *Geostiba* group well except that the eyes are somewhat too large. The m:i:m ratio is about 13:2:15, with the metasternal process slender.

*Thamiaraea* group

Among the Athetini, genera of this group are distinguished by relatively broad intercoxal processes, and distinctive eighth male tergite (fig. 28G,H).

*Thamiaraea* and *Earota* constitute a group within the Athetini. As I have pointed out frequently, the Bernhauer and Scheerpeltz system of classification repeatedly separates closely-allied genera. *Thamiaraea* was placed in their Schistogeniae, a subtribe of Myrmedoniini, while *Earota* was assigned to the Athetae.

The subtribe Schistogeniae was proposed for genera with two-segmented labial palpi, regardless of their affinities. Inasmuch as the fusion of the two basal segments of the labial palpi could result from a relatively minor genetic change, it is not logical to separate such closely-allied genera into different subtribes.

Of the other eight genera assigned to the Schistogeniae, I have studied only the Nearctic *Strophogastra* Fenyes from the standpoint of classification. It does not seem to be allied to *Thamiaraea* so I am placing it in a separate group.

**THAMIARAEA** Thomson. Figure 28G-L.

*Thamiaraea* Thomson, 1858, p. 35. Type species: *Thamiaraea cinnamomea* (Gravenhorst).

*Distribution.*—This genus is not as well represented in the Holarctic Region (four species) as in the Indo-Australian Region and Pacific Islands (more than 10 species). There are four Neotropical species. The only recorded Nearctic species, *americana* Bernhauer, was collected in Louisiana.

*Diagnosis.*—The first and second segments of the labial palpi are usually (but not necessarily) fused; the third segment of the labial palpi is swollen (fig. 28I), antennal segment 4 is subquadrate and

5-10 are transverse but not strongly incrassate; the m:i:m ratio is 20:5:20. Characters of male abdomen are distinctive (fig. 28G,H).

**EAROTA** Mulsant and Rey. Figures 9A,B; 24I; 28J,M,N.

*Earota* Mulsant and Rey, 1874, p. 154. Type species: *Earota reyi* (Kiesenweiter).
*Macroterma* Casey, 1906, p. 335; 1910, p. 9. Type species: *Macroterma alutacea* Casey.

*Distribution.*—The type species, *reyi,* is European. Five American species, widely distributed, have been recorded.

*Diagnosis.*—*Earota* is distinguished from *Thamiaraea* by having generalized three-segmented labial palpi (fig. 28J). The male eighth tergite is distinctive. The m:i:m ratio—18:10:10—is rather different.

## SEA-SHORE GENERA

Two genera of Athetini, not necessarily related, inhabit the seashore of the Pacific coast.

**PONTOMALOTA** Casey. Figure 9H, I.

*Pontomalota* Casey, 1885, p. 296. Type species: *Pontomalota opaca* LeConte.

*Distribution.*—Five species have been named from southern California to British Columbia.

*Diagnosis.*—*Pontomalota* is distinguished by its pronotum (one-fifth broader than long) which is narrow at the base and wide at the apex (three-fourths as broad at base as apex) and has the sides evenly arcuate; the base and apex are almost straight. The integuments are granulose in appearance due to a fine-meshed raised reticulation (head, pronotum, and elytra only). The eyes are medium-sized. The elytra are slightly shorter than the pronotum, subequal in width to the pronotum, and have the apices strongly bisinuate (outer angles prolonged). The antennae have segments 5-10 transverse, but only strongly incrassate.

**TARPHIOTA** Casey. Figure 24J.

*Tarphiota* Casey, 1893, p. 332, 1910, p. 74. Type species: *Tarphiota pallidipes* Casey.

*Distribution.*—Several species occur on the seashore from California to Alaska.

*Diagnosis.*—The dark-colored species may be distinguished by

their granulose integuments which have a dense, small-meshed raised reticulation. The deep mesocoxal acetabula are not margined on the medial and posterior borders. The head is one-fifth broader than long; the pronotum one-third broader than long; the eyes are very large, with fine facets; antennal segments 4 and 5 are longer than broad, and 6-10 slightly transverse; the anterior tibiae are densely spinulose externally.

*Trichiusa* group

*Trichiusa* is a distinctive genus, the affinities of which are unknown to me.

**TRICHIUSA** Casey

*Trichiusa* Casey, 1893, p. 339. Type species: *Trichiusa compacta* Casey.

*Distribution.*—A large genus of Nearctic species widely scattered throughout much of the region. Eighteen species have been named.

*Diagnosis.*—The species of *Trichiusa* have a distinctive form—the head and pronotum are relatively small, the elytra are one-fifth to one-third broader than the foreparts, and the robust abdomen is broader than the elytra. The species are usually rather hairy, with the pubescence relatively long and shaggy. The pronotal pubescence pattern is type E (hairs directed cephalad in midline) or with most of the hairs transverse. The mesocoxae are relatively widely separated for the Athetini.

*Goniusa* group

Contains a single distinctive genus of myrmecophiles.

**GONIUSA** Casey. Figure 9E-G.

*Goniusa* Casey, 1906, p. 348. Type species: *Goniusa obtusa* LeConte.

*Distribution.*—First recorded from Pennsylvania, *Goniusa* is known to occur as far west and south as Texas.

*Diagnosis.*—*Goniusa* is easily recognized by its distinctive pronotum which is nearly three-fifth broader than long; its sides are moderately arcuate and converge strongly in front of the middle; the apex is not more than three-fourths as broad as the base. The pronotal disk is broadly and conspicuously impressed in the male (concavity is almost three-fifths as broad as the pronotum; deeper and a little broader in the basal half). The species are relatively large (3.1-3.5 mm. in length). The eighth male tergite is feebly crenulate.

*Doliponta* group

The genus *Doliponta* is one of uncertain affinities.

**DOLIPONTA** Blackwelder

*Lipodonta* Fenyes, 1921a, p. 24 (junior homonym of *Lipodonta* Nitzsch). Type species: *Lipodonta veris* Fenyes.
*Doliponta* Blackwelder, 1952, p. 132. Type species: *Doliponta veris* (Fenyes).

*Distribution.*—One species from California.

*Diagnosis.*—The species is slender, 2.5 mm. in length. The eyes are large. The antennae are elongated, segment four is quadrate, 5-7 are elongated, 8-9 are subquadrate, and 1 is slightly elongate. The pronotal pubescence pattern is type E (hairs in midline directed cephalad); the pronotum is one-seventh broader than long; the elytra are one-third longer than the pronotum; the mesosternal and metasternal processes are on different planes (the former more ventral); the isthmus is peculiarly carinate (especially where it contacts the mesosternal process).

**LYPOGLOSSA** Fenyes. Figures 9J, K; 10M.

*Lypoglossa* Fenyes, 1918, p. 23. Type species: *Lypoglossa fenyesi* Bernhauer.

For the characters of this genus refer to the key and to the original description [L.H.].

**PARAMEOTICA** Ganglbauer

*Parameotica* Ganglbauer, 1895, p. 228. Type species: *Parameotica laticeps* (Thomson).

For the characters of this genus refer to the original description. The genus does not appear in the key [L.H.].

**STROPHOGASTRA** Fenyes

*Strophogastra* Fenyes, 1921a, p. 20. Type species: *Strophogastra penicillata* Fenyes.

For the characters of this genus refer to the key and to the original description [L.H.].

## Tribe ALEOCHARINI

Aleocharides Thomson, 1859, p. 29; 1860, p. 239; 1867, p. 212 (subtribe).
Aleocharaires Mulsant and Rey, 1874a, p. 1 (branch).

Aleocharina Sharp, 1883, p. 146.

Aleocharini Ganglbauer, 1895, p. 21; Bernhauer, 1901, p. 431; Reitter, 1909, p. 17; Casey, 1906, p. 127; Fenyes, 1918; 1920; 1921; Bernhauer and Scheerpeltz, 1926, p. 718; Cameron, 1939; Blackwelder, 1944, p. 164; Hatch, 1957, p. 136.

The tribe Aleocharini as herein organized is approximately equivalent to the genus *Aleochara* in the broad sense that has been used by Fenyes (1918, 1920, 1921) and Bernhauer and Scheerpeltz (1926). Subdivision of *Aleochara* (*sensu lato*) into genera provides much more latitude for classification, and eliminates the necessity of using a trinomial. Casey's classification of this group is adopted with some modification. As Casey proposed a number of generic names, no new ones are necessary. Sixteen genera are recognized, but this number may be reduced by consolidation. A thorough revision of the tribe is needed, not only for the Nearctic Region but for the world. The tribe may be more numerous in our western states; 56 species (in 13 genera) are from the west, and 32 species (in nine genera) are from the east.

*Tribal characteristics.*—Tarsi 5,5,5 segmented; antennae 11 segmented; maxillary palpi 5 segmented; labial palpi 4 segmented. Velum of parameres reticulated (fig. 2E).

Probably the most interesting—and most important—distinguishing feature of this tribe is an ecological one; the larvae are predator-parasites within puparia of cyclorrhaphous Diptera where they undergo hypermetamorphosis. Although the life histories of only a few species are known, it seems plausible to consider this a tribal character.

**ALEOCHARA** Gravenhorst. Figures 2A, D, E; 10N; 11A-J; 24C; 25B; 29G.

*Aleochara* Gravenhorst, 1802, p. 67. Type species: *Aleochara fuscipes* Linnaeus.

*Distribution.*—Cosmopolitan.

*Diagnosis.—Aleochara* is used here in the limited sense of *Aleochara (sensu stricto)* of Casey and others. The species are relatively large and may be distinguished by a combination of characters: The large convex pronotum is about two-fifths broader than long; its hypomera are not visible in lateral view. Pronotal pubescence pattern is type B. The mesocoxae are narrowly separated; the mesosternum is not carinate. The m:i:m ratio is 62:0:12; the isthmus is absent; the broad, mesosternal process is truncate at the apex. Antennal segments 5-10 are transverse. Tergites 3-5 are impressed and the impressions finely punctate at most.

## **AIDOCHARA** Casey

*Aidochara* Casey, 1906, p. 145. Type species: *Aidochara planiventris* Casey.

*Distribution.*—One species recorded from California.

*Diagnosis.*—*Aidochara* is closely related to *Aleochara* but distinguished by the absence of impressions at the base of the fourth and fifth tergites, the narrower intercoxal processes, the shorter mesosternal process (m:i:m ratio—32:0:12), and the second antennal segment being longer than third.

## **POLYCHARA** Mulsant and Rey. Figure 12A, B.

*Polychara* Mulsant and Rey, 1874, p. 348. Type species: *Polychara discipennis* Mulsant and Rey.

*Distribution.*—Holarctic.

*Diagnosis.*—The following seven genera are differentiated from *Aleochara* by having the mesosternum carinate. They are similar to *Aleochara* in having invisible hypomera and narrowly separated mesocoxae (the intercoxal processes are variable). *Polychara,* as catalogued by Bernhauer and Scheerpeltz (1926), is about the same as Casey's group I of *Baryodma.* Casey (1906) construed *Baryodma* in a broad sense, but it should be restricted to species with a double row of pronotal punctures.

The pronotum and elytra of *Polychara* are rather uniformly and finely punctate and the pronotum has pubescence pattern C. The intercoxal processes are contiguous (the m:i:m ratio in *uvidula* is 32:0:9); the mesosternal process is truncate.

## **CALOCHARA** Casey

*Calochara* Casey, 1906, p. 149. Type species: *Calochara rubripennis* Casey.

*Distribution.*—One species in California.

*Diagnosis.*—Closely allied to *Polychara,* distinguished by the coarse umbilicate punctation of the pronotum and elytra, the smooth, non-reticulate pronotum and elytra, the mesosternal process which is acuminate at the apex, the obconical third maxillary palpomere which is less than twice as long as broad.

## **ISOCHARA** Bernhauer. Figure 12E-H.

*Isochara* Bernhauer, 1901, p. 440. Type species: *Isochara tristis* Gravenhorst.

*Distribution.*—Holarctic, Neotropical.

*Diagnosis.*—This genus as herein constituted is about the same as Casey's groups II, III, and IV of *Baryodma*. It is somewhat heterogeneous, and the species are keyed out in several places. From the other genera with invisible hypomera, carinate mesosternum, and uniformly punctate pronotum (lacking rows of punctures), *Isochara* is differentiated by several tergal characters—in some species the tergal impressions have very large punctures, in other the tergites are imbricated.

**OREOCHARA** Casey

*Oreochara* Casey, 1906, p. 148. Type species: *Oreochara laramiensis* Casey.

*Distribution.*—One species recorded in Wyoming.

*Diagnosis.*—Distinguished from the preceding genera by the distinctive conical fourth maxillary palpomere.

**XENOCHARA** (Mulsant and Rey) Casey. Figure 12I, J.

*Xenochara* Mulsant and Rey, 1874, p. 344; Casey, 1906, p. 146. Type species: *Xenochara puberula* Klug (through synonymy with *decorata* Aubé).

*Distribution.*—The type species *puberula* Klug, is a palaearctic species that is apparently almost cosmopolitan through introduction. A single Nearctic species, *bipartita* Casey, occurs in Texas.

*Diagnosis.*—The mesosternum is distinctively carinate—the entire surface is gradually elevated to an acute crest. The pronotal pubescence pattern is type F (hairs in midline directed cephalad in apical one-third, and directed caudad in basal two-thirds).

**BARYODMA** Thomson. Figure 13A-I.

*Baryodma* Thomson, 1858, p. 31. Type species: *Baryodma bipunctata* (Olivier).
*Coprochara* Mulsant and Rey, 1874, p. 430. Type species: *Coprochara bilineata* (Gyllenhal).

*Distribution.*—Cosmopolitan. Sixteen species have been recorded in the Nearctic Region, almost all of them in the western states. *B. bimaculata* (Gravenhorst) and *B. verna* (Say) occur in the eastern United States. Most of the species of this genus are listed under *Coprochara* in Bernhauer and Scheerpeltz.

*Diagnosis.*—*Baryodma* contains the species of Casey's groups V and VI of *Baryodma*. The pronotum of these species has two subparallel rows of punctures. There is considerable variation in the composition of these rows: the punctures may be sparse and more or less in single rows, or the rows may be multiple and confused;

the punctures may be fine, coarse, or slightly confluent. The mesocoxae are moderately widely separated; the mesosternal process is broad and truncate or slender and acuminate; the m:i:m ratios are *densissima*—24:0:8 and *verna*—30:0:10.

**FUNDA** Blackwelder

*Eucharina* Casey, 1906, p. 165 (junior homonym of *Eucharina* Agassiz). Type species: *Eucharina sulcicollis* Mannerheim.
*Funda* Blackwelder, 1952, p. 166.

*Distribution.*—On the Pacific sea-shore from California to Alaska. The type species occurs in Alaska; four other species were named by Casey. It seems almost certain that Say's *semicarinata* (Missouri) does not belong here.

*Diagnosis.*—Obviously related to *Baryodma,* this genus has the punctures of the pronotum in two oblique rows (as a rule each row is single); the punctures are exceptionally coarse (subfoveolate) and more or less confluent. The fore and middle tibia—in contrast to *Baryodma*—are relatively short and are beset with numerous stout spines. The intercoxal processes are relatively slender, and the metasternal process relatively long; the m:i:m ratio is 24:0:12.

**EMPLENOTA** Casey

*Emplenota* Casey, 1884, p. 17. Type species: *Emplenota maritima* Casey.
*Polystomota* Casey, 1906, p. 136. Type species: *Polystomota grisea* (Kraatz).

*Distribution.*—Contains a common Atlantic sea-shore species, *maritima,* and five Pacific coast species.

*Diagnosis.*—This and the next five genera of the tribe have the hypomera visible in lateral view, and the mesocoxae narrowly separated. None of these genera has rows of pronotal punctures nor a carinate mesosternal.

*Emplenota* and *Echochara* are distinguished by having four tergites (3-6) impressed at the base. From *Echochara,* this genus is differentiated by its darker coloration, shorter hind tarsi (with the basal segment scarcely longer than the second), and non-cavernicolous habits.

**ECHOCHARA** Casey

*Echochara* Casey, 1906, p. 176. Type species: *Echochara lucifuga* Casey.

*Distribution.*—In caves of eastern North America. A single species has been recorded but there may be more as the genus occurs in numerous caves.

*Diagnosis.*—Similar to *Emplenota,* this genus is rufoflavate in color, and the hind tarsi are relatively long (the basal segment is longer than two and three combined).

**RHEOBIOMA** Casey

*Rheobioma* Casey, 1906, p. 180. Type species: *Rheobioma disjuncta* Casey.

*Distribution.*—Three species in California.

*Diagnosis.*—This genus differs from the two preceding genera in having only three tergites (3-5) impressed at the base. *Rheobioma* is distinctive in having the intercoxal processes separated and the isthmus relatively long—*marcida* (18:12:2); *disjuncta* (28:8:4). The pronotum is one-fourth to three-tenths broader than long; the elytra are one-third longer than the pronotum. The pronotal pubescence pattern is type B, with most of the hairs directed laterad.

**RHEOCHARA** (Mulsant and Rey) Casey. Figure 14B.

*Rheochara* Mulsant and Rey, 1874, p. 294. Type species: *Rheochara spadicea* Erichson.

*Distribution.*—A Holarctic genus, with species recorded in the Neotropical Region.

*Diagnosis.*—Distinguished from *Rheobioma* and *Rheocharella* by its distinctive pronotum which is one-half broader than long, and very strongly convex; the hypomera being feebly visible in lateral view, the depressed anterior angles, and by being broadest near the base, with the sides converging to the relatively narrow apex. The pronotal pubescence pattern is type B with four or five rows of transverse hairs at the base. The mesosternal process is long and slender, its apex rounded; the isthmus is as long as or longer than the metasternal process; the m:i:m ratio is 28:6:6. The hind tarsi have the basal segment subequal to segments two and three combined; 2,3,4 are subequal. Only two tergites are impressed (segments 3,4).

**RHEOCHARELLA** Casey

*Rheocharella* Casey, 1906, p. 181. Type species: *Rheocharella fenyesi* Bernhauer.

*Distribution.*—One species in California.

*Diagnosis.*—Distinguished from the two previous genera by having the intercoxal processes contiguous (isthmus absent)—m:i:m ratio (30:0:12). The pronotum is only one-fifth broader than long; it is broadest in front of the middle; the hypomera are fully exposed.

The elytra one-sixth longer than the pronotum. The pronotal pubescence pattern is type C (with a few hairs at the apical border directed cephalad), with only one row of transverse hairs at the base. Tergites 3-5 are impressed.

**PINALOCHARA** Casey

*Pinalochara* Casey, 1906, p. 177. Type species: *Pinalochara wickhami* Casey.

*Distribution.*—One species in Arizona.

*Diagnosis.*—Distinguished by the short elytra, which are subequal in length to the pronotum, the truncate elytral apices, and the type E pronotal pubescence pattern (sparse, with only a few hairs directed cephalad). The pronotum is one-sixth broader than long, broadest subapically, and the basal angles are distinct. The mesosternum is not carinate; the intercoxal processes are contiguous, both processes are long and slender. Tergites 3-5 are impressed.

**MASEOCHARA** Sharp. Figure 14C,D.

*Maseochara* Sharp, 1883, p. 154. Casey 1906, p. 168. Type species: *Maseochara opacella* Sharp.

*Tithanis* Casey, 1884, p. 16. Type species: *Tithanis valida* (LeConte).

*Distribution.*—A group of species in the southwestern United States, Mexico and Guatemala.

*Diagnosis.*—Distinguished from all other genera of the tribe by having the mesocoxae very broadly separated, and the intercoxal processes broad. The species are the largest in the tribe (10-13 mm.) or are relatively small (4.5-6 mm.).

**EURYODMA** Reitter

*Euryodma* Reitter, 1909, p. 23. Type species: *Euryodma brevipennis* (Gravenhorst).

In the past this genus has been regarded as a subgenus of *Aleochara*. Seevers elevated many of the subgenera of *Aleochara,* but did not mention *Euryodma* except in the "Index" where it is listed as though it were a genus. *Euryodma* does not appear in the key [L.H.].

## Tribe HOPLANDRIINI

Hoplandriini Fenyes, 1920, p. 306; Cameron 1939, p. 555; Borgmeier, 1949, p. 114.

Hoplandriae (group of Myrmedoniini) Casey, 1910, p. 170; Bernhauer and Scheerpeltz, 1926, p. 713.

*Tribal Characteristics.*—The Hoplandriini are most closely related to the Aleocharini, and not to the Myrmedoniini in which they have been placed by Bernhauer and Scheerpeltz (1926) and others. They agree with the Aleocharini in having an extra segment of the labial and maxillary palpi, and in the reticulated character of the paramere velum. From the Aleocharini the American species may be distinguished by having 4,5,5 segmented tarsi. This is not a tribal character, however, because the Oriental genera have 5,5,5 segmented tarsi (*Pseudoplandria,* etc.). The ecology of the Hoplandriini has probably not been studied; it is not known whether or not any of the larvae are predator-parasites.

*Tribal distribution.*—In contrast to the tribes considered earlier, the Hoplandriini seem to be most abundant in tropical areas and in particular the Neotropical and Oriental Regions. The tribe is very poorly represented in the Palaearctic Region and possibly not at all in Africa. The Nearctic Hoplandriini comprise seven genera and almost 39 species. The Neotropical fauna of this tribe will probably prove to be the largest (at present, nine genera with 68 species). It is interesting that the genera with the 5,5,5 segmented tarsi are in the Oriental Region and Pacific Islands. Whether or not one may infer anything from this about the origin of the tribe is conjectural at this time.

## HOPLANDRIA Kraatz. Figures 14E-G; 24D.

*Hoplandria* Kraatz, 1857, p. 4. Type species: *Hoplandria ochracea* Kraatz.

*Distribution.*—Predominantly a Neotropical genus, with 55 species through South and Central America, *Hoplandria* extends into the United States (7 species) as far north as New England and Iowa. In the west, only one species has been recorded from Tucson, Arizona. Species have been reported from Manchuria, Japan, Singapore, Ceylon, New Caledonia, and the Philippines in the Old World. The generic position of these species should be reconsidered.

*Descriptive features.*—Head somewhat broader than long; frontal suture absent. Eyes very large and finely facetted. Postgenal carinae very strong. Underside of head generalized. Ligula long, simple. Antennae short; segments 1-3 moderately long; 4 short, slightly transverse; 5-10 short, strongly transverse, but only a little incrassate. Pronotum two-fifths broader than long; apex straight; base very strongly arcuate; basal angles obsolete; sides converging in front of broadest level disk strongly margined; pronotum convex; hypomera inflexed so that they are scarcely visible in lateral view. Pronotum pubescence distinctive pattern A, modified—caudally-directed hairs lateral to midline curving slightly mesad. Elytra almost one-fourth longer than pronotum; apices bisinuate. Elytra in male with spinose process near each inner apical angle; in female unmodified. Elytral pubescence

pattern with all hairs subparallel and directed caudad. Mesocoxae widely separated, intercoxal processes broad, contiguous, their apices truncate or slightly rounded; m:i:m ratio—*texana* (18:0:12). Abdomen at level of third segment about as broad as elytra; narrowing apically to become subacuminate. Tergites 3-5 impressed. Fourth tergite in male with strong median carinate process. Female abdomen not modified. Length 2.8-3.5 mm. Coloration rufoflavate to flavotestaceous.

## PLATANDRIA Casey. Figures 14I; 24E.

*Platandria* Casey, 1893, p. 345. Type species: *Platandria mormonica* Casey.

*Distribution.*—Except for a species in Costa Rica, this genus has only six Nearctic species. In the east the genus has been found in North Carolina, Nebraska, and Kansas; in the west as far north as Oregon and Utah.

*Descriptive features.*—Head very little broader than long. Eyes moderate in size. Antennae with segment 4 subquadrate, 5 slightly transverse, 6-10 moderately transverse and incrassate. Pronotum a little less than two-fifths broader than long; form as in *Hoplandria*. Pronotal pubescence pattern type B or C. Mesocoxae narrowly separated; mesosternal process long, slender and acuminate; isthmus short; metasternal process short, subtriangular. Metasternum relatively long behind mesocoxae. Elytra without spinose process in either sex. Abdomen with carinate processes on seventh and eighth tergites in male. Abdomen less acuminate than in *Hoplandria*. Abdomen often with setigerous asperities. Integuments less shiny and more densely pubescent than in *Hoplandria*.

## TINOTUS Sharp. Figure 15C-F.

*Tinotus* Sharp, 1883, p. 170. Type species: *Tinotus cavicollis* Sharp.

*Distribution.*—Well represented in the Nearctic Region with 17 described species (12 in the east, five in the west—none in the coastal states). There are six Neotropical species. Only the widespread species *morion* (Gravenhorst) occurs in the Palaearctic Region. One species has been recorded in Africa.

*Diagnosis.*—The integuments have a fine, close-meshed reticulation; the abdomen usually has asperities or an asperate-imbricate pattern. The pronotum and elytra are usually densely pubescent (pronotal pattern type C). The pronotal form is distinctive—broadest subapically, sides converging to distinct basal angles, base feebly bisinuate; relatively broad—and one-half to three-fourths broader than long; the disk often (but not always) has a broad medial impression in the basal two-thirds (or apical two-thirds). The head is often broadly impressed.

## NOSORA Casey

*Nosora* Casey, 1911, p. 145. Type species: *Nosora azteca* Casey.

*Distribution.*—One species recorded in southern Arizona and Texas, one in Mexico.

*Descriptive features.*—Small species, length, 1.4-2 mm. Coloration flavate (*meticola*), with elytra and some tergites darker, or reddish-brown (*azteca*). Integuments obsoletely reticulate. Eyes very large, with medium-sized facets (eye length about three times their distance from base of head). Antennae with segment 3 short, slender; segments 4-10 short, transverse; 3-7 strongly incrassate, 7-11 subparallel. Pronotum more than one-half broader than long, broadest at middle; pronotal pubescence pattern type B. Elytra one-half longer than pronotum. M:i:m ratio—10:8:2, low feebly convex isthmus almost as long as mesosternal process. Abdomen with parallel sides; tergites 3-5 impressed (impressions glabrous); eighth tergite of *meticola* (sex of type undetermined) broadly and shallowly emarginate and with more than dozen moderately large setigerous carinulae.

**GENOSEMA** Notman. See Figure 14H, J.

*Genosema* Notman, 1920a, p. 720. Type species: *Genosema sexualis* Notman.

For the characters of this genus refer to the key and to the original description [L.H.].

**LOPHOMUCTER** Notman. See Figure 15A, B.

*Lophomucter* Notman, 1920a, p. 722. Type species: *Lophomucter laevicollis* Notman.

For the characters of this genus refer to the key and to the original description [L.H.].

**TETRALLUS** Bernhauer. See Figure 15G.

*Tetrallus* Bernhauer, 1905, p. 252. Type species: *Tetrallus fenyesi* Bernhauer.

For the characters of this genus refer to the key and to the original description [L.H.].

## Tribe FALAGRIINI

Falagriates Mulsant and Rey, 1873b, p. 8 (rameau—Myrmedoniaires); Ganglbauer, 1895, p. 107 (subtribe—[subtribus]—Myrmedoniini).

Falagriae Casey, 1906, p. 183 (subtribe of Myrmedoniini); Fenyes, 1918, p. 18; Bernhauer and Scheerpeltz, 1926, p. 571.

*Tribal characteristics.*—Tarsi 4,5,5 segmented. Head with distinct neck, not more than two-fifths as broad as head and usually less than one-third (one-fifth to one-fourth as broad as head—*Borboropora, Aleodorus;* one-fourth to one-third—*Falagriota, Lorinota, Cordalia, Falagria, Myrmecopora* (part); two-fifths—*Myrmecopora vaga*). Pronotum narrow at base—not more than three-fourths maximum width. Pronotum with distinct median sulcus (faint in *Falagriota*). Mesothoracic peritremes behind procoxae almost always, but not necessarily, enlarged and sclero-

tized. Prosternum elongated above and behind procoxae and in conjunction with inflexed hypomera and enlarged peritremes "closing" procoxal cavities. Parameres distinctive; condylite velum clearly separated from the paramerite velum (figs. 17A, C, E, G, I; 18A, C). Eighth tergite with comb of more than 30 very minute denticles in an arcuate row present (*Falagria, Myrmecopora, Lissagria, Aleodorus,* and *Borboropora*) or absent (*Falagriota, Anaulocaspis, Stenagria, Cordalia*).

The genera of Falagriini are considered in the following order:

Eighth tergite with comb of denticles.
  Hypomera delimited; elytral punctation uniform.
    Scutellum bicarinate ..... *Falagria*
    Scutellum not carinate ..... *Myrmecopora*
  Hypomera not or feebly delimited; elytral punctation variable.
  Elytral punctures dense near scutellum.
    Intercoxal processes specialized ..... *Aleodorus*
    Intercoxal processes not specialized ..... *Omoschema, Lissagria*
  Elytral punctures uniform ..... *Borboropora*
Eighth tergite without comb of denticles.
  Peritremes large, sclerotized ..... *Cordalia, Stenagria, Anaulacaspis*
  Peritremes small, unsclerotized; pronotal sulcus very faint ..... *Falagriota*

## **FALAGRIA** Leach. Figures 17A, B; 30D; 35B.

*Falagria* Leach, 1819, p. 177. Type species: *Falagria sulcata* (Paykull).

*Distribution.—Falagria* is used by Bernhauer and Scheerpeltz (1926, p. 574) in a broad sense (including *Anaulacaspis, Stenagria,* and *Lissagria,* herein recognized as genera). *Falagria* (*sensu stricto*) is apparently widely distributed, occurring in almost every zoogeographic region. Ten Nearctic species have been described, seven in the eastern states. The genus has doubtfully been recorded west of Utah.

*Diagnosis.*—Distinguished from all other Falagriini by the bicarinate scutellum. Differentiated from at least some genera by the comb of denticles on the eighth tergite, the margined hypomera, the deep pronotal sulcus, and the uniform elytral punctation.

*Descriptive features.*—Length, 2-2.5 mm.; small, slender, graceful species. Head and pronotum narrower than elytra which are slightly broader than abdomen. Head broadest at eye level (eyes moderate in size); sides arcuate behind eyes; basal angles obsolete; neck one-third as broad as head. Antennae with segment 4 quadrate, 5-10 transverse (5 may be quadrate) but only moderately so, and not strongly incrassate. Pubescence of head transverse in apical half and directed caudad in basal part. Pronotum one-fourth broader than long; broadest subapically, sides converging sinuately to base which is little more than three-fifths as broad as maximum width. Elytra one-fourth longer than pronotum. Tergites 3-5 impressed at base; impressions coarsely punctate, intervals subcarinate. M:i:m ratio—16:2:10; intercoxal processes on slightly different planes; mesosternal process rounded; metasternal process truncate. Sides of abdomen subparallel.

## MYRMECOPORA Saulcy. Figures 17C, D; 35D.

*Myrmecopora* Saulcy, 1864, p. 429. Type species: *Myrmecopora publicana* Saulcy.

Only one species, *Myrmecopora vaga* LeConte, has been recorded in our fauna. The characteristics below apply to the American species.

*Descriptive features.*—Length, 3.15 mm. Coloration chestnut brown. Head slightly broader than pronotum and considerably broader (62:52) than long (excluding labrum); sides of head rounded into transverse base; neck broad. Antennae elongated, extending nearly to middle of elytra; segments 1-6 distinctly elongated; 7-10 subquadrate, decreasing slightly in length; 11 elongated, but only slightly so, tapering apically. Pronotum subequal in length and width; broadest subapically; sides converge moderately to base. Pronotal hypomera distinctly delimited and fully visible. Pronotal sulcus moderately wide and deep. Pronotal pubescence pattern E (all hairs in midline directed cephalad). Elytral punctation and pubescence evenly distributed. Scutellum not carinate. Tergites 3-5 moderately deeply impressed; the impressions not coarsely punctate. Eighth tergite very finely denticulate. Aedeagus as in Figure 17C, D.

## ALEODORUS Say. Figure 18A, B.

*Aleodorus* Say, 1830, p. 60. Type species: *Aleodorus bilobatus* Say.
*Chitalia* Sharp, 1883, p. 235. Type species: *Chitalia crenata* Sharp.

*Distribution.*—New World—11 species in the Nearctic Region and six in the Neotropical Region (only one in South America).

*Diagnosis.*—Distinguished from all other Falagriini by the distinctive intercoxal processes: The mesocoxal acetabula are not margined internally; the acute mesosternal process is on a more dorsal level than the mesosternum proper and overlapping the metasternal process (not delimited) and perhaps fused to it.

*Descriptive features.*—Length, 2.8-3.3 mm. Coloration flavotestaceous or darker. Form of head as in *Falagria*. Antennae long, and stouter than in *Falagria;* segments 1-7 tend to be stout and elongated; 8-10 feebly transverse; 11 short, conoidal. Pronotum only about one-eighth broader than long; sides converging very strongly, base only one-half maximum width; dorsum with coarse asperate punctation. Hypomera small and feebly delimited. Scutellum not carinate, but granulose and having narrow smooth area. Elytra one-fourth longer than pronotum and with dense concentration of subasperate punctures near base. Procoxal cavities closed by prolonged prosternum, large peritremes, and inflexed hypomera. Mesosternum in front of mesocoxal-level large, smooth, almost impunctate. Tergites 3-5 impressed (6 slightly); impressions coarsely punctate.

## LISSAGRIA Casey. Figure 38A, B.

*Lissagria* Casey, 1906, p. 252. Type species: *Lissagria laeviuscula* LeConte.

*Distribution.*—Six California species were named by Casey.

*Diagnosis.*—*Lissagria* is similar to *Aleodorus* in having an area of dense punctation and pubescence at the base of each elytron. It differs from that genus in having generalized intercoxal processes between the mesocoxae. The pronotum is longer than broad.

*Descriptive features.*—Head as long as broad. Eyes medium-sized. Antennae with segments 1-7 elongated, 8-10 quadrate to feebly transverse, only 8-10 appreciably incrassate. Pronotal pubescence with all hairs directed caudad, some curving toward median line. Elytra one-fourth longer than pronotum; apices bisinuate. Tergal impressions sparsely punctate, if at all.

## BORBOROPORA Kraatz

*Borboropora* Kraatz, 1862, p. 405. Type species: *Borboropora kraatzi* Fuss.
*Aneurota* Casey, 1893, p. 347. Type species: *Aneurota sulcifrons* Casey.
*Orthagria* Casey, 1906, p. 260. Type species: *Orthagria quadriceps* (LeConte).

*Distribution.*—Holarctic with two species in the Palaearctic Region, and two in the Nearctic Region (New York and Florida).

*Diagnosis.*—From those genera of Falagriini with a comb of fine denticles on the eighth tergite, *Borboropora* is distinguished by the non-carinate scutellum, the generalized meso-metasternal processes, the uniform elytral punctation, and the non-punctate tergal impressions. *Borboropora* has a subquadrate head (with a medium sulcus on the apical half of the vertex in some species) and a subquadrate pronotum (length and width subequal). The species are small, less than 2 mm. in length.

## CORDALIA Jacobs. Figure 17I, J.

*Cordalia* Jacobs, 1925, p. 82. Type species: *Cordalia obscura* (Gravenhorst).
*Cardiola* Mulsant and Rey, 1874, p. 38 (junior homonym of *Cardiola* Broderip, 1834). Type species: *Cardiola obscura* (Gravenhorst).

*Distribution.*—Two Palaearctic species, one of which *(obscura* Gravenhorst) has been introduced into the United States. An African species has been described.

*Diagnosis.*—Distinguished from the preceding genera by the absence of the eighth tergite comb. The hypomera are delimited, the elytral punctation is uniform, and scutellum not bicarinate; antennal segments 5-10 are transverse. The pronotal sulcus is relatively shallow, and pronotal pubescence relatively long. The rufous species is small (2.5 mm.).

## STENAGRIA Sharp. Figure 17G, H.

*Stenagria* Sharp, 1883, p. 238. Type species: *Stenagria gracilipes* Sharp.
*Lorinota* Casey, 1906, p. 238. Type species: *Lorinota cingulata* (LeConte).

Blackwelder, 1952, p. 227, lists *Lorinota* Casey and *Stenagria* Sharp as synonyms of *Myrmecocephalus* MacLeay, an Australian genus. These synonymies require confirmation. *Stenagria* is based on a Central American species.

*Distribution.*—In many zoogeographic regions. In the Nearctic Region, 11 species have been recorded from the midwestern and southwestern states.

*Descriptive features.*—Head with sides evenly converging to narrow neck (angles obsolete) or with genae more pronounced and basal angles obsolescent. Antennae with all segments elongated (9 or 10 may be subquadrate). Eyes medium-sized. Pronotum longer than broad (slightly to one-eighth longer). Mesothoracic peritremes very large, and contiguous with prosternum which is very large, produced under procoxae, and depressed to form acetabula. Scutellum usually with incomplete carina. Tergites 3-5 with strong coarsely punctate impressions, or with impressions glabrous—*caviceps* (New Mexico), *bilimbata* (Iowa), *pinalica* (Arizona). M:i:m ratio—14:6:14; mesosternal process slender and acute at apex; metasternal process not margined along sides, truncate at tip; isthmus of different color (black) and texture. Eighth tergite without comb of very fine denticles.

**ANAULACASPIS** Ganglbauer. Figure 18C, D.

*Anaulacaspis* Ganglbauer, 1895, p. 256. Type species: *Anaulacaspis nigra* (Gravenhorst).
*Falagrioma* Casey, 1906, p. 230. Type species: *Falagrioma thoracica* (Curtis).
*Leptagria* Casey, 1906, p. 249. Type species: *Leptagria perexilis* Casey.

*Distribution.*—Rather widely distributed in many parts of the world; two Nearctic species occur in New York and Texas.

*Diagnosis.*—*Anaulacaspis* does not seem to have any pronounced diagnostic features. The species are small (about 2 mm.), lack the eighth tergite comb, have the hypomera delimited, uniform elytral punctation, and generalized intercoxal relationships. The head is *Falagria*-like, with more arcuate sides; the pronotum is subquadrate; the scutellum is non-carinate but with a smooth median line; antennal segments 5-10 are feebly transverse; the tergal impressions are not punctate.

**FALAGRIOTA** Casey. Figure 17E-F.

*Falagriota* Casey, 1906, p. 255. Type species: *Falagriota occidua* Casey.

*Distribution.*—Nearctic with six California species named by Casey.

*Diagnosis.*—Clearly a member of the Falagriini, as indicated by the narrow neck, and faintly sulcate falagriine pronotum and parameres. The genus is relatively generalized in these respects: the

eighth tergite lacks a comb, the scutellum is non-carinate, the hypomera are delimited, and the elytral pubescence is uniform. The species are small and slender with the head subequal in length and width, and the clypeus long; the antennae are relatively long; segments 1-5 are elongated 6-7 quadrate to slightly transverse and 8-10 transverse but feebly incrassate; the pronotum is equal in length and width (base three-fourths maximum width), its median sulcus is relatively faint but perceptible; the prosternum is moderately prolonged but the peritremes are only moderately large, triangular in form and weekly sclerotized.

*Remarks.—Falagriota* is likely to be confused with *Gnypetella* (Oxypodini, Tachyusae). Distinguished from that genus by its more slender neck, narrower pronotal base, sulcate pronotum, and distinctive parameres.

### LOPHAGRIA Casey

*Lophagria* Casey, 1906, p. 230. Type species: *Lophagria subaenea* (Eppelsheim).

In the past this genus has been placed with the genera now included in the Falagriini. Seevers, however, did not mention *Lophagria* in the manuscript except in the index. It does not appear in the key [L.H.].

### OMOSCHEMA Notman

*Omoschema* Notman, 1920a, p. 731. Type species: *Omoschema laticeps* Notman.

For the characters of this genus refer to the key and to the original description [L.H.].

## Tribe SCEPTOBIINI, new tribe

This tribe is proposed to receive four genera of myrmecophilous aleocharines associated with *Liometopum,* in the southwestern United States and Mexico. Its four genera—*Sceptobius* Sharp, *Apteronina* Wasmann, *Dinardilla* Wasmann, and *Symbiochara* Fenyes—were placed in the Myrmedoniini (*sensu lato*) by Fenyes (1918, 1920, 1921) and subsequent cataloguers. As I expect to show, the affinity of the group is with the Falagriini; the distinctive nature of the parameres clearly suggests such a relationship. Placement in the Falagriini would be appropriate, but it seems better to emphasize their specialized structural features (aptery, etc.) and distinctive ecological habits by separate tribal status. They are assigned to the supertribe Falagriinea.

Very little attention has been paid to this interesting group, so records are scanty. Indeed, this may be the first discussion of *Sceptobius* since Sharp (1883) recorded the type species, *dispar,* from Mexico (locality and habits unknown). Borgmeier (1949) listed it (with question) as a possible guest of army ants, and Fenyes (1909) stated that *Symbiochara* is related to it.

As is frequently the case with specialized inquilinous groups, there is so much morphological diversity that early studies by different workers have resulted in a series of monotypic genera. In the Sceptobiini there were four monotypic genera before Mann described two additional species and assigned them, erroneously, to two Wasmann genera. In reviewing the situation, it seems to me that retention of four genera is justifiable, although merger of *Symbiochara* with *Sceptobius* would be defensible. In the early phases of the study of a group—and considerable collecting needs to be done in the present case—the final generic alignments cannot be predicted. Examination of Mann's Mexican species—*mexicanum* and *wasmanni*—which he placed, respectively, in *Dinardilla* and *Apteronina,* shows that they are closer to *Sceptobius.* Mann's *mexicanum* is closely allied to *Sceptobius dispar* Sharp and may be conspecific; *wasmanni* has a number of distinctive properties and may require a separate generic position, but is much closer to *Sceptobius* than to *Apteronina.*

## **SCEPTOBIUS** Sharp

*Sceptobius* Sharp, 1883, p. 211. Type species: *Sceptobius dispar* Sharp.

*Distribution.*—Mexico and the southwestern United States.

*Descriptive features.*—Head about one-fifth broader than long; sides and base evenly arcuate; vertex with broad, shallow V-shaped impression. Vertex tapering from eye region to narrow, subtruncate apex; clypeus and labrum deflexed so strongly as to be invisible from above. Antennal fossae moderately deeply recessed under vertexal arcade, opening anterolateral. Neck stout, about two-fifths as broad as head, head dorsoventrally thickened. Eyes small, distance from base of head one-third greater than eye length; facets fine. Antennae subfusiform, compactly arranged, pedicels invisible; segments with following relative lengths 26:12:10:8:8:8:8:8:8:10:25; distal segments somewhat compressed (10 and 11 especially). Gula one-sixth as broad as head, sutures converging slightly in front; submentum large, 2½ times as broad as gular apex; mentum inordinately short (one-third as long as submentum).

Pronotum stout and dorsoventrally thickened, one-sixth to one-fifth broader than long; broadest subapically, sides converging evenly to base (about four-fifths maximum width); apex straight at middle, apical angles broadly rounded; base almost straight (very feebly emarginate); disk broadly and feebly impressed. Pronotum strongly deflexed laterally to form large vertical flanks (densely pubescent and with

several setae); hypomera very small, inflexed, almost invisible. Elytra exceptionally broad and short; only about four-fifths as long as pronotum but twice as broad; sutural length only one-third pronotal length, large area of second segment tergite exposed; apex of combined elytra broadly V-shaped.

Coxae exceptionally large; procoxae somewhat spindle-shaped; mesocoxae strongly convex, set in large and deep acetabula; metacoxae elongated medially, their general form subtriangular. Intercoxal processes slender carina-like processes. Metasternum behind middle coxae extremely short. Metepimera large and conspicuous in ventral view, their apices broadly rounded. Legs moderately long. Hind femora and tibiae compressed; hind tarsi long; tarsal segments of following relative lengths—30:10:8:6:10, decreasing in diameter. Tarsal claws distinctive.

Abdomen broad, robust; base as broad as elytra; fifth and sixth segment one-sixth broader than base. Tergites not impressed. Paratergites exceptionally broad (about one-ninth as broad as corresponding tergite); parasternites slender.

Pronotal pubescence moderately long and dense, subparallel hairs directed caudad. Pronotum with six longitudinal rows of erect setae; elytra with one discal and one humeral seta; tergites and sternites almost without setae. Coloration dark reddish-brown (Mexican types), light brown (1 specimen from New Mexico).

## SYMBIOCHARA Fenyes. Figure 30C.

*Symbiochara* Fenyes, 1909a, p. 325. Type species: *Symbiochara lativentris* Fenyes.

*Distribution.*—One species occurs in California.

*Diagnosis.*—Probably the most generalized of the Sceptobiini, *Symbiochara* has the sutural length of the elytra more than one-half the pronotal length; the second segment tergite is not visible from above; antennal segments 8-10 are cylindrical and scarcely (if at all) compressed; the elytra, tergites and sternites have a conspicuous vestiture of erect setae (best seen in profile); the pronotum lacks a distinctive pattern of dark setae; the abdomen, at the level of the fifth segment is one-fifth broader than the base; the second segment of the hind tarsi is almost one-half as long as the basal segment and twice as long as the third or fourth.

*Descriptive features.*—Head one-fifth broader than long, smooth, shining, and with very little sculpture (punctules fine, sparse; pubescence short); eyes one-third head length. Antennae with third segment two-fifths longer than second. Pronotum one-fifth broader than long; disk broadly flattened and abruptly deflexed laterally as in *Sceptobius;* disk with shallow impression in basal half; pubescence as in *Sceptobius;* setae much shorter and paler and difficult to pattern. Elytra one-third broader than pronotum (narrower than in *Sceptobius*); subequal to pronotum in length. Elytra, tergites and sternites with a conspicious vestitute of moderately long fine erect setae. Dorsum of abdomen furrowed along sides, the parasternites horizontal. Hind tarsi with segments as follows: 26:12:6:6:10).

## APTERONINA Wasmann. Figures 18E, F; 30B.

*Apteronina* Wasmann, 1901, p. 146. Type species: *Apteronina schmitti* Wasmann.

*Distribution.*—One species has been recorded from Colorado to Arizona.

*Descriptive features.*—Body form distinctive (fig. 30B). Head very slightly longer than broad. Eyes very small, less than one-seventh head length. Antennae subcylindrical throughout. Mentum not especially short—two-thirds as long as submentum. Pronotum one-sixth longer than broad. Elytra small and inconspicuous; their combined apices deeply emarginate; sutural length less than one-sixth pronotal length; subequal to pronotum in width; sides parallel. Intercoxal processes very short. Metasternum very short. Legs greatly elongated—hind trochanter and femur combined almost as long as abdomen; coxae all large. Hind tarsi with segments in following ratio—54:20:14:10:16. Abdomen broadest at fifth segment (four-fifths broader than elytra); second tergite visible.

**DINARDILLA** Wasmann. Figures 18G, H; 30A.

*Dinardilla* Wasmann, 1901, p. 145. Type species: *Dinardilla liometopi* Wasmann.

*Distribution.*—One species has been recorded, from Colorado to Arizona.

*Descriptive features.* Form distinctive (fig. 30A). Head short and very broad—subbasal width one-half greater than length. Pronotum almost three-fourths broader than long. Elytra appreciably broader than pronotum and much broader at apex than at base; elytra shorter than pronotum and having very short sutural length (only one-third pronotal length). Small area of second tergite exposed.

## Tribe MYRMEDONIINI

Myrmedoniides Thomson, 1867, p. 209.
Myrmedoniaires Mulsant and Rey, 1873b.
Myrmedoniina Sharp, 1883, p. 170.
Myrmedoniides Casey, 1893, p. 316.
Myrmedoniini Ganglbauer, 1895, p. 106; Casey, 1906, p. 183; Fenyes, 1918, p. 18; Bernhauer and Scheerpeltz, 1926, p. 571.

*Tribal characteristics.*—Tarsi 4,5,5-segmented. Distinguished by having: Galea and lacinia moderately long to very much elongated; length of galea equal to or longer than its distance from base of cardo (fig. 33B, C). Maxillary sinuses usually extensive (extending as far back as posterior tentorial pits). Ligula bifid. Mesocoxae set in marginal acetabula; intercoxal processes broad (usually extremely so), metasternal process longer than (but occasionally subequal to) mesosternal process; isthmus short or absent. Hind coxae transverse. Median lobe of aedeagus with capsule of bulbous base almost divided into two parts (fig. 16B, D, G, H).

This tribe of myrmecophiles and termitophiles is taxonomically complicated by the very large *Drusilla-Zyras* complex. This complex has been poorly treated taxonomically and hundreds of species have been assigned to these genera rather haphazardly. As it is a rather easily circumscribed species group, *Drusilla* should not have presented the taxonomic problems that it has. *Drusilla* seems to be

restricted to the Palaearctic Region except for a limited range in Alaska. The tropical species that have been placed in *Drusilla* do not seem to belong there. *Zyras* Stephens, with more than 500 species in some 35 subgenera is taxonomically unsound. It seems likely that *Zyras* is a small genus, perhaps even monotypic. Most of the subgenera of *Zyras* should probably be raised to generic rank as the first step in a comprehensive revision. The African and Indian species, which are very numerous, are probably not congeneric with *Zyras haworthi* Stephens.

### North American Myrmedoniini

Drusillae group (= Myrmedoniae): *Apalonia* Casey, *Drusilla* Leach, *Myrmoecia* Mulsant and Rey, *Xesturida* Casey, and *Zyras* Stephens.

Lomechusae group: *Xenodusa* Wasmann.

Dinocorynae group: *Dinocoryna* Casey, *Ecitonidia* Wasmann.

Tetradoniae group: *Tetradonia* Wasmann.

Ecitoporae group: *Ecitoxenidia* Wasmann, *Microdonia* Casey.

### *Drusillae* group

**DRUSILLA** Leach. Figures 16A-C; 33B; 35H.

*Drusilla* Leach, 1819, p. 177. Type species: *Drusilla canaliculata* (Fabricius).

*Astilbus* Dillwyn, 1829, p. 63; Bernhauer and Scheerpeltz, 1926, p. 688. Type species: *Astilbus canaliculatus* (Fabricius).

*Myrmedonia* Erichson, 1837, p. 287. Type species: *Myrmedonia canaliculata* (Fabricius).

*Distribution.*—A Palaearctic genus of about 12 species, a majority in Asia. One species in Alaska. The tropical species assigned here are probably not congeneric.

*Descriptive features.*—Pronotum longer than broad; its disk with broad, oval, moderately-deep impression (and smaller, deeper basal fovea); head slender, only five-sixths as broad as pronotum; antennae with segment 4 a little longer than broad, 5 and 6 subquadrate, 7-10 slightly transverse; head reticulate, with moderately dense umbilicate punctation; gular sutures not united by U-shaped line at base; lacinia extremely long (visible from above); maxillary acetabula exceptionally large; tergal impressions impunctate; eighth tergite emarginate, and with about 22 denticles; spermathecal duct short and straight, spermatheca enlarged.

*Remarks.*—Although the name *Astilbus* has been most frequently used, the correct name of this genus is *Drusilla* Leach. The name *Myrmedonia* was very frequently used in the sense of *Zyras,* but is isogenotypic with *Drusilla.* The tribal name Myrmedoniini is correct; the rules permit tribal names to be based on synonyms.

*Drusilla* seems to have very limited distribution in North America.

One species, *cavicollis* Casey is from Alaska; the other *canaliculata* (Fabricius), an introduction, is known from the eastern United States. I have seen series of specimens of *canaliculata* from Rochester, New York and Philadelphia, Pennsylvania (in moss from Italy).

**ZYRAS** Stephens. Figures 16D-F, H, J; 25K; 33C, D.

*Zyras* Stephens, 1835, p. 430. Type species: *Zyras haworthi* (Stephens).
*Platyusa* Casey, 1885, p. 305. Type species: *Platyusa sonomae* Casey.

Blackwelder (1952, p. 80) lists *Zyras* as a synonym of *Bolitochara* Mannerheim—based on *collaris* (Paykull). The unfortunate consequences of this synonymy have been avoided by the International Commission, which has used its plenary powers (opinion 599, 1961) to designate *lunulata* (Paykull) as the type species of *Bolitochara* (and to keep it in the Gyrophaenini).

Inasmuch as a revision of *Zyras* has not been feasible, the genus is used in the conventional sense, i.e., to include those species of Myrmedoniini not placed elsewhere. The type species, *haworthi,* not only occurs in Europe but in the northern Nearctic Region as well (recorded as *obliqua* Casey). When *Zyras* is subdivided many of the American species will probably be in *Pella* Stephens (type species: *Pella limbata* [Paykull]).

In reviewing the Nearctic species of *Zyras,* I have prepared the following key:

1. Pronotum two-thirds broader than long ..... *schmitti* Hamilton
   Pronotum at most one-half broader than long ..... 2
2. Pronotal disk broadly and shallowly impressed, its surface with moderate number of extremely coarse asperate punctures ..... *rudis* LeConte
   Pronotal disk usually not impressed, but, if so, without coarse asperate punctures ..... 3
3. Pronotum with extremely fine dense granulation ..... *criddlei* Casey
   Pronotum never finely granulose ..... 4
4. Pronotum more than two-fifths broader than long. ..... *sonomae* Casey
   Pronotum one-third broader than long, or less ..... 5
5. Pronotum one-fourth to one-third broader than long ..... 6
   Pronotum at most one-fifth broader than long ..... 8
6. Pronotum with shallow, diamond-shaped impression in medial one-third of disk ..... *planifer* Casey
   Pronotal disk evenly convex ..... 7

7. Elytra umbilicately punctate and weakly reticulate, never imbricate *schwarzi* Wasmann

Elytra with fine asperate punctures; reticulation moderately strong (imbricate) ..... *caliginosa* Casey

8. Gula with U-shaped margination near base; pronotum one-tenth broader than long ..... *haworthi* Stephen (=*obliqua* Casey)

Gular surface smooth, without basal margination ..... 9

9. Impressions of tergites coarsely punctate; pronotum one-fourth broader than head ..... *loricata* Casey

Impressions of tergites not punctate ..... 10

10. Antennal segments 4-6 elongated, segments 7-10 subquadrate *fauveli* Sharp

Antennal segments 4-7 elongated, segments 8-10 slightly transverse *recisa* Casey

Antennal segments 4-5 subquadrate, 6-10 transverse, strongly incrassate *angustula* Casey

## MYRMOECIA Mulsant and Rey

*Myrmoecia* Mulsant and Rey, 1874, p. 130. Type species: *Myrmoecia tuberiventris* (Fairmaire).

*Nototaphra* Casey, 1893, p. 327. Type species: *Nototaphra lauta* Casey.

*Distribution.*—At least 14 species have been reported in the Palaearctic Region and two in North America.

*Diagnosis.*—The species are easily identified by the large tuberosities on the fourth and fifth segment tergites. The pronotal disk is moderately deeply impressed (impression broader near apex than base) and the pronotum is two-fifths broader than long.

The species are placed in *Zyras* by Bernhauer and Scheerpeltz, 1926. The American species may be identified as follows:

1. First segment of hind tarsi as long as segments 2 and 3 combined; coloration red and black. Eastern states (Michigan, Massachusetts, New Hampshire) ..... *lauta* Casey

First segment of hind tarsi less than three-fourths as long as segments 2 and 3 combined; coloration blackish brown. Western states (Colorado, British Columbia) ..... *lugubris* Casey

## APALONIA Casey

*Apalonia* Casey, 1906, p. 323. Type species: *Apalonia seticornis* Casey.

*Distribution.*—The genus has been recorded from Kansas and Florida.

*Descriptive features.*—Small species with polished, almost glabrous integuments; head, pronotum, elytra, and abdomen with sparse fine pubescence; tergites 3-6 with

four long black setae on apical margin (longer than tergites); terminal segments with additional black setae; sternites bristling with long erect setae. Eyes medium-sized, facets coarse. Antennal segments 1-4 elongated, 5-6 subquadrate, 7-10 transverse and somewhat incrassate; pronotum somewhat convex; obtrapezoidal widest subapically, sides converging to relatively narrow base; basal angles obsolescent. Elytra a little longer than pronotum (only four-fifths as long at suture). Intercoxal processes broad, truncate; m:i:m ratio—10:0:14.

**XESTURIDA** Casey

*Xesturida* Casey, 1906, p. 325. Type species: *Xesturida laevis* Casey.

*Distribution.*—A single species has been recorded from Mississippi. An undescribed Mexican species is in the Fenyes collection.

*Descriptive features.*—Length, 2 mm., width, 0.7 mm. Integuments with almost no trace of microsculpture, strongly shining. Head and pronotum sparsely pubescent, abdomen with a few very minute hairs, and terminal segments with a few short setae. Eyes large (length twice that of distance to base of head), finely faceted. Antennae with segments 1-4 very slender, 5-6 feebly transverse, but small, segments 7-10 short, transverse, and rather incrassate (segment 11 twice as broad as 5). Pronotum a little more than one-fourth broader than long; apex straight, sides very feebly arcuate in basal two-thirds, converging somewhat in front. Elytra a little more than one-fourth longer than pronotum. Abdomen with sides converging behind fifth segment to an acuminate apex.

*Xenodusae* group

The genera of this group are distinguished by the presence of abdominal trichomes (tufts of golden yellow hairs). The group includes the well-known Palaearctic genera, *Lomechusa* Gravenhorst [= *Atemeles* (Dillwyn) *sensu* Wasmann] and *Lomechusoides* Tottenham (= *Lomechusa, sensu* Wasmann), as well as the New World *Xenodusa* Wasmann. Wasmann wrote voluminously about the biology of *Lomechusa* and *Atemeles*.

**XENODUSA** Wasmann. Figure 35E.

*Xenodusa* Wasmann, 1894, p. 205. Type species: *Xenodusa cava* LeConte.

The status of the species of *Xenodusa* is confused. There are perhaps four species groups (all names are not necessarily valid): 1) *cava* LeConte group; including *lobata* Casey, *probata* Casey and *major* Wasmann; 2) *reflexa* Walker group; including *hirsuta* Wasmann, and *montana* Casey; 3) *caseyi* Wasmann group; including *augusta* Fall (a synonym of *caseyi*); 4) *sharpi* Wasmann group; subgenus *Pseudolomechusa* Mann, 1914.

Species of the *cava* group (*cava* may be the only one) are known (from material examined personally) to occur in Massachusetts,

Pennsylvania, New York, Ontario, West Virginia, Ohio, Michigan, Illinois, Iowa, and Missouri. The southernmost record is West Virginia and the westernmost, Missouri and eastern Iowa. Hatch's (1957, p. 146) record of *cava* in the northwestern states is incorrect.

Species of the *reflexa* group are primarily western in distribution, but overlap the *cava* range in New England, New York, Ontario, Michigan, Illinois, and Iowa. *X. reflexa* Walker, first collected in British Columbia, has largely been ignored. Members of the *reflexa* group probably occur throughout southern Canada, the northwestern states, the mountains of California, Montana east through South Dakota, and into Iowa, Illinois and Michigan, New England and New York. Specimens from the above areas have been seen.

*Xenodusa caseyi* Wasmann, a smaller species, is known from southern Colorado and southern California and probably occurs throughout the southwest.

*Xenodusa* (*Pseudolomechusa*) *sharpi* Wasmann, is recorded from the mountains of Hidalgo, Mexico.

Host records for the genus are not very reliable. Wheeler (1911) states that *cava* has *Formica* as a winter host and *Camponotus* as a summer host.

Two species groups may be differentiated as follows:

1. Lateral margin of pronotum with erect setae; metasternum with erect (black) setae and recumbent hairs; antennae relatively short (3.5 times pronotal length) ..... *reflexa* group

2. Lateral margin of pronotum without erect setae; metasternum almost glabrous; antennae relatively long (3.9 times pronotal length) *cava* group

## *MYRMEDONIINI ASSOCIATED WITH ARMY ANTS*

The five following genera occur with *Neivamyrmex* and possibly *Labidus*. For a more detailed account of the relationships of the North American species, see Seevers, 1965.

### **DINOCORYNA** Casey

*Dinocoryna* Casey, 1893, p. 319; Seevers, 1959, p. 71; 1965, p. 257. Type species: *Dinocoryna bisinuata* Casey.

*Ecitonusa* Wasmann, 1897a, p. 281; Seevers, 1959, p. 71; 1965, p. 257. Type species: *Ecitonusa schmitti* Wasmann.

*Dinocoryna* and *Ecitonidia* are Nearctic representatives of the Dinocorynae, a group of 12 genera, a majority of which are in the Neotropical Region. All species of this group occur with *Neivamyrmex*. The seven Nearctic species of *Dinocoryna* are known to occur in the following general range: North Carolina to Florida and west to Kansas and Arizona, possibly wherever the host genus *Neivamyrmex* occurs.

*Descriptive features.*—Species small, 1.8-3 mm. in length. Most characteristic features of genus: long robust antennae, with closely-placed cylindrical segments and invisible pedicels; conspicuously setose sternites; neck one-half or more head width; eyes small to medium-sized; pronotum not more than one-fifth broader than long, apex bisinuate or not, dorsum not impressed, or with shallow impression (broad or relatively narrow); abdomen generalized (not myrmecoid); legs long, sometimes with tibiae impressed.

**ECITONIDIA** Wasmann. Figure 16I.

*Ecitonidia* Wasmann, 1900, p. 283; Seevers 1959, p. 76; 1965, p. 264. Type species: *Ecitonidia wheeleri* Wasmann.

Allied to *Dinocoryna,* easily distinguished from it and all other Nearctic guests of *Neivamyrmex* by its very deeply sulcate pronotum. The single known species occurs with *Neivamyrmex* Cresson, and has been collected west of the Mississippi River (Arkansas, Kansas, Colorado, Arizona).

**MICRODONIA** Casey. Figure 16G.

*Microdonia* Casey, 1893, p. 318; Seevers, 1959, p. 67; 1965, p. 244. Type species: *Microdonia occipitalis* Casey.

*Microdonia* and *Ecitoxenidia* are Nearctic representatives of the group Ecitoporae (11 genera), widespread in the Neotropical Region. Our species of Ecitoporae occur with *Neivamyrmex*. Four Nearctic species are known; they have been collected in Texas, Kansas, and Arizona.

Generalized in form and in most of its features, *Microdonia* is not easily characterized but can be distinguished by characters of the key. The species are small and slender—2.5-3 mm. in length, 0.7-0.8 mm. in width.

**ECITOXENIDIA** Wasmann

*Ecitoxenidia* Wasmann, 1909, p. 179; Seevers, 1959, p. 76; 1965, p. 246. Type species: *Ecitoxenidia brevipes* Brues.

Four species of this genus have been collected with *Neivamyrmex* in Texas, Alabama, North Carolina, and Brazil.

*Diagnosis.*—The small species (2.5-3 mm.) of this genus are easily identified by their distinctively carinate head and pronotum. The head has three strong carinae forming an inverted Y and the vertex has a tubercle above each eye; from each tubercle a supraorbital carina extends caudad to join a vertical postgenal carina. The pronotum is very broad (three-fifths to nine-tenths broader than long); its dorsum is divided by two undulating carinae into three areas, the median area on a higher level than the lateral ones.

**TETRADONIA** Wasmann. Figure 33A.

*Tetradonia* Wasmann, 1894, p. 209; Seevers, 1965, p. 249. Type species: *Tetradonia eppelsheimi* Wasmann.

*Chlorotusa* Casey, 1906, p. 324; Seevers, 1965, p. 249. Type species: *Chlorotusa megalops* Casey.

A single species of *Tetradonia* represents the large Neotropical group, Tetradoniae (8 genera, 25 species), in North America.

Casey proposed *Chlorotusa* for *megalops,* not recognizing that its habits are probably ecitophilous. The closest known relative of *megalops* is *Tetradonia marginalis* Reichensperger, a guest of *Eciton* in Costa Rica. Thirteen other species of *Tetradonia,* widespread in the Neotropical Region, occur with *Eciton, Labidus,* and *Nomamyrmex.* The host of *megalops* is unknown; specimens were probably all collected at lights.

*Diagnosis.*—From all other North American Myrmedoniini, *Tetradonia* is distinguished by very large eyes that occupy almost the entire sides of the head. The antennae are very long; the integuments are smooth and shining (with very little surface sculpture); the neck is less than one-half as broad as the head; the pronotum is not impressed; the abdomen is generalized. The length is 3-5 mm.

## Tribe DORYLOMIMINI

*Dorylomimini* Wasmann, 1916, p. 99; Seevers, 1965, p. 187.

The members of this tribe are all inquilines in army-ant societies. Based on the dorylophilous African genus *Dorylomimus* Wasmann, I (Seevers, 1965) expanded the tribe to include 33 genera of army-ant guests in Africa, the Oriental Region, and the New World. The Dorylomimini have myrmecoid, petiolate abdomens of considerable diversity, and a distinctive thoracic structure. I realize that the tribe may be a grade and not a clade, and am willing to concede the probability that the New World genera evolved conver-

gently with their Old World counterparts. If so, the American subtribe Mimecitoni would become the Mimecitonini.

The Nearctic fauna has only a few members of the tribe, as its army-ant fauna is quite limited compared to that of the tropics. Nevertheless, *Probeyeria, Beyeria,* and *Pulicomorpha* constitute a remarkable phyletic series in the tribe. They are easily distinguished from all North American Aleocharinae by the petiolate abdomen and myrmecoid form (figs. 34A-D). The petiole is unique, even among Dorylomimini, as it is formed in part by a second segment sternite (a sclerite very rarely found in the Aleocharinae). In *Probeyeria* and *Pulicomorpha* the second sternite is present below the second tergite (fig. 34A), but in *Beyeria* is prolonged beneath the attenuated base of the third tergite (fig. 34D) to form a remarkable petiole. Other characteristics of the Dorylomimini are: the free mesocoxae that are not set in margined acetabula, the elongated coxae, and the convex pronotum, with its flanks inflexed behind the procoxae. For a more detailed consideration of the Dorylomimini, consult my 1956 monograph on dorylophilous Staphylinidae.

**PROBEYERIA** Seevers. Figure 34A, B.

*Probeyeria* Seevers, 1965, p. 213. Type species: *Probeyeria pulex* Sanderson.

The single species of this genus has been found with *Neivamyrmex* in Arkansas, Kansas, and Arizona. It is distinguished from *Beyeria* by its abdominal petiole (fig. 34A, B).

*Probeyeria* and *Beyeria* are winged, and are attracted to light.

**BEYERIA** Fenyes. Figure 34C, D.

*Beyeria* Fenyes, 1910, p. 118; Seevers, 1965, p. 214. Type species: *Beyeria vespa* Fenyes.

The two species of *Beyeria* have been collected in Arizona and western Mexico; they occur with *Neivamyrmex. Beyeria* is recognized by its remarkably elongated second segment sternite which, with the attenuated base of the third tergite, forms a long petiole (fig. 34C, D).

**PULICOMORPHA** Mann[1]

*Pulicomorpha* Mann, 1924, p. 87. Type species: *Pulicomorpha coeca* Mann.

[1]*Pulicomorpha* does not appear in the key [L.H.].

*Pulicomorpha,* a minute, wingless genus of this phyletic series, was recorded from southern Baja California in Mexico, and may occur in the southwestern states.

## Tribe BOLITOCHARINI

Gyrophaenini Kraatz, 1856, p. 351 (subdivision).
Gyrophaenites Jacquelin DuVal, 1858, p. 18 (subdivision).
Gyrophaenides Thomson, 1859, p. 31; 1860, p. 264; 1867, p. 228.
Gyrophaenae Fauvel, 1875, (section).
Gyrophenates Mulsant and Rey, 1871, p. 2 (rameau—Bolitocharaires); Ganglbauer, 1895, p. 258 (subtribus—Bolitocharini).
Gyrophaenae (subtribe of Bolitocharini) Casey, 1906, p. 275; Fenyes, 1918, p. 18; Bernhauer and Scheerpeltz, 1926, p. 525.
Gyrophaenini (= Bolitocharini, in part) Hatch, 1957, p. 147.
Bolitocharides Thomson, 1859, p. 31; 1860, p. 271, (subtribe); Thomson, 1867, p. 222; Casey, 1893, p. 348.
Bolitocharaires Mulsant and Rey, 1871, p. 1.
Bolitocharina Sharp, 1883, p. 240 (group).
Bolitocharini Ganglbauer, 1895, p. 258; Casey, 1906, p. 260; Casey, 1911, p. 179; Fenyes, 1918, p. 17; Bernhauer and Scheerpeltz, 1926, p. 524; Blackwelder, 1944, p. 155.
Ditropaliini (= Bolitocharini) Hatch 1957, p. 147.
Diestotates Mulsant and Rey, 1871, p. 2 (rameau—Bolitocharaires); Ganglbauer, 1895, p. 258 (subtribus—Bolitocharini).
Elachistarthronini Notman, 1920a, p. 714 (tribe).
Elachistarthrones (subtribe of Bolitocharini) Bernhauer and Scheerpeltz, 1926, p. 524.
Bolitocharini. Placed on the official list of family-group names by the International Commission on Zoological Nomenclature. Opinion 599, 1961.

This tribe contains a majority of the aleocharine genera with 4,4,5-segmented tarsi. The other tribes—which I include in the supertribe Gyrophaeninea—are Autaliini, Philotermitini, and Phytosini. The Bolitocharini seem to subdivide into the following generic groups in North America:

| | |
|---|---|
| Gyrophaenae: | *Gyrophaena, Phanerota, Eumicrota, Agaricochara, Encephalus.* |
| Bolitocharae: | *Bolitochara, Leptusa, Sipalia.* |
| Homalotae: | *Homalota, Thecturota, Placusa, Anomognathus.* |
| Silusae: | *Silusa, Apheloglossa, Elachistarthron, Orthodiatelus, Schistacme.* |
| Euvirae: | *Euvira.* |

*Tribal characteristics.*—The members of the tribe are morphologically diversified and not easy to characterize as a group. The tribe contains all genera with 4,4,5-segmented tarsi except those placed in other tribes because of special features or habits. An interesting feature of the tribe is a distinctive mandibular structure: the mandibles bear rows of minute denticles which perhaps constitute a molar surface (fig. 31A,B,E) associated with fungus feeding. The aedeagus, and in particular the medium lobe, seems to have a difficult-to-define bolitocharine character.

The Gyrophaenae and Bolitocharae are inhabitants of fresh mushrooms, upon which the larvae and adults feed. The Homalotae and Silusae are subcortical and wood-inhabiting genera. The habits of *Euvira* are unknown.

### *Gyrophaenae* group

This is a large cosmopolitan group of fungicoles. Among the Bolitocharini they are distinguished by widely separated mesocoxae, with broad intercoxal processes of variable lengths; shining subglabrous integuments, with the pronotal pubescence very sparse or absent; and two-segmented labial palpi (two basal segments fused).

Of the five North American genera, *Gyrophaena* is primarily a Holarctic group with many species on fresh gilled mushrooms. *Eumicrota* and *Agaricochara* are abundant in the Neotropical Region and inhabit polypore fungi. *Phanerota* is also abundant in the Neotropical Region and has allies in the Oriental Region. *Encephalus* is a small, apparently widespread genus (Palaearctic Region, northern Nearctic Region, New Zealand).

A species revision of the North American Gyrophaenae was published by me in 1951.

**GYROPHAENA** Mannerheim. Figures 19A,B; 31A.

*Gyrophaena Mannerheim,* 1831, p. 488; Seevers, 1951, p. 673. Type species: *Gyrophaena nana* (Paykull).

*Distribution.*—In a broad sense, as in Bernhauer and Scheerpeltz (1926), *Gyrophaena* is cosmopolitan, but in the restricted sense of this paper, its distribution may be considerably more limited. *Gyrophaena* is very well represented throughout the Holarctic Region, but in the Neotropical Region most species probably belong to *Eumicrota, Agaricochara,* or perhaps to some other genus. The generic positions of the species of the Old World tropics should be reconsidered.

In my species revision of the Nearctic *Gyrophaena,* I recognized 56 species. With its rich flora of gilled mushrooms, temperate

North America has many species of *Gyrophaena,* but in the southern states, where polypore fungi predominate, the number of species is far fewer.

*Diagnosis.*—*Gyrophaena* may be identified by its glabrous, nonpubescent pronotum; widely-spaced mesocoxae, with the broad mesosternal process as long as and usually longer than the metasternal process; pronotum which is never more than two-thirds broader than long (and usually considerably less); hypomera which are visible in lateral view; eyes which are medium-sized; and postgenal carina which is present.

The aedeagi of *Gyrophaena* vary remarkably from one species group to another. The median lobes of the American species are illustrated in my 1951 paper.

### PHANEROTA Casey

*Phanerota* Casey, 1906, p. 285; Seevers, 1951, p. 747. Type species: *Phanerota fasciata* (Say).

*Distribution.*—Species of this genus are most abundant in the Neotropical Region. What the Nearctic Region lacks in number of species in eastern North America (three), it makes up in a vast number of individuals. Two species are widespread in our eastern states, but the genus does not occur in the west.

*Diagnosis.*—Easily differentiated from other *Gyrophaenae,* and, in fact, from other fungicoles, by its extremely large, coarse-faceted eyes.

### EUMICROTA Casey

*Eumicrota* Casey, 1906, p. 280; Seevers, 1951, p. 732. Type species: *Eumicrota corruscula* (Erichson).

*Distribution.*—A New World genus with the greatest number of species in the neotropics. The seven Nearctic species recognized in my 1951 paper are really an extension of the Neotropical fauna. Two species are very widely distributed in the eastern United States. The genus is not known west of the Rocky Mountains north of Arizona. The species of *Eumicrota* live and feed on polypore fungi.

*Diagnosis.*—Although in my earlier revision I considered *Eumicrota* a subgenus, I now believe it to be a well-delimited genus. Small in size (0.6-1.5 mm. in length) and dark in coloration (piceous to brownish-black), the species have very broad pronota (al-

most twice as broad as long), subequal intercoxal processes, and short compact antennae with the segments conspicuously larger beyond the fourth segment (5-11 subequal in width).

### AGARICOCHARA Kraatz

*Agaricochara* Kraatz, 1856, p. 361; Seevers, 1951, p. 740. Type species: *Agaricochara laevicollis* Kraatz.

*Distribution.*—Several European species, six Nearctic species, and a substantially larger number of Neotropical species.

*Diagnosis.*—Allied to *Eumicrota* as evidenced by size, facies, pronotal structure, intercoxal processes, and male abdominal characters. Differentiated by the less compact antennae, which are incrassate from segment 4-10. When more information is available about the Neotropical species, it may be necessary to merge *Eumicrota* with this genus.

### ENCEPHALUS Kirby

*Encephalus* Kirby, 1832, p. 163; Seevers, 1951, p. 752. Type species: *Encephalus complicans* Stephens.

*Distribution.*—This genus is recorded from the Holarctic Region and New Zealand.

*Diagnosis.*—Easily identified by the character of the key, *Encephalus* is the most distinctive genus of the subtribe. Not recorded in the New World until my 1951 paper, the single specimen *americanus* has been collected in Montana and New Hampshire.

#### *Bolitocharae* group

Like the Gyrophaenae, the Bolitocharae are fungicoles. At the present time I am able to recognize only three Nearctic genera—*Bolitochara, Leptusa,* and *Sipalia.* Numerous species are involved, but no revisional studies have been made. Casey subdivided *Bolitochara* and *Leptusa* to a considerable degree, and some of his taxa may have validity, but, until a thorough study has been made, it seems advisable to recognize broader genera. The North American species of *Bolitochara* seem to be more heavily concentrated in western North America where the Gyrophaenae are less numerous; Casey recognized 17 species west of the Rockies and eight in the eastern states. *Leptusa,* on the other hand, has 17 recorded eastern species and only five in the west.

The Bolitocharae may be distinguished by their narrowly sepa-

rated mesocoxae and slender intercoxal processes; by the relatively coarsely asperate integuments (not always); by the relatively convex body (not dorsoventrally compressed); by the generalized labial palpi; and by having the pronotal pubescence directed caudad. The eighth male tergal specializations are much less conspicuous and diversified than in the Gyrophaenae.

**BOLITOCHARA** Mannerheim. Figure 19C-H.

*Bolitochara* Mannerheim, 1831, p. 489. Type species: *Bolitochara lunulata.* (Paykull)—Fixed by the International Commission on Zoological Nomenclature (1961, Opinion 599).
*Ditropalia* Casey, 1906, p. 263. Type species: *Ditropalia bella* Maerkel.
*Pleurotobia* Casey, 1906, p. 273. Type species: *Pleurotobia suturalis* Casey.
*Silusida* Casey, 1906, p. 270. Type species: *Silusida marginella* Casey.
*Stictalia* Casey, 1906, p. 264. Type species: *Stictalia notata* Maerkel.
*Venusa* Casey, 1906, p. 272. Type species: *Venusa picta* Casey.

*Bolitochara* is distinguished from *Leptusa* by having the basal segment of the hind tarsi as long as segments two and three combined. This large complex of species badly needs revision; it is fruitless to consider generic groupings until the male genitalia have been studied.

Casey's genera were drawn along geographic lines—*Stictalia* (17 species) was distributed in California, British Columbia, and Alaska; *Pleurotobia* (four species), *Venusa* (three species), and *Silusida* (two species) comprised only eastern species.

**LEPTUSA** (Kraatz) Casey. Figure 19I, J.

*Leptusa* Kraatz, 1856, p. 60; Casey, 1906, p. 351; 1911, p. 199. Type species: *Leptusa analis* (Gyllenhal).
*Dianusa* Casey, 1906, p. 346. Type species: *Dianusa pasadenae* Casey.
*Eucryptusa* Casey, 1906, p. 346. Type species: *Eucryptusa nanula* Casey.
*Ulitusa* Casey, 1906, p. 346. Type species: *Ulitusa cribratula* Casey.

Similar to *Bolitochara,* the American species assigned to *Leptusa* by Casey are distinguished by having the basal segment of the hind tarsi little longer than segment two, and certainly shorter than the second the third combined. How these species relate to the European *Leptusa,* a relatively large species complex, is yet to be determined. Casey separated the small species, 1.6-2 mm. in length, into the genus *Eucryptusa* (with several subgenera) but the validity of the grouping needs study. The species of Casey's *Leptusa* are 2.2-3 mm. in length. Several species (*opaca, seminitens*) do not have the characteristic asperate integuments of the Bolito-

charae, but have dense granulose pronota. As in *Bolitochara,* the pronotal pubescence is pattern B or C (rarely A).

**SIPALIA** Mulsant and Rey

*Sipalia* Mulsant and Rey, 1853, p. 32; not *Sipalia* (Mulsant and Rey) Casey, 1910, 1911; Fenyes 1920; Bernhauer and Scheerpeltz, 1926. Type species: *Sipalia difformis* Mulsant and Rey.

*Pasilia* Mulsant and Rey, 1872, p. 316 (subgenus). Type species: *Pasilia nubigena* Kiesenwetter.

*Sipalia* is used here in the original sense of Mulsant and Rey, as a genus of Gyrophaenini, and not as interpreted by Casey and others—as a genus of Athetini (see *Geostiba* Thomson). Species of *Sipalia* are apparently not numerous in the New World. *Sipalia* is distinguished from other Bolitocharae by its short elytra (subequal in length to pronotum).

*Silusae* group

The genera of this group are easily distinguished by their inordinately long filiform labial palpi (fig. 31D,G). Although the labial palpi have at times been stated to be one or two segmented, they are with rare exceptions three segmented.

**SILUSA** Erichson. Figures 31E-G; 38E.

*Silusa* Erichson, 1837, p. 377. Type species: *Silusa rubiginosa* Erichson.

Distinguished from *Apheloglossa, Elachistarthron,* and *Orthodiatelus* by having the mesocoxae narrowly separated, the intercoxal processes slender, and the pronotal pubescence directed caudad (pattern C). The head and pronotum are not reticulated, but finely asperately punctate. Antennal segments 4-10 are transverse. The m:i:m ratio is 22:0:12. The processes of the eighth male tergite are considerably shorter than in *Apheloglossa.*

Two of Casey's species assigned to this genus do not belong here. They do not have the characteristic filiform palpi. *S. modica* seems to fall in *Bolitochara* and *rutilans* in *Leptusa.*

**APHELOGLOSSA** Casey. Figures 20D, E, 31B-D.

*Apheloglossa* Casey, 1893, p. 348. Type species: *Apheloglossa rufipennis* Casey.
*Amenusa* Casey, 1906, p. 349. Type species: *Amenusa angustula* Casey.
*Pectusa* Casey, 1911, p. 197. Type species: *Pectusa oblonga* Casey.

The species of this genus were placed in *Diestota* Mulsant and Rey by Fenyes (1918, 1920, 1921) and by Bernhauer and Scheer-

peltz (1926). I have decided not to do so because of the strong probability that *Diestota*—based on *mayeti* Mulsant and Rey—is an Oriental genus. *D. mayeti* is apparently an Oriental species that was introduced into France and collected at Cette (type locality). Study of specimens of the type species from the Oriental Region indicates that the aedeagus is different from that of American species.

*Diagnosis.*—Distinguished from *Silusa* by having widely separated mesocoxae, broad intercoxal processes, pronotal pubescence of pattern E (hairs in midline directed cephalad), and by the much longer processes of the eighth male tergite.

*Descriptive features.*—Length, 3-3.5 mm. Species dark reddish brown with paler elytra. Head and pronotum granulose in appearance (with fine-meshed raised reticulation); abdomen asperate and strigulate. Eyes large, finely faceted. Antennae with segments 5-10 transverse, incrassate. Pronotum one-third broader than long; elytra one-third longer than pronotum. Intercoxal processes subequal and contiguous, mesosternal process feebly rounded. Eighth male tergite with two widely spaced processes enclosing 6-8 shorter ones.

## ORTHODIATELUS Notman

*Orthodiatelus* Notman, 1920a, p. 716. Type species: *Orthodiatelus innotabilis* Notman.

*Distribution.*—One species is recorded from Florida.

*Diagnosis.*—Clearly allied to *Apheloglossa* and *Diestota,* this genus may perhaps be distinguished by the characters of the key.

*Descriptive features.*—Head and pronotum asperately punctate, but not granulose in appearance (without raised reticulation). Eyes large, finely faceted. Postgenal carina strong. Antennae with segments 1 to 3 elongated (decreasing in length); 4 to 10 short, transverse, incrassate. Pronotum slightly less than one-half broader than long; pronotal pubescence pattern E; elytra less than three-times longer than broad; metasternal process longer than mesosternal process; intercoxal processes broad, truncate, contiguous; m:i:m ratio—8:0:12; tergites 3 to 4 moderately impressed, 5 very feebly. Tergites finely asperate, even imbricated. Eighth male tergite with processes as in *Apheloglossa*.

## ELACHISTARTHRON Notman

*Elachistarthron* Notman, 1920a, p. 715. Type species: *Elachistarthron ambiguum* Notman.

*Distribution.*—One species in Florida.

Closely allied to *Orthodiatelus*. Ligula bifid. Metasternal process shorter than in preceding genus.

Notman considered the labial palpi one segmented, but this is

incorrect. (Slide preparations show this to be true). Notman even proposed, unnecessarily, a tribe for this genus.

*Homalotae* group

The wood-dwelling and subcortical species of this group generally have dorsoventrally compressed bodies. *Placusa* has a broad pronotum—at least one-half broader than long; the others have narrower pronota. All have narrowly separated mesocoxae. *Anomognathus* has a distinctive spinose eighth tergite (both sexes). *Homalota* and *Thecturota* differ chiefly in size.

## ANOMOGNATHUS Solier

*Anomognathus* Solier, 1849, p. 338. Type species: *Anomognathus filiformis* Solier.
*Theetura* Thomson, 1858, p. 32. (*Thectura* Thomson, a misspelling). Type species: *Theetura cuspidata* Erichson.

*Descriptive features.*—Small species easily recognized by prolongation of eighth tergites in both sexes into long spinous process. Length, 1.8 mm.; width, 0.4 mm. Form dorsoventrally compressed (habitus "subcortical"); sides subparallel throughout, uniform in width except elytra a little broader. Head with small umbilicate punctures. Integuments reticulated, except obsolescent on abdomen. Antennae with segments 5-10 very short, transverse. Pronotum one-fifth broader than long. Mesocoxae narrowly separated. Tergites 4-6 with pair of small setigerous tubercles. Tergites 3-7 impressed at base.

## PLACUSA Erichson. Figure 24A.

*Placusa* Erichson, 1837, p. 370. Type species: *Placusa pumilio* (Gravenhorst).

A genus of widely distributed species that live under bark and in wood. The pronotum seems to be exceptionally broad—at least in the American species—and ranges from one-half to two-thirds broader than long. The pronotum has pubescence pattern A, with the fine hairs subparallel. The pronotum has a slightly emarginate apical border and moderately arcuate base. The eighth male tergite—at least in some species—is distinctive, having two widely spaced acute processes and a medial lobe-like process that may have a strong spine.

There seems to be some discordance among the species and the genus needs study on a basis broader than the Nearctic Region.

## HOMALOTA Mannerheim. Figure 20F, I.

*Homalota* Mannerheim, 1831, p. 487. Type species: *Homalota plana* (Gyllenhal).

*Descriptive features.*—Length, 2.1-2.8 mm.; width, 0.6-0.7 mm. Head, pronotum, and elytra with close-meshed raised reticulation giving appearance of granulation.

Head coarsely punctate (probably umbilicately). Pronotum two-fifths broader than long; head only five-sixths as broad. Pronotal pubescence pattern D, with almost all hairs transverse. Abdomen not broadest at seventh segment, sides of abdomen subparallel.

## THECTUROTA Casey

*Thecturota* Casey, 1893, p. 357. Type species: *Thecturota tenuissima* Casey.
*Hemithecta* Casey, 1911, p. 211. Type species: *Hemithecta ruficollis* Casey.
*Oligurota* Casey, 1893, p. 361. Type species: *Oligurota pusio* Casey.

*Descriptive features.*—Small slender species—1.12-1.16 mm. in length, about 0.33 mm. in width. Head as long as pronotum and as wide (or possibly a little wider). Pronotum one-fourth broader than long; elytra one-fourth longer than pronotum. Eyes small; their length about five-seventh the distance to base of head. Pronotal pubescence pattern C (modified), with almost all hairs transverse. Pronotum broadest subapically, the sides converging behind to strongly arcuate base; basal angles obsolescent. Antennae with segments 4-10 short, transverse, but not strongly incrassate. Head umbilicately punctate; pronotum without raised reticulation. Abdomen broadest at seventh segment (except in *tenuissima* and a few other species) which is one-eighth broader than segment three.

### *Euvirae* group

## Euvira Sharp. Figure 20G, H.

*Euvira* Sharp, 1883, p. 278. Type species: *Euvira nigra* Sharp.
*Crimalia* Casey, 1911, p. 206. Type species: *Crimalia quadriceps* Casey. NEW SYNONYM.

*Distribution.*—*Euvira* is a large, Neotropical genus ranging from Mexico to Argentina. A few species occur in the Nearctic fauna as well. Casey's *Crimalia quadriceps* recorded from Mississippi belongs here. I have seen one specimen from northern Illinois and Bierig recorded the genus in Florida.

*Diagnosis.*—*Euvira* is distinguished from other Bolitocharini by its small size, distinctive quadrate head, and distinct neck (one-half as broad as head). *Euvira* has been placed with the Autaliae in catalogs (e.g., Blackwelder, 1944), but I believe that it is not a member of that group.

*Descriptive features.*—Body small, slender; length, 1.4 mm., width, 0.4 mm. Head one-fifth broader than long, broadest at base; sides converging slightly in front to medium-sized eyes; head with shallow umbilicate punctures. Labial palpi two segmented, basal segment broad, terminal segment filiform. Antennae short, strongly incrassate (segment 10 twice as broad as 4); segments 1 and 2 short and relatively broad; 3 and 4 slender, minute; 5-10 very short, transverse. Pronotum one-half broader than long; apex strongly arcuate, humeral angles rounded; short sides nearly straight; base strongly arcuate; dorsum with dense shallow umbilicate punctures; pronotal pubescence pattern D, hairs directed caudad except for several basal

rows curving transversely. Elytra one-half longer than pronotum. Tergites 3-7 with apical row of asperate punctures. Seventh tergite almost twice as long as sixth. Intercoxal processes slender; m:i:m ratio—8:2:4.

*Schistacme* group

**SCHISTACME** Notman

*Schistacme* Notman, 1920a, p. 712. Type species: *Schistacme obtusa* Notman.

*Schistacme obtusa* Notman is a small species from Florida with the characters given in the key. Its affinities within the Bolitocharini are not clear at this time.

**CYPHEA** Fauvel

*Cyphea* Fauvel, 1863, p. 220. Type species: *Cyphea curtula* (Erichson).

For the characters of this genus refer to the original description. The genus does not appear in the key [L.H.].

## Tribe AUTALIINI

Autaliides Thomson, 1859, p. 30; 1860, p. 260 (subtribe); 1867, p. 203.
Autaliae Fenyes, 1918 (group of Bolitocharini); Bernhauer and Scheerpeltz, 1926, p. 568 (subtribe of Bolitocharini).
Autaliates Mulsant and Rey, 1871, (rameau—Bolitocharaires); Ganglbauer, 1895, p. 258 (subtribus—Bolitocharini).

Nine genera (with 48 species) are assigned by Bernhauer and Scheerpeltz (1926) to the Autaliae, a subtribe of Bolitocharini. The group seems to be delimited from the Bolitocharini and to deserve tribal status. Three-fourths of the recorded species are Neotropical —*Eudera* (3), *Gansia* (4), *Rhopalogastrum* (1), *Attonia* (1), *Ophioglossa* (9). *Autalia,* with eight species, is in the Palaearctic and Nearctic Regions, and East Indies. Several small genera are Oriental (Java, Burma, East Indies).

Four species of *Autalia* have been recorded in California and British Columbia. Whether or not the genus occurs east of the coastal states is not known.

**AUTALIA** Leach. Figures 20J-L, 31H-K.

*Autalia* Leach, 1819, p. 177. Type species: *Autalia impressa* (Olivier).

*Descriptive features.*—Form distinctive. Head broadest at eye level, its sides converging arcuately (feebly) to slender neck which is less than one-third as broad as head; pronotum relatively small (nine-tenths as broad as head), narrow at apex where it closely embraces neck, its sides diverging strongly from apex to broadest level (about one-third of way back) and then slightly bisinuate to distinct basal

angles; elytra large, two-fifths broader at scutellar level than pronotum, and two-fifths longer than pronotum; abdomen a little narrower than elytra, its sides subparallel to sixth segment and then gradually converging. Pronotum with four subbasal foveae (in some species somewhat sulcate); elytra each with two conspicuous basal foveae; tergites 3-5 with median carina, as well as several shorter carinae and coarse punctures in basal impressions. Antennae moderately long; segments 1-6 longer than broad, 7 quadrate, 8-10 slightly transverse (or 4 quadrate, 5-10 transverse), only moderately incrassate. Eyes medium sized. Integuments relatively free from surface sculpture, except for fine punctation.

Mesocoxae widely separated, not set in margined acetabula. Sternal relationships distinctive: Mesosternum relatively short, strongly carinate and on different level from metasternum; mesosternum prolonged into area behind procoxae and forming, in conjunction with prolonged prosternum, impressed procoxal acetabula; mesosternal process short; isthmus much longer. Metasternum inordinately long, unmargined metasternal process relatively narrow.

*Autalia* is very similar in form to *Blepharhymenus* of the Oxypodini, but is doubtfully related.

## Tribe PHYTOSINI

Phytosides Thomson, 1867 (curia).

Phytosates Mulsant and Rey, 1871 (rameau—Bolitocharaires); Ganglbauer, 1895, p. 258 (subtribus—Myrmedoniini).

Phytosi Fenyes, 1918, p. 18 (subtribe of Bolitocharini); Bernhauer and Scheerpeltz, 1926, p. 550.

Species of this tribe of small aleocharines are found in the intertidal zone of seashores in many parts of the world. Apparently restricted to the Pacific Coast of the Nearctic Region, the phytosines may be distinguished from *Pontomalota* and *Tarphiota* (of the Athetini) by their short elytra and 4,4,5 tarsal segmentation, and from *Diglotta* (*Diglottini*) by different tarsal segmentation and distinctive mouthparts.

Species of *Phytosini* have been collected on the shores of the North and Baltic Seas in Europe, the coasts of Japan and Formosa, the Atlantic Coast of Morocco and Senegal (?), the Red Sea Coast, the Falkland Islands and South Georgia Island east of South America, Kerguelen and Crozet Islands south of Africa, and New Zealand and adjacent Islands.

*Tribal Characteristics.*—Tarsi, 4,4,5 segmented; elytra always shorter than pronotum—one-half to five-sixths as long; wings absent; eyes small (occasionally medium sized); tarsal claws sickle-shaped; parameres distinctive (figs. 2C; 21A, D-F); metasternum very short behind middle coxae; coxae relatively large; mandibles strong.

*Phytosus* of Europe is presumably the most generalized genus of

the tribe. The Nearctic genera are endemic (perhaps one or more may occur in Japan). The Nearctic Phytosini were revised by Moore (1956b).

## THINUSA Casey

*Thinusa* Casey, 1893, p. 371. Type species: *Thinusa maritima* Casey.

*Diagnosis.*—This genus is distinguished by the moderately strong spines on the fore and middle tibiae.

*Descriptive features.*—Length, 2.8-3.2 mm. Coloration rufotestaceous, abdomen brown. Body with sides subparallel throughout; head and pronotum robust; elytra smaller and a little more slender; abdomen as wide at base as elytra, but slightly broader towards apex. Head broader than long, with coarse raised reticulation. Antennae short, moderately incrassate; segment 4 quadrate, 5-10 very short, transverse. Eyes medium sized. Pronotum large, one-sixth broader than long. Pronotal pubescence pattern C, with basal three or four rows curving transversely. Elytra about five-sixths as long as pronotum. Procoxae elongated and strongly convex; mesocoxae attenuated beyond acetabula. Intercoxal processes on different planes; mesosternal process very slender; isthmus long. Tergites 3-5 moderately impressed.

## LIPAROCEPHALUS Maeklin. Figures 2B, C; 21D, E, H; 24M.

*Liparocephalus* Maeklin, 1853, p. 192. Type species: *Liparocephalus brevipennis* Maeklin.

*Diagnosis.*—A very distinctive genus with a large robust head, smaller pronotum, very small elytra, a broad robust abdomen, small eyes, distinctive pronotal pubescence pattern, nonimpressed tergites, and strong toothed mandibles.

*Descriptive features.*—Length, 3.5-4.2 mm. Coloration reddish brown. Head one-seventh broader than pronotum and more than one-fifth longer. Pronotum one-fifth broader than long; broadest subapically, base and apex arcuate at middle; sides bisinuate. Elytra relatively small, less than one-half as long as pronotum. Antennal segments 1-7 elongated, scarcely varying in width; 8 quadrate; 9-10 slightly transverse; 8-10 incrassate. Eyes small; length only one-third their distance from base of head. Pronotal pubescence distinctive—pattern G (fig. 24M); hairs directed caudad in apical half, cephalad in basal half. Tibiae not spinose. Abdomen broadest at level of segments 5 and 6 which are one-half broader than base.

## DIAULOTA Casey. Figure 21F, G, I.

*Diaulota* Casey, 1893, p. 354. Type species: *Diaulota densissima* Casey.

*Diagnosis.*—*Diaulota* is distinguished by having the head and pronotum longer than broad, the neck usually not visible from above, and the vertex of head without a longitudinal impression.

*Descriptive features.*—Length, 2.4-2.8 mm. Coloration dark reddish brown. Head more than one-fifth longer than broad; without basal impression nor longitudinal sulcus. Eyes small, length about one-half distance to base of head. Integuments

coarsely reticulated. Pronotum a little longer than broad; dorsum strongly deflexed onto flanks; hypomera very small. Elytra only about one-half as long as pronotum. Abdomen broadest at level of segments 6 and 7, which are more than one-fifth broader than elytra. Tergites 3-5 impressed at base.

### BRYOBIOTA Casey

*Bryobiota* Casey, 1893, p. 367. Type species: *Bryobiota bicolor* Casey.

*Diagnosis.*—Distinguished by its slender form, subparallel sides, subquadrate head with an impressed neck region and a shallow longitudinal furrow in the basal part of the vertex, and by having the sixth tergite impressed.

*Descriptive features.*—Length, 2.1-2.4 mm., width, 0.56 mm. Coloration of foreparts yellowish brown; abdomen reddish brown. Antennal segments 4-10 transverse. Eyes small. Pronotum as broad as long; hypomera generalized (not reduced in size). Pronotal pubescence pattern E with hairs directed cephalad in midline. Elytra four-fifths as long as pronotum. Abdomen perceptibly broader at seventh segment, but only slightly. Tergites 3-6 impressed.

### BRYOTHINUSA Casey

*Bryothinusa* Casey, 1904, p. 312. Type species: *Bryothinusa catalinae* Casey.

*Diagnosis.*—Identified by its uniform width, pale coloration, fine pilose pubescence, nonimpressed tergites, and nonspinose tibiae.

*Descriptive features.*—Length, 2.5 mm. Coloration pale flavotestaceous. Antennae moderately long; segments 1-5 elongated; 6-7 subquadrate; 8-10 feebly transverse; antennae only slightly incrassate. Pronotum only one-eighth broader than long; its sides converging toward straight base from broadest level near apex. Elytra about three-fourths as long as pronotum. Pronotal pubescence pattern E.

### AMBLOPUSA Casey

*Amblopusa* Casey, 1893, p. 355. Type species: *Amblopusa brevipes* Casey.

*Diagnosis.*—Distinguished by having the seventh tergite impressed at base.

*Descriptive features.*—Length, 1.6-3.1 mm. width, 0.4-0.6 mm. Head transverse. Eyes small. Antennae variable; segments 4-10 transverse (*pallida*), or with 3-6 subquadrate, and 7-10 transverse (slightly incrassate). Pronotum only a little broader than long; obtrapezoidal, base only three-fifths maximum pronotal width. Pronotal pubescence pattern E. Tergites 3-7 impressed at base, impressions not punctate.

## Tribe PHILOTERMITINI

Philotermitini Seevers, 1957, p. 250.

This tribe was proposed for two genera of termitophiles associated with Rhinotermitidae: *Philotermes* Kraatz with *Reticuli-*

*termes* in the eastern United States, and *Neophilotermes* Seevers with *Coptotermes* in Costa Rica and Guatemala.

The mandibles, with rows of fine denticles forming a "molar surface," suggest affinity of these termitophiles with the Gyrophaenini, which have the same 4,4,5 tarsal formula. *Philotermes* may have been derived from some wood-dwelling gyrophaenine.

**PHILOTERMES** Kraatz. Figures 21L, M; 24O; 31L.

*Philotermes* Kraatz, 1857, p. 13; Blatchley, 1910, p. 343; Seevers, 1938, p. 430; 1957, p. 251.

Differentiated by the characters of the key. For a more detailed account of the genus, with a key to the species, illustrations, and host relationships, see my earlier papers on termitophilous Staphylinidae. Six species have been collected in the eastern United States from Massachusetts to Florida, and west to Illinois and Texas.

## Supertribe GYMNUSINEA

Three tribes—Gymnusini, Deinopsini, and Myllaenini—may be the most isolated section of the Aleocharinae. *Gymnusa* has certain abdominal characteristics that may be more generalized than any other in the subfamily. Furthermore, the facies of the species of this section may be the most tachyporine-like in the subfamily. On the other hand, their mouthparts are very specialized, and their parameres the most complex in the subfamily. Despite the indications that *Gymnusa, Deinopsis,* and *Myllaena* were derived from the same stock, they are so diversified in structure as to require tribal status for each.

*Supertribal Characteristics.*—Antennae filiform except for slight enlargement of last three segments; all segments elongated. Body sublimuloid, somewhat tachyporine-like. Head deflexed, its long axis tending to be dorsoventral. Head somewhat elongated, closely embraced at base by pronotum. Pronotum very convex, its hypomera not visible in lateral view; one-third to one-half broader than long; broadest at middle or subbasally. Postgenal carinae absent; maxillary acetabula very large, attaining side of head. Pronotal pubescence pattern A (*Myllaena*), or B (other tribes). Mesocoxae very close, separated by very slender spine-like mesosternal process which almost attains apex of coxae and which overlaps short metasternal process (*Deinopsis, Gymnusa*), or is shorter and separated from short metasternal process by isthmus (*Myllaena*).

## Tribe GYMNUSINI

Gymnusini Kraatz, 1856 (subdivision); Ganglbauer, 1895, p. 321; Reitter, 1909, p. 89; Fenyes, 1918, p. 19; Bernhauer and Scheerpeltz, 1926, p. 503; Casey, 1911,

p. 233 (tribe of Myllaeninae); 1915, p. 395 (tribe of Myllaeninae).
Gymnusites Jacquelin DuVal, 1858, p. 19 (subdivision).
Gymnusides Thomson, 1867, p. 201 (manipulus).
Gymnusaires Mulsant and Rey, 1873, p. 17.
Gymnusae Fauvel, 1875 (section).

*Tribal characteristics.*—Tarsi 5,5,5 segmented; abdominal sclerites of segments 3-6 with ctenidia of close-set spinose setae (fig. 26F); hind coxa with lobe over base of femur; mandibles (fig. 26A) with fewer teeth than in *Deinopsis* (fig. 26C); gula broad; sutures subparallel; mentum expanded laterally over cardo; apex slightly emarginate and apical angles slightly produced; maxillary palpi as in *Deinopsis* except that fourth segment distinctive; galea and lacinia basically as in *Deinopsis* (fig. 26D), but distinctive (fig. 26B); labial palpi and glossae basically similar to those of *Deinopsis,* but distinctive (fig. 26I); terminal segments of abdomen generalized; ninth tergite complete in front of large tenth tergite (fig. 25C); median lobe and parameres remarkably distinctive (fig. 22A-D); hind femora without spinose setae; tarsal claws simple; last tarsal segment without long setae.

### GYMNUSA Gravenhorst. Figures 22A-D, 25C, 26A, B, F, I.

*Gymnusa* Gravenhorst, 1806, p. 173. Type species: *Gymnusa brevicollis* (Paykull), through synonymy with *excusa* Gravenhorst.

Casey described two species, *atra* and *grandiceps,* from Massachusetts and Rhode Island. Bernhauer and Scheerpeltz (1926) synonymized *atra* with the European *brevicollis* (Paykull) and recorded another European species, *variegata* Kiesenweiter, in our fauna. The situation is confusing and requires clarification.

*Gymnusa* has been recorded only in the Palaearctic Region and eastern North America.

*Gymnusa* has the characteristics listed for the tribe.

## Tribe DEINOPSINI

Deinopsini Sharp, 1883, p. 294, Fenyes, 1918, p. 17; Bernhauer and Scheerpeltz, 1926, p. 502; Cameron, 1939, p. 12.
Deinopsini (subfamily Myllaeninae): Casey, 1911, p. 234.
Deinopsini Ganglbauer, 1895, p. 323; Reitter, 1909, p. 89.

*Tribal characteristics.*—Tarsi 3,3,3 segmented; abdominal sclerites of segments 3-6 with ctenidia of close-set, alternating spatulate and spinose setae (fig. 26E); hind coxa with lobe over base of femur; mandibles tridentate (fig. 26C); gula broad; sutures diverging slightly; mentum expanded at base over cardo, apex strongly emarginate, apical angles produced; maxillary palpi long and slender, with fourth segment short and stout (with slender papilla), second segment swollen subapically; third very slender at base, increasing uniformly to truncate apex; galea and lacinia exceptionally long (fig. 26D); first segment of labial palpi exceptionally long, second much shorter, third very short and papilla-like, glossae long, membranous (fig. 26I); terminal abdominal segments distinctive—ninth tergite completely divided into two

rod-like sclerites lying lateral to tenth tergite; median lobe and parameres of aedeagus distinctive (fig. 22E, F, H); hind femora with row of short spinose setae on outer margin; tarsal claws bidenticulate; terminal tarsal segment with three very long terminal setae.

Bernhauer and Scheerpeltz (1926) list only the single genus *Deinopsis,* with 10 species, in the Deinopsini. The species are distributed in Europe (1), Japan (1), North American (1), Neotropical Region (5), Australia (1), Ceylon (1). They list a single Nearctic species (synonymizing three others) in the eastern states.

To the Deinopsini must certainly be added *Pagla* Blackwelder (= *Pachyglossa* Fauvel, preoccupied) with five species in southern South America. The monotypic tribe Pachyglossini is unwarranted.

**DEINOPSIS** Matthews. Figures 22E, F, H; 25D; 26C, D, E.

*Deinopsis* Matthews, 1838, p. 193. Type species: *Deinopsis erosa* Stephens (through synonymy with fuscata Matthews).

With the characters of the tribe. Although the single Nearctic species, *americana* Kraatz, has been regarded as valid, the species problem requires careful study.

## Tribe MYLLAENINI

Myllaenini Ganglbauer, 1895, p. 317; Reitter, 1909, p. 88; Fenyes, 1920, p. 135; Bernhauer and Scheerpeltz, 1926, p. 504; Cameron, 1939, p. 15; Blackwelder, 1944, p. 153.

Myllaeninae (subfamily): Casey, 1911, p. 236; 1915, p. 395.

*Tribal characteristics.*—Tarsi 4,4,5 segmented; abdominal sclerites without ctenidia; hind coxae without lamella covering base of femur; mandibles shorter than in two preceding tribes, without teeth; gula broad, sutures arcuate; mentum with apex strongly emarginate, apical angles moderately produced; maxillary palpi slender but shorter than in *Deinopsis;* third segment spindle-shaped; fourth papilliform; galea very long, slender and bearing short spines; lacinia very slender, ciliate; labial palpi exceptionally long and filiform, glossae small; terminal abdominal segments distinctive; ninth tergite divided into two parts separated by tenth tergite which is deeply bifid (fig. 25G); median lobe and parameres distinctive (fig. 22G, I, J); hind femora without spinose setae; tarsal claws simple, last tarsal segment without setae.

**MYLLAENA** Erichson. Figures 22G, I, J; 25G; 26G, H.

*Myllaena* Erichson, 1837, p. 382; Casey, 1911, p. 236; Notman, 1920a, p. 710. Type species: *Myllaena dubia* (Gravenhorst).

*Myllaena* is a large genus (55 species, Bernhauer and Scheerpeltz, 1926), with a wide distribution in many zoogeographic re-

gions (scarce in Africa). Fifteen species have been reported in the Neotropical Region (Blackwelder, 1944), and 25 in the Nearctic Region. Our species are seemingly distributed throughout North America.

Four common European species have generally been listed as occurring in North America. Bernhauer and Scheerpeltz (1926) synonymize 12 Casey species and one Kraatz species with the four European species (*dubia* Gravenhorst, *infuscata* Kraatz, *intermedia* Erichson, *minuta* Gravenhorst), and synonymize six additional Casey species with *fenyesi* Bernhauer. Thus, they considered only nine of the described North American species as valid. Inasmuch as neither Fenyes (who originally synonymized the Casey species) nor Bernhauer saw the Casey collection, their judgments about the validity of Casey's species cannot be taken very seriously. Their placement of four European species in our fauna must also be viewed with some skepticism.

*Myllaena* has the characters listed for the tribe.

## Tribe DIGLOTTINI

Diglossaires Mulsant and Rey, 1873, p. 73.
Diglossini Ganglbauer, 1895, p. 313.
Diglottini Fenyes, 1918, p. 66. Eichelbaum, 1909, p. 204; Bernhauer and Scheerpeltz, 1926, p. 508.

The tribe Diglottini contains a single recorded genus of sea-shore species that live under sea-weed, stones, and other litter that may be covered by the tide. The relationships of *Diglotta* are not clear; it may have been derived from generalized stock of Phytosini—a tribe of intertidal species—but this remains to be demonstrated. *Diglotta* is differentiated by its 4,4,4 segmented tarsi, with long setae on the plantar surface and sickle-shaped claws; beak-like mouthparts—with long straight mandibles that have slightly incurved apices, long galea and lacinia (the latter with rows of teeth), long filiform labial palpi, and exceptionally elongated maxillary palpi (fig. 26L); short meso-metasternal region; presence of a frontal suture; and the distinctive pronotal form. The existence of a frontal suture in this tribe is interesting in view of the fact that elsewhere in the paper I have developed the thesis that this is a generalized character. Within the Aleocharinae, relatively few genera outside of the tribe Oxypodini have a suture between the anterior tentorial pits. But few other characters would seem to link *Diglotta* with the Oxypodini.

*Diglotta* is interesting zoogeographically, although the very incomplete records must show a discontinous distribution. Two species occur in Europe—one in northwestern Europe (Denmark, Holland, northern and western France, the British Isles), and a second on the coast of southern France. Several species are recorded from the Middle East—Perim, Sinai, the Red Sea region—and two have been reported in the Far East—a species in the Celebes, one at Singapore. In the New World the records are even more inconclusive; a species was recorded on the coast of southern California and one on the coast of New Jersey (under the generic name *Phytosus*). Collecting attempts have been, no doubt, very haphazard, and it is doubtful if most seacoasts of the world have been searched at all.

**DIGLOTTA** Champion. Figures 21J, K; 26J-N.

*Diglotta* Champion, 1887, p. 228. Type species: *Diglotta mersa* Haliday.
*Diglossa* Haliday, 1837, p. 252. (junior homonym of *Diglossa* Wagler).

*Diagnosis.*—The genus is differentiated by the characters given for the tribe.

*Descriptive features.*—Head broader than long, excluding anteclypeus and labrum. Postclypeus short, its margin straight or incised. Labrum with median elevation that may become subcarinate. Eyes medium-sized, their length about equivalent to distance from base of head. Pronotum distinctive in form; broadest subapically, sides bisinuate to somewhat narrower base; flanks straight, hypomera vertical and faintly delimited. Elytra almost as long as pronotum or considerably shorter, wings present or absent (species sometimes or always dimorphic). Pronotal pubescence pattern E (hairs directed cephalad in midline). Coxae large, sternal region exceptionally short so that three pairs of coxae are in close sequence. Tibiae ciliate but with terminal spines at most. Tarsi 4,4,4 segmented; plantar area of segments at times prolonged or with long setae (hook-tipped); claws sickle-shaped. Abdomen a little broader at apex than base; tergites 3-6 impressed at base; seventh tergite longer than preceding.

*The Nearctic species of* Diglotta *Champion:* Records for this genus in North America are surprisingly meager, although we clearly have at least one species on each of our coasts. The Pacific Coast species, *pacifica* Fenyes, has apparently been infrequently collected in southern California, and the Atlantic species, *littoralis* (Horn) is known from the single type specimen (collected somewhere on the New Jersey Coast). Whether these species are as rare as the records would indicate, or have just been overlooked, is difficult to say. Horn assigned *littoralis* to *Phytosus* where it has remained since 1871. Having examined the type in the Philadelphia Academy of Sciences, I am reassigning it to *Diglotta* and differentiating it from *mersa* Haliday of Europe, and *pacifica* Fenyes of California.

*D. littoralis* (Horn): Head a little broader than long; postclypeus with small, smooth median eminence that seems to be connected to relatively strong median labial carina; head reticulated, and with moderately dense, fine asperate punctation; head pubescence directed caudad; antennae short, segments one and two moderately long; three slightly longer than broad; 4-10 short, transverse, incrassate (tenth segment three-fifths broader than fourth); segment 11 rounded at apex and only a little more than three-fourths as long as 9 and 10 combined; pronotum one-seventh broader than long, its base hardly two-fifths maximum width; sides strongly bisinuate. Elytra small, about two-thirds as long as pronotum. Wingless. Coloration light testaceous; abdomen darker. Length, 1.8 mm.

*D. pacifica* Fenyes: Head one-third broader than long; postclypeal margin incised at middle; postclypeus without median eminence; apex of anteclypeus (or base of labrum) with pair of small oblique elevations; labrum with low median elevation; punctation of head coarser and denser than in *littoralis;* pubescence of head dense, and with most hairs directed medially and caudally, and becoming caudad in midline; antennae with segments 4 and 5 subquadrate, 6-10 transverse but less so than in *littoralis;* pronotum one-fourth broader than long, its base about one-half maximum width.

*D. mersa* (Haliday): Head a little broader than long; clypeal margin not incised at middle; labrum with low median elevation; antennae moderately long, slender, segment 3 moderately long, spindle-shaped, 4 and 5 quadrate, 6-10 transverse but relatively slightly so, segment 11 acuminate at tip, as long as 9 and 10 combined; pronotum one-eighth broader than long, relatively broad at base which is one-third maximum pronotal width; elytra only trifle shorter than pronotum.

## Tribe OLIGOTINI

Oligotides Thomson, 1860, p. 262; 1867; Casey, 1893, p. 379.
Oligotaires Mulsant and Rey, 1873, p. 97.
Oligotina Sharp, 1883, p. 287.
Oligotini Ganglbauer, 1895, p. 306; Fenyes, 1918, p. 17; Bernhauer and Scheerpeltz, 1926, p. 510.
Hypocyptina Thomson, 1861, p. 109 (tribe).
Hypocypti (Tachyporini) Fauvel, 1875, p. 612; Horn, 1877, p. 83.
Hypocyptaires (Tachyporiens) Rey, 1882, p. 144.
Hypocyptini (Tachyporinae) Ganglbauer, 1895, p. 330; Bernhauer and Schubert, 1916, p. 495.
Not Cyphini (based on *Cyphus* Germ. in Rhyncophora).
Hypocyphtinae Seevers, 1957, p. 282.

*Cypha* and related genera have not been included in the Aleocharinae by other writers, and have either constituted a tribe within the subfamily Tachyporinae, or have been accorded subfamilial status (Hypocyphtinae). There should be no doubt about the aleocharine affinites of *Cypha* and allies—the parameres clearly show this—nor about their oligotine relationships. The characteristics of *Cypha* clearly link that genus with *Holobus*. *Cypha* does not show tachyporine affinities.

*Tribal characteristics.*—Antennae 10 segmented, three terminal segments forming loose club. Hind coxae with lamella over base of femur.

## **OLIGOTA** Mannerheim. Figure 23A-C.

*Oligota* Mannerheim, 1831, p. 486. Type species: *Oligota pusillima* (Gravenhorst).

This is a widespread genus of small species which tend to live on vegetation, flowers, etc., and to feed on mites. Its species are the most generalized of the tribe and are distinguished by the form of the body, with its parallel sides, and relatively narrower head and pronotum. The pronotum is less convex and the hypomera are fully visible.

*Descriptive features.*—Length, 0.9-1.1 mm.; width, 0.35 mm. Relative widths of parts as follows: head (27), pronotum (38), elytra (42), abdominal segments 3-6 (40), seventh segment tapering slightly. Head about one-fourth broader than long (excluding labrum). Eyes large, facets small. Antennae with two basal segments longer than broad, 3-6 small and slender, 7-10 enlarged to form loose club. Pronotum a little less than one-half broader than long; dorsum moderately convex; hypomera fully visible. Pronotal pubescence of pattern B. Elytra one-fifth to one-fourth longer than pronotum. Mesocoxae widely separated; intercoxal processes broad, subequal in length; metasternal process moderately arcuate; isthmus absent. Third and fourth tergites shallowly impressed. Aedeagus as in Figure 23A-C.

## **HOLOBUS** Solier. Figures 23D-F; 32E, F.

*Holobus* Solier, 1849, p. 335. Type species: *Holobus pigmaeus* Solier.

*Holobus* has more often than not been considered a subgenus of *Oligota,* but is clearly delimited from that genus and its species are easily distinguished. The species are subovate in form and are clearly more robust than in *Oligota.* The head and pronotum are relatively broad; the latter is more convex and its hypomera are not visible in lateral view. The tergites are not impressed. *Holobus* in many respects seems to be more closely allied to *Cypha,* the following genus, than to *Oligota,* although it is less specialized than the former.

*Descriptive features.*—Length, 0.95-1.12 mm.; width, 0.4-0.45 mm. Relative widths of body parts: head (32); pronotum (36 at apex, 50 at base); elytra (58); abdomen (50 at base, tapering to 28 at apex of seventh segment). Head three-fifths broader than long; (excluding labrum). Pronotum more than three-fifths broader than long; very convex; apical angles depressed; hypomera not visible in lateral view; base strongly arcuate; sides converging very strongly from base to apex. Pronotal pubescence pattern A (to B), sparse to moderately dense. Antennae basically as in *Oligota;* club (segments 8-10) abruptly larger than in segments 3-7. Sculpture of elytra and abdomen usually imbricate. Seventh tergite often with raised, incomplete striae.

## **CYPHA** Leach. Figures 23G-I; 32A-D, G.

*Cypha* Leach, 1819, p. 176; Blackwelder, 1952, p. 115. Type species: *Cypha granulum* (Gravenhorst).

*Hypocyphtus* Gyllenhal, 1827, p. 294. Type species: *Hypocyphtus longicornis* (Paykull). (= *Hypocyptus*).

*Descriptive features.*—Length, 1.25 mm.; width, 0.7 mm. Of general form of *Holobus,* but even more subovate and robust; body widest at elytra and abdomen somewhat acuminate. Relative widths: head (50), pronotum (78 at base, 50 at apex), elytra (85, subhumeral, 78, apical), abdomen acuminate. Head more than twice as broad as long (50:22). Eyes large. Antennae with third segment very slender and slightly elongated; 4 and 5 shorter and broader than 3; 6 and 7 slightly broader than 5; 8-10 forming club with terminal segment as long as two preceding segments. Pronotum almost twice as long as broad (basal width); sides converging strongly to apex which is about two-thirds as broad as base; hypomera not visible. Metasternum very convex, mesosternum oblique; intercoxal processes broad, subequal, contiguous. Tergites not impressed. Aedeagus as in Figure 23G-I.

## **ANACYPTUS** Horn. Figure 23J, K.

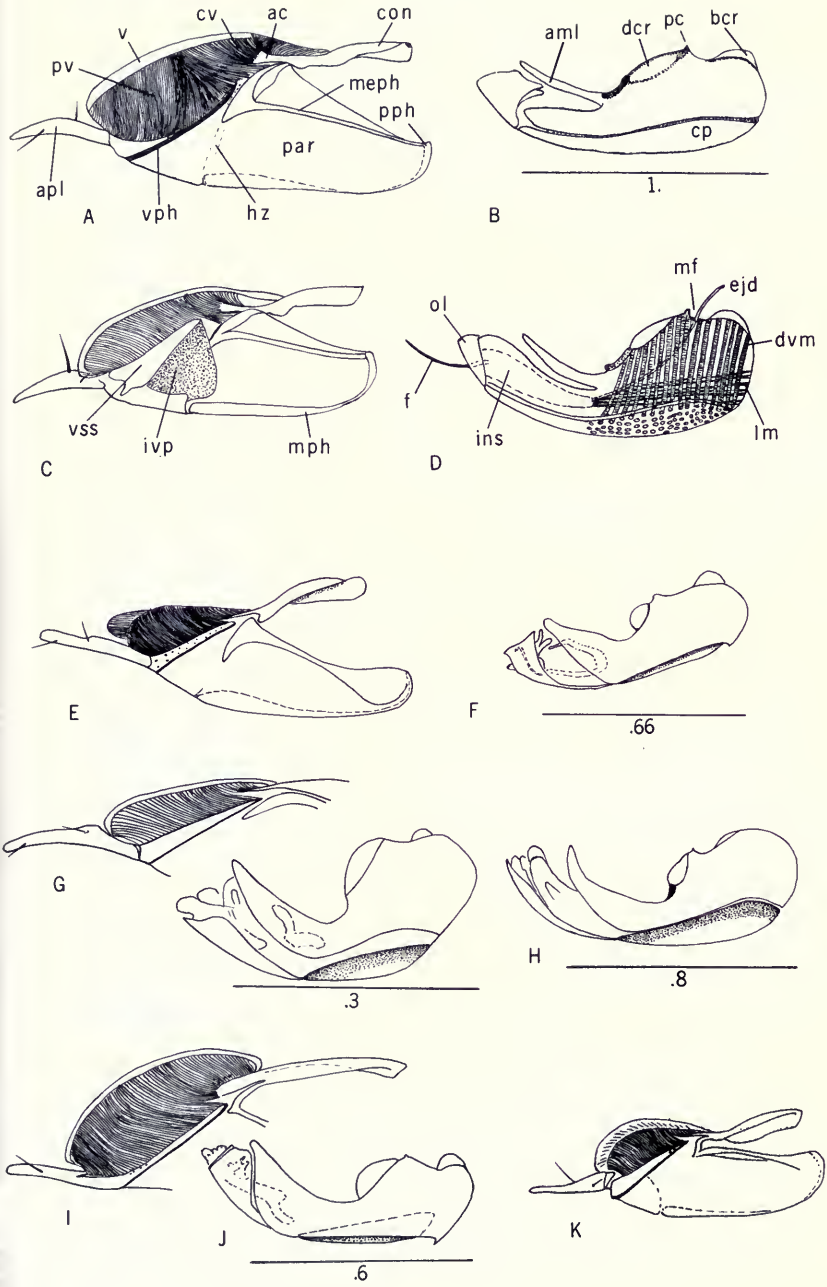
*Anacyptus* Horn, 1877, p. 87. Type species: *Anacyptus testaceus* (LeConte).

*Microcyptus* Horn, 1883, p. 1. Type species: *Microcyptus testaceus* (LeConte).

A New World genus of minute staphylinids in the southeastern United States (Florida to Illinois, North Carolina to Texas), and in the Neotropical Region. They occur under bark and in wood and are frequently in the company of termites (*Reticulitermes,* etc). A specimen was collected with army ants (*Neivamyrmex*) in North Carolina.

*Descriptive features.*—Length. 0.85-1.12 mm.; width, 0.35-0.42 mm. Form strongly limuloid; large convex pronotum almost covering somewhat deflexed head. Coloration testaceous to flavotestaceous. Relative widths: head (34); pronotum (54); elytra (56); abdomen (44—third segment, 16—apex of abdomen). Head deflexed and closely embraced by pronotal apex; labrum large. Antennal segments 3-6 very minute, 7 scarcely larger; 8-10 forming club. Pronotum exceptionally convex (cross-sectional profile almost circular); hypomera not visible. Pronotal pubescence pattern A. Middle coxae narrowly separated, intercoxal processes slender. Elytra and abdomen with imbricate sculpture. Aedeagus as in Figure 23J, K.

FIG. 1. *Oxypoda spectabilis* (Europe): **A,** Paramere, lateral surface; **B,** Median lobe; **C,** Paramere, internal surface; **D,** Median lobe, musculature. *Devia prospera* (Massachusetts): **E,** Paramere; **F,** Median lobe. *Ocyusa maura* (Europe): **G,** Apex of paramere; and median lobe. *Calodera nigrita* (Europe): **H,** Median lobe; **K,** Paramere. *Gnathusa eva* (California): **I,** Paramere (apex); **J,** Median lobe.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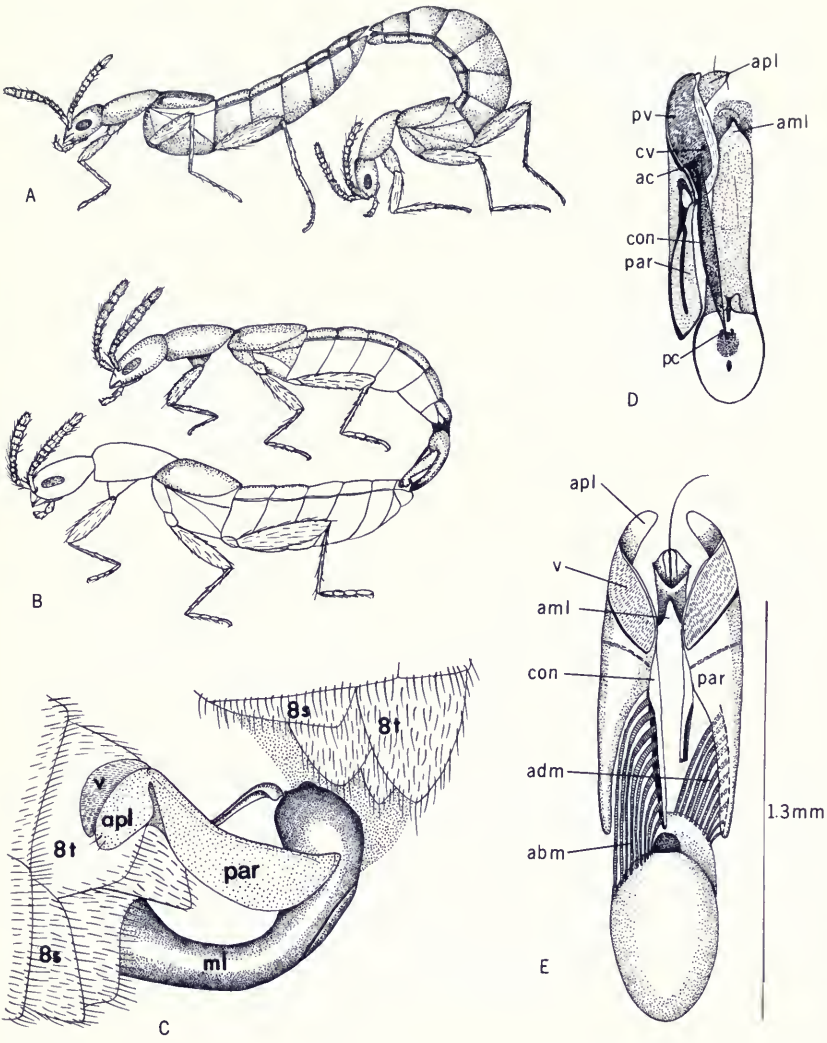


FIG. 2. **A,** *Aleochara,* mating position. **B,** *Liparocephalus,* mating position. **C,** *Liparocephalus,* aedeagus in contact with female terminalia. **D,** *Aleochara lata,* functionally upper surface of aedeagus. **E,** *Aleochara bimaculata,* functionally upper surface of aedeagus.

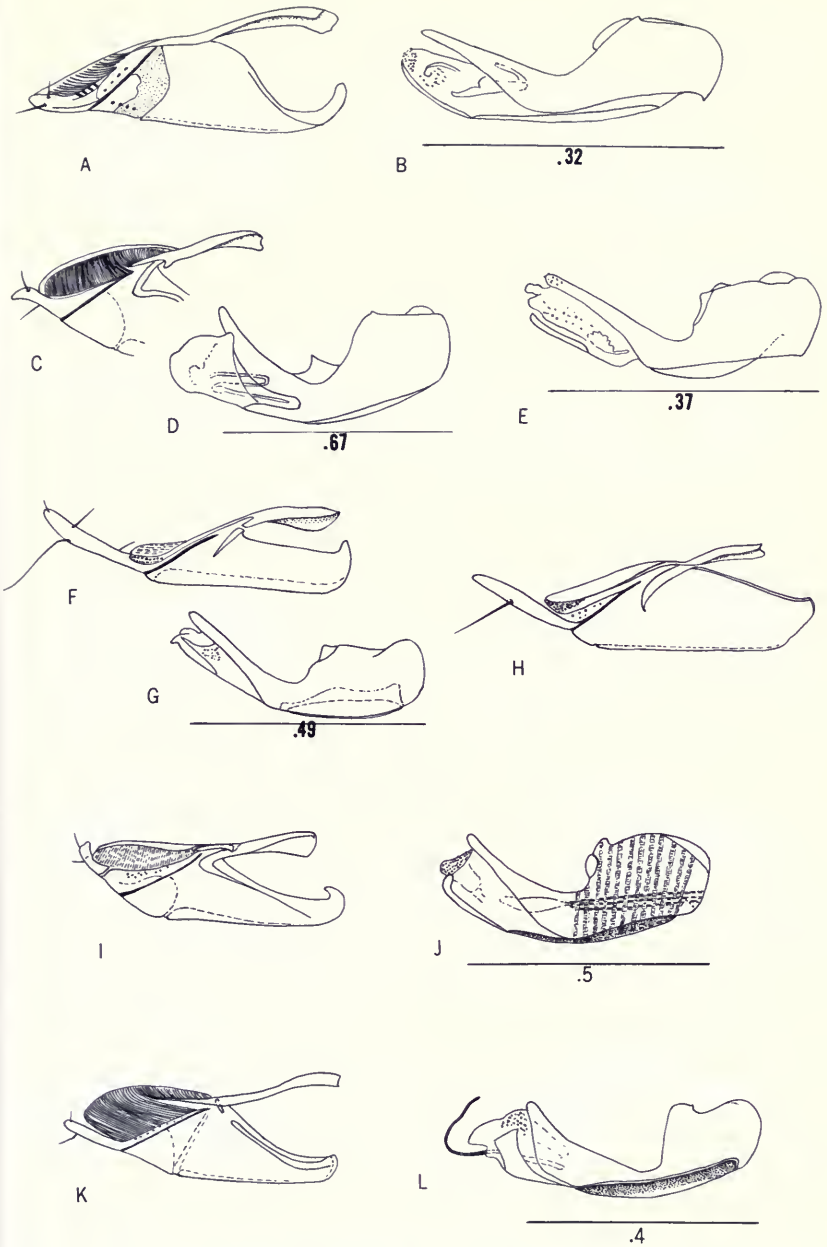


FIG. 3. *Dexiogyia corticina* (Europe): **A,** Paramere; **B,** Median lobe. *Crataraea suturalis* (Europe): **C,** Paramere (apex); **D,** Median lobe. *Thyasophila* sp.: **E,** Median lobe; **H,** Paramere. *Thyasophila lateralis* (Europe): **F,** Paramere; **G,** Median lobe. *Haploglossa pulla* (Europe): **I,** Paramere; **J,** Median lobe. *Phloeopora ferruginea* (Europe): **K,** Paramere; **L,** Median lobe.

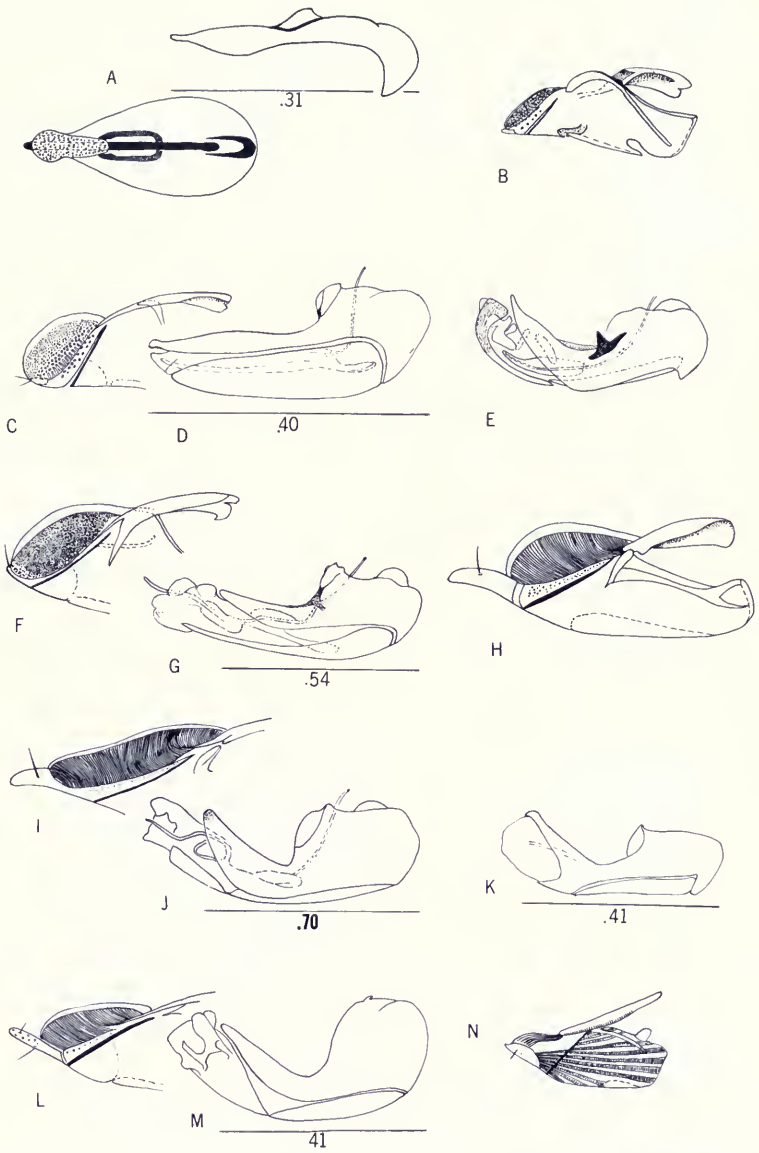


FIG. 4. *Amarochara umbrosa* (Europe): **A,** Median lobe (capsule); **B,** Paramere. *Amarochara* sp. (Pennsylvania): **C,** Paramere (apex); **D,** Median lobe. *Ilyobates nigricollis* (Europe): **E,** Median lobe; **H,** Paramere. *Pachycerota duryi:* **F,** Paramere (apex); **G,** Median lobe. *Ocalea picata* (Europe): **I,** Paramere; **J,** Median lobe. *Euthorax picipennis:* **K,** Median lobe; **N,** Paramere. *Myrmobiota crinitula:* **L,** Paramere (apex); **M,** Median lobe.

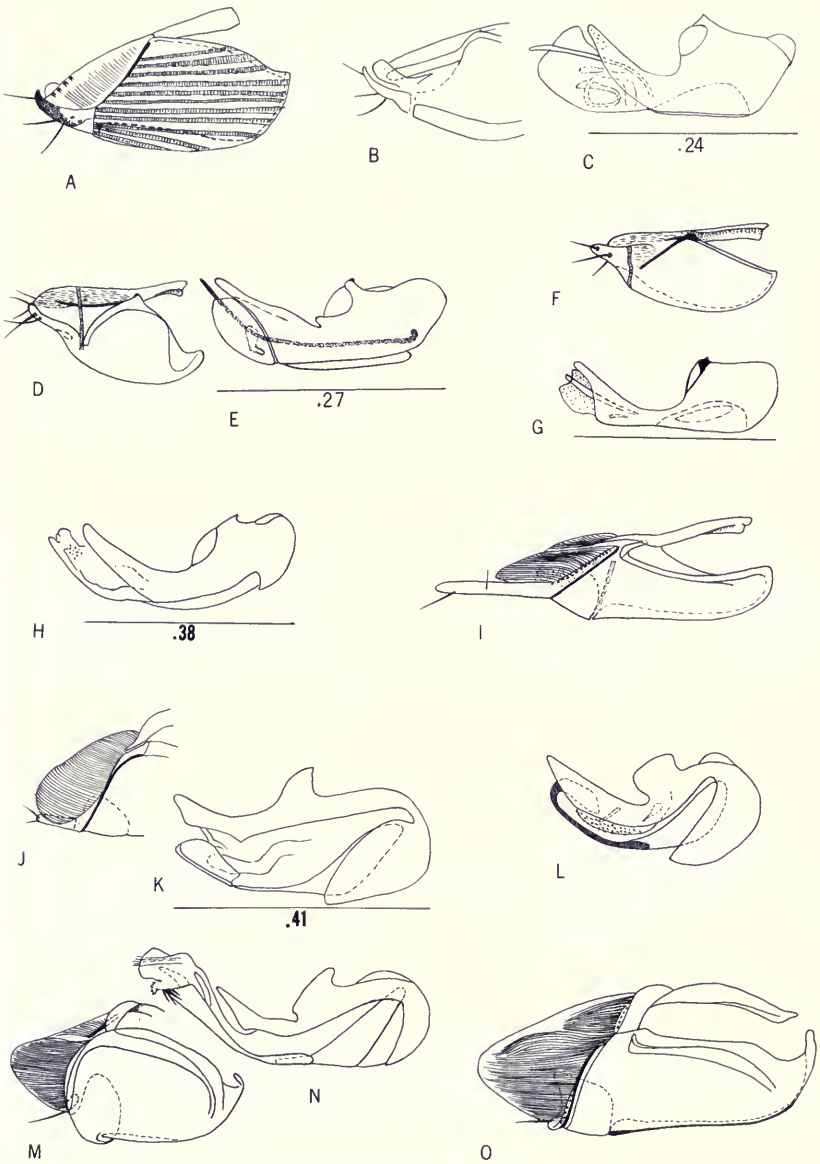


FIG. 5. *Meotica exilis* (Europe): **A,** Paramere (lateral view); **B,** Paramere (internal surface); **C,** Median lobe. *Alisalia bistriata:* **D,** Paramere; **E,** Median lobe. *Apimela macella* (Europe): **F,** Paramere; **G,** Median lobe. *Blepharhymenus eximius:* **H,** Median lobe; **I,** Paramere. *Gnypeta carbonaria* (Europe): **J,** Paramere (apex); **K,** Median lobe. *Brachyusa concolor* (Europe): **L,** Median lobe; **O,** Paramere. *Brachyusa americana* (British Columbia): **M,** Paramere; **N,** Median lobe.

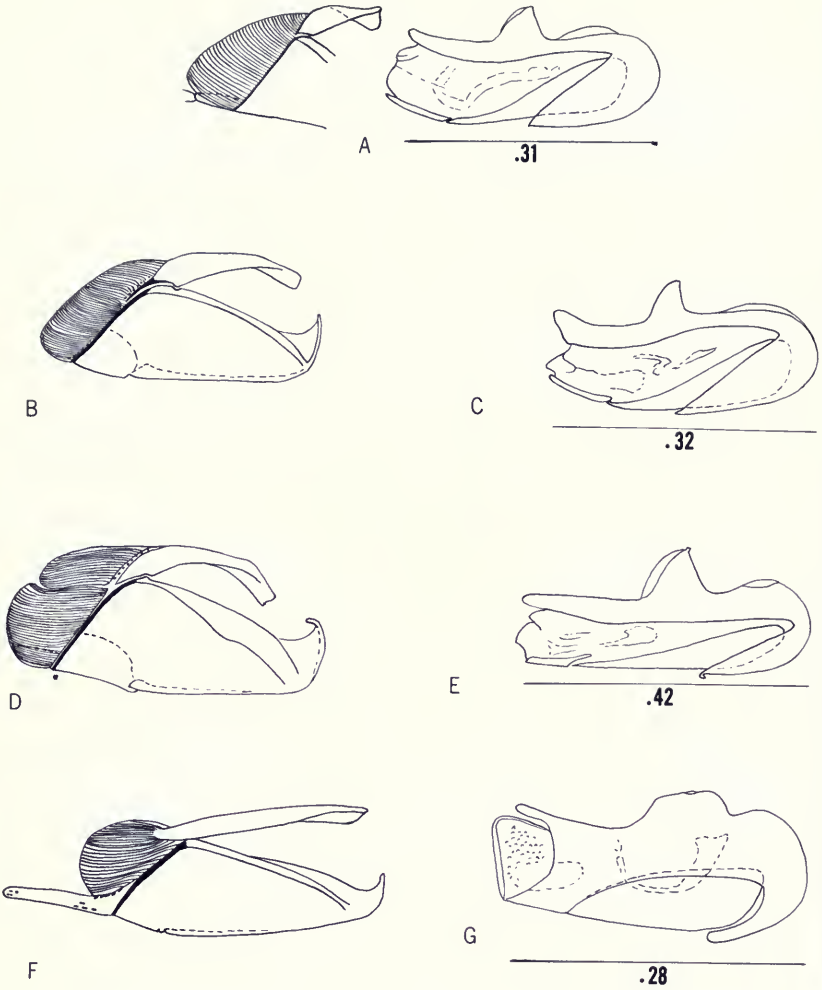


FIG. 6. (Oxypodini; Tachyusae). *Tachyusa constricta* (Europe): **A,** Paramere (apex); median lobe. *Tachyusa gracillima:* **B,** Paramere; **C,** Median lobe. *Tachyusa cavicollis:* **D,** Paramere; **E,** Median lobe. *Meronera venustula:* **F,** Paramere; **G,** Median lobe.

FIG. 7. (Athetini). *Atheta graminicola* (Europe): **A,** Paramere (Internal surface); **B,** Median lobe. *Atheta granulata* (Alaska): **C,** Paramere (internal surface); **D,** Median lobe; **E,** Paramere (lateral view). *Schistoglossa viduata* (Europe): **F,** Median lobe; **G,** Paramere (lateral view); **H,** Paramere (internal surface). *Aloconota gregaria* (Europe): **I,** Median lobe; **J,** Paramere. *Anopleta arcana* (Europe): **K,** Median lobe; **L,** Paramere.

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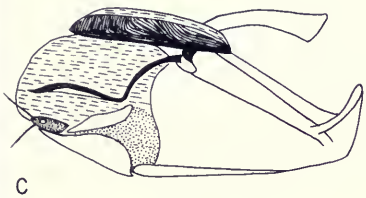

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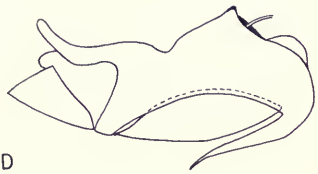

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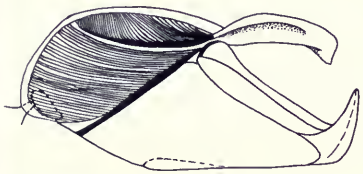

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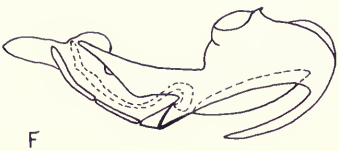

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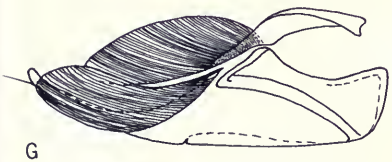

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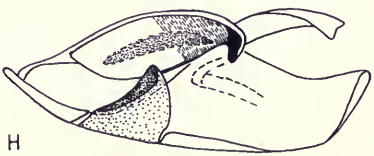

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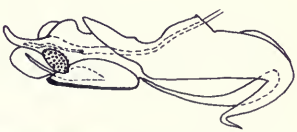

K

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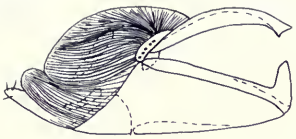
L

FIG. 8. (Athetini). *Xenota myrmecobia* (Europe): **A,** Paramere; **B,** Median lobe. *Xenota nigritula* (Europe): **C,** Paramere **D,** Median lobe. *Xenota euryptera* (Europe): **E,** Paramere; **F,** Median lobe. *Dinaraea aequata* (Europe): **G,** Median lobe; **H,** Paramere. *Philhygra elongatula* (Europe): **I,** Paramere; **J,** Median lobe. *Brundinia* (=*Metaxya*) *meridionalis* (Europe): **K,** Median lobe; **L,** Paramere. *"Atheta" dichroa* (Pennsylvania): **M,** Paramere; **N,** Median lobe.



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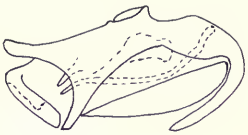

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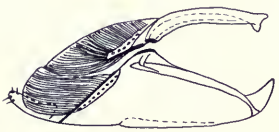

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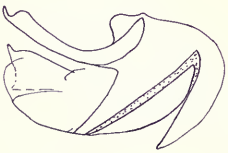

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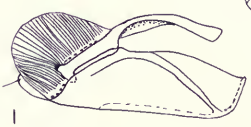

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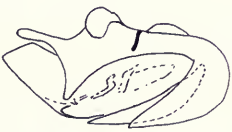

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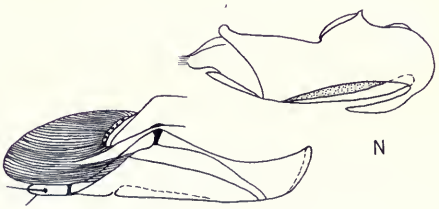

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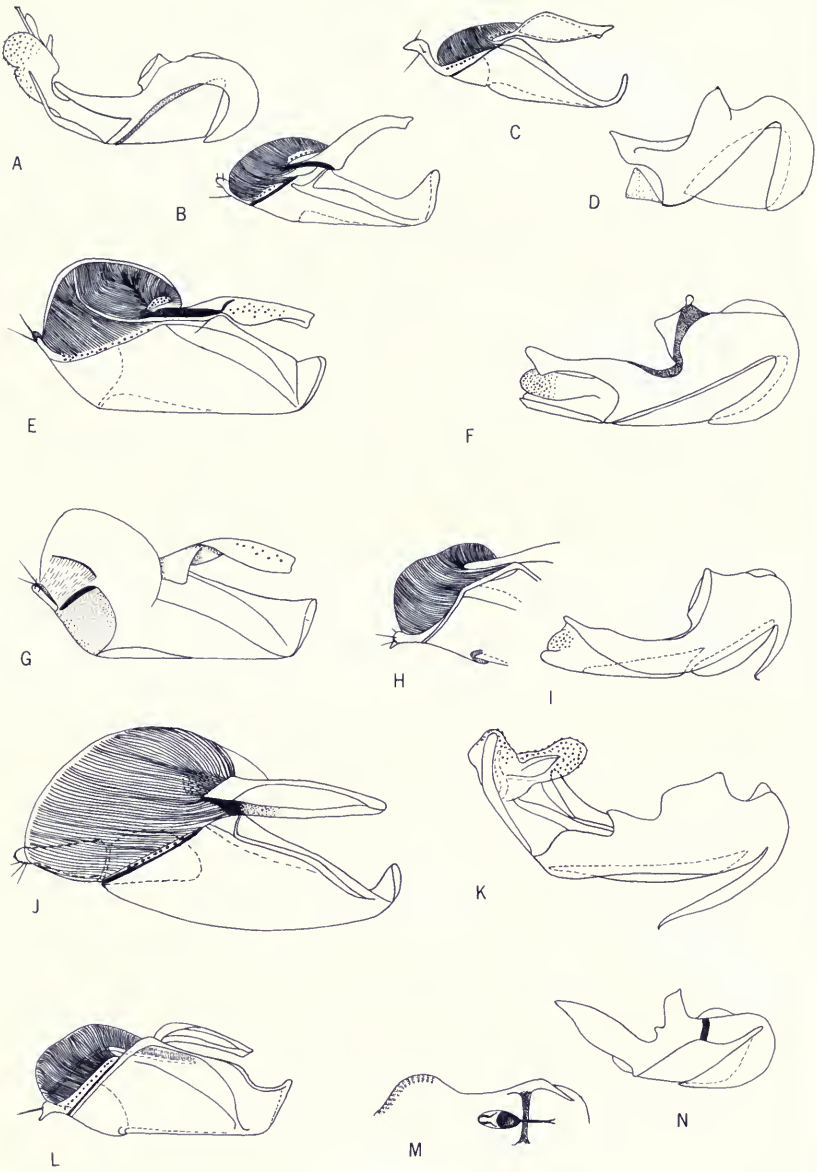



FIG. 9. (Athetini). *Earota dentata* (North Carolina): **A,** Median lobe; **B,** Paramere. *Hydrosmecta longula* (Europe): **C,** Paramere; **D,** Median lobe. *Goniusa obtusa* (Massachusetts): **E,** Paramere; **F,** Median lobe; **G,** Paramere (internal surface). *Pontomalota opaca* (California): **H,** Paramere (apex); **I,** Median lobe. *Lypoglossa fenyesi* (British Columbia): **J,** Paramere; **K,** Median lobe. *Parameotica americana* (California): **L,** Paramere; **M,** Median lobe (lateral); **N,** Median lobe (upper surface).

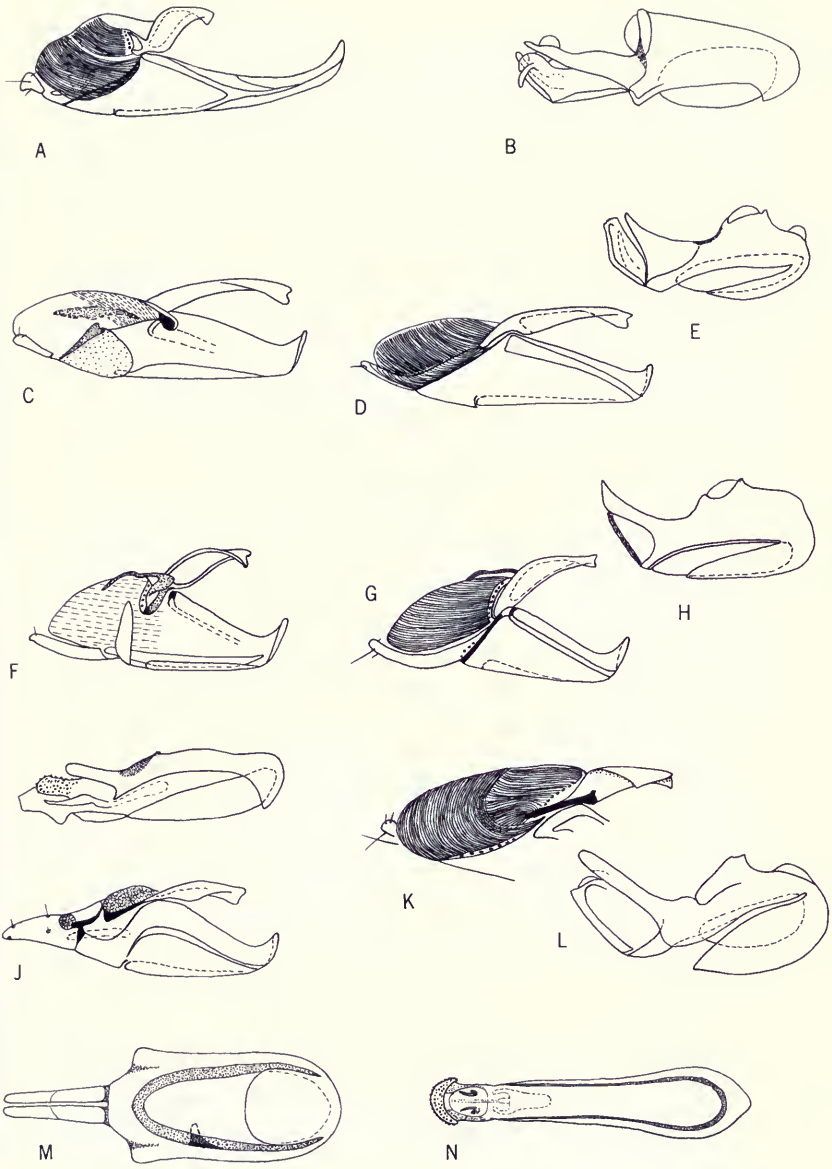



FIG. 10. *Amischa cavifrons* (Europe): **A,** Paramere; **B,** Median lobe. *Amischa curtipennis* (Europe): **C,** Paramere (internal surface); **D,** Paramere (lateral view); **E,** Median lobe. *Ousipalia caesula* (Europe): **F,** Paramere (internal surface); **G,** Paramere (lateral); **H,** Median lobe. *Datomicra celata* (Europe): **I,** Median lobe; **J,** Paramere. *Geostiba circellaris* (Europe): **K,** Paramere (apex); **L,** Median lobe. *Lypoglossa fenyesi* (British Columbia): **M,** Median lobe (underside to show athetine bridge). *Aleochara lata* (Europe): **N,** Median lobe (underside with long compressor plate; no athetine bridge).

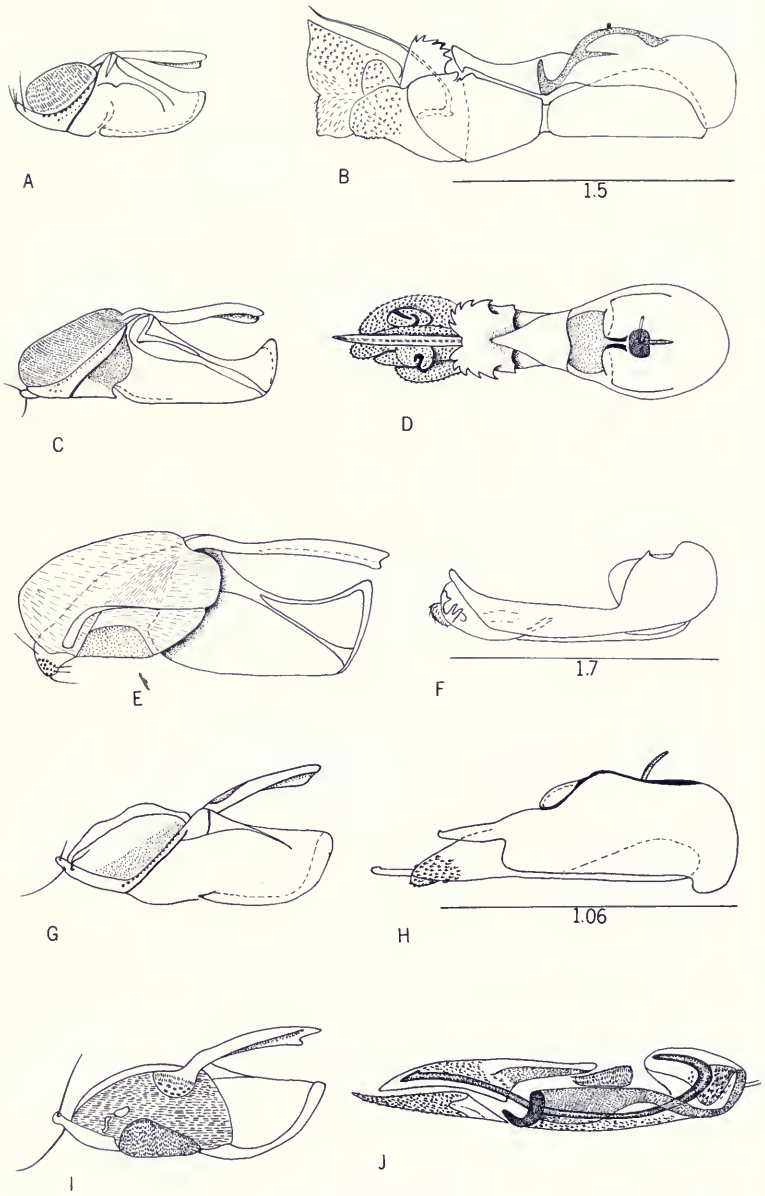



FIG. 11. *Aleochara fuscipes* (=*curtula*) (Europe): **A,** Paramere; **B,** Median lobe (lateral); **D,** Median lobe (upper surface). *Aleochara lata* (Europe): **C,** Paramere (lateral); **E,** Paramere (internal surface); **F,** Median lobe. *Aleochara lustrica* (Illinois): **G,** Paramere (lateral); **H,** Median lobe; **I,** Paramere (internal surface); **J,** Median lobe (internal apparatus).

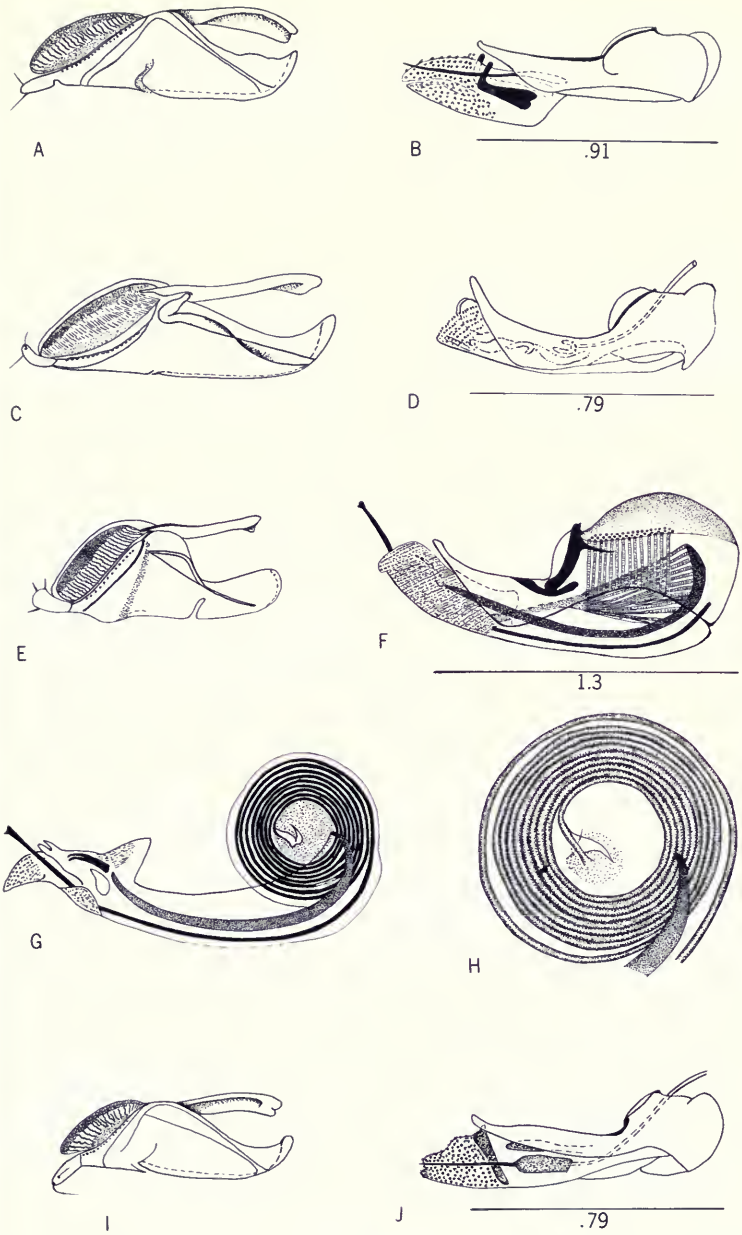



FIG. 12. (Aleocharini). *Polychara discipennis* (Europe): **A,** Paramere (lateral view); **B,** Median lobe. *Euryodma brevipennis* (Europe): **C,** Paramere (lateral view); **D,** Median lobe. *Isochara tristis* (Europe): **E,** Paramere (lateral view); **F,** Median lobe (internal musculature); **G,** Median lobe (internal apparatus); **H,** Median lobe (internal apparatus enlarged). *Xenochara puberula* (Europe): **I,** Paramere (lateral); **J,** Median lobe.

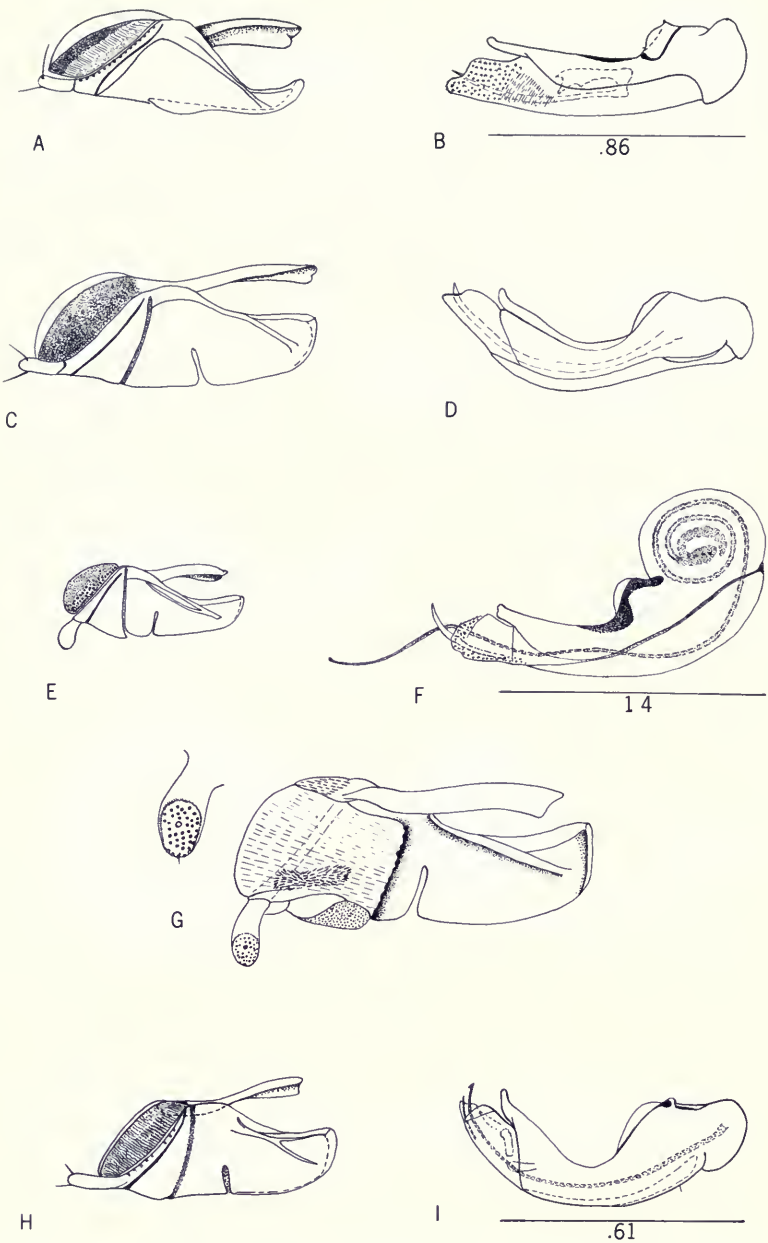



FIG. 13. (Aleocharini). *Baryodma bipustulata* (Europe): **A,** Paramere. (lateral view); **B,** Median lobe. *Baryodma bilineata* (Europe): **C,** Paramere (lateral view); **D,** Median lobe. *Baryodma bimaculata* (Pennsylvania): **E,** Paramere (lateral view); **F,** Median lobe; **G,** Paramere (internal surface; and enlarged apical lobe). *Baryodma verna* (Pennsylvania): **H,** Paramere (lateral view); **I,** Median lobe.

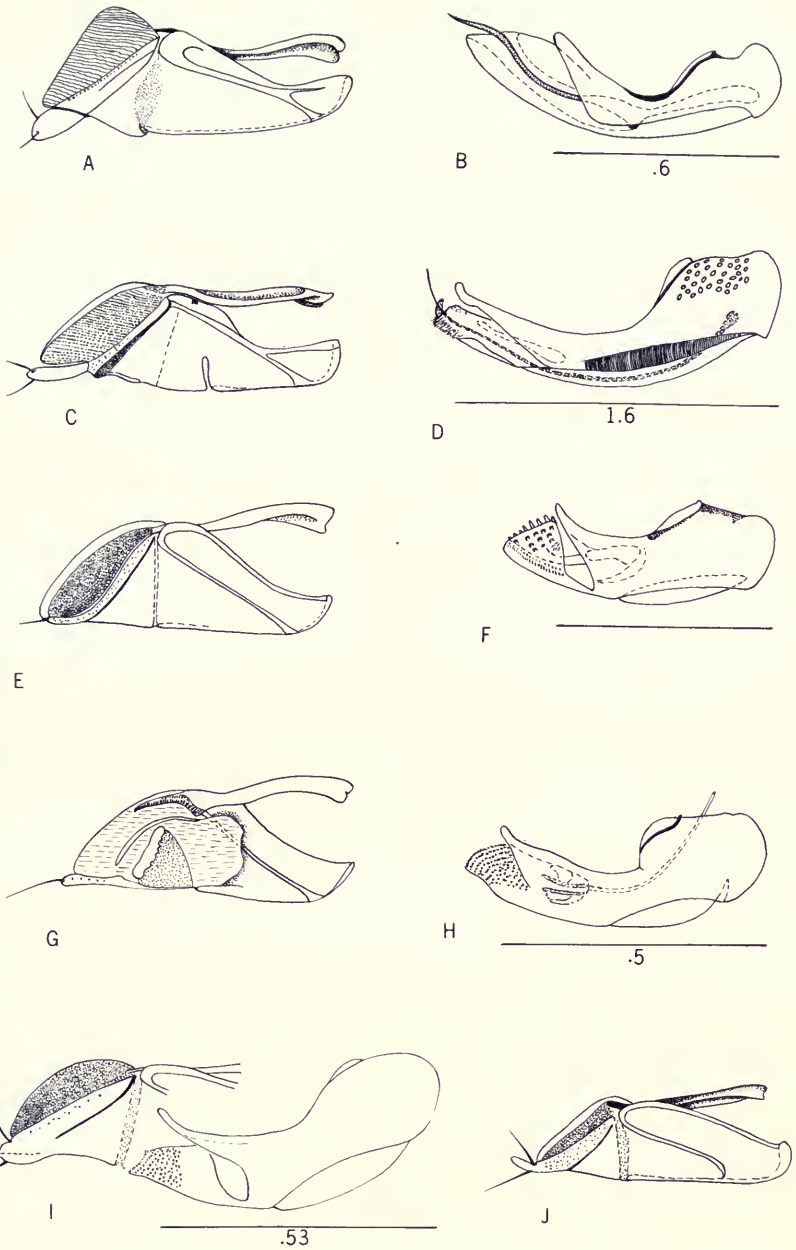



FIG. 14. *Rheochara spadicea* (Europe): **A,** Paramere (lateral view); **B,** Median lobe. *Maseochara valida* (Arizona): **C,** Paramere (lateral view); **D,** Median lobe. *Hoplandria lateralis* (West Virginia): **E,** Paramere (lateral view); **F,** Median lobe; **G,** Paramere (internal surface). *Genosema sexualis:* **H,** Median lobe; **J,** Paramere (lateral view). *Platandria* sp. (Pennsylvania): **I,** Paramere (apex) and median lobe.

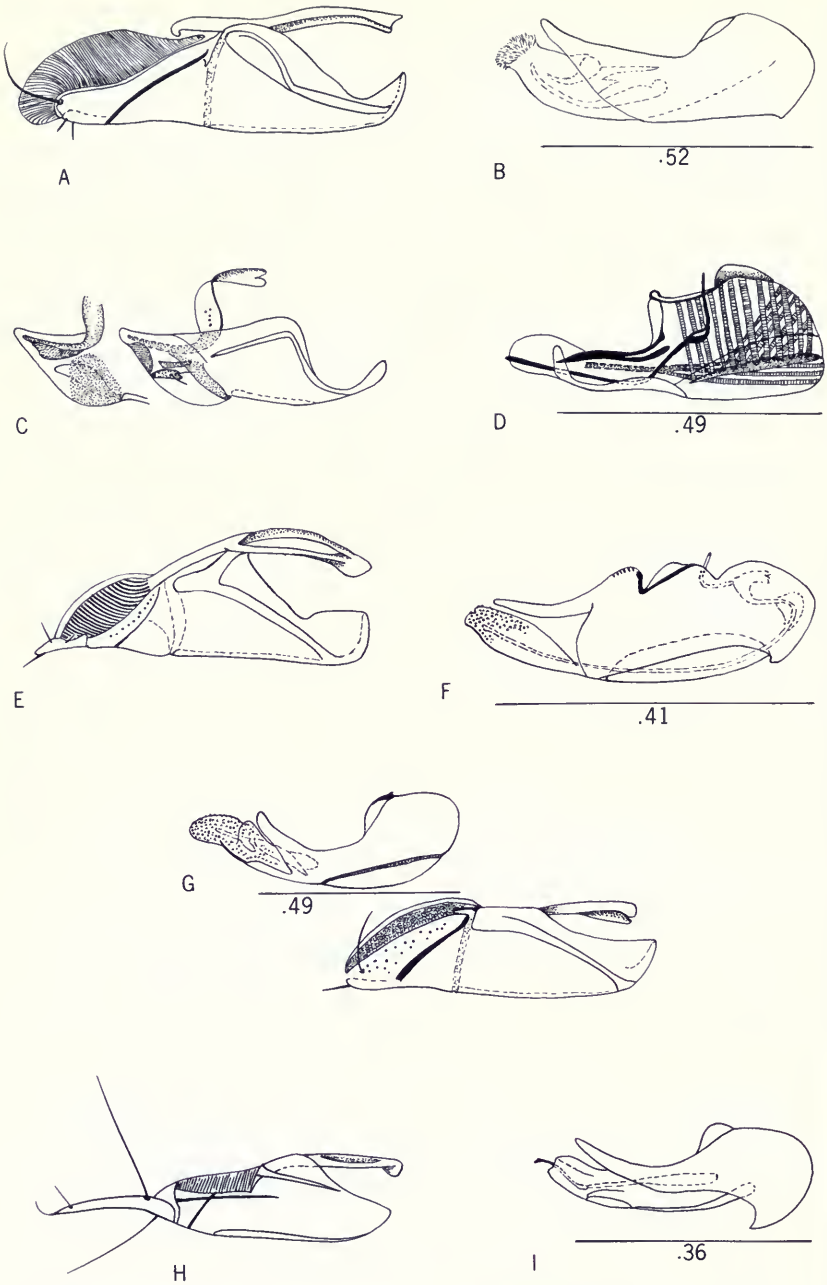



FIG. 15. (Hoplandrini). *Lophomucter* sp.: **A,** Paramere; **B,** Median lobe. *Tinotus imbricatus* (Massachusetts): **C,** Paramere (apex, lateral view; and internal surface); **D,** Median lobe. *Tinotus* sp. (near *morion*) (Pennsylvania): **E,** Paramere. *Tinotus morion* (Europe): **F,** Median lobe. *Tetrallus fenyesi* (California): **G,** Median lobe; and paramere. *Pseudoplandria frugivora* (Singapore): **H,** Paramere; **I,** Median lobe.

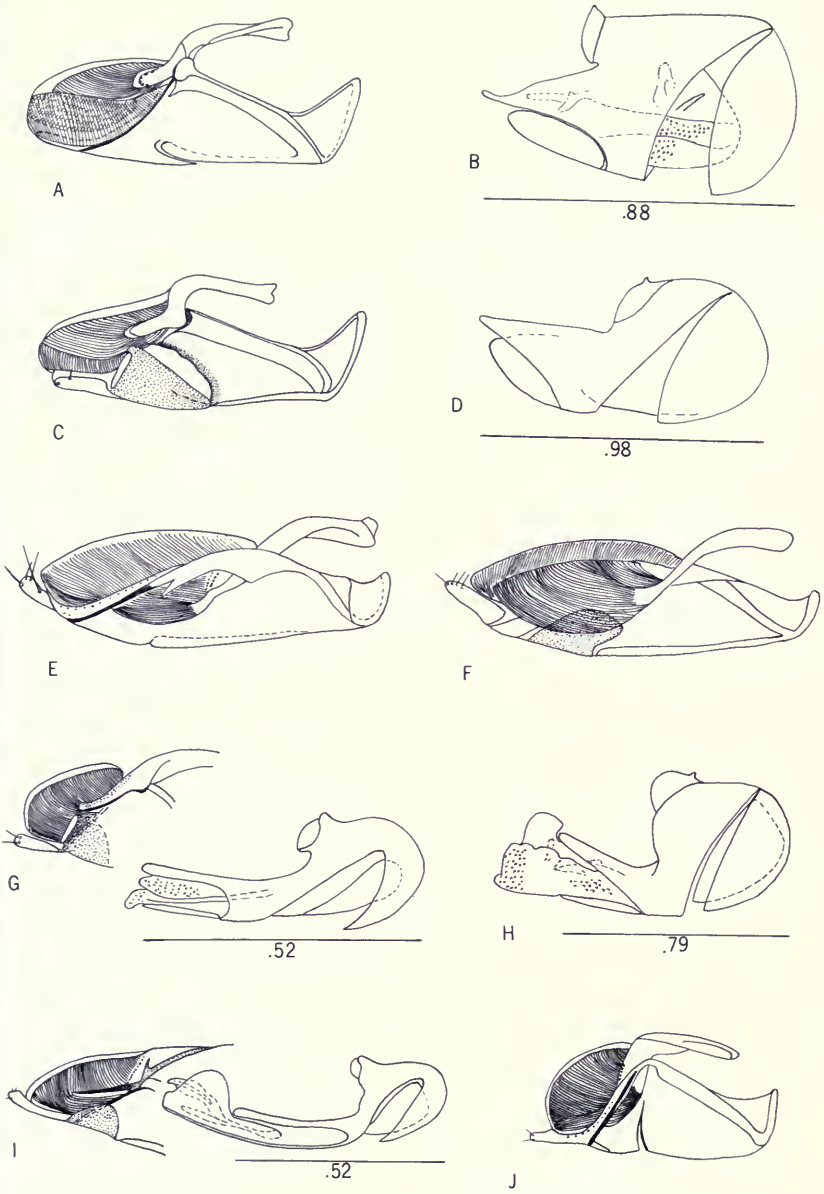



FIG. 16. (Myrmedoniini). *Drusilla canaliculata* (Europe): **A,** Paramere (lateral view); **B,** Median lobe; **C,** Paramere (internal surface). *Zyras haworthi* (Europe): **D,** Median lobe; **E,** Paramere (lateral view); **F,** Paramere (internal surface). *Microdonia kansana* (Kansas): **G,** Paramere (apex, internal surface), and median lobe; *Zyras (Pella) limbata* (Europe): **H,** Median lobe; **J,** Paramere (lateral view). *Ecitonidia wheeleri:* **I,** Paramere (apex, internal surface), and median lobe.

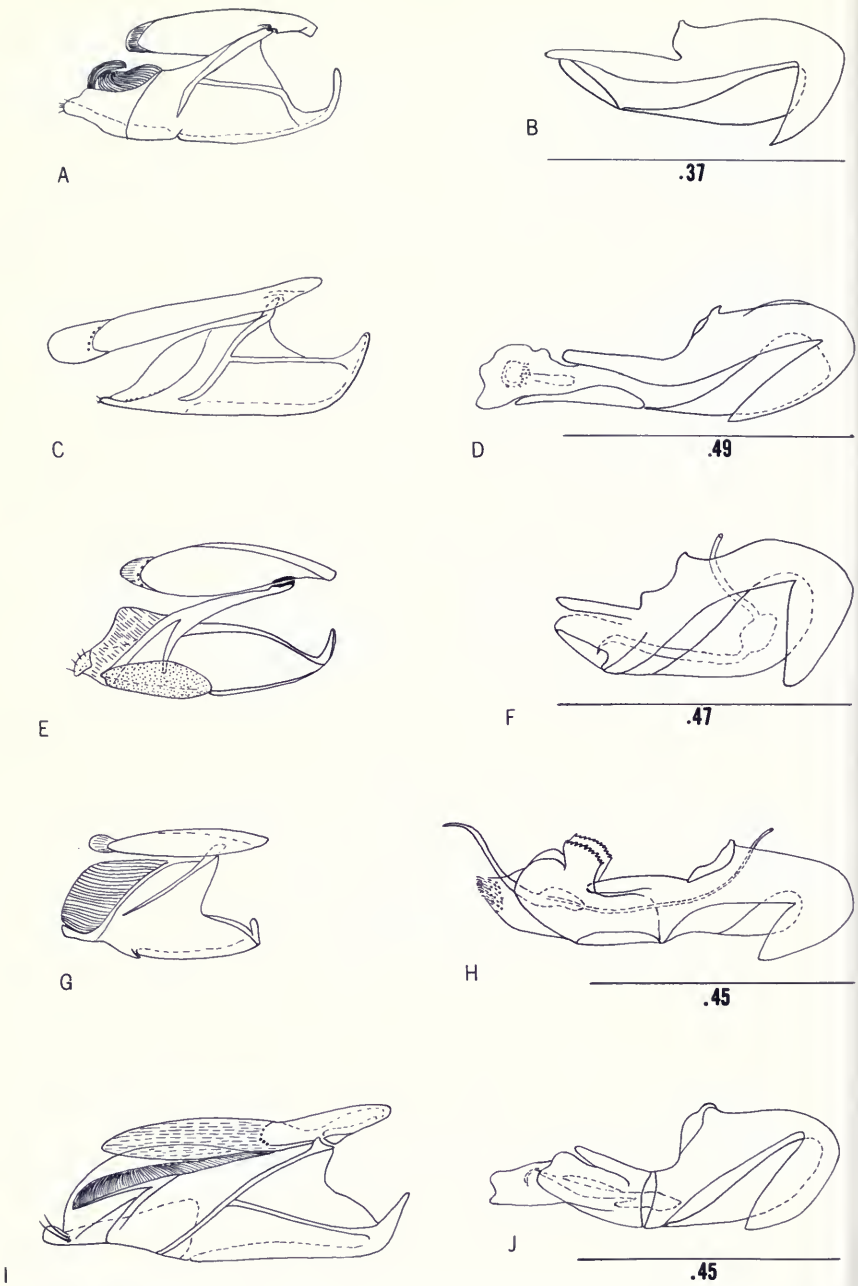



FIG. 17. (Falagriini). *Falagria sulcata* (Europe): **A,** Paramere; **B,** Median lobe. *Myrmecopora fugax* (Europe): **C,** Paramere; **D,** Median lobe. *Falagriota:* **E,** Paramere (internal surface): **F,** Median lobe. *Stenagria* (=*Lorinota*) *fontinalis:* **G,** Paramere; **H,** Median lobe. *Cordalia obscura* (Europe): **I,** Paramere; **J,** Median lobe.

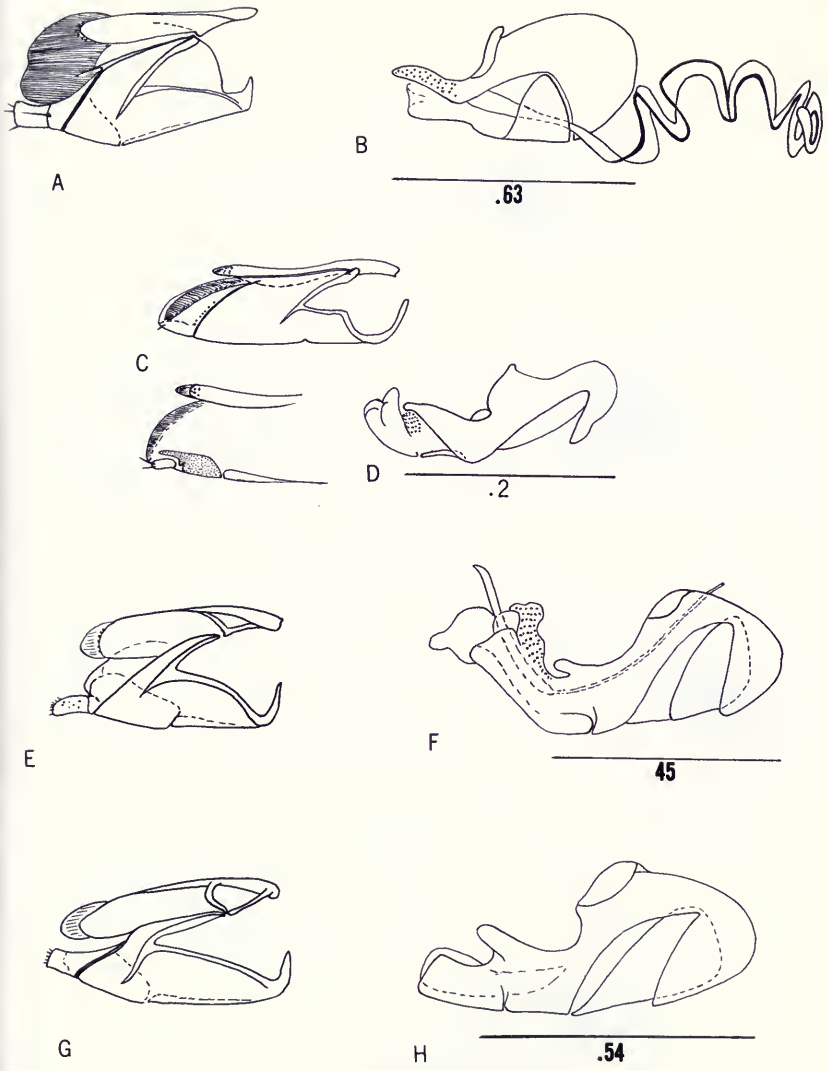



FIG. 18. (Falagriini). *Aleodorus* sp.: **A,** Paramere; **B,** Median lobe. *Anaulacaspis nigra:* **C,** Paramere lateral view (above); internal surface (below); **D,** Median lobe. Sceptobiini. *Apteronina schmitti* (New Mexico): **E,** Paramere; **F,** Median lobe. *Dinardilla liometopi* (New Mexico): **G,** Paramere; **H,** Median lobe.

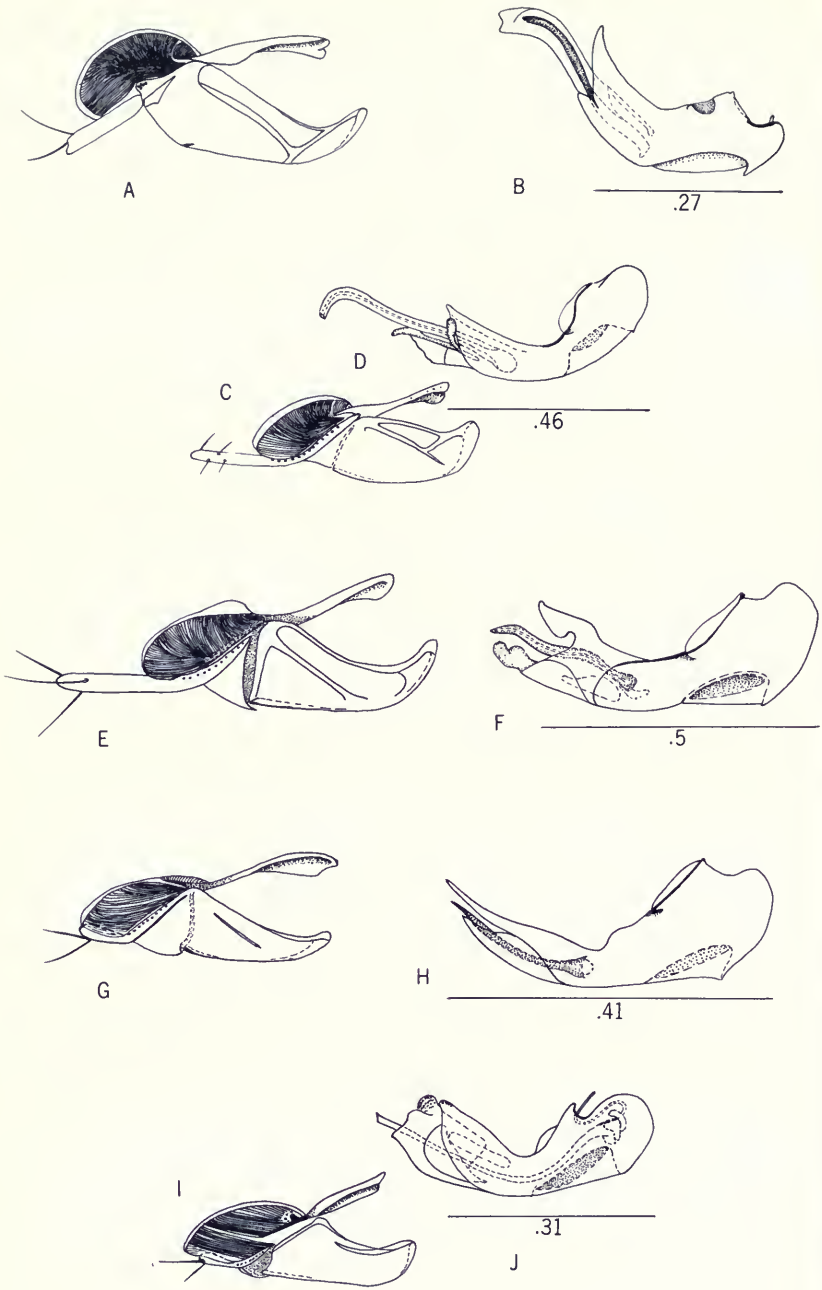



FIG. 19. (Bolitocharini). *Gyrophaena nana* (Europe): **A,** Paramere; **B,** Median lobe. *Bolitochara lunulata* (Europe): **C,** Paramere; **D,** Median lobe. *Bolitochara nigrina* (California): **E,** Paramere; **F,** Median lobe. *Bolitochara blanchardi:* **G,** Paramere; **H,** Median lobe. *Leptusa atrocephala* (California): **I,** Paramere; **J,** Median lobe.

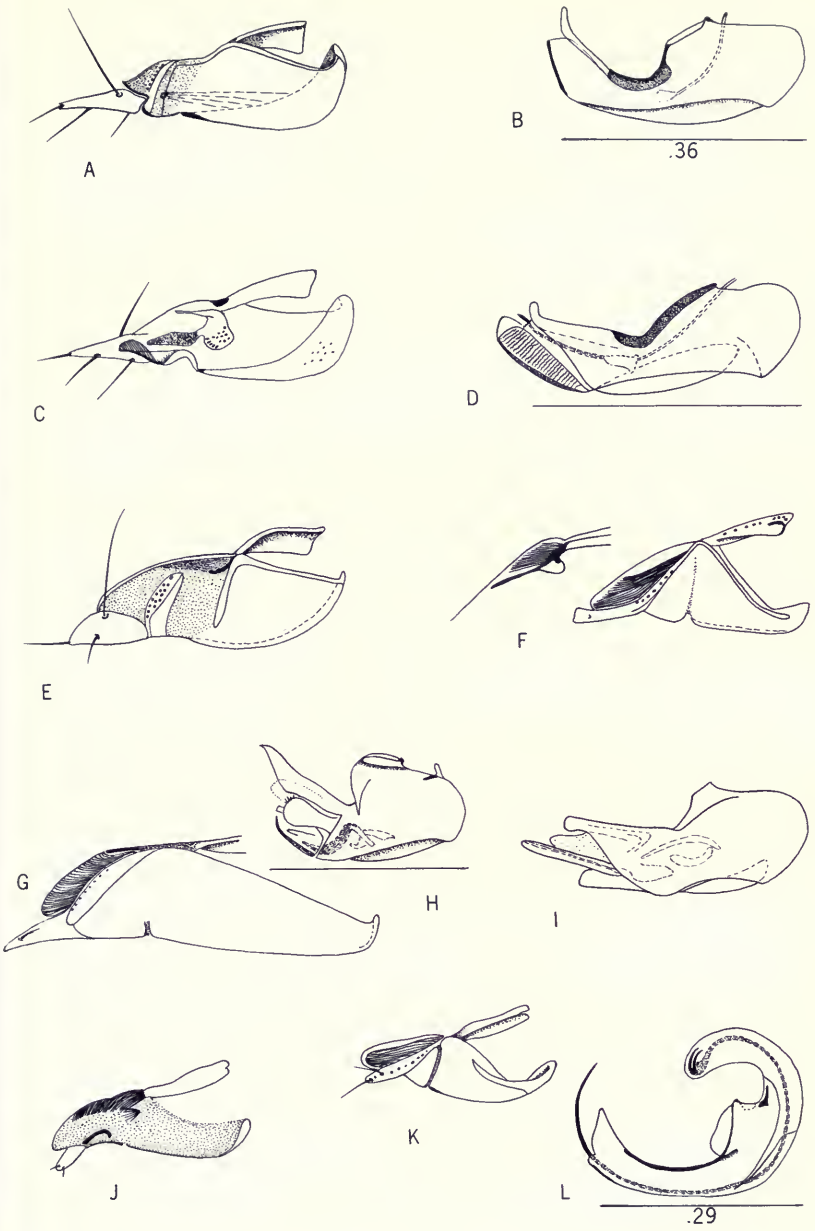



FIG. 20. (Bolitocharini). *Diestota testacea* (Sumatra): **A,** Paramere (lateral view); **B,** Median lobe; **C,** Paramere (internal surface). *Apheloglossa rufipennis* (California): **D,** Median lobe; **E,** Paramere (internal surface). *Homalota plana* (Europe): **F,** Paramere (apex, medial surface; entire, lateral view); **I,** Median lobe. *Euvira quadriceps* (Mississippi): **G,** Paramere; **H,** Median lobe. *Autalia rivularis* (Europe): **J,** Paramere (internal surface); **K,** Paramere (lateral view); **L,** Median lobe.

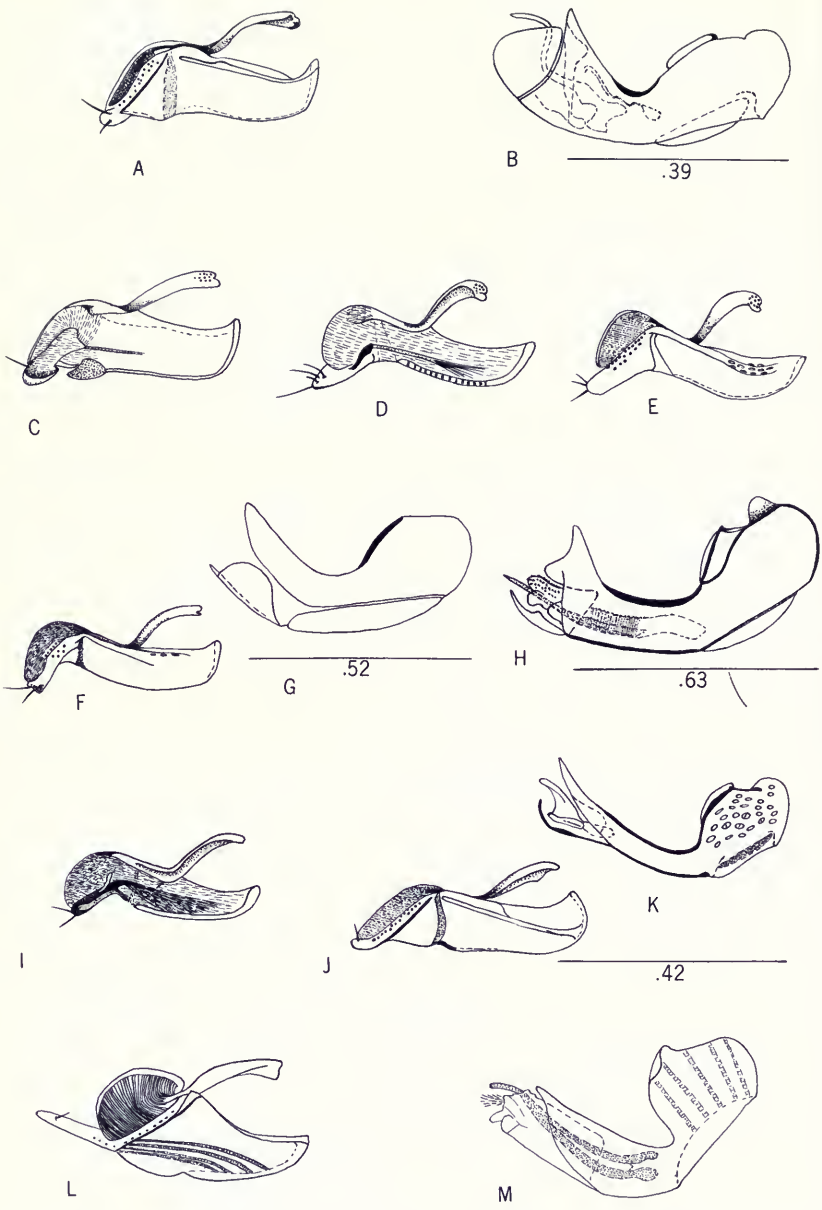



FIG. 21. *Phytosus spinifer* (Europe): **A,** Paramere (lateral view); **B,** Median lobe; **C,** Paramere (internal surface). *Liparocephalus:* **D,** Paramere (internal surface); **E,** Paramere (lateral view); **H,** Median lobe. *Diaulota densissima:* **F,** Paramere (lateral view); **G,** Median lobe; **I,** Paramere (internal surface). *Diglotta mersa* (Europe): **J,** Paramere (lateral); **K,** Median lobe. *Philotermes pilosus* (Massachusetts): **L,** Paramere (lateral); **M,** Median lobe.

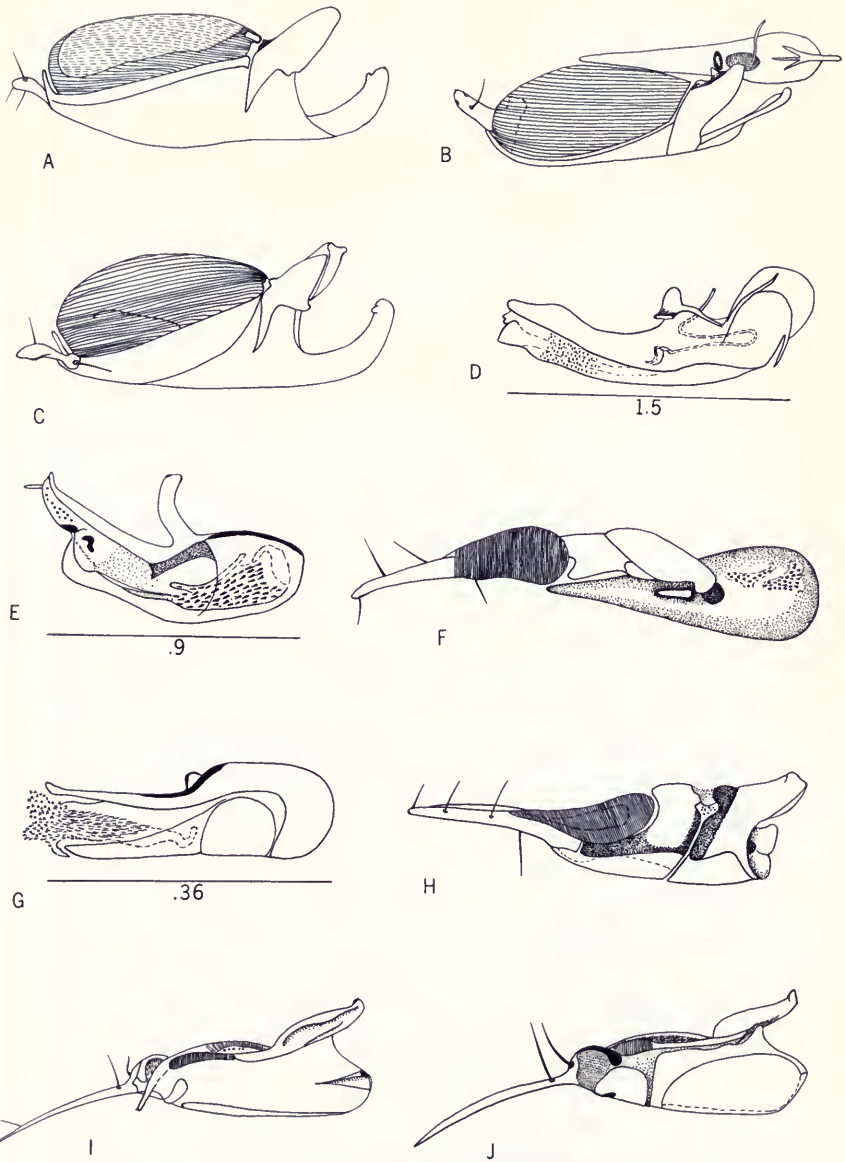



FIG. 22. *Gymnusa brevicollis* (Europe): **A,** Paramere (lateral); **B,** Median lobe and paramere ("upper" surface); **C,** Paramere (internal surface); **D,** Median lobe (lateral view). *Deinopsis erosa* (Europe): **E,** Median lobe; **F,** Median lobe and paramere ("upper" surface); **H,** Paramere (lateral). *Myllaena* sp. (Massachusetts): **G,** Median lobe; **I,** Paramere (internal surface); **J,** Paramere (lateral).

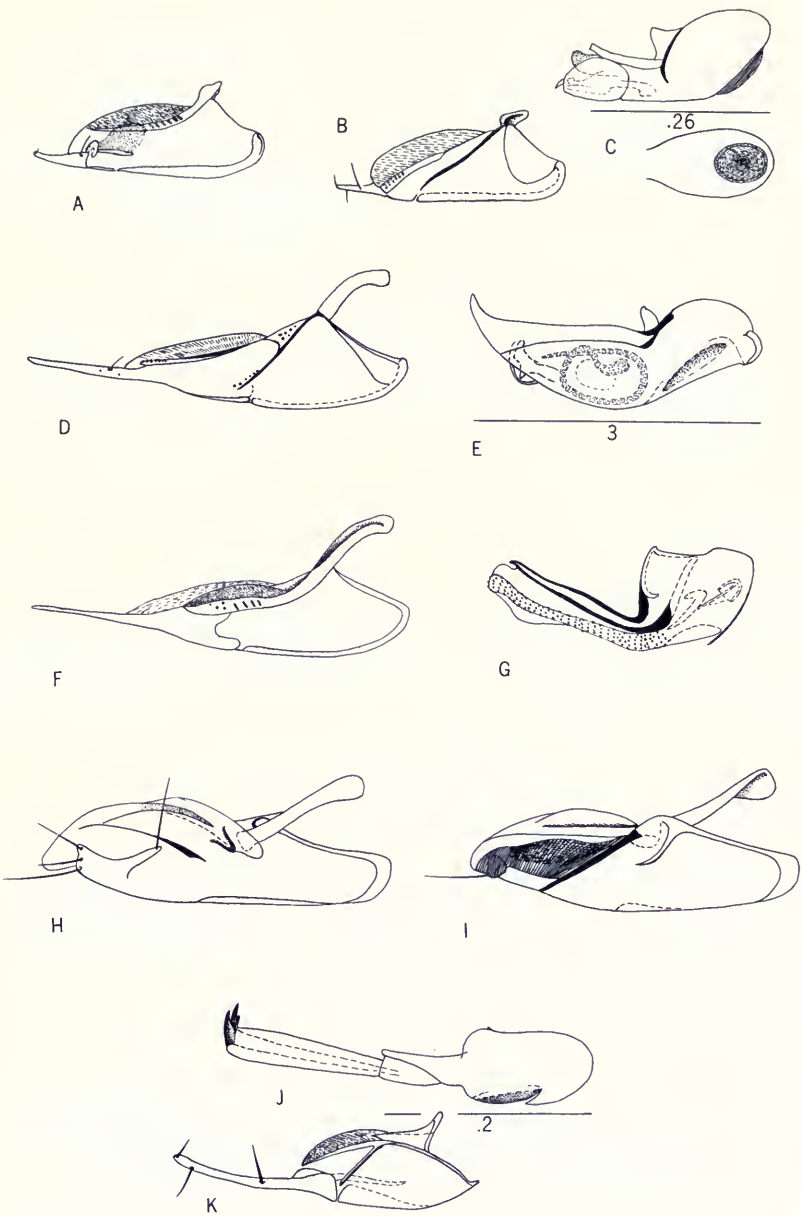



FIG. 23. *Oligota pusillima* (Europe): **A,** Paramere (internal surface); **B,** Paramere (lateral); **C,** Median lobe (lateral), and compressor plate (underside). *Holobus flavicornis:* **D,** Paramere (lateral); **E,** Median lobe; **F,** Paramere (internal surface). *Cypha longicornis* (Europe): **G,** Median lobe; **H,** Paramere (internal surface); **I,** Paramere (lateral). *Anacyptus testaceus* (Mississippi): **J,** Median lobe; **K,** Paramere (lateral).

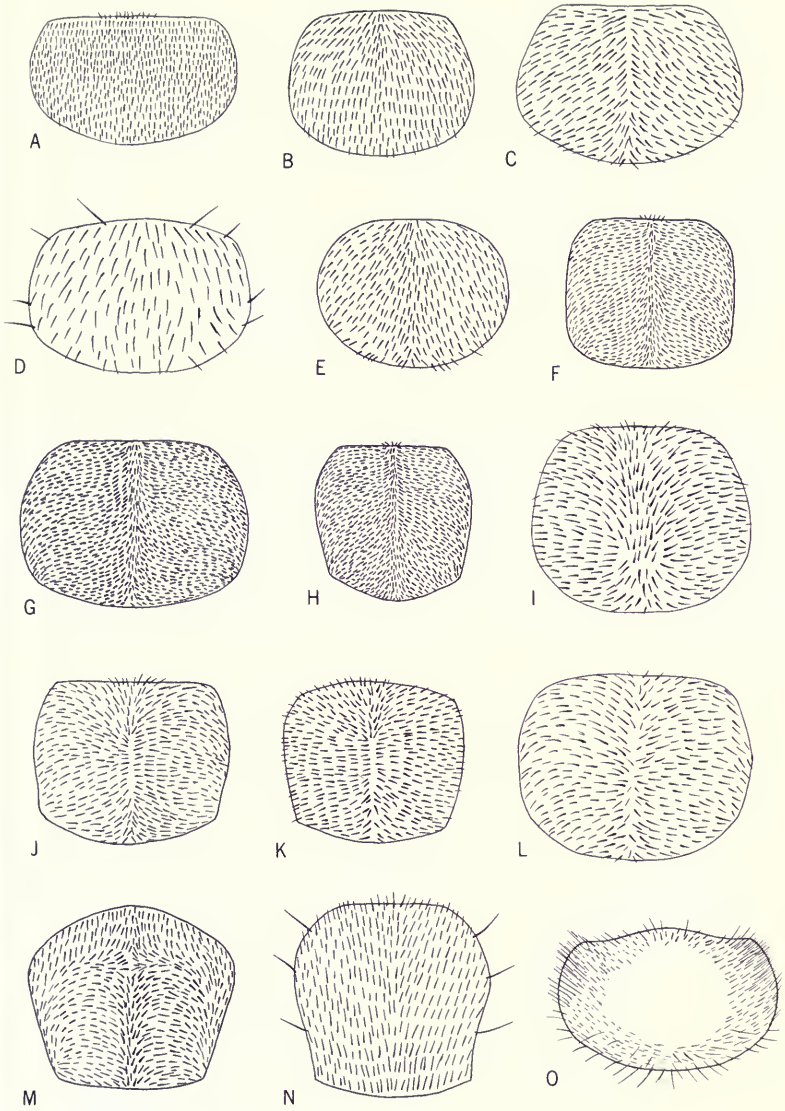
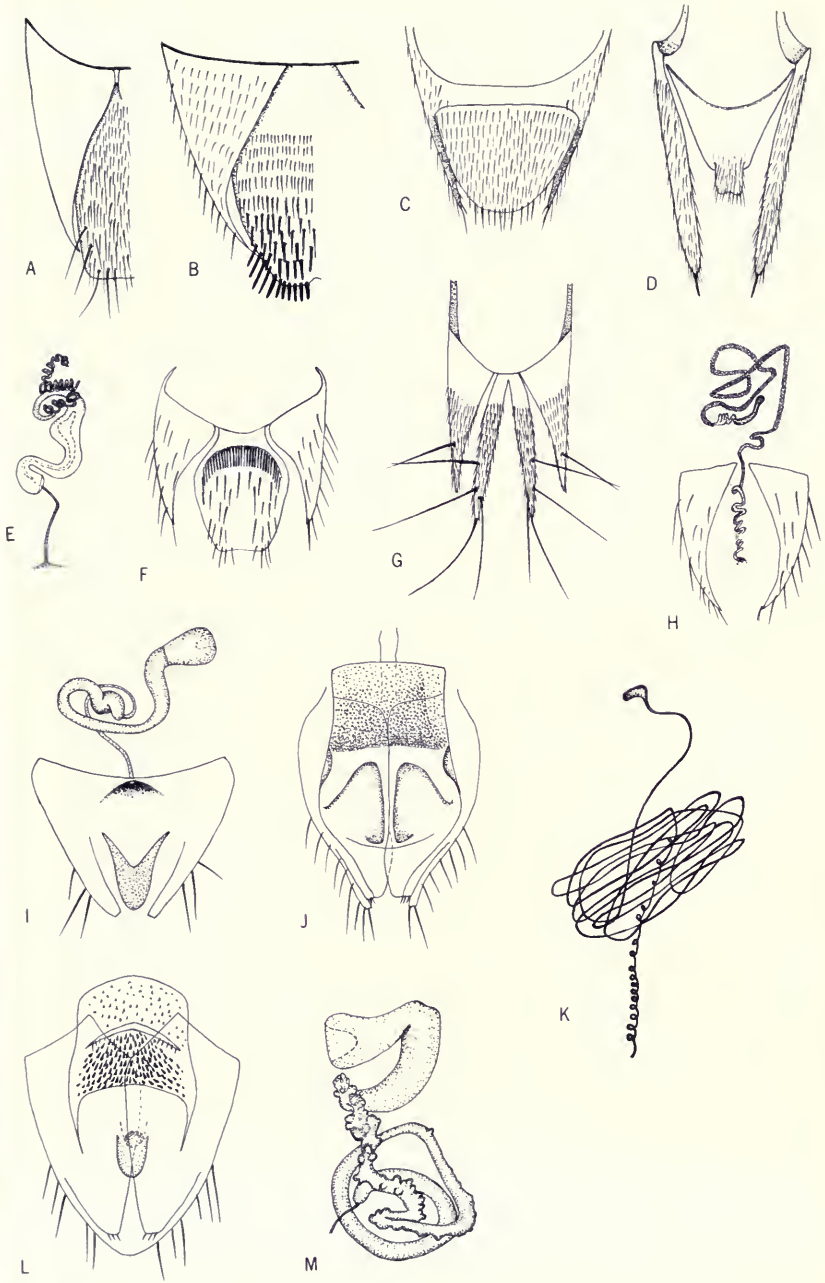



FIG. 24. Pronotal pubescence.

**A.** *Placusa* ..... (Pattern A).
**B.** *Oxypoda* ..... (Pattern B).
**C.** *Aleochara* ..... (Pattern B).
**D.** *Hoplandria* ..... (Pattern B).
**E.** *Platandria* ..... (Pattern B).
**F.** *Gnypeta* ..... (Pattern C).
**G.** *Devia* ..... (Pattern C).
**H.** *Calodera* ..... (Pattern C).
**I.** *Earota* ..... (Pattern E).
**J.** *Tarphiota* ..... (Pattern F).
**K.** *Apimela* ..... (Pattern F).
**L.** *Atheta* ..... (Pattern F).
**M.** *Liparocephalus* .... (Pattern G).
**N.** *Bamona* ..... (Pattern H).
**O.** *Philotermes* ..... (Pattern Ha).

FIG. 25. **A,** Ninth and tenth tergites (*Oxypoda sagulata*). **B,** Ninth and tenth tergites (*Aleochara lata*). **C,** Ninth and tenth tergites (*Gymnusa brevicollis*). **D,** Ninth and tenth tergites (*Deinopsis erosa*). **E,** Spermatheca (*Apimela attenuate*). **F,** Ninth and tenth tergites (*Apimela attenuata*). **G,** Ninth and tenth tergites (*Myllaena* sp.) **H,** Spermatheca (*Dexiogyia* near *corticina*). **I,** Spermatheca and vagina (*Xenota virginica*). **J,** Female terminalia (*Philhygra,* near *polaris;* California). **K,** Spermatheca (*Zyras haworthi;* Europe). **L,** Female terminalia (*Philhygra,* near *palustris;* Maryland). **M,** Spermatheca (*Atheta graminicola*).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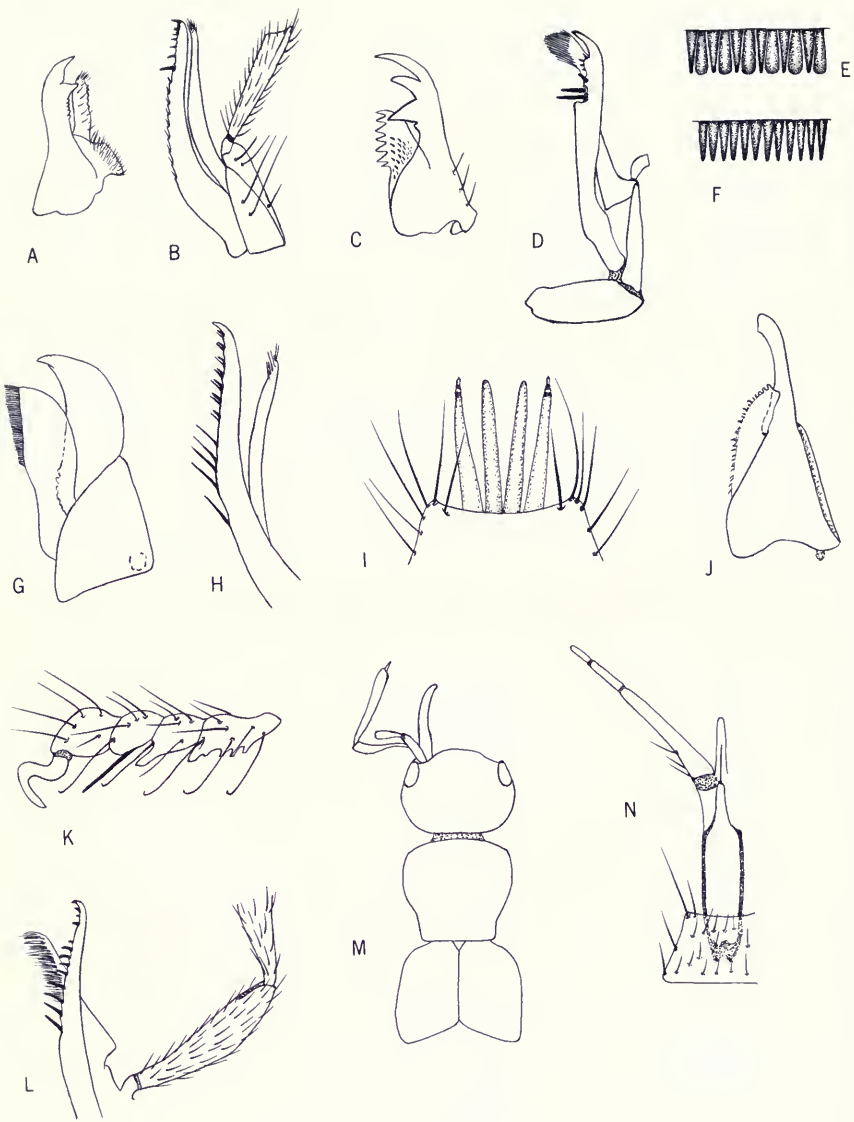


FIG. 26. *Gymnusa* sp.: **A,** Mandible; **B,** Galea and lacinia; **F,** Tergal ctenidium; **I,** Labial palpi and glossae. *Deinopsis erosa* (Europe): **C,** Mandible; **D,** Galea and lacinia; **E,** Tergal ctenidium. *Myllaena* sp.: **G,** Mandible; **H,** Galea lacinia. *Diglotta mersa* (Europe): **J,** Mandible; **K,** Hind tarsus; **L,** Galea and lacinia; **M,** Foreparts; **N,** Labial palpi and ligula.

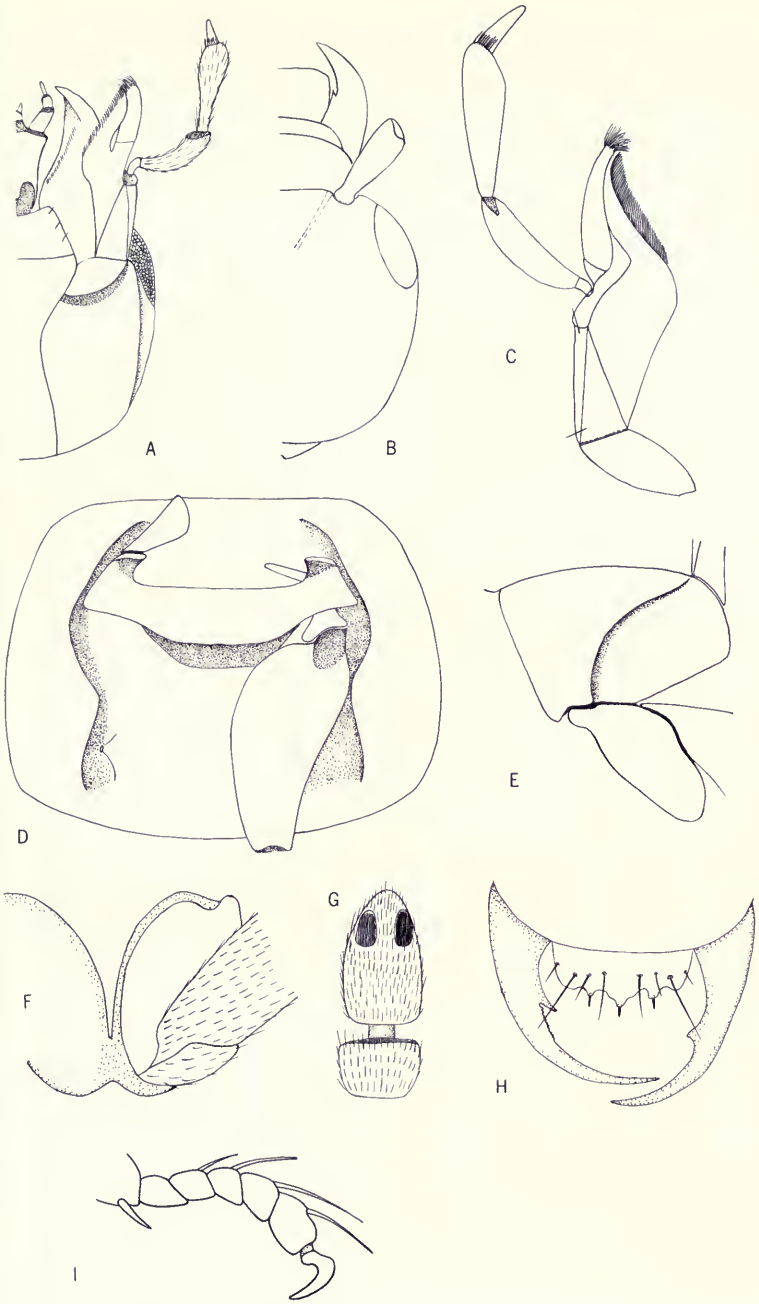


FIG. 27. *Oxypoda spectabilis* (Europe): **A,** Underside of head; **B,** Upper surface of head showing frontal suture; **C,** Maxilla; **D,** Prothorax, underside; **E,** Hind coxae; **F,** Mesosternal and metasternal processes. *Apimela:* **G,** Terminal antennal segment with coeloconic sensilla. *Gnathusa eva* (California): **H,** Labrum and mandibles. *Gyronycha texana* (Texas): **I,** Fore tarsus.

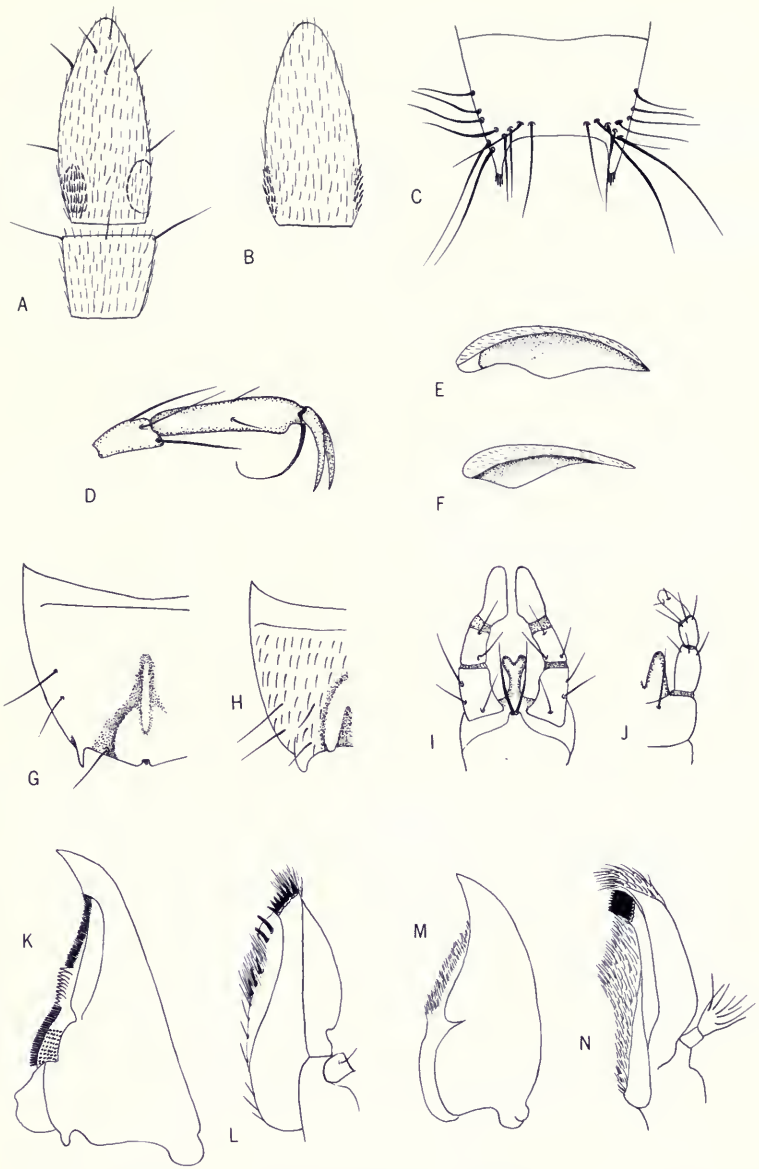


FIG. 28. *Stethusa* sp.: **A,** Terminal antennal segment (with basal sensilla); **B,** Same in profile. *Strophogastra* sp.: **C,** Eighth tergite. *Aloconota (Taphrodota):* **D,** Terminal segment of hind tarsus. *Atheta granulata* (Alaska): **E,** Pronotal hypomeron. *Dimetrota marcida* (Europe): **F,** Pronotal hypomeron. *Thamiaraea:* **G,** Male eighth tergite. *Thamiaraea americana* (Louisiana): **H,** Male eighth tergite; **I,** Labial palpi; **K,** Mandible; **L,** Galea and lacinia. *Earota dentata:* **J,** Labial palpi; **M,** Mandible; **N,** Galea and lacinia.

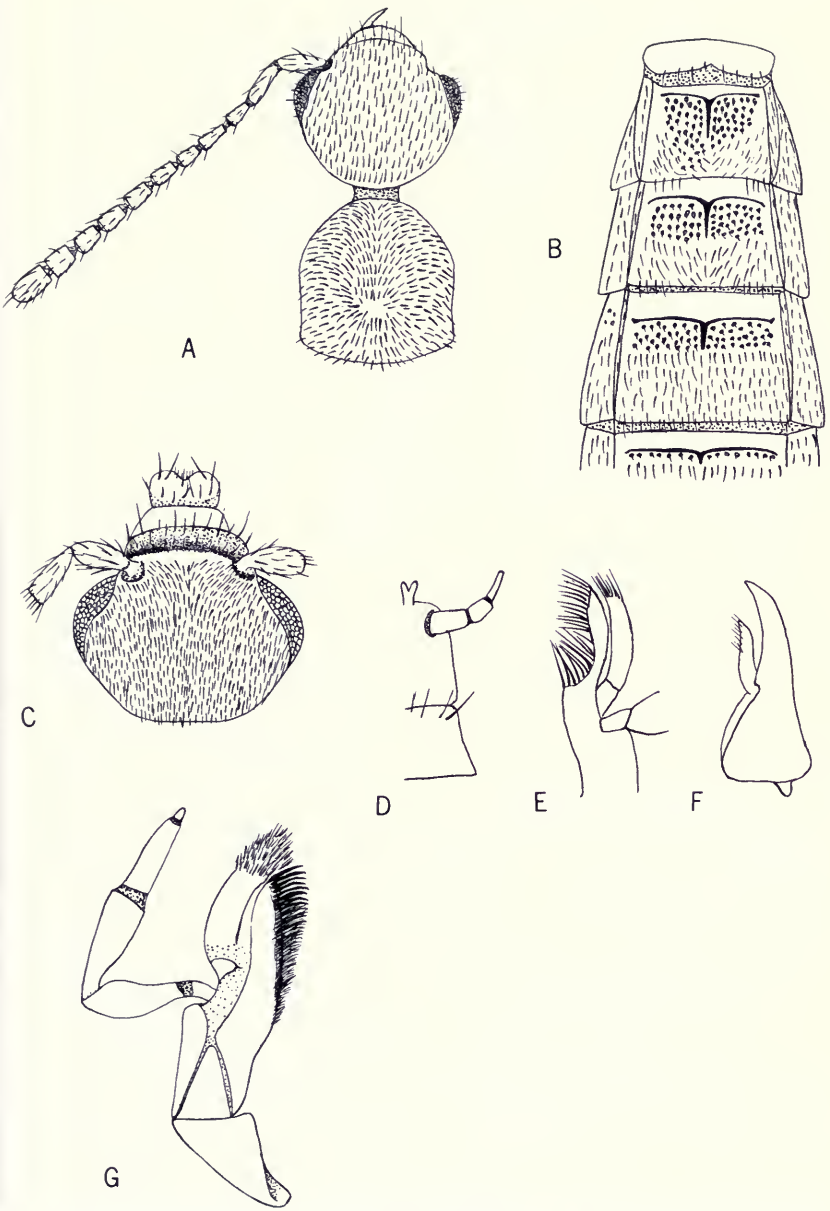


FIG. 29. *Blepharhymenus eximius* Casey (California): **A,** Head and pronotum; **B,** Abdomen (dorsal aspect). *Brachyusa americana:* **C,** Head; **D,** Labial palpi; **E,** Galea and lacinia; **F,** Mandible. *Aleochara lata* (Europe): **G,** Maxilla.

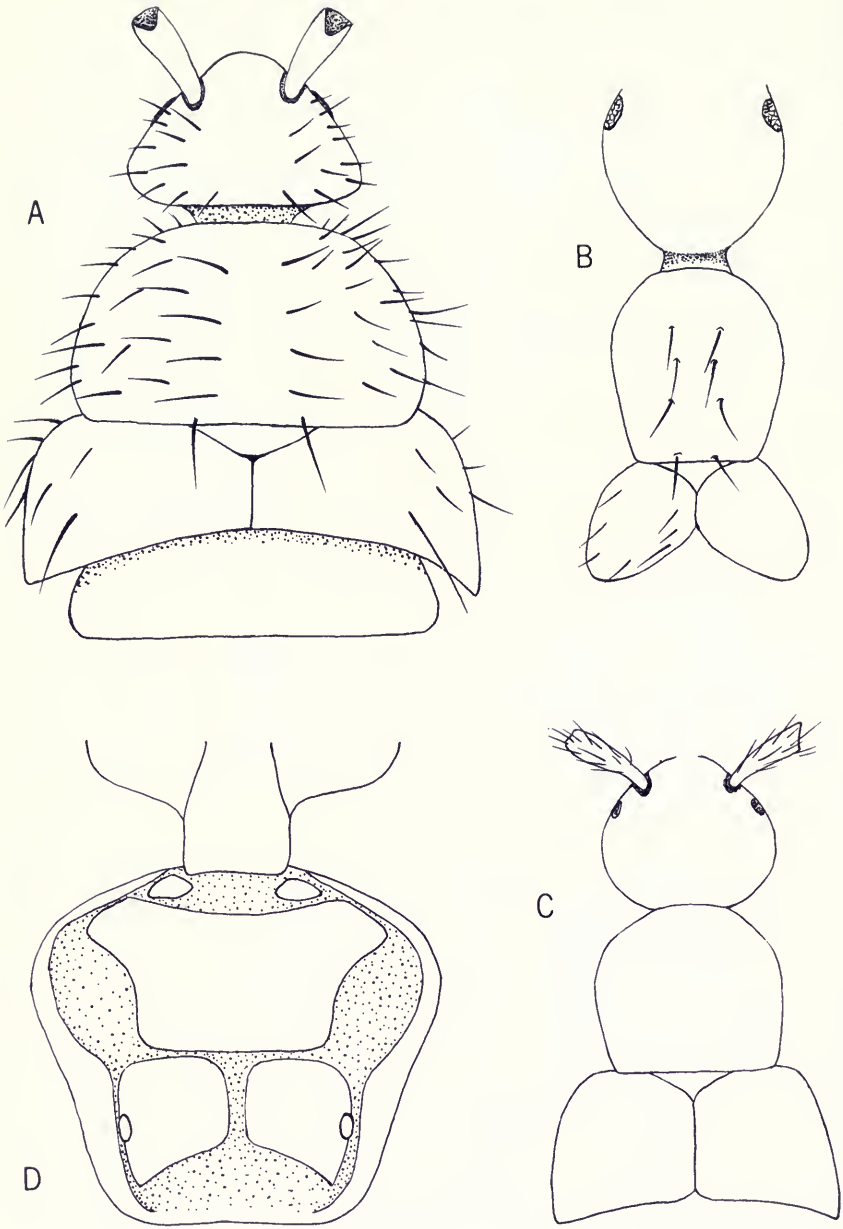


FIG. 30. **A,** *Dinardilla liometopi:* Head, pronotum, and elytra; dorsal view. **B,** *Apteronina schmitti:* Head, pronotum, and elytra; dorsal view. **C,** *Symbiochara:* Head, pronotum, and elytra; dorsal view. **D,** *Falagria dissecta:* (Europe): underside of prothorax.

FIG. 31. *Gyrophaena nana* (Europe): **A,** Mandible. *Apheloglossa rufipennis:* **B,** Mandible; **C,** Galea and lacinia; **D,** Labial palpi. *Silusa californica:* **E,** Mandible; **F,** Galea and lacinia; **G,** Labial palpi. *Autalia* sp.: **H,** Head and prothorax, ventral view; **I,** Mesosternum and metasternum; **J,** Tergite; **K,** Abdomen, underside. *Philotermes pilosus:* **L,** Antenna.

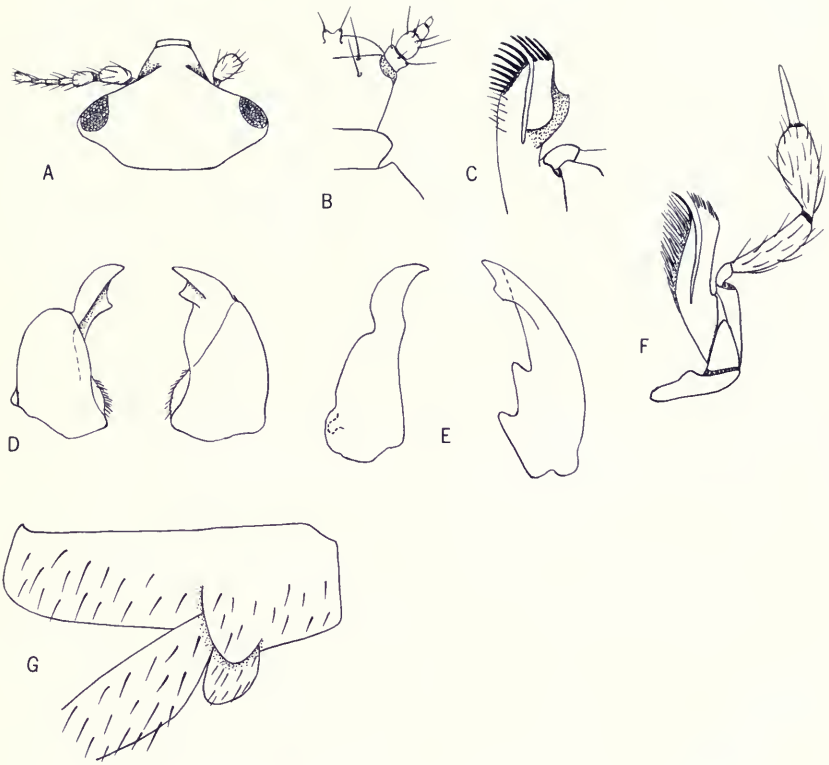


FIG. 32. *Cypha longicornis* (Europe): **A,** Head, dorsal; **B,** Labium; **C,** Galea and lacinia; **D,** Mandibles; **G,** Hind coxa (with lamella). *Holobus* sp.: **E,** Mandibles; **F,** Maxilla.

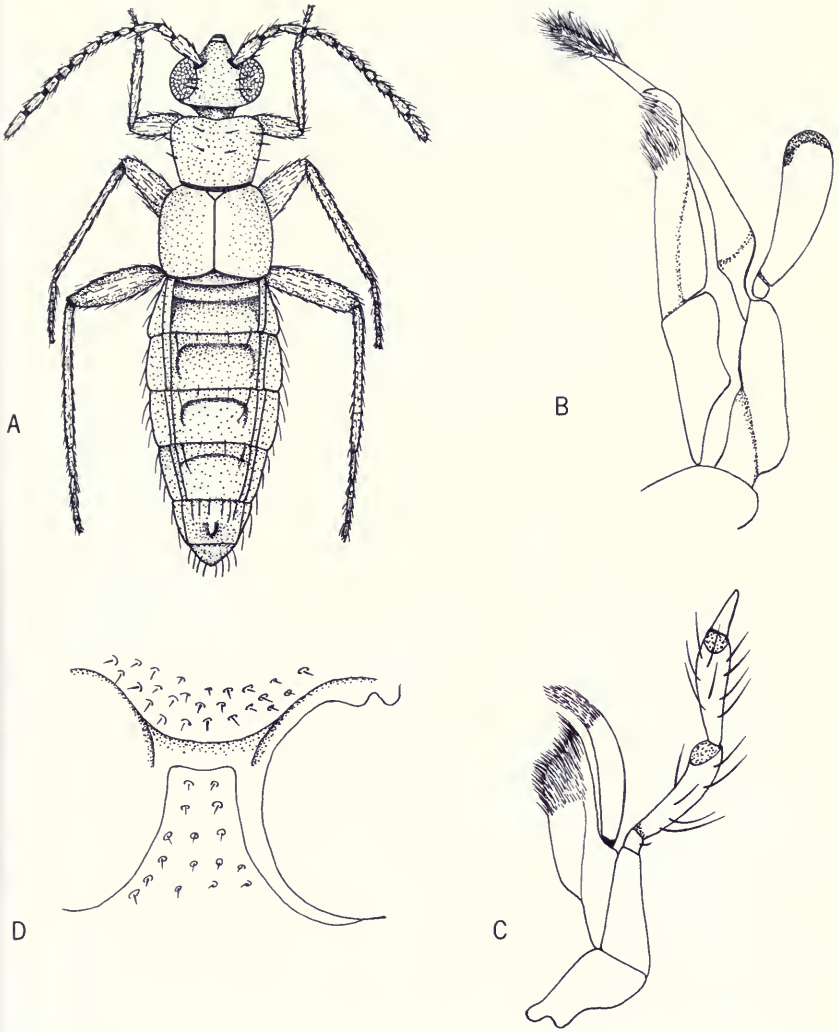


FIG. 33. *Tetradonia megalops* (Texas): **A,** Dorsal view. *Drusilla canaliculata* (Europe): **B,** Maxilla. *Zyras haworthi* (Europe): **C,** Maxilla; **D,** Mesosternal process; isthmus; metasternal process (m:i:m)

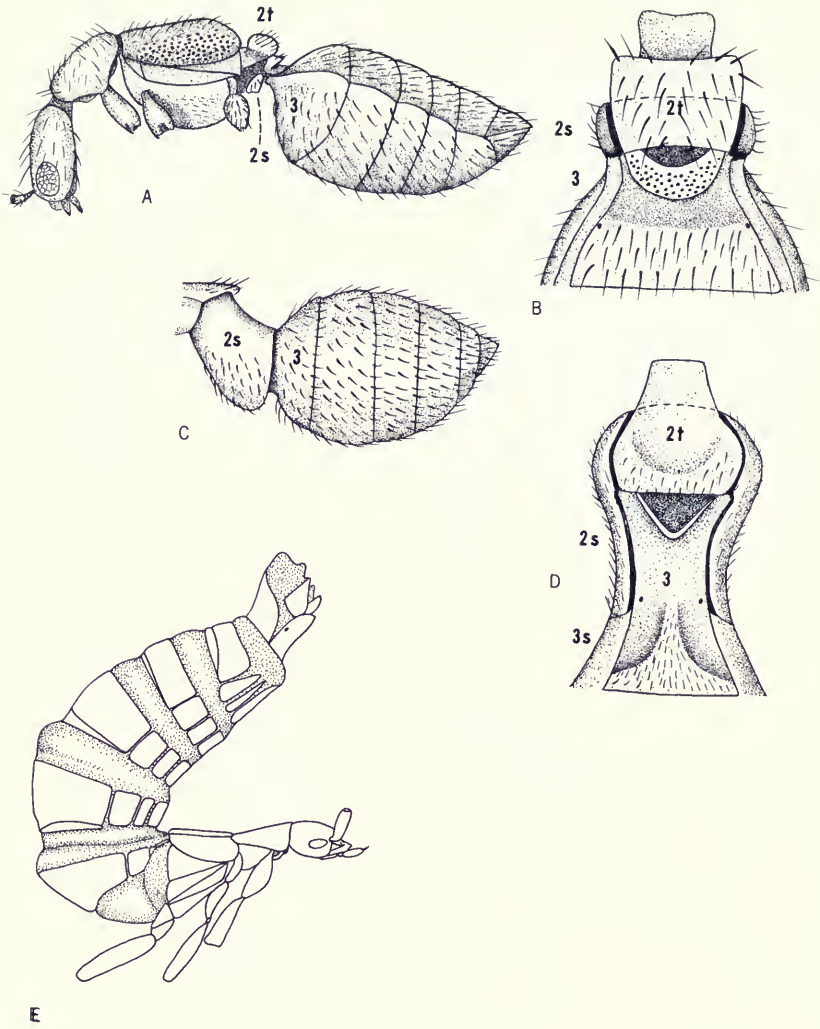


FIG. 34. *Probeyeria pulex* (Arkansas): **A,** Lateral view, showing petiole. Note second sternite; **B,** Petiole in dorsal view. *Beyeria vespa* (Arizona): **C,** Abdomen, lateral view, showing second sternite forming petiole; **D,** Petiole from above. *Eburniogaster sp.:* **E,** Lateral view. Note physogastric abdomen.

FIG. 35. Mesosternal and Metasternal Processes. **A,** *Homoeusa acuminata.* **B,** *Falagria sulcata.* **C,** *Tachyusa constricta.* **D,** *Myrmecopora fugax.* **E,** *Xenodusa* sp. **F,** *Amarochara umbrosa.* **G,** *Pachycerota duryi.* **H,** *Drusilla* sp. **I,** *Haploglossa* sp. **J,** *Ocyusa maura.* **K,** *Euthorax ruficornis.* **L,** *Dexiogyia corticina.*

FIG. 36. Mesosternal and Metasternal Processes: **A,** *Oxypoda spectabilis*. **B,** *Ocalea picata*. **C,** *Meotica exilis*. **D,** *Meronera venustula*. **E,** *Thyasophila angulata*. **F,** *Blepharhymenus corcicus*. **G,** *Calodera* sp. (California). **H,** *Phloeopora corticalis*. **I,** *Gnypeta carbonaria*. **J,** *Gyronycha texana*. **K,** *Ilyobates nigricollis*.

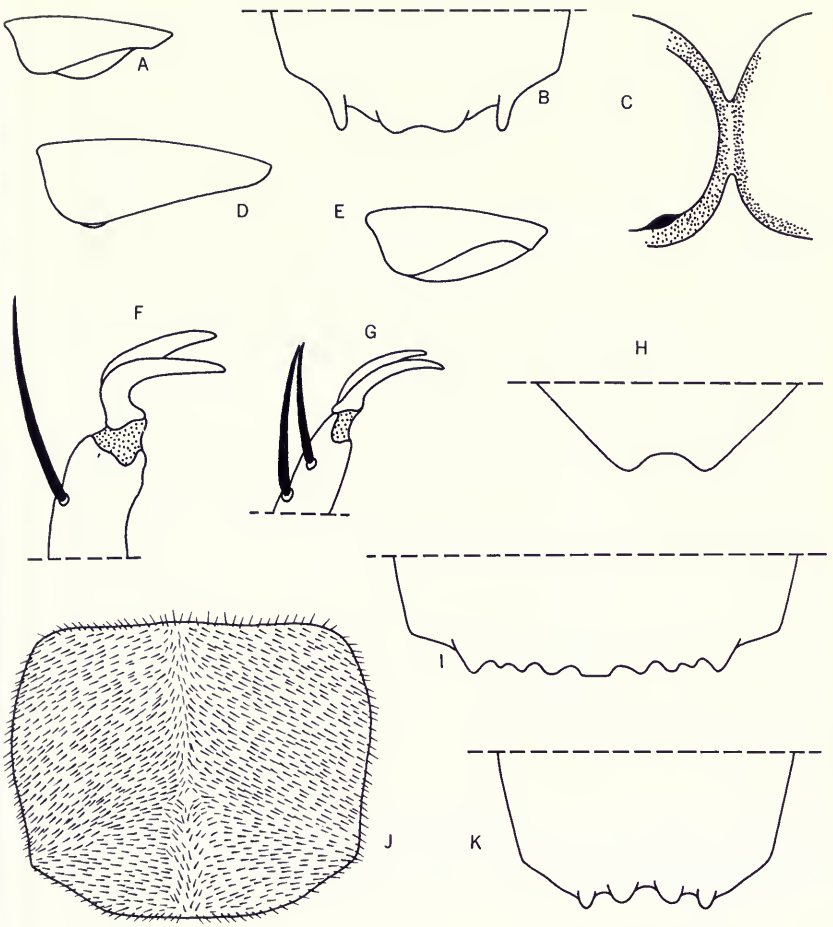


FIG. 37.[1] *Dimetrota fenyesi* (California): **A,** Prothorax, lateral view. *Stethusa irvingi* (New York): **B,** Tergum VIII, male. *Aloconota (Terasota) brunneipes* (Pennsylvania): **C,** Mesosternal and Metasternal Processes. *Devia prospera* (Michigan): **D,** Prothorax, lateral view. *Tetralaucopora fuliginosa* (Massachusetts): **E,** Prothorax, lateral view. *Apimela attenuata* (California): **F,** Metatarsal claw. *Meotica exilis:* **G,** Mesotarsal claw. *Atheta graminicola* (Alaska): **H,** Sternum VIII, male. **I,** Tergum VIII, male. *Paradilacra densissima* (California): **J,** Pronotal pubescence. *Aloconota (Taphrodota) ventralis* (Pennsylvania): **K,** Tergum VIII, male.

[1]The illustrations of Figure 37 were made by me from the slides that Seevers studied [L.H.].

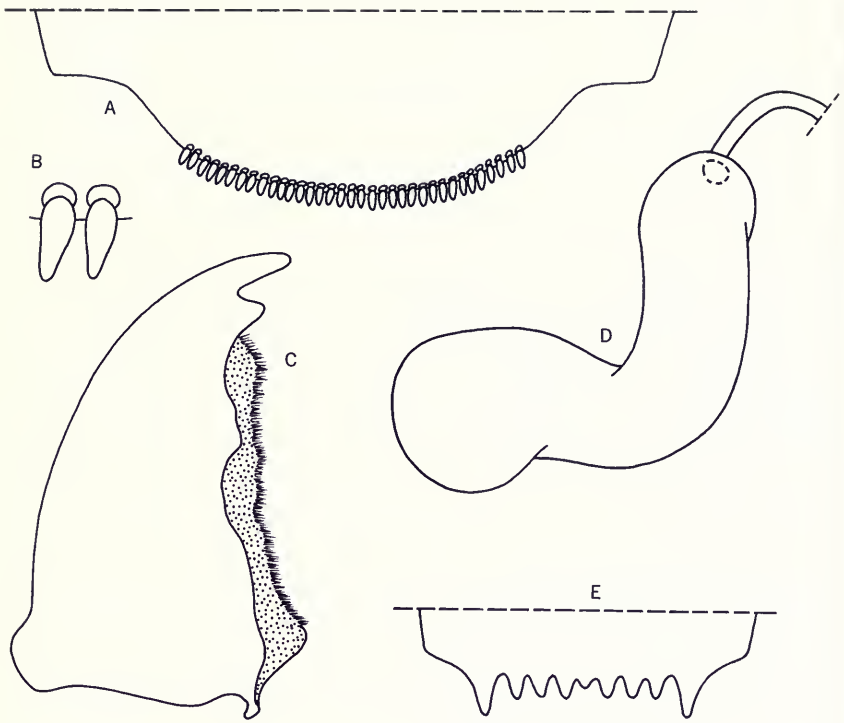


FIG. 38.[1] *Lissagria laeviuscula* (California): **A,** Tergum VIII. **B,** Enlargement of modified setae. *Devia prospera* (Massachusetts): **C,** Left mandible. *Meotica exilis:* **D,** Spermatheca. *Silusa* (*Stenusa*) *rubra* (Europe): **E,** Tergum VIII, male.

[1]The illustrations of Figure 38 were made by me from the slides used by Seevers [L.H.].

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## ERRATUM

In this Index, page references to entries in the Species Catalogue are in error as given; to correct this, all page numbers above 231 should be increased by 14.

## INDEX OF SCIENTIFIC NAMES

Page numbers in **boldface** type refer to descriptions, synonymic lists, or major references to the taxa; page numbers in *italics* refer to keys and the catalogue.


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## SPECIES CATALOGUE

*Introduction.*—Inasmuch as Bernhauer, Casey, and other authors frequently gave several localities for a species, the type locality is often in doubt. In the following catalogue I give the type locality as determined from the label of the type specimen whenever possible.

Even though he had not studied the Casey collection, Fenyes (1918, 1920, 1921) synonymized about 265 Casey species; these were accepted without question by Bernhauer and Scheerpeltz (1926). After a careful study of a good deal of Fenyes and Bernhauer material, I am convinced that many of the determinations made by these men are inaccurate. None of the synonyms can be taken for granted, and in my catalogue I have ignored those that have not been substantiated by personal study. The interested student may consult the *Coleopterorum catalogus* for the Fenyes and Bernhauer synonyms. My experiences with the Gyrophaenae (Seevers, 1951) indicated that many of Fenyes' synonyms were unjustified, and if Casey did create synonyms, Fenyes as often as not synonymized them with the wrong species.

Several major works have catalogued the North American Aleocharinae, but in some instances only as part of the world fauna. These works include Leng's (1920) *Catalogue of the Coleoptera of America, north of Mexico,* and its supplements (Leng and Mutchler 1927, 1933; Blackwelder, 1939; Blackwelder and Blackwelder, 1948); Fenyes (1918, 1920, 1921) *Aleocharinae* in the *Genera Insectorum;* and Bernhauer and Scheerpeltz (1926) *Staphylinidae* in the *Coleopterorum Catalogus.*

The present catalogue differs from all of these in several important respects in addition to numerous differences in generic assignments. (1) More than 100 European species listed as occurring in our fauna have been eliminated from the catalogue, and listed in an introductory section. (2) More than 200 Casey species synonymized by Fenyes and Bernhauer have been restored to valid status.

Many of these species may be synonyms, but as neither Fenyes nor Bernhauer studied the Casey collection their judgments on matters of synonymy are extremely unreliable.

*The problem of European species in the American fauna.*—The taxonomy of the North American Aleocharinae has been burdened with published reports, more often erroneus than not, that many European species occur in our fauna. The records have been carried from catalogue to catalogue, often accompanied by incorrect synonymies. Fenyes did North American coleopterology a disservice by listing more than 100 European species in our fauna and by synonymizing many valid endemic species. Bernhauer and Scheerpeltz (1926) accepted most of his judgments.

It is my opinion, after examining many of the specimens on which Fenyes and Bernhauer based their determinations, that a large number of their records are incorrect. Some widespread species, some almost cosmopolitan, and some seemingly Holarctic, do occur in North America, but I agree with Casey (1910) that the number of authenticated records of European species in the Nearctic Region is probably not over a dozen. The authenticated cases are included in the catalogue.

Reports of European aleocharine species in our fauna were made by Hamilton (1889)—20 species; Fenyes (1908)—88 species; Leng (1920)—103; Bernhauer and Scheerpeltz (1926)—58 species.

## European and exotic species doubtfully occurring in North America

Tribe OXYPODINI

*Amarochara umbrosa* Erichson.
*Dexiogyia corticina* Erichson.
*Ityochara rubens* Erichson.
*Ocyusa nivicola* Thomson.
*Oxypoda exigua* Erichson.
*Parocalea baicalica* Eppelsheim.
*Phloeopora corticalis* Gravenhorst, *latens* Erichson, *testacea* Mannerheim.
*Homoeusa acuminata* Maerkel.
*Brachyusa raptoria* Wollaston.
*Tachyusa objecta* Mulsant and Rey.
*Gnypeta cavicollis* Sahlberg.

Tribe ATHETINI

*Acrotona aterrima* Gravenhorst, *clientula* Erichson, *orbata* Erichson, *parva* Sahlberg, *pygmaea* Gravenhorst, *fuscipes* Heer, *fungi* Gravenhorst.
*Amischa cavifrons* Sharp, *curtipennis* Sharp, *filaria* Fauvel.
*Atheta graminicola* Gravenhorst.

*Aloconota cambrica* Wollaston, *sulcifrons* Stephens, *insecta* Thomson.
*Anopleta arcana* Erichson.
*Amidobia talpa* Heer.
*Badura parvula* Mannerheim, *macrocera* Thomson.
*Datomicra canescens* Sharp, *zosterae* Thomson, *celata* Erichson, *sordidula* Erichson.
*Dinaraea angustula* Gyllenhal.
*Dimetrota marcida* Erichson, *setigera* Sharp, *subrugosa* Kiesenwetter.
*Halobrecta flavipes* Thomson.
*Hypatheta oraria* Kraatz, *aquatica* Thomson, *castanoptera* Mannerheim, *pertyi* Heer.
*Liogluta granigera* Kiesenwetter, *hypnorum* Kiesenwetter.
*Microdota amicula* Stephens, *palleola* Erichson.
*Oreostiba sibirica* Maeklin.
*Parameotica complana* Mannerheim.
*Philhygra elongatula* Gravenhorst, *fallaciosa* Sharp, *melanocera* Thomson, *magniceps* Sahlberg, *vaga* Heer, *polaris* Bernhauer, *fusca* Sahlberg, *palustris* Kiesenwetter, *islandica* Kraatz.
*Schistoglossa gemina* Erichson, *aubei* Brisout, *viduata* Erichson.
*Xenota basicornis* Mulsant and Rey, *coriaria* Kraatz, *divisa* Maerkel, *euryptera* Stephens, *nigritula* Gravenhorst, *sodalis* Erichson, *pallidicornis* Thomson.

Tribe ALEOCHARINI

*Aleochara (sensu lato) bilineata* Gyllenhal, *curtula* Goeze, *stygialis* Sharp, *nitida* Gravenhorst, *bipustulata* L., *notula* Erichson, *puberula* Klug, *crassicornis* Boisduval and Lacordaire, *villosa* Mannerheim, *brevipennis* Gravenhorst, *moerens* Gyllenhal, *maura* Sachse, *rubripennis* Pettit, *lanuginosa* Gravenhorst, *fumata* Erichson, *algarum* Fauvel.

Tribe HOPLANDRIINI

*Tinotus morion* Gravenhorst.

Tribe FALAGRIINI

*Stenagria concinna* Erichson.
*Myrmecopora crassiuscula* Aube.

Tribe MYRMEDONIINI

*Xenodusa sharpi* Wasmann (Mexico).

Tribe GYROPHAENINI

*Anomognathus cuspidatus* Erichson *(Thectura).*
*Euvira debilis* Sharp (Guatemala).
*Gyrophaena bihamata* Thomson, *fasciata* Marsham, *strictula* Erichson, *polita* Gravenhorst, *pulchella* Heer.
*Leptusa haemorrhoidalis* Heer.
*Placusa complanata* Erichson, *tachyporoides* Waltl, *atrata* Sahlberg, *despecta* Erichson.
*Tomoglossa luteicornis* Erichson.

Tribe AUTALIINI

*Autalia puncticollis* Sharp.

Tribe GYMNUSINI

*Gymnusa brevicollis* Paykull, *variegata* Kiesenwetter.

Tribe MYLLAENINI

*Myllaena dubia* Gravenhorst, *infuscata* Kraatz, *intermedia* Erichson, *minuta* Gravenhorst.

Tribe OLIGOTINI

*Cypha laeviuscula* Mannerheim, *longicornis* Paykull.
*Oligota apicata* Erichson, *parva* Kraatz, *pumilio* Kiesenwetter, *pusillima* Gravenhorst.

## North American species

Tribe OXYPODINI

Subtribe Oxypodae

*Acrimea* Casey (1911, p. 14)

*acerba* Casey, 1911, p. 15. WASHINGTON (N. Yakima).
*fimbriata* Casey, 1911, p. 15. OREGON (The Dalles).
*resecta* Casey, 1911, p. 14. IDAHO (Coeur d'Alene).

*Amarochara* Thomson (1858, p. 32)

*Nasirema* Casey (1893, p. 307)
*fenyesi* Blatchley, 1910, p. 361. INDIANA (Lawrence and Clark Co.).
*humilis* (Casey), 1893, p. 308. PENNSYLVANIA.
*inquilina* Casey, 1906, p. 311. IOWA (Iowa City).
*parviceps* (Casey), 1893, p. 309. RHODE ISLAND.

*Calodera* Mannerheim (1831, p. 499)

*infuscata* Blatchley, 1910, p. 361. INDIANA (Marion Co.).

*Crataraea* Thomson (1858, p. 34)

*suturalis* (Mannerheim), 1831, p. 496. EUROPE. North America.

*Devia* Blackwelder (1952, p. 122)

*Dasyglossa* Kraatz (1856, p. 130, junior homonym).
*congruens* (Casey), 1893, p. 292 (*Oxypoda*). MONTANA (Helena).
*prospera* (Erichson), 1839, p. 143. EUROPE. North America.

*Dexiogyia* Thomson (1858, p. 34)

*abscissa* (Casey), 1911, p. 16 (*Ischnoglossa*). RHODE ISLAND (Boston Neck).
*alticola* (Casey), 1911, p. 18 (*Ischnoglossa*). CALIFORNIA (Truckee).
*angustiventris* (Casey), 1893, p. 303 (*Thiasophila*). RHODE ISLAND.
*asperata* (Casey), 1893, p. 303 (*Thiasophila*). CALIFORNIA (Lake Tahoe).
*intenta* (Casey), 1911, p. 17 (*Ischnoglossa*). IOWA (Iowa City).
*tenuicauda* (Casey), 1911, p. 17 (*Ischnoglossa*). FLORIDA.

*Gnathusa* Fenyes (1909, p. 197)

*eva* Fenyes, 1909, p. 198. CALIFORNIA (Tahoe City).
*grandiceps* (Casey), 1911, p. 9 (*Microglossa*). CALIFORNIA. **New combination** (in *Crataraea*—Casey collection).
*tenuicornis* Fenyes, 1921a, p. 26. BRITISH COLUMBIA (Glacier).

*Haploglossa* Kraatz (1856, p. 78)

*Microglotta* Kraatz (1862a, p. 300).
*Microglossa* Mulsant and Rey (1874, p. 201).
*barberi* (Fenyes), 1921a, p. 30. VIRGINIA (Chain Bridge).
*grandiceps* Casey (transferred to *Gnathusa*).

*Ilyobates* Kraatz (1856, p. 133)

*Gennadota* Casey, 1906, p. 308. **New synonym.**
*canadensis* (Casey), 1906, p. 309. CANADA. (in *Callicerus*—Casey coll.)
*puberula* (Casey), 1893, p. 310 (*Callicerus*). NEW YORK.

*Longipeltina* Bernhauer (1912, p. 682)

*bakeri* Bernhauer, 1912, p. 682. CALIFORNIA (Claremont).

*Melanalia* Casey (1911, p. 10)

*tabida* Casey, 1911, p. 10. CALIFORNIA (Lake Tahoe).
(*tetricula* Casey and *larvalis* Casey transferred to *Oxypoda*).

*Moluciba* Casey (1911, p. 156)

*grandipennis* Casey, 1911, p. 156. BRITISH COLUMBIA (Metlakatla).

*Ocalea* Erichson (1837, p. 298)

*Isoglossa* Casey (1893, p. 304).
*agnita* Casey, 1911, p. 55. ARIZONA (Winslow).
*arcuata* (Casey), 1893, p. 304. CALIFORNIA (Lake Tahoe).
*franciscana* Casey, 1906, p. 305. CALIFORNIA (Santa Cruz Mts.).
*fusca* Fenyes, 1909b, p. 424. ARIZONA (Flagstaff).
*grandicollis* Casey, 1906, p. 305. CALIFORNIA (Siskiyou Co.).
*pellax* (Casey), 1911, p. 54. CALIFORNIA (Tehachapi Pass).
*vancouveri* Casey, 1893, p. 309. BRITISH COLUMBIA (Vancouver Island).

*Ocyusa* Kraatz (1856, p. 156)

*asperula* Casey, 1893, p. 305. IOWA; Rhode Island.
*brevipennis* Bernhauer, 1906, p. 344. MASSACHUSETTS.
*californica* Bernhauer, 1906, p. 343. CALIFORNIA (Tallac).

*Oxypoda* Mannerheim (1831, p. 483)

*Hylota* Casey (1906, p. 318). **New synonym.**

(Eastern species)

*affecta* Casey, 1911, p. 35. MISSISSIPPI (Vicksburg).
*agitata* Casey, 1911, p. 43. TEXAS (El Paso).
*amica* Casey, 1906, p. 312. IOWA (Iowa City).
*canora* Casey, 1911, p. 32. NEW YORK (Catskill Mts.).
*convergens* Casey, 1893, p. 293. NEW YORK (Catskill Mts.).
*croceola* Casey, 1911, p. 36. MISSOURI (St. Louis); Texas (Houston).
*demissa* Casey, 1911, p. 22. ONTARIO.
*gnara* Casey, 1911, p. 25. RHODE ISLAND (Boston Neck).
*hiemalis* Casey, 1911, p. 37. ONTARIO (Ottawa).
*hudsonica* Casey, 1893, p. 298. NEW YORK (New York).
*inimica* Casey, 1911, p. 25. MASSACHUSETTS.
*iowensis* Casey, 1906, p. 314. IOWA (Iowa City).
*lacustris* Casey, 1906, p. 317. ONTARIO (Trenton).
*latebricola* Casey, 1911, p. 33. PENNSYLVANIA (Philadelphia).
*lineata* Casey, 1893, p. 297. RHODE ISLAND.
*lucidula* Casey, 1906, p. 313. MISSOURI (St. Louis).
*manitobae* Casey, 1911, p. 28. MANITOBA (Aweme).
*mimetica* Casey, 1906, p. 312. VIRGINIA (Norfolk).
*minuta* Sachse, 1852, p. 116. GEORGIA.
*mobilis* Casey, 1911, p. 26. TEXAS (El Paso).

*mollicula* Casey, 1911, p. 36. NORTH CAROLINA (Asheville).
*neptis* Casey, 1911, p. 50. IOWA (Iowa City).
*nigriceps* Casey, 1893, p. 296. RHODE ISLAND (Boston Neck).
*nugax* Casey, 1911, p. 50. MISSISSIPPI (Vicksburg).
*obliqua* Casey, 1906, p. 316. VIRGINIA (Norfolk).
*oblita* Casey, 1911, p. 34. MISSISSIPPI (Vicksburg).
*ochracea* (Casey), 1906, p. 319 (*Hylota*). NEW YORK (New York). **New combination.**
*orbicollis* Casey, 1911, p. 22. WISCONSIN (Bayfield).
*palustris* Blatchley, 1910, p. 362. INDIANA (Starke Co.).
*perexilis* Casey, 1906, p. 316. MISSOURI (St. Louis); Mississippi (Vicksburg).
*profecta* Casey, 1911, p. 27. MISSOURI (St. Louis).
*robusticornis* Bernhauer, 1907, p. 403. NEW HAMPSHIRE (Mt. Washington).
*rubescans* Casey, 1911, p. 26. NEW YORK (Catskill Mts.).
*sagulata* Erichson, 1839, p. 146. PENNSYLVANIA.
*schaefferi* Notman, 1920, p. 193. NEW YORK.
*simulans* Casey, 1906, p. 315. MISSOURI (St. Louis).
*sylvia* Casey, 1906, p. 312. MAINE (Rangeley Lake).
*stygica* Casey, 1906, p. 313. NEW YORK (New York).
*tenuicula* Casey, 1911, p. 35. IOWA (Iowa City).
*truncatella* Casey, 1906, p. 315. MISSOURI (St. Louis).
*vetula* Casey, 1911, p. 44. NEW JERSEY (Atlantic City).
*virginica* Casey, 1906, p. 316. VIRGINIA (Fort Monroe).

(Western species)

*astricta* Casey, 1911, p. 44. CALIFORNIA (Pomona).
*californica* Casey, 1893, p. 299. CALIFORNIA.
*cauta* Casey, 1911, p. 23. COLORADO (Greeley).
*cernua* Casey, 1911, p. 29. CALIFORNIA (Arcata, Humboldt Co.).
*congesta* Casey, 1911, p. 33. CALIFORNIA (Siskiyou Co.).
*cruda* Casey, 1911, p. 23. CALIFORNIA (Truckee).
*dubia* Fenyes, 1907, p. 61.
  *ancilla* Casey, 1906, p. 314. COLORADO (Boulder Co.).
  *caseyi* Bernhauer, 1907, p. 404.
*effecta* Casey, 1911, p. 52. CALIFORNIA (Pomona).
*egestosa* Casey, 1911, p. 40. BRITISH COLUMBIA (Victoria).
*elusa* Casey, 1911, p. 37. CALIFORNIA (Truckee).
*famula* Casey, 1911, p. 40. BRITISH COLUMBIA (Massett, Queen Charlotte Island).
*flebilis* Casey, 1911, p. 38. CALIFORNIA (Truckee).
*frigida* Bernhauer, 1907, p. 404. BRITISH COLUMBIA (Emerald Lake).
*fusiformis* Casey, 1906, p. 317. CALIFORNIA (Pomona Mts.).
*fustiger* Casey, 1893, p. 298. CALIFORNIA (Humboldt Co.).
*gatosensis* Bernhauer, 1905, p. 256. CALIFORNIA (Los Gatos).
*glenorae* Casey, 1893, p. 295. BRITISH COLUMBIA (Glenora).
*gymnica* Casey, 1911, p. 42. ARIZONA (Williams).
*implicata* Casey, 1911, p. 51. CALIFORNIA (San Francisco).
*impressa* Casey, 1893, p. 293. BRITISH COLUMBIA (Glenora).
*irrasa* Maeklin, 1853, p. 183. ALASKA.
*juncea* Casey, 1911, p. 32. NEW MEXICO (Gallup).

*lassula* Casey, 1911, p. 39. WASHINGTON (Spokane).
*lenis,* Casey, 1911, p. 43. NEW MEXICO (Coolidge).
*lividula* Casey, 1911, p. 52. CALIFORNIA (San Mateo).
*madescans* Casey, 1911, p. 29. CALIFORNIA (Monterey).
*mansueta* Casey, 1911, p. 46. CALIFORNIA (San Francisco).
*morula* Casey, 1911, p. 45. CALIFORNIA (San Francisco).
*nevadensis* Casey, 1906, p. 317. NEVADA (Reno).
*nimbata* Casey, 1911, p. 28. CALIFORNIA (Santa Cruz Mts.).
*nubifer* Casey, 1893, p. 294. UTAH (southwest).
*nutricia* Casey, 1911, p. 41. CALIFORNIA (Santa Cruz Mts.).
*olescans* Casey, 1911, p. 24. CALIFORNIA (Hoopa Valley, Humboldt Co.).
*opacicollis* Bernhauer, 1907, p. 404. CALIFORNIA (Pasadena).
*opica* Casey, 1911, p. 46. CALIFORNIA (Mt. Diablo).
*optiva* Casey, 1911, p. 39. BRITISH COLUMBIA (Vancouver).
*paganica* Casey, 1911, p. 41. CALIFORNIA (Pomona Mts.).
*perita* Casey, 1911, p. 49. CALIFORNIA (Fisks Mill, Sonoma Co.).
*profuga* Casey, 1911, p. 38. CALIFORNIA (Duncans Mills, Sonoma Co.).
*recensa* Casey, 1911, p. 31. CALIFORNIA (Lake Tahoe).
*regressa* Casey, 1911, p. 49. BRITISH COLUMBIA (Victoria).
*renoica* Casey, 1906, p. 314. NEVADA (Reno).
*saturata* Casey, 1911, p. 48. NEVADA (Reno).
*saxatilis* Casey, 1893, p. 295. COLORADO (Cañon City).
*scaeva* Casey, 1911, p. 48. OREGON (The Dalles).
*sedula* Casey, 1911, p. 42. ARIZONA (Tucson).
*sejuncta* Casey, 1911, p. 47. CALIFORNIA (Placer Co.).
*subnitens* Bernhauer, 1907, p. 403. CALIFORNIA (Pasadena).
*subpolaris* Casey, 1911, p. 30. ALASKA (Nome).
*tenera* Bernhauer, 1906, p. 345. CALIFORNIA (Pasadena).
*tetricula* (Casey), 1911, p. 11 (*Melanalia*). CALIFORNIA (Soda Spring).
*larvalis* Casey, 1911, p. 11 (with *tetricula* in Casey coll.).
*wickhami* Casey, 1911, p. 31. UTAH (Provo).

*Pachycerota* Casey (1906, p. 307)
*duryi* Casey, 1906, p. 308. OHIO (Cincinnati). Massachusetts—Iowa.

*Pentanota* Bernhauer (1905a, p. 591)
*meuseli* Bernhauer, 1905a, p. 593. U.S.S.R. (Lake Baikal Region).
*Alaska* in Bernhauer collection.

*Phloeopora* Erichson (1837, p. 311)
*ferruginea* Casey, 1893, p. 306. PENNSYLVANIA.
*liberta* Casey, 1911, p. 19. NORTH CAROLINA (Tryon).
*sublaevis* Casey, 1906, p. 310. IOWA; North Carolina.

*adversa* Casey, 1911, p. 20. CALIFORNIA (Pomona).
*debiliceps* Casey, 1911, p. 19. NEVADA (Elko).
*jacobiana* Casey, 1911, p. 20. CALIFORNIA (San Diego).
*oregona* Casey, 1906, p. 310. OREGON (The Dalles).

*Tetralaucopora* Bernhauer (1928, p. 20)
*Chilopora* Kraatz (1856, p. 146).
*americana* (Casey), 1906, p. 306. NEW YORK (Peekskill).

*fuliginosa* (Casey), 1906, p. 306. NORTH CAROLINA (Asheville).

*Thyasophila* Fairmaire and Laboulbene (1856, p. 461)
*Thiasophila* Kraatz (1856, p. 69).
*blanchardi* Casey, 1911, p. 12. MASSACHUSETTS (Tyngsboro).
*laticollis* Casey, 1893, p. 302. NEW YORK.
*parvula* Notman, 1921, p. 157. NEW YORK
*wickhami* Casey, 1911, p. 13. IOWA (Iowa City).

Subtribe Dinardae

*Decusa* Casey (1900, p. 54)
*expansa* (LeConte), 1866, p. 373. DISTRICT OF COLUMBIA.

*Euthorax* Solier (1849, p. 345)
*Myrmecochara* Kraatz (1857, p. 40).
*Eurynotida* Casey (1906, p. 343).
*arizonicus* (Casey), 1906, p. 344. ARIZONA (Phoenix).
*crinitus* (Casey), 1893, p. 596. COLORADO (Cañon City).
*debilis* (Wasmann), 1894, p. 206. DISTRICT OF COLUMBIA.
*ornatus* (Casey), 1906, p. 343. TEXAS (Del Rio).
*pictipennis* (Kraatz), 1857, p. 41. LOUISIANA.

*Losiusa* Seevers, **new genus**
*angusticollis*, **new species.** MASSACHUSETTS.

*Myrmobiota* Casey (1893, p. 594)
*Soliusa* Casey (1900, p. 53).
*crassicornis* Casey, 1893, p. 595. IOWA (Iowa City).
*crinitula* (Casey), 1900, p. 54. NEW YORK.
*frosti* (Casey), 1911, p. 53. MASSACHUSETTS (Framingham).

Subtribe Meoticae

*Alisalia* Casey (1911, p. 219)
*antennalis* Casey, 1911, p. 223. TEXAS (Austin).
*austiniana* Casey, 1911, p. 222. TEXAS (Austin).
*bistriata* (Bernhauer), 1909, p. 528 (*Meotica*); Casey, 1911, p. 223. PENNSYLVANIA (Jeannette).
*brevipennis* Casey, 1911, p. 220. RHODE ISLAND (Boston Neck).
*delicata* Casey, 1911, p. 220. COLORADO (Cañon City).
*minutissima* Casey, 1911, p. 221. NORTH CAROLINA.
*parallela* Casey, 1911, p. 220. TEXAS (Waco); Galveston.
*testacea* Casey, 1911, p. 221. NORTH CAROLINA (Asheville).

*Apimela* Mulsant and Rey (1874, p. 36)
*attenuata* (Casey), 1885, p. 306 (*Calodera*); Casey, 1893, p. 377 (*Gyronycha*); Casey, 1911, p. 218 (*Gyronychina*). CALIFORNIA (Paraiso Springs, Monterey Co.).
*fenyesi* (Bernhauer), 1906, p. 337 (*Aleunota*); Casey, 1911, p. 218 (*Gyronychina*); Bernhauer, 1912b, p. 109 (*Gampsonycha*). CALIFORNIA (Pasadena).
*lineata* Casey, 1893, p. 376. NEVADA (Reno).
*longipennis* (Casey), 1911, p. 219 (*Gyronychina*). CALIFORNIA (*Calistoga*, Napa Co.).

*Bamona* Sharp (1883, p. 287)

*carolinae* Casey, 1906, p. 355. NORTH CAROLINA (Asheville).
*falliana* Casey, 1893, p. 378. CALIFORNIA (Los Angeles).
*tenuissima* Casey, 1906, p. 355. CALIFORNIA (Mokelumne Hill, Calaveras Co.).

*Gyronycha* Casey (1893, p. 372)

*fusciceps* Casey, 1893, p. 376. NEW YORK (Catskill Mts.).
*lepida* Casey, 1911, p. 217. NORTH CAROLINA (Asheville).
*longicornis* Casey, 1911, p. 217. NEW YORK (Ithaca).
*obscura* Casey, 1893, p. 375. CALIFORNIA (Pomona).
*texana* Casey, 1893, p. 373. TEXAS (Austin).
*valens* Casey, 1893, p. 373. TEXAS (Austin).

*Leptobamona* Casey (1911, p. 216)

*pertenuis* (Casey), 1893, p. 377. NEW JERSEY.

*Meotica* Mulsant and Rey (1873b, p. 176)

*exilis* (Erichson), 1837, p. 333. EUROPE. Maine (introduced ?).

Subtribe Blepharhymeni

*Blepharhymenus* Solier (1849, p. 339)

*Echidnoglossa* Wollaston (1864, p. 530).
*Colusa* Casey (1885, p. 288).

*brendeli* (Casey) 1893, p. 314. IOWA (Cedar Rapids).
*lacustris* (Casey), 1893, p. 313. MICHIGAN.

*aemulus* (Casey), 1911, p. 56. CALIFORNIA (Lake Co.).
*brevicornis* (Casey), 1893, p. 313. CALIFORNIA.
*clavicauda* (Casey), 1911, p. 58. CALIFORNIA (Soda Spring, Mendocino Co.).
*concinnus* (Casey), 1911, p. 56. CALIFORNIA (Lake Co.).
*defectus* (Casey), 1911, p. 59. CALIFORNIA (Gilroy Hot Springs, Santa Clara Co.).
*eminens* (Casey), 1911, p. 63. CALIFORNIA (Siskiyou Co.).
*exilis* (Casey), 1885, p. 294. CALIFORNIA (Gualala River, Mendocino Co.).
*eximius* (Casey), 1885, p. 293. CALIFORNIA (Gilroy Hot Springs).
*gaudens* (Casey), 1911, p. 62. CALIFORNIA (Hoopa Valley, Humboldt Co.).
*gracilis* (Casey), 1885, p. 292. CALIFORNIA (Hoopa Valley).
*grandicollis* (Casey), 1885, p. 295. CALIFORNIA (Gilroy Hot Springs).
*illectus* (Casey), 1911, p. 60. OREGON (Portland).
*lativentris* (Casey), 1893, p. 315. MONTANA (Mullan).
*leviventris* (Casey), 1911, p. 61. CALIFORNIA (Lake Co.).
*ludibundus* (Casey), 1911, p. 59. CALIFORNIA (Gilroy Hot Springs).
*monticola* (Casey), 1893, p. 315. COLORADO.
*morigera* (Casey), 1911, p. 58. UTAH (Provo).
*occiduus* (Casey), 1911, p. 57. CALIFORNIA (Pomona Mts.).
*quadripennis* (Casey), 1911, p. 60. CALIFORNIA (Redwood Creek, Marin Co.).
*strangulans* (Casey), 1911, p. 57. CALIFORNIA (Los Angeles Co.).
*tenuicornis* (Casey), 1911, p. 61. CALIFORNIA (Sonoma Co.).
*validus* (Casey), 1885, p. 294. CALIFORNIA (Yountville, Napa Co.).
*ventralis* (Casey), 1911, p. 62. CALIFORNIA (Siskiyou Co.).

Subtribe Tachyusae

*Brachyusa* Mulsant and Rey (1874, p. 38)

*Tetralina* Casey (1911, p. 224). **New synonym.**

*alutacea* (Casey), 1911, p. 226. CALIFORNIA (Yountville, Napa Co.). **New combination.**

*americana* (Fenyes), 1921a, p. 28 (*Hygropora*). BRITISH COLUMBIA. (Shawnigan Lake, Vancouver Island). **New combination.**

*filitarsis* (Casey), 1911, p. 225. MONTANA (Kalispell). **New combination.**

*helenae* (Casey), 1911, p. 225. MONTANA (Helena). **New combination.**

*Gnypeta* Thomson (1858, p. 33)

*Euliusa* Casey, (1906, p. 215).

*atrolucens* Casey, 1893, p. 346. NEW YORK.

*baltifera (LeConte),* 1863, p. 29 (*Tachyusa*); Casey, 1906, p. 202. (subgenus *Gnypetoma* Casey). NEW JERSEY (Elizabeth).

*bockiana* Casey, 1906, p. 195. MISSOURI (St. Louis).

*brunnescens* Casey, 1911, p. 167. NEW YORK (New York).

*floridana* Casey, 1906, p. 195. FLORIDA.

*manitobae* Casey, 1906, p. 196. MANITOBA (Winnipeg).

*nigrella* (LeConte), 1863, p. 29; Casey, 1906, p. 196. PENNSYLVANIA.

*abducens* Casey, 1906, p. 201. OREGON (Lane Co.).

*boulderensis* Casey, 1911, p. 167. COLORADO (Boulder Co.).

*brevicornis* Casey, 1906, p. 196. BRITISH COLUMBIA (Kamloops).

*citrina* Casey, 1906, p. 220. CALIFORNIA (Los Angeles Co.).

*crebrepunctata* (Casey), 1885, p. 203 (*Tachyusa*); 1906, p. 194. CALIFORNIA (Monterey Co.).

*curtipennis* Casey, 1906, p. 201. CALIFORNIA (Siskiyou Co.).

*deserticola* Casey, 1906, p. 193. ARIZONA (Benson).

*elsinorica* (Casey), 1906, p. 218. (*Eliusa*). CALIFORNIA (Riverside Co.).

*experta* (Casey), 1885, p. 300 (*Tachyusa*). CALIFORNIA (Gualala River, Mendocino Co.).

*harfordi* (Casey), 1885, p. 304. (*Tachyusa*). CALIFORNIA (Sebastopol, Sonoma Co.).

*helenae* Casey, 1906, p. 193. MONTANA (Kalispell).

*impressiceps* Casey, 1906, p. 199. CALIFORNIA (Yuma).

*incrassata* Casey, 1906, p. 198. UTAH (Provo).

*laticollis* (Casey), 1885, p. 289 (*Falagria*). CALIFORNIA (Gilroy Hot Springs).

*leviventris* Casey, 1906, p. 198. CALIFORNIA (Ojai).

*limatula* Casey, 1911, p. 171. CALIFORNIA (southern).

*linearis* (Casey), 1885, p. 301 (*Tachyusa*). CALIFORNIA (Yountville, Napa Co.).

*lucens* Bernhauer, 1905, p. 254. CALIFORNIA (Pasadena).

*majuscula* (Casey), 1906, p. 217 (*Euliusa*). ARIZONA.

*modica* Casey, 1911, p. 170. ARIZONA (Tucson).

*mollis* (Casey), 1906, p. 219. CALIFORNIA (Los Angeles Co.).

*oblata* Casey, 1911, p. 168. CALIFORNIA (Siskiyou Co.).

*oregona* Casey, 1906, p. 199. OREGON (Portland).

*pallidipes* Casey, 1911, p. 168. WASHINGTON (N. Yakima).

*pimalis* (Casey), 1906, p. 220. ARIZONA (Tucson).

*punctulata* Casey, 1906, p. 194. CALIFORNIA (Pomona).

*sensilis* Casey, 1911, p. 170. CALIFORNIA (Pomona).

*shastana* Casey, 1906, p. 201. CALIFORNIA (Siskiyou Co.).
*sparsella* (Casey), 1906, p. 217. CALIFORNIA (Los Angeles Co.).
*transversa* (Casey), 1906, p. 218. CALIFORNIA (Los Angeles Co.).
*uteana* Casey, 1911, p. 169. UTAH (southwestern).
*ventralis* Casey, 1906, p. 194. ARIZONA.
*wickhami* Casey, 1911, p. 166. ARIZONA (Pinal Mts.).

*Gnypetella* Casey (1906, p. 214)
*laticeps* (Casey), 1885, p. 302. CALIFORNIA (Paraiso Springs).
*placidula* Casey, 1906, p. 215. CALIFORNIA (Los Angeles Co.).

*Meronera* Sharp (1887, p. 779)
*montana* Casey, 1906, p. 222. TEXAS (El Paso). Utah (Provo).
*obliqua* Casey, 1906. p. 222. NEW YORK (Catskill Mts.).
*venustula* (Erichson), 1839, p. 55 (*Falagria*). PENNSYLVANIA.

*Tachyusa* Erichson (1837, p. 307)
*americana* Casey, 1906, p. 206. NEW YORK (Catskill Mts.).
*carolinae* Casey, 1906, p. 207. NORTH CAROLINA (Asheville).
*cavicollis* LeConte, 1863, p. 29.
*dakotana* Casey, 1906, p. 210. NORTH DAKOTA (Williston).
*gracillima* LeConte, 1863, p. 29.
*illini* Casey, 1906, p. 210. MISSOURI (St. Louis).
*meraca* Casey, 1911, p. 174. MASSACHUSETTS.
*missouriana* Casey, 1906, p. 209. MISSOURI.
*obsoleta* Casey, 1906, p. 208. NORTH CAROLINA (Asheville).
*ohiana* Casey, 1911, p. 174. OHIO (Cincinnati).
*ornatella* Casey, 1906, p. 211. TEXAS (Del Rio).
*parviceps* Casey, 1906, p. 208. PENNSYLVANIA.
*pruinosa* Casey, 1906, p. 209. NEW YORK (Catskill Mts.).
*silvatica* Casey, 1911, p. 173. NEW YORK (Ithaca).
*smithi* Casey, 1906, p. 205. NEW YORK (Catskill Mts.).
*subalutacea* Casey, 1906, p. 209. NORTH CAROLINA (Asheville).
*virginica* Casey, 1911, p. 172. VIRGINIA (Fredericksburg).

*arida* Casey, 1906, p. 211. CALIFORNIA (Yuma).
*faceta* Casey, 1885, p. 302. CALIFORNIA (Yountville, Napa Co.).
*vaciva* Casey, 1911, p. 175. CALIFORNIA (Dunsmuir, Siskiyou Co.).
*vespertina* Casey, 1906, p. 212. CALIFORNIA (Los Angeles Co.).

*Teliusa* Casey (1906, p. 203)
*alutacea* Casey, 1906, p. 203. TEXAS (Brownsville).
*malaca* Casey, 1911, p. 172. TEXAS (Del Rio).

*Trachyota* Casey (1906, p. 190)
*cavipennis* LeConte, 1866, p. 372 (*Falagria*). CALIFORNIA.
*lativentris* Casey, 1906, p. 191. CALIFORNIA (Pomona).

Tribe COROTOCINI

*Eburniogaster* Seevers (1938, p. 424)
*termitocola* Seevers, 1938, p. 426; 1957, p. 135. ARIZONA (Oracle).
*texanus* (Brues), 1902, p. 186, pl. 9, figs. 3-5 (*Termitogaster*); Seevers, 1938, p. 427. TEXAS (Austin).

*Termitonidia* Seevers (1938, p. 428)
*lunata* Seevers, 1938, p. 429, pl. 2, figs. 11-14, 16; 1957, p. 137. ARIZONA (Oracle); Sonoita.

Tribe ATHETINI

Subtribe Acrotonae

*Acrotona* Thomson (1859, p. 38)
*adjuvans* Casey, 1910, p. 149. ONTARIO (Ottawa).
*bakeri* (Bernhauer), 1909, p. 526. PENNSYLVANIA (Jeannette).
*fulgens* (Bernhauer), 1907, p. 392. WEST VIRGINIA (White Sulphur Springs).
*luteola* (Erichson), 1839, p. 114. AMERICA SEPTENTRIONALI.
*modesta* (Melsheimer), 1844, p. 31. PENNSYLVANIA.
*subpygmaea* (Bernhauer), 1909, p. 526. MASSACHUSETTS (Framingham).
*hebeticornis* (Notman), 1920a, p. 730. FLORIDA (Enterprise).
*picescens* (Notman), 1920a, p. 729. FLORIDA (Enterprise).

*ardelio* Casey, 1910, p. 150. CALIFORNIA (Lake Tahoe).
*breviuscula* (Maeklin), 1852, p. 309, ALASKA (Sitka).
*digesta* Casey, 1910, p. 148. CALIFORNIA (Duncan's Mill, Sonoma Co.).
*lividula* Casey, 1910, p. 147. OREGON (Portland).
*malaca* Casey, 1910, p. 151. CALIFORNIA (Siskiyou Co.).
*pasadenae* (Bernhauer), 1906, p. 338. CALIFORNIA (Pasadena).
*prudens* Casey, 1910, p. 149. BRITISH COLUMBIA (Queen Charlotte Islands).
*renoica* Casey, 1910, p. 150. NEVADA (Reno).
*severa* Casey, 1910, p. 148. CALIFORNIA (Siskiyou Co.).
*shastanica* Casey, 1910, p. 148. CALIFORNIA (Siskiyou Co.).

Subgenus *Achromota* Casey (1893, p. 300)
*fusiformis* Casey, 1893, p. 301. NEW YORK (New York).

Subgenus *Ancillota* Casey (1910, p. 165)
*sollemnis* Casey, 1910, p. 165. MISSOURI (St Louis).

Subgenus *Eurypronota* Casey (1893, p. 334; 1910, p. 137)
*discreta* Casey, 1893, p. 335. IOWA (Cedar Rapids).
(*scopula* Casey, 1910, p. 137, to *Dolosota*).

Subgenus *Neada* Casey (1910, p. 152)
*lubricans* Casey, 1910, p. 153. RHODE ISLAND (Boston Neck).

Subgenus *Coprothassa* Thomson (1859, p. 38)
*laurentiana* (Blatchley), 1910, p. 357. INDIANA (Lawrence Co.).
*sordida* (Marsham), 1802, p. 514. EUROPE. Nearctic Region (widespread).
*smithi* Casey, 1910, p. 166. NEW YORK (Catskill Mts.).

Subgenus *Arisota* Casey (1910, p. 133)
*insueta* (Casey), 1910, p. 134. RHODE ISLAND (Boston Neck).
*tetricula* (Casey), 1910, p. 134. NEW YORK (Catskill Mts.).

*apacheela* (Casey), 1910, p. 135. ARIZONA (Winslow).
*pomonensis* (Casey), 1910, p. 135. CALIFORNIA (Pomona).
*speculifer* (Casey), 1910, p. 135. CALIFORNIA (Gilroy Hot Springs).
*umbrina* (Casey), 1910, p. 136. CALIFORNIA (San Diego).

Subgenus *Colpodota* Mulsant and Rey (1873a, p. 153); Casey, 1910, p. 153
*acuminata* (Casey), 1910, p. 155. RHODE ISLAND (Boston Neck).
*acutella* (Casey), 1910, p. 156. NEW YORK (Catskill Mts.).
*assecla* (Casey), 1910, p. 158. NEW YORK (Catskill Mts.).
*austiniana* (Casey), 1910, p. 158. TEXAS (Austin).
*avia* (Casey), 1910, p. 154. RHODE ISLAND (Boston Neck).
*defessa* (Casey), 1910, p. 158. RHODE ISLAND (Boston Neck).
*egregiella* (Casey), 1910, p. 156. NEW YORK (Catskill Mts.).
*fortuita* (Casey), 1910, p. 164. MASSACHUSETTS (Tauton).
*insula* (Casey), 1910, p. 155. RHODE ISLAND (Boston Neck).
*puritana* (Casey), 1910, p. 154. MASSACHUSETTS.
*sequestralis* (Casey), 1910, p. 159. IOWA (Cedar Rapids).
*simulata* (Casey), 1910, p. 156. MISSOURI (St. Louis).
*sobris* (Casey), 1910, p. 154. MISSISSIPPI (Vicksburg).
*turbens* (Casey), 1910, p. 157. TEXAS (Galveston).

*abdicans* (Casey), 1910, p. 163. CALIFORNIA (Ojai).
*egens* (Casey), 1910, p. 160. CALIFORNIA (Lake Tahoe).
*fatigans* (Casey), 1910, p. 161. CALIFORNIA (Santa Cruz).
*inceptor* (Casey), 1910, p. 152. CALIFORNIA (Santa Cruz).
*laxella* (Casey), 1910, p. 164. CALIFORNIA (Santa Cruz).
*pupilla* (Casey), 1911, p. 155. CALIFORNIA (Paraiso Hot Springs, Monterey Co.).
*repentina* (Casey), 1910, p. 163. CALIFORNIA (Pomona).
*sonomana* (Casey), 1910, p. 162. CALIFORNIA (Cloverdale).
*torvula* (Casey), 1910, p. 161. CALIFORNIA (Siskiyou Co.).
*trossula* (Casey), 1910, p. 159. ARIZONA (Tucson).
*zephyrina* (Casey), 1910, p. 160. CALIFORNIA (Gilroy Hot Springs).

Subgenus *Aremia* Casey (1910, p. 145)
*reclusa* Casey, 1910, p. 146. NEW YORK (Catskill Mts.).

Subgenus *Dolosota* Casey (1910, p. 136; 1911, p. 154.) (= *Pancota* Casey)
*abundans* (Casey), 1910, p. 139. MISSOURI (St. Louis).
*flaccida* (Casey), 1910, p. 139. MISSISSIPPI (Vicksburg).
*scopula* (Casey), 1893, p. 335 (*Eurypronota*); 1910, p. 137. RHODE ISLAND (Boston Neck).
*secunda* (Casey), 1910, p. 138. IOWA (Iowa City).
*sequax* (Casey), 1910, p. 138. IOWA (Cedar Rapids).

Subgenus *Microlia* Casey (1910, p. 144)
*pernix* Casey, 1910, p. 144. VIRGINIA (Norfolk).
*petulans* Casey, 1910, p. 145. NEW JERSEY.
*silacea* (Erichson), 1839, p. 120. AMERICA SEPTENTRIONALI.

Subgenus *Reania* Casey (1910, p. 146)
*fontinalis* Casey, 1910, p. 146. COLORADO (Colorado Springs).

*Strigota* Casey (1910, p. 176)
*Eustrigota* Casey (1911, p. 165).
*assueta* Casey, 1910, p. 178. MISSOURI (St. Louis).
*gnava* Casey, 1910, p. 177. NORTH CAROLINA (Asheville).
*mediocris* Casey, 1910, p. 179. TEXAS (El Paso).

*oppidana* Casey, 1910, p. 177. NEW YORK (New York).
*recta* Casey, 1911, p. 165. CONNECTICUT (New Haven).
*verecunda* Casey, 1910, p. 178. IOWA (Cedar Rapids).

*impiger* Casey, 1910, p. 181. WASHINGTON (Spokane).
*inculta* Casey, 1910, p. 180. NEVADA (Reno).
*intrudens* Casey, 1910, p. 181. CALIFORNIA (no locality with type specimen). (Type locality listed as Santa Cruz).
*obliquata* Casey, 1910, p. 183. CALIFORNIA (Lake Co.).
*placata* Casey, 1910, p. 182. CALIFORNIA (Santa Cruz).
*perplexa* Casey, 1910, p. 180. COLORADO (Boulder Co.).
*seclusa* Casey, 1911, p. 165 (subgenus *Eustrigota*). CALIFORNIA (Catalina Island).
*seducens* Casey, 1910, p. 182. CALIFORNIA (Lake Tahoe).
*vapida* Casey, 1910, p. 179. NEW MEXICO (Coolidge). Colorado (Greeley and Salida).

Subtribe Dimetrotae

*Amischa* Thomson (1858, p. 33)
*Colposura* Casey (1893, p. 336; 1910, p. 97 subgenus).
*analis* (Gravenhorst), 1802, p. 76. EUROPE. Nearctic Region.
*continentalis* (Bernhauer), 1909, p. 528. IOWA (Iowa City).
*flavicornis* (Bernhauer), 1909, p. 527. PENNSYLVANIA (Jeannette).
*gigantula* (LeConte), 1877, p. 239 (*Thinobius*). TEXAS (Belfrage). **New combination.**
*normalis* Casey, 1910, p. 97. NEW YORK (New York).
*propera* (Say), 1834, p. 470. INDIANA.

*angusta* (Casey), 1893, p. 339. NEVADA (Elko).
*colonia* Casey, 1910, p. 98. CALIFORNIA (Fisks Mill, Sonoma Co.)
*devincta* Casey, 1910, p. 98. CALIFORNIA.
*parviceps* (Casey), 1893, p. 338. WASHINGTON (Spokane).
*praelonga* (Casey), 1893, p. 337. WYOMING (Cheyenne).
*tersa* Casey, 1910, p. 99. COLORADO (Colorado Springs).

*Anatheta* Casey [1910, p. 112 (subgenus of *Sableta*)]
*planulicollis* (Casey), 1910, p. 112. KANSAS (Meade).

? *curata* (Casey), 1910, p. 112. VIRGINIA (Fredericksburg).

*Canastota* Casey [1910, p. 108 (subgenus of *Sableta*)]
*canadensis* (Casey), 1910, p. 108. ONTARIO (Toronto).
*flaveola* (Melsheimer), 1844, p. 30. PENNSYLVANIA.
*flaviventris* (Casey), 1910, p. 111. TEXAS (Dallas).
*longiclava* (Casey), 1910, p. 110. RHODE ISLAND (Boston Neck).
*nanella* (Casey), 1906, p. 271 (*Silusida*). PENNSYLVANIA (Philadelphia).
*beatula* Casey, 1910, p. 109.
*ornator* (Casey), 1910, p. 110. NEW YORK (Catskill Mts.).
*phrenetica* (Casey), 1910, p. 111. TEXAS (Dallas).

*Datomicra* Mulsant and Rey (1874, p. 387)
*Hilarina* Casey (1910, p. 128; as subgenus).
*Micromota* Casey (1910, p. 127; as subgenus).

*Oligomia* Casey (1910, p. 129; as subgenus).
*Taxicerella* Casey (1910, p. 113; as subgenus of *Sableta*).
*atomica* Casey, 1911, p. 153. NEW YORK (Catskill Mts.). (*Hilarina*).
*decolorata* Casey, 1910, p. 120. NEW YORK (Catskill Mts.).
*diffidens* Casey, 1910, p. 122. NEW YORK (Catskill Mts.).
*filiformis* Casey, 1910, p. 127. NEW YORK (Catskill Mts.). (*Micromota*).
*hebescens* Casey, 1910, p. 124. NEW YORK (Catskill Mts.).
*inanis* Casey, 1910, p. 129. PENNSYLVANIA (Philadelphia). (*Hilarina*).
*inopia* Casey, 1910, p. 120. NEW YORK (Catskill Mts.).
*mina* Casey, 1911, p. 153. CONNECTICUT (Double Beach). (*Hilarina*).
*particula* Casey, 1910, p. 128. RHODE ISLAND (Boston Neck). (*Hilarina*).
*pellax* Casey, 1910, p. 124. RHODE ISLAND (Boston Neck).
*remissa* (Casey), 1910, p. 113. PENNSYLVANIA (Philadelphia). (*Taxicerella*). **New combination.**
*schematica* Casey, 1910, p. 121. PENNSYLVANIA (Philadelphia).
*stilla* Casey, 1910, p. 123. RHODE ISLAND (Boston Neck).
*vacans* Casey, 1910, p. 122. NEW YORK (Catskill Mts.).
*vaciva* Casey, 1910, p. 126. MASSACHUSETTS.

*baringiana* (Bernhauer), 1907, p. 396. WASHINGTON (Baring).
*coruscula* Casey, 1910, p. 124. CALIFORNIA (Paraiso Springs; Monterey Co.).
*incumbens* Casey, 1910, p. 123. NEVADA (Reno).
*nigrita* (Fenyes), 1909b, p. 423. NEVADA (Reno).
*perpaula* Casey, 1910, p. 130. CALIFORNIA (Siskiyou Co.). (*Oligomia*).
*pomonae* Casey, 1910, p. 121. CALIFORNIA (Pomona).
*scintilla* Casey, 1910, p. 129. CALIFORNIA (Monterey). (*Oligomia*).
*surgens* Casey, 1910, p. 125. BRITISH COLUMBIA (Glenora).
*wrangeli* Casey, 1910, p. 126. ALASKA (Fort Wrangel).

*Dimetrota* Mulsant and Rey (1873a, p. 165)

*Dalotia* Casey (1910, p. 106).
*Dimetrotina* Casey (1911, p. 143).
*Engamota* Casey (1910, p. 151; 1911, p. 143).
*hampshirensis* (Bernhauer), 1909, p. 525. NEW HAMPSHIRE.
*novella* Casey, 1910, p. 105. NEW YORK (Willets Point, Long Island).
*nyptalis* Casey, 1910, p. 100. RHODE ISLAND.
*recondita* (Erichson), 1839, p. 123. NORTH AMERICA.
*sentiens* Casey, 1910, p. 105. KANSAS (Onaga).

*absona* (Casey), 1910, p. 152. CALIFORNIA (Engamota).
*cerebrosa* Casey, 1911, p. 142. CALIFORNIA (Sausalito, Marin Co.).
*cursor* (Maeklin), 1852, p. 307. ALASKA (Sitka).
*fenyesi* (Bernhauer), 1907, p. 395. CALIFORNIA (Pasadena).
*immerita* Casey, 1911, p. 141. CALIFORNIA (Riverside).
*immunis* (Casey), 1910, p. 114. (*Sableta*). CALIFORNIA (Santa Cruz Mts.). **New combination.**
*incredula* Casey, 1911, p. 141. CALIFORNIA (Sausalito, Marin Co.).
*laetula* (Fenyes), 1909b, p. 421. NEW MEXICO (Porvenir).
*maeklini* (Fenyes), 1920, p. 205.
*moesta* (Maeklin), 1852, p. 307. ALASKA (Sitka).

*neomexicana* (Fenyes), 1909b, p. 422. NEW MEXICO (Porvenir).
*omissa* Casey, 1910, p. 101. BRITISH COLUMBIA (Queen Charlotte Islands).
*opinata* Casey, 1911, p. 142. CALIFORNIA (Berkeley).
*pectorina* Casey, 1910, p. 106. CALIFORNIA (Santa Cruz Mts.). (*Dalotia*).
*crucialis* Casey, 1910, p. 107 (with *pectorina* in Casey coll.)
*picipennis* (Mannerheim), 1843, p. 224. ALASKA (Sitka).
*resima* Casey, 1910, p. 100. CALIFORNIA (Pomona).
*resplendens* Casey, 1910, p. 104. BRITISH COLUMBIA (Queen Charlotte Islands).
*retrusa* Casey, 1910, p. 103. BRITISH COLUMBIA (Metlakatla).
*revoluta* Casey, 1910, p. 104. IDAHO (Coeur d'Alene).
*sectator* Casey, 1910, p. 102. CALIFORNIA (Gilroy Hot Springs).
*insolida* (Casey), 1910, p. 125 (in tray with *sectator* in Casey coll.).
*stercoris* (Fenyes), 1920, p. 205.
*columbica* (Bernhauer), 1907, p. 394. BRITISH COLUMBIA (Emerald Lake).
*vacunalis* Casey, 1910, p. 102. CALIFORNIA.
*vaniuscula* Casey, 1911, p. 144. NEVADA (Esmeralda Co.). (*Dimetrotina*).
*vicaria* Casey, 1910, p. 101. BRITISH COLUMBIA (Queen Charlotte Islands).
*vigilans* Casey, 1910, p. 103. CALIFORNIA (Pomona).

*Fusalia* Casey (1911, p. 145)

*brittoni* (Casey), 1911, p. 145 (*Sableta,* subg. *Fusalia*). CONNECTICUT (Westville).

*Pancota* Casey (1906, p. 345)

*Dolosota* Casey (1910, p. 136, in part); 1911, p. 154. Some species are retained.
*alumna* (Casey), 1910, p. 142. IOWA (Cedar Rapids).
*collaris* Casey, 1906, p. 345. NEW YORK (Catskill Mts.).
*comis* (Casey), 1910, p. 140. IOWA (Cedar Rapids).
*cupiens* (Casey), 1910, p. 140. NEW YORK (Catskill Mts.).
*euphonia* (Casey), 1910, p. 143. NEW YORK (Catskill Mts.).
*lacertina* (Casey), 1910, p. 141. RHODE ISLAND (Boston Neck).
*laetabilis* Casey, 1911, p. 154. NEW YORK (Catskill Mts.).
*panda* (Casey), 1910, p. 143. DISTRICT OF COLUMBIA.
*redudans* (Casey), 1910, p. 137. NEW YORK (Catskill Mts.).
*restricta* (Casey), 1910, p. 142. MISSISSIPPI (Vicksburg).
*serva* (Casey), 1910, p. 144. MASSACHUSETTS.
*sophista* (Casey), 1910, p. 143. IOWA (Cedar Rapids).
*vafra* (Casey), 1910, p. 140. NORTH CAROLINA (Asheville).

*Pseudota* Casey (1910, p. 114)

*clienta* Casey, 1911, p. 150. MISSISSIPPI (Vicksburg).
*dissensa* Casey, 1910, p. 115. PENNSYLVANIA (Philadelphia).
*fascinans* Casey, 1911, p. 148. NEW YORK (Catskill Mts.).
*miscella* Casey, 1910, p. 115. NEW JERSEY.
*nugatoria* Casey, 1911, p. 149. PENNSYLVANIA (Philadelphia).
*puricula* Casey, 1911, p. 148. NEW YORK (Catskill Mts.).
*sitiens* Casey, 1910, p. 116. IOWA (Cedar Rapids).

*cornicula* Casey, 1911, p. 151. BRITISH COLUMBIA (Metlakatla).
*formalis* Casey, 1911, p. 152. BRITISH COLUMBIA (Metlakatla).

*irrupta* Casey, 1910, p. 117. BRITISH COLUMBIA (Metlakatla).
*nanulina* Casey, 1911, p. 152. BRITISH COLUMBIA (Metlakatla).
*nescia* Casey, 1910, p. 117. BRITISH COLUMBIA (Queen Charlotte Islands).
*pimalis* Casey, 1910, p. 118. ARIZONA (Tucson).
*praesaga* Casey, 1910, p. 116. CALIFORNIA (San Mateo).
*vana* Casey, 1911, p. 150. BRITISH COLUMBIA (Massett, Queen Charlotte Islands).

*Sableta* Casey (1910, p. 107)

*infulata* Casey, 1910, p. 107. MISSISSIPPI (Vicksburg).

*Synaptina* Casey (1910, p. 131)

*Rhodeota* Casey (1911, p. 147). **New synonym.**
*consonens* Casey, 1910, p. 132. RHODE ISLAND (Boston Neck).
*disparilis* Casey, 1910, p. 133. CALIFORNIA (San Francisco).
*merica* Casey, 1910, p. 131. IOWA (Keokuk).
*quaesita* Casey, 1910, p. 132. IOWA (Iowa City).
*tartarea* (Casey), 1910, p. 168 (*Ousipalia*); 1911, p. 147 (*Rhodeota*). **New combination.**

Subtribe Geostibae

*Anaduosternum* Notman (1922, p. 106)

*brevipennis* Notman, 1922, p. 107. NEW JERSEY (Newark).

*Asthenesita* Casey (1893, p. 365)

*pallens* Casey, 1893, p. 366. FLORIDA (southern).

*Crephalia* Casey (1910, p. 54)

*prolongata* (Casey), 1910, p. 55. MISSOURI (St. Louis).
*recessa* (Casey), 1910, p. 55. NEW YORK (Catskill Mts.).
*testata* (Casey), 1910, p. 56. PENNSYLVANIA (Philadelphia).

*Gaenima* Casey (1911, p. 160)

*impedita* Casey, 1911, p. 161. CALIFORNIA.

*Geostiba* Thomson (1858, p. 33)

*Sipalia* (Mulsant and Rey), Fenyes, 1918; Bernhauer and Scheerpeltz, 1926; Casey, 1910, 1911.
*Sonomota* Casey, 1911, p. 158 (subgenus).
*fontana* (Casey), 1911, p. 157 (*Sipalia*). PENNSYLVANIA (Buena Vista Springs). **New combination.**
*hesperica* (Casey), 1910, p. 169 (*Ousipalia*). CALIFORNIA (Ojai). **New combination.**
*lineatula* (Casey), 1910, p. 167. IOWA (Iowa City). **New combination.**
*lippa* (Casey), 1911, p. 158. CALIFORNIA (San Francisco). (*Sonomota*). **New combination.**
*pacifica* (Casey), 1910, p. 169 (*Ousipalia*). CALIFORNIA (San Francisco). **New combination.**
*parvipennis* (Bernhauer), 1907, p. 398 (*Atheta—Ousipalia*). ALBERTA (Banff). **New combination.**
*sparsepunctata* (Bernhauer), 1907, p. 398. (*Atheta—Ousipalia*). CALIFORNIA (Pasadena). **New combination.**
*turpicula* (Casey), 1910, p. 170 (*Ousipalia*). COLORADO (Boulder Co.). **New combination.**

*Sibiota* Casey (1906, p. 350)

*fossata* (Casey), 1910, p. 167 (*Sipalia*); 1911, p. 157. OREGON (Lane Co.).
*impressula* Casey, 1906, p. 350. OREGON (Portland).

*Sipaliella* Casey (1911, p. 159)

*filaria* (Casey), 1911, p. 159 (*Sipalia—Sipaliella*). RHODE ISLAND (Boston Neck).

Subtribe Athetae

*Aloconota* Thomson (1858, p. 33)

*Taphrodota* Casey (1906, p. 338; 1910, p. 84).
*Terasota* Casey (1906, p. 337; 1910, p. 84).
*brunneipes* (Casey), 1906, p. 337 (*Terasota*). NEW YORK (Ithaca). (*Terasota*).
*incertula* Casey, 1910, p. 84. VIRGINIA (Fort Monroe). (*sensu stricto*).
*intecta* Casey, 1910, p. 86. NORTH CAROLINA (Asheville). (*Terasota*).
*perdita* Casey, 1910, p. 85. CALIFORNIA (Gualala, Mendocino Co.). (*Terasota*).
*ventralis* (Casey), 1906, p. 339 (*Taphrodota*). NEW YORK (Ithaca). (*Taphrodota*).

*admista* Casey, 1910, p. 84. IOWA (Cedar Rapids). (a discordant species).

*Anepsiota* Casey (1893, p. 329; 1906, p. 335)

*quadricollis* Casey, 1893, p. 346. BRITISH COLUMBIA (Vancouver).
*terminalis* Casey, 1906, p. 339. BRITISH COLUMBIA (Glenora).
*renominata* Bernhauer and Scheerpeltz, 1926, p. 658 (a new name for *terminalis* preoccupied in *Atheta*).
(*shastana* and *torpens* transferred to *Athetota*).

*Atheta* Thomson (1858, p. 36)

*Elytrusa* Casey (1906, p. 334; 1910, p. 15).
*Megista* Mulsant and Rey (1874, p. 623).
*granulata* (Mannerheim), 1846, p. 508; Casey, 1910, p. 15. ALASKA (Unalaschka Island).
*nomadica* Casey, 1910, p. 15. ALASKA (Nome).

*Athetalia* Casey (1910, p. 14)

*bicariniceps* (Casey), 1910, p. 14 (*Atheta—Athetalia*). CALIFORNIA (Siskiyou Co.).
*metlakatlana* (Bernhauer), 1909, p. 522 (*Atheta sensu stricto*). BRITISH COLUMBIA (Metlakatla).
*nimia* (Casey), 1910, p. 15 (*Atheta—Athetalia*). BRITISH COLUMBIA (Metlakatla).
*oregonensis* (Bernhauer), 1909, p. 523. OREGON (Albany).
*repensa* (Casey), 1910, p. 14 (*Atheta—Athetalia*). CALIFORNIA (Santa Cruz Mts.).
*vasta* (Maeklin), 1853, p. 183. ALASKA (Sitka).

*Athetota* Casey (1906, p. 336)

*atriventris* Casey, 1906, p. 336. BRITISH COLUMBIA (Victoria).
*insignis* (Casey), 1885, p. 310 (*Oxypoda*); 1893 (*Anepsiota*); 1906 (*Athetota*). CALIFORNIA (San Francisco).
*caseyi* Bernhauer and Scheerpeltz, 1926, p. 658.
*shastana* (Casey), 1910, p. 13 (*Atheta—Anepsiota*). CALIFORNIA (Siskiyou Co.). **New combination.**
*torpens* (Casey), 1910, p. 13 (*Atheta—Anepsiota*). CALIFORNIA (San Mateo Co.). **New combination.**
*wickhami* (Casey), 1893, p. 331 (*Anepsiota*). BRITISH COLUMBIA (Stickeen River canyon).

*Euromota* Casey (1906, p. 338)
*lucida* Casey, 1906, p. 338. VIRGINIA (Fort Monroe).

*Lamiota* Casey (1910, p. 17; 1911, p. 82)
*achromata* (Casey), 1911, p. 82. BRITISH COLUMBIA (Metlakatla).
*keeni* (Casey), 1910, p. 17. BRITISH COLUMBIA (Metlakatla).
*profecta* (Casey), 1911, p. 83. BRITISH COLUMBIA (Metlakatla).

*concessa* (Casey), 1911, p. 83. BRITISH COLUMBIA (Metlakatla). (Does not belong to this genus).

*Liogluta* Thomson (1858, p. 35; Casey, 1910, p. 16)
*aemula* (Erichson), 1839, p. 102; Bernhauer, 1909, p. 518. PENNSYLVANIA.
*abdominalis* (Bernhauer), 1907, p. 394. CALIFORNIA (Bishop).
*insolens* (Casey), 1910, p. 16. BRITISH COLUMBIA (Queen Charlotte Islands).

*Pseudomegista* Bernhauer (1907, p. 390)
*nigropolita* (Bernhauer), 1907, p. 390. NEW HAMPSHIRE (Mt. Washington).

*Schistoglossa* Kraatz (1856, p. 344)
*aubeiodes*[1] Brundin, 1943, page unavailable. MASSACHUSETTS.
*holmbergi*[2] Brundin, 1943, page unavailable. ALASKA.
*reticulata* (Casey), 1910, p. 40. VIRGINIA (Newport News). **New combination.**

Subtribe Xenotae

*Anopleta* Mulsant and Rey (1874, pp. 36, 694)
sp. (near *arcana* Erichson, 1839, p. 93). WASHINGTON.

*Clusiota* Casey (1910, p. 119)
*claviventris* Casey, 1910, p. 119. BRITISH COLUMBIA (Glenora).

*Dinaraea* Thomson (1858, p. 33; Casey, 1910, p. 96)
*nomensis* Casey, 1910, p. 96. ALASKA (Nome).
*subdepressa* (Bernhauer), 1907, p. 386 (*Atheta—Dinaraea*). NEW HAMPSHIRE (Mt. Pleasant House).

*Halobrecta* Thomson (1858, p. 35)
*algophila* (Fenyes), 1909b, p. 419. CALIFORNIA (San Diego).

*Homalotusa* Casey (1906, p. 340; 1910, p. 10; 1911, p. 81)
*coloradensis* (Casey), 1911, p. 81. COLORADO (Red Cliff).
*fuscula* Casey, 1906, p. 341. IDAHO (Coeur d'Alene).
*pallida* Casey, 1906, p. 341 (with *fuscula* in Casey coll.).
*helenica* Casey, 1906, p. 340. MONTANA (Helena).
*lacustrina* (Casey), 1910, p. 11. WISCONSIN (Bayfield).
*lanei* (Casey), 1910, p. 10. OREGON (Lane Co.).
*manitobae* (Casey), 1911, p. 81. MANITOBA (Aweme).
*mormon* (Casey), 1910, p. 11. UTAH (southwestern).
*oregonina* (Casey), 1910, p. 11. OREGON (Lane Co.).
*tahoensis* Casey, 1906, p. 341. CALIFORNIA (Lake Tahoe).

[1,2]I am unable to find descriptions of these species in either Brundin's 1943 paper or listed in any Zoological Record from 1943 to 1965 [L.H.].

*wisconsinica* (Casey), 1910, p. 12. WISCONSIN (Bayfield).

*Hydrosmecta* Thomson (1858, p. 33; Casey, 1910, p. 86)

*caduca* Casey, 1910, p. 87. NEW YORK (Catskill Mts.).
*dulcis* Casey, 1910, p. 87. WISCONSIN (Bayfield).
*rarula* Casey, 1910, p. 90. NEW YORK (Ithaca). (Generic position uncertain).
*tincta* (Notman), 1921, p. 156. NEW YORK (Westfield).
*torrida* (Notman), 1921, p. 156. NEW YORK (Westfield).

*benigna* Casey, 1910, p. 88. CALIFORNIA (Fisks Mill, Sonoma Co.). (Generic position uncertain)
*callidula* Casey, 1910, p. 87. CALIFORNIA (San Bernardino Co.).
*fastidiosa* Casey, 1911, p. 139. CALIFORNIA (Santa Cruz). (Position uncertain).
*jugalis* Casey, 1910, p. 89. CALIFORNIA (Booneville, Mendocino Co.). (Generic position uncertain).
*odiosica* Casey, 1911, p. 138. CALIFORNIA (Santa Rosa, Sonoma Co.).
*salinasica* Casey, 1911, p. 139. CALIFORNIA (Paraiso Springs, Monterey Co.). (Generic position uncertain).
*subparilis* Casey, 1910, p. 89. CALIFORNIA (Booneville).

*Hydrosmectina* Ganglbauer (1895, p. 145)

*macra* Fenyes, 1921a, p. 23. CALIFORNIA (Pasadena).

*Iotota* Casey (1910, p. 95)

*pseudovilis* (Bernhauer), 1907, p. 386 (*Atheta, Dralica*). CALIFORNIA (Tallac). **New combination.**
*tepida* Casey, 1910, p. 95. CALIFORNIA (Lake Tahoe).
*unica* Casey, 1910, p. 95. CALIFORNIA (Lake Tahoe).

*Micratheta* Casey (1910, p. 53)

*caudex* (Casey), 1910, p. 53. VIRGINIA (Fort Monroe).

*Microrearota* Casey (1910, p. 49)

*definita* (Casey), 1910, p. 50 (subgenus of *Atheta*). TEXAS (Austin).
*fecunda* (Casey), 1910, p. 52. NEW YORK (Catskill Mts.).
*gregaria* (Casey), 1910, p. 51. IOWA (Cedar Rapids).
*loricula* (Casey), 1910, p. 49. IOWA (Cedar Rapids).
*pristina* (Casey), 1910, p. 51. RHODE ISLAND (Boston Neck).
*reperta* (Casey), 1910, p. 50. IOWA (Iowa City).
*sana* (Casey), 1910, p. 52. PENNSYLVANIA (Philadelphia).
*tincta* (Casey), 1910, p. 53. NEW YORK.
*versuta* (Casey), 1910, p. 50. RHODE ISLAND (Boston Neck).

*Microdota* Mulsant and Rey (1873a, p. 160; Casey, 1910, p. 58)

*Hilara* Mulsant and Rey, 1873a, p. 160; Casey, 1910, p. 61 (subgenus of *Atheta*). *Hilara* Mulsant and Rey is a junior homonym and requires a new name if used.
*festinans* (Erichson), 1839, p. 112. PENNSYLVANIA.
*fontis* (Casey), 1911, p. 122 (*Atheta*). PENNSYLVANIA (Buena Vista Springs, Franklin Co.). (*Hilara*).
*fulviceps* (Notman), 1920a, p. 726 (*Atheta*). FLORIDA. (*Hilara*).
*globicollis* (Bernhauer), 1907, p. 388. ONTARIO (Nepigon).
*impressipennis* (Bernhauer), 1909, p. 518. MASSACHUSETTS (Framingham).

*libens* (Casey), 1910, p. 63. RHODE ISLAND (Boston Neck). (*Hilara*).
*sejuncta* (Casey), 1910, p. 64; 1911, p. 252.
*macrops* (Notman), 1920a, p. 725. FLORIDA. (*Hilara*).
*nugator* (Casey), 1910, p. 63. RHODE ISLAND (Boston Neck). (*Hilara*).
*pennsylvanica* (Bernhauer), 1907, p. 388. PENNSYLVANIA. (*Hilara*).
*polita* (Melsheimer), 1844, p. 31. PENNSYLVANIA.
*pseudoatomaria* (Bernhauer), 1909, p. 518. MAINE.
*unigena* (Casey), 1910, p. 62. NEW YORK (Catskill Mts.). (*Hilara*).
*validiceps* (Casey), 1910, p. 62. RHODE ISLAND (Boston Neck). (*Hilara*).
*vestigialis* (Erichson), 1839, p. 112. PENNSYLVANIA.

*alamedana* (Casey), 1910, p. 59. CALIFORNIA (Alameda Co.).
*ficta* (Casey), 1910, p. 59. CALIFORNIA (San Mateo).
*fulgida* (Bernhauer), 1907, p. 399. CALIFORNIA (Pasadena).
*holmbergi* (Bernhauer), 1907, p. 389. ALASKA (Sitka).
*luctifera* (Bernhauer), 1906, p. 341. CALIFORNIA (Pasadena).
*impressicollis* (Bernhauer), 1907, p. 389. WASHINGTON (Baring).
*nova* (Fenyes), 1920, p. 187.
*perversa* (Casey), 1910, p. 61. CALIFORNIA (Gualala, Mendocino Co.).
*pratensis* (Maeklin), 1852, p. 308. ALASKA (Sitka).
*prosperans* (Casey), 1910, p. 60. CALIFORNIA (Hydesville, Humboldt Co.).
*repens* (Casey), 1910, p. 60. CALIFORNIA (Truckee).
*saturata* (Casey), 1910, p. 59. CALIFORNIA (Lake Tahoe).

*Noverota* Casey (1910, p. 90)
*clemens* Casey, 1910, p. 92. WISCONSIN (Bayfield).
*decora* Casey, 1910, p. 91. MISSISSIPPI (Vicksburg).
*finitima* Casey, 1910, p. 93. RHODE ISLAND (Boston Neck).
*improvisa* Casey, 1910, p. 91. TEXAS (Del Rio).
*ornatella* Casey, 1910, p. 90. NEW JERSEY.
*personata* Casey, 1910, p. 92. VIRGINIA (Norfolk).
*scenica* Casey, 1910, p. 93. NEW YORK (New York).

*Omegalia* Casey (1910, p. 94)
*abjecta* Casey, 1910, p. 94. CALIFORNIA (Truckee).
*vieta* Casey, 1910, p. 94. CALIFORNIA (Placer Co.).

*Panalota* Casey (1910, p. 71)
*maritima* (Mannerheim), 1843, p. 224. ALASKA (Sitka).
*setositarsis* (Casey), 1910, p. 71. CALIFORNIA (San Francisco).

*Paradilacra* Bernhauer (1909, p. 517; Casey, 1910, p. 72; 1911, p. 127)
*ambigua* (Erichson), 1839, p. 134. NORTH AMERICA.
*densissima* (Bernhauer), 1909, p. 517. CALIFORNIA (S. Anselmo).
*deserticola* Casey, 1911, p. 131. NEVADA (Elko).
*erebea* Casey, 1911, p. 128. CALIFORNIA (Napa Junction).
*glenorica* Casey, 1910, p. 74. BRITISH COLUMBIA (Glenora).
*memnonia* Casey, 1911, p. 130. CALIFORNIA (Cloverdale, near Santa Rosa).
*persola* Casey, 1910, p. 72. CALIFORNIA (Monterey).
*sinistra* Casey, 1911, p. 129. CALIFORNIA (San Jose).
*subaequa* Casey, 1911, p. 128. CALIFORNIA (Santa Rosa).
*symbolica* Casey, 1911, p. 127. CALIFORNIA (Napa Junction).

*uintana* Casey, 1910, p. 73. UTAH (Milford).
*vulgatula* Casey, 1911, p. 130. CALIFORNIA (Jountville, Napa Co.).
*willametta* Casey, 1910, p. 73. OREGON (Portland).

*Phasmota* Casey (1910, p. 54)
*ingratula* Casey, 1910, p. 54. MISSISSIPPI (Vicksburg).

*Philhygra* Mulsant and Rey (1873a, p. 160)
*Metaxya* (Mulsant and Rey) Casey, 1910, 1911; Bernhauer, 1907, 1909.
*Hygroecia* (Mulsant and Rey) Brundin, 1944.
*Amphibitherion* Notman, 1921, p. 155.
*albanica* (Casey), 1911, p. 131. NEW YORK (Catskill Mts.).
*angusticauda* (Bernhauer), 1909, p. 516. NEW HAMPSHIRE (Mt. Washington).
*angusticornis* (Bernhauer), 1907, p. 384. NEW HAMPSHIRE (Mt. Washington).
*approximata* (Bernhauer), 1909, p. 516. MASSACHUSETTS (Framingham).
*awemeana* (Casey), 1911, p. 132. MANITOBA (Aweme).
*bellula* (Casey), 1910, p. 77. RHODE ISLAND (Boston Neck).
*criddlei* (Casey), 1911, p. 137. MANITOBA (Aweme).
*demissum* Notman, 1921, p. 155. NEW YORK (Westfield).
*dichroa* (Gravenhorst), 1802, p. 186. NORTH AMERICA.
*discrepans* (Casey), 1910, p. 77. IOWA (Keokuk).
*elusa* Casey, 1910, p. 78. IOWA (Cedar Rapids).
*erudita* (Casey), 1911, p. 135. MANITOBA (Aweme).
*impotens* (Casey), 1910, p. 81. RHODE ISLAND.
*indentata* (Say), 1834, p. 469. PENNSYLVANIA.
*obscuricornis* (Notman), 1919, p. 134. NEW YORK (Mooers, Clinton Co.).
*proterminalis* (Bernhauer), 1907, p. 383. PENNSYLVANIA (Jeannette).
*plutonica* (Casey), 1910, p. 82. NEW HAMPSHIRE (Mt. Washington).
*surrufa* (Casey), 1911, p. 135. MANITOBA (Aweme).
*varula* (Casey), 1911, p. 136. MANITOBA (Aweme).

*adjuncta* (Casey), 1910, p. 80. CALIFORNIA (Lake Tahoe).
*badeola* (Casey), 1911, p. 133. CALIFORNIA (San Mateo Co.).
*bracata* (Casey), 1910, p. 79. NEVADA (Reno).
*californica* (Bernhauer), 1907, p. 385. CALIFORNIA (Del Monte).
*centropunctata* (Bernhauer), 1909, p. 515. CALIFORNIA (Pasadena).
*comparabilis* (Maeklin), 1853, p. 181. ALASKA (Insula Kadjak).
*deceptor* (Casey), 1910, p. 79. NEW MEXICO (Gallup).
*delectans* (Casey), 1910, p. 82. OREGON (Lane Co.).
*discreta* (Casey), 1910, p. 79. NEVADA (Reno).
*famula* (Casey), 1910, p. 81. CALIFORNIA (Lake Tahoe).
*fatua* (Casey), 1910, p. 80. CALIFORNIA (Truckee).
*invenusta* (Casey), 1910, p. 78. UTAH (southwestern).
*laevicollis* (Maeklin), 1852, p. 306. ALASKA (Sitka).
*mateana* (Casey), 1911, p. 134. CALIFORNIA (San Mateo Co.).
*prognata* (Casey), 1911, p. 133. BRITISH COLUMBIA (Metlakatla).
*satanas* (Bernhauer), 1907, p. 383. ALBERTA (Banff).
*subpolaris* (Fenyes), 1909b, p. 423. ARIZONA (Flagstaff).
*suffusca* (Casey), 1910, p. 83. CALIFORNIA (Gualala, Mendocino Co.).

*Stethusa* Casey (1910, p. 4)
*Hypatheta* Fenyes (1918, p. 23)

*canonica* Casey, 1910, p. 6. RHODE ISLAND (Boston Neck).
*cernens* Casey, 1911, p. 79. MISSISSIPPI (Pass Christian).
*clarescans* Casey, 1911, p. 77. NEW YORK (Catskill Mts.).
*crenuliventris* (Bernhauer), 1907, p. 393. MAINE (East Machias).
*cynica* Casey, 1911, p. 78. RHODE ISLAND (Boston Neck).
*galvestonica* Casey, 1910, p. 6. TEXAS (Galveston).
*irvingi* Casey, 1910, p. 5. NEW YORK (Catskill Mts.).
*affluens* Casey, 1910, p. 5; 1911, p. 251.
*klimschi* (Bernhauer), 1909, p. 523. LOUISIANA (Opelousas).
*officiosa* Casey, 1911, p. 79. NEW YORK (Catskill Mts.).
*sagax* Casey, 1910, p. 7. VIRGINIA (Norfolk).
*sororella* Casey, 1910, p. 7. NEW YORK (Catskill Mts.).
*tuta* Casey, 1911, p. 80. NEW YORK (Ithaca).
*videns* Casey, 1911, p. 78. RHODE ISLAND (Boston Neck).
(*mendosa* Casey, *spuriella* Casey, *subdebilis* Casey, and *texana* Casey transferred to *Xenota*).

*Valenusa* Casey [1906, p. 342; 1910, p. 83 (subgenus of *Metaxya*)]
*parallela* Casey, 1906, p. 342. CALIFORNIA (Pomona).

*Xenota* Mulsant and Rey (1874, p. 429)
*Adota* Casey (1910, p. 67; subgenus of *Atheta*)
*Atheta* (Thomson), *sensu stricto* Casey, 1910, 1911; Fenyes, 1918, 1920, 1921; Bernhauer and Scheerpeltz, 1926.
*Ceritaxa* (Mulsant and Rey) Bernhauer, 1909.
*Delphota* Casey (1910, p. 17; subgenus of *Atheta*).
*Donesia* Casey (1910, p. 48; subgenus of *Atheta*).
*Halobrecthina* Bernhauer (1909, p. 519; subgenus of *Atheta*).
*Mycota* Mulsant and Rey (1874, p. 534).
*Nemota* Casey (1910, p. 56; subgenus of *Atheta*).
*Philhygra* (Mulsant and Rey) Casey, 1910, p. 65.
*Rovalida* Casey (1910, p. 69; 1911, p. 252—synonym of *Halobrecthina*).
*Tetropla* Mulsant and Rey (1874, p. 524).
*Traumoecia* (Mulsant and Rey) Casey, 1910, p. 46; 1911, p. 118.

Species inquirenda
*falsifica* (Say), 1839, p. 155. INDIANA.
*minima* (Say), 1839, p. 156. INDIANA.
*quadripunctata* (Say), 1834, p. 470. MISSOURI, INDIANA.
*pallitarsis* (Kirby), 1837, p. 90. CANADA.
*pedicularis* (Melsheimer), 1844, p. 31. PENNSYLVANIA.

Eastern species
*amens* (Casey), 1911, p. 97. PENNSYLVANIA (Philadelphia).
*annexa* (Casey), 1910, p. 43. NORTH CAROLINA (Asheville).
*aspericauda* (Bernhauer), 1907, p. 400. FLORIDA (Enterprise).
*aspericola* (Casey), 1910, p. 47 (*Traumoecia*). NEW YORK (Catskill Mts.).
*astuta* (Casey), 1910, p. 65 (*Philhygra*). PENNSYLVANIA (Philadelphia).
*auguralis* (Casey), 1911, p. 104. NEW YORK (Catskill Mts.).
*bifaria* (Casey), 1911, p. 104. DISTRICT OF COLUMBIA.
*blatchleyi* (Bernhauer and Scheerpeltz), 1926, p. 630.

*caviceps* Blatchley, 1910, p. 354. INDIANA (Lake, Marshall, Marion Co.).
*bucolica* (Casey), 1910, p. 46. MISSISSIPPI (Vicksburg).
*burra* (Casey), 1911, p. 100. WISCONSIN (Bayfield).
*callens* (Casey), 1911, p. 87 (*Delphota*). DISTRICT OF COLUMBIA.
*candidula* (Casey), 1911, p. 94. NEW YORK (Catskill Mts.).
*capella* (Casey), 1910, p. 24. RHODE ISLAND (Boston Neck).
*catula* (Casey), 1911, p. 94. NEW YORK (Catskill Mts.).
*cephalina* (Casey), 1910, p. 18 (*Delphota*). IOWA.
*citata* (Casey), 1910, p. 41. NEW YORK (Catskill Mts.).
*comitata* (Casey), 1910, p. 24. RHODE ISLAND (Boston Neck).
*dama* (Casey), 1910, p. 27. NEW YORK (Catskill Mts.).
*delumbis* (Casey), 1911, p. 87 (*Delphota*). NEW JERSEY.
*diffisa* (Casey), 1911, p. 95. NEW YORK (Catskill Mts.).
*discipula* (Casey), 1910, p. 33. NEW YORK (Catskill Mts.).
*discreta* (Casey), 1910, p. 42. NEW YORK (Catskill Mts.).
*disjuncta* (Casey), 1910, p. 43. PENNSYLVANIA (Allegheny).
*ducens* (Casey), 1910, p. 25. NEW YORK (Catskill Mts.).
*elota* (Casey), 1910, p. 26. NEW YORK (Catskill Mts.).
*enitescens* (Casey), 1910, p. 20. NEW YORK (Ithaca).
*evecta* (Casey), 1910, p. 44. MISSISSIPPI (Vicksburg).
*fenisex* (Casey), 1911, p. 102. RHODE ISLAND (Boston Neck).
*franklini* (Casey), 1911, p. 89. PENNSYLVANIA (Buena Vista Springs, Franklin Co.).
*freta* (Casey), 1910, p. 44. NORTH DAKOTA (Bismarck).
*frosti* (Bernhauer), 1909, p. 520. MASSACHUSETTS (Framingham).
*frugalis* (Casey), 1910, p. 66 (*Philhygra*). NEW YORK (Catskill Mts.).
*fulgens* (Bernhauer), 1907, p. 392. WEST VIRGINIA (White Sulphur Springs).
*georgiae* (Bernhauer and Scheerpeltz), 1926, p. 643.
*orientia* (Bernhauer), 1909, p. 525. GEORGIA.
*gnoma* (Casey), 1910, p. 25. NEW YORK (Catskill Mts.).
*houstoni* (Casey), 1910, p. 67 (*Philhygra*). TEXAS (Galveston).
*insidiosa* (Casey), 1910, p. 26. NEW YORK (Catskill Mts.).
*iterans* (Casey), 1910, p. 20. NEW YORK (New York).
*ithacana* (Casey), 1910, p. 46 (*Traumoecia*). NEW YORK (Ithaca).
*jerseyiana* (Bernhauer and Scheerpeltz), 1926, p. 629.
*repanda* (Casey), 1910, p. 65. NEW JERSEY.
*kansana* (Casey), 1911, p. 92. KANSAS (Sedgwick Co.).
*klagesi* (Bernhauer), 1909, p. 524. PENNSYLVANIA (Jeannette).
*leviceps* (Casey), 1910, p. 66 (*Philhygra*). NEW YORK (Catskill Mts.).
*limulina* (Casey), 1911, p. 93. RHODE ISLAND (Boston Neck).
*logica* (Casey), 1911, p. 86 (*Delphota*). PENNSYLVANIA (Philadelphia).
*lymphatica* (Casey), 1911, p. 84 (*Delphota*). IOWA (Cedar Rapids).
*mendosa* (Casey), 1910, p. 8 (*Stethusa*). VIRGINIA (Fort Monroe).
*modiella* (Casey), 1911, p. 96. RHODE ISLAND (Boston Neck).
*monroei* (Casey), 1910, p. 71 (*Rovalida*). VIRGINIA (Fort Monroe).
*nacta* (Casey), 1911, p. 101. MISSOURI (St. Louis).
*nata* (Casey), 1911, p. 95. RHODE ISLAND (Boston Neck).
*nexa* (Casey), 1910, p. 29. PENNSYLVANIA (Philadelphia).
*nupera* (Casey), 1910, p. 40. NEW YORK (Willets Point, L.I.).
*nympha* (Casey), 1910, p. 42. NEW YORK (Catskill Mts.).

*obsequens* (Casey), 1911, p. 119 (*Traumoecia*). NEW YORK (Catskill Mts.).
*opaciceps* (Bernhauer), 1909, p. 519 (*Halobrecthina*). MASSACHUSETTS (Chatham).
*orbiceps* (Casey), 1910, p. 47 (*Traumoecia*). IOWA (Cedar Rapids).
*ordinata* (Casey), 1910, p. 28. NEW YORK (Catskill Mts.).
*palpator* (Casey), 1911, p. 99. OHIO (Cincinnati).
*perspicua* (Casey), 1911, p. 85. NEW JERSEY.
*piceicornis* (Casey), 1910, p. 70 (*Rovalida*). NEW JERSEY.
*pocahontas* (Casey), 1910, p. 19. VIRGINIA (Norfolk).
*promota* (Casey), 1910, p. 36. MISSISSIPPI (Vicksburg).
*propitia* (Casey), 1911, p. 99. NORTH CAROLINA (Asheville).
*punctata* (Blatchley), 1910, p. 355. INDIANA (Posey Co.).
*reformata* (Casey), 1911, p. 102. WISCONSIN (Bayfield).
*regenerans* (Casey), 1911, p. 85 (*Delphota*). IOWA (Cedar Rapids).
*replicans* (Casey), 1910, p. 44. IOWA (Cedar Rapids).
*restricta* (Casey), 1911, p. 120 (*Donesia*). VIRGINIA (Fort Monroe).
*rhodeana* (Casey), 1910, p. 24. RHODE ISLAND (Boston Neck).
*rusticula* (Casey), 1911, p. 93. NEW YORK (Catskill Mts.).
*sibylla* (Casey), 1910, p. 21. VIRGINIA (Fort Monroe).
*spadix* (Casey), 1910, p. 45. NEW YORK (New York).
*spuriella* (Casey), 1910, p. 7 (*Stethusa*). NEW YORK (Catskill Mts.).
*strigulosa* (Casey), 1910, p. 30. NEW YORK (Catskill Mts.).
*subdebilis* (Casey), 1910, p. 7 (*Stethusa*). MISSOURI (St. Louis).
*subdola* (Casey), 1910, p. 47 (*Traumoecia*). WISCONSIN (Bayfield).
*temperans* (Casey), 1910, p. 27. DISTRICT OF COLUMBIA.
*temporalis* (Casey), 1910, p. 48 (*Donesia*). RHODE ISLAND (Boston Neck).
*tenuicula* (Casey), 1911, p. 118 (*Traumoecia*). MANITOBA (Aweme).
*texana* (Casey), 1910, p. 6. TEXAS (Austin).
*tractabilis* (Casey), 1910, p. 27. NEW YORK (Catskill Mts.).
*tradita* (Casey), 1911, p. 101. NEW YORK (Catskill Mts.).
*tubericauda* (Bernhauer), 1909, p. 520. MASSACHUSETTS (Framingham).
*umbonalis* (Casey), 1910, p. 22. OHIO (Cincinnati).
*unigranosa* (Bernhauer), 1909, p. 521. DELAWARE (Newark).
  *duplicata* (Fenyes), 1920, p. 213.
*vacillans* (Casey), 1911, p. 98. RHODE ISLAND (Boston Neck).
*vaticina* (Casey), 1910, p. 19. NEW YORK (Willets Point, L.I.).
*ventricosa* (Bernhauer), 1907, p. 391. NEW JERSEY (Arington).
*vierecki* (Casey), 1911, p. 103. CONNECTICUT (Double Beach).
*villica* (Casey), 1911, p. 97. PENNSYLVANIA (Philadelphia).
*virginica* (Bernhauer), 1907, p. 393. WEST VIRGINIA (White Sulphur Springs).
*weedi* (Casey), 1910, p. 21. MISSISSIPPI (Agricultural College).

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*alaskana* (Casey), 1911, p. 113. ALASKA (Fort Wrangel).
*aperta* (Casey), 1910, p. 33. CALIFORNIA (Arcarta, Humboldt Co.).
*apposita* (Casey), 1911, p. 90. BRITISH COLUMBIA (Metlakatla).
*arizonica* (Casey), 1910, p. 22. ARIZONA (Tucson).
*audens* (Casey), 1911, p. 107. CALIFORNIA (Oakland).
*barbarae* (Casey), 1910, p. 18. CALIFORNIA (Santa Barbara).
*bidenticulata* (Bernhauer), 1907, p. 399. CALIFORNIA (Pasadena).

*blandita* (Casey), 1910, p. 32. CALIFORNIA (Stockton).
*brumalis* (Casey), 1910, p. 32. BRITISH COLUMBIA (Metlakatla).
*carlottae* (Casey), 1910, p. 32. BRITISH COLUMBIA (Massett).
*civica* (Casey), 1910, p. 29. CALIFORNIA (Monterey).
*claricella* (Casey), 1910, p. 31. CALIFORNIA (San Diego).
*concussa* (Casey), 1911, p. 116. WASHINGTON (Spokane).
*crenulata* (Bernhauer), 1907, p. 391. WASHINGTON (Baring).
*definita* (Casey), 1911, p. 123 (*Adota*). CALIFORNIA (Santa Rosa).
*districta* (Casey), 1911, p. 113. BRITISH COLUMBIA (Metlakatla).
*dunni* (Casey), 1910, p. 31. CALIFORNIA (southern).
*esmeraldae* (Casey), 1911, p. 116. NEVADA (Esmeralda Co.).
*fanatica* (Casey), 1910, p. 38. BRITISH COLUMBIA (Massett).
*filiola* (Casey), 1910, p. 57 (*Nemota*). CALIFORNIA (San Bernardino Mts.).
*fugitans* (Casey), 1911, p. 106. CALIFORNIA (San Mateo).
*gnypetoides* (Casey), 1910, p. 69 (*Adota*). CALIFORNIA (Redondo).
*hilaris* (Fenyes), 1909b, p. 420. NEW MEXICO (Porvenir).
*importuna* (Casey), 1911, p. 111. CALIFORNIA (San Francisco).
*innocens* (Casey), 1910, p. 39. OREGON (Lane Co.).
*insons* (Casey), 1911, p. 125 (*Adota*). CALIFORNIA (San Diego).
*informalis* (Casey), 1911, p. 121 (*Nemota*). CALIFORNIA (Siskiyou Mts.).
*intacta* (Casey), 1911, p. 110. CALIFORNIA (San Ancelito, Marin Co.).
*irrita* (Casey), 1911, p. 126. NEVADA (Esmeralda Co.).
*lepidula* (Casey), 1911, p. 108. CALIFORNIA (Oakland).
*littoralis* (Maeklin), 1853, p. 182. ALASKA (Insula Kadjak).
*loquax* (Casey), 1911, p. 117. CALIFORNIA (Gilroy Hot Springs, Santa Clara Co.).
*luscitiosa* (Casey), 1910, p. 39. CALIFORNIA (Lake Tahoe).
*marcescens* (Casey), 1911, p. 122 (*Nemota*). COLORADO (Boulder Co.).
*marinica* (Casey), 1910, p. 34. CALIFORNIA (Mill Valley, Marin Co.).
*massettensis* (Casey), 1910, p. 68. BRITISH COLUMBIA (Massett).
*meticulosa* (Casey), 1911, p. 121 (*Nemota*). CALIFORNIA (Paraiso Hot Springs, Monterey Co.).
*metlakatlana* (Bernhauer), 1909, p. 522. BRITISH COLUMBIA (Metlakatla).
*militaris* (Bernhauer), 1909, p. 519 (*Ceritaxa*). CALIFORNIA (Wawona).
*mollicula* (Casey), 1910, p. 37. BRITISH COLUMBIA (Metlakatla).
*morbosa* (Casey), 1911, p. 107. CALIFORNIA (Sausalito).
*mordax* (Casey), 1911, p. 115. BRITISH COLUMBIA (Stickine River).
*neutralis* (Casey), 1910, p. 38. CALIFORNIA (Santa Cruz Mts.).
*nevadensis* (Casey), 1910, p. 23. NEVADA (Reno).
*nitens* (Maeklin), 1852, p. 307. ALASKA (Sitka).
*novicia* (Casey), 1911, p. 105. CALIFORNIA (San Mateo).
*obsoleticollis* (Bernhauer), 1909, p. 522. COLORADO (Ouray).
*occidentalis* (Bernhauer), 1906, p. 338. CALIFORNIA (Pasadena).
*oscitans* (Casey), 1911, p. 88. CALIFORNIA (Siskiyou Co.).
*ostenta* (Casey), 1910, p. 35. ARIZONA (Tucson).
*paganella* (Casey), 1910, p. 56 (*Nemota*). CALIFORNIA (Siskiyou Co.).
*parallela* (Casey), 1906, p. 342. CALIFORNIA (Los Angeles Co.).
*pavidula* (Casey), 1911, p. 126 (*Adota*). CALIFORNIA (Booneville, Mendocino Co.).
*perpera* (Casey), 1910, p. 58 (*Nemota*). CALIFORNIA (Ojai).
*perspecta* (Casey), 1910, p. 58 (*Nemota*). CALIFORNIA.
*planaris* (Maeklin), 1852, p. 309. ALASKA (Sitka).

*postulans* (Casey), 1911, p. 90. BRITISH COLUMBIA (Metlakatla).
*prolata* (Casey), 1910, p. 37. CALIFORNIA (Claremont—mountains).
*pugnans* (Fenyes), 1920, p. 218.
*militaris* (Casey), 1911, p. 118 (*Traumoecia*). ALASKA (Fort Wrangel).
*querula* (Casey), 1910, p. 37. CALIFORNIA (Calaveras Co.).
*relicta* (Casey), 1911, p. 112. BRITISH COLUMBIA (Metlakatla).
*remulsa* (Casey), 1910, p. 20. BRITISH COLUMBIA (Glenora).
*repexa* (Casey), 1911, p. 109. CALIFORNIA (Claremont—mountains).
*reposita* (Casey), 1910, p. 35. UTAH (southwestern).
*resplendens* (Casey), 1910, p. 104. BRITISH COLUMBIA (Massett).
*rurigena* (Casey), 1911, p. 114. BRITISH COLUMBIA (Yale).
*scolopacina* (Casey), 1911, p. 124 (*Adota*). CALIFORNIA (Berkeley).
*scortea* (Casey), 1911, p. 124 (*Adota*). CALIFORNIA (Berkeley).
*socors* (Casey), 1911, p. 108. CALIFORNIA (San Diego).
*stoica* (Casey), 1911, p. 110. CALIFORNIA (San Francisco).
*subintima* (Casey), 1910, p. 68 (*Adota*). BRITISH COLUMBIA (Metlakatla).
*sublucens* (Bernhauer), 1909, p. 522. CALIFORNIA (Pasadena).
*subretracta* (Casey), 1911, p. 115. IDAHO (Coeur d'Alene).
*sumpta* (Casey), 1911, p. 92. BRITISH COLUMBIA (Metlakatla).
*timida* (Casey), 1910, p. 57 (*Nemota*). CALIFORNIA (Santa Cruz Mts.).
*truncativentris* (Bernhauer), 1907, p. 400. CALIFORNIA (Pasadena).
*vacunalis* (Casey), 1910, p. 102; **New combination.** (*Dimetrota*). CALIFORNIA.
*wrangelica* (Casey), 1910, p. 91. ALASKA (Fort Wrangel).

Subtribe Thamiaraeae

*Earota* Mulsant and Rey (1874, p. 154)
*Macroterma* Casey (1906, p. 335; 1910, p. 9).
*alutacea* (Casey), 1906, p. 335 (*Macroterma*). NEW YORK (Ithaca).
*borealis* (Casey), 1906, p. 335 (*Macroterma*). NEW HAMPSHIRE (White Mts.).
*dentata* (Bernhauer), 1906, p. 342 (*Atheta*). CALIFORNIA (Wawona).
*iowensis* (Casey), 1910, p. 10 (*Macroterma*). IOWA (Iowa City).
*sulcata* (Blatchley), 1910, p. 355 (*Atheta*). INDIANA (Posey Co.).

*Thamiaraea* Thomson (1858, p. 35)
*americana* Bernhauer, 1907, p. 401. LOUISIANA (Opelousas).

Miscellaneous genera

*Doliponta* Blackwelder (1952, p. 132)
*Lipodonta* Fenyes (1921a, p. 24).
*veris* (Fenyes), 1921, p. 24. CALIFORNIA (Pasadena).

*Goniusa* Casey (1906, p. 348)
*obtusa* (LeConte), 1866, p. 373 (*Euryusa*). PENNSYLVANIA.

*Lypoglossa* Fenyes (1918, p. 23)
*fenyesi* (Bernhauer), 1907, p. 402 (*Dasyglossa*). BRITISH COLUMBIA (Emerald Lake).

*Parameotica* Ganglbauer (1895, p. 228)
*americana* (Bernhauer), 1907, p. 386.
*sexualis* (Bernhauer), 1906, p. 339 (*Atheta*). CALIFORNIA (Pasadena).
*delicata* (Bernhauer), 1906, p. 340 (*Atheta*). CALIFORNIA (Pasadena).

*Pontomalota* Casey (1885, p. 296)

*bakeri* Bernhauer (1912, p. 170). CALIFORNIA (Laguna Beach).
*californica* Casey, 1885, p. 298. CALIFORNIA (San Francisco).
*luctuosa* Casey, 1911, p. 164. BRITISH COLUMBIA (Massett).
*nigriceps* Casey, 1885, p. 299. CALIFORNIA (Santa Cruz).
*opaca* (LeConte), 1863, p. 28; Casey, 1885, p. 297. CALIFORNIA (San Diego).

*Strophogastra* Fenyes (1921a, p. 20)

*penicillata* Fenyes, 1921a, p. 20. MANITOBA (Stonewall).

*Tarphiota* Casey (1893, p. 332)

*debilicollis* Casey, 1910, p. 75. BRITISH COLUMBIA (Victoria).
*fucicola* (Maeklin), 1852, p. 306 (*Tachyusa*). ALASKA (Sitka).
*geniculata* (Maeklin), 1852, p. 308 (*Homalota*). ALASKA (Edgecombe Island).
*hirsutula* Casey, 1910, p. 75. CALIFORNIA (Santa Monica).
*insolita* Casey, 1910, p. 76. BRITISH COLUMBIA (Queen Charlotte Islands).
*iota* Casey, 1910, p. 76. CALIFORNIA (San Francisco).
*litorina* Casey, 1910, p. 75. CALIFORNIA (San Francisco).
*pallidipes* Casey, 1893, p. 333. CALIFORNIA (San Francisco—San Diego).
*seditiosa* Casey, 1910, p. 76. BRITISH COLUMBIA (Queen Charlotte Islands).

*Trichiusa* Casey, (1893, p. 339)

Eastern species

*atra* Casey, 1906, p. 329. KANSAS (McPherson).
*compacta* Casey, 1893, p. 341. DISTRICT OF COLUMBIA.
*convergens* Casey, 1906, p. 328. TEXAS (Galveston).
*hirsuta* Casey, 1906, p. 329. VIRGINIA (Fort Monroe).
*parviceps* Casey, 1906, p. 327. OHIO (Cincinnati).
*parvicollis* Casey, 1893, p. 344. DELAWARE.
*pilosa* Casey, 1893, p. 343. RHODE ISLAND (Boston Neck).
*polita* Casey, 1906, p. 326. DISTRICT OF COLUMBIA.
*postica* Casey, 1906, p. 330. ONTARIO (Ottawa).
*rigida* Casey, 1906, p. 331. MISSISSIPPI (Vicksburg).
*robustula* Casey, 1893, p. 343. IOWA (Cedar Rapids).
*setigera* Casey, 1893, p. 342. NEW JERSEY.
*transversa* Casey, 1906, p. 327. OHIO (Cincinnati).
*ursina* Notman, 1920. p. 725. FLORIDA (Punta Gorda).
*varicolor* Casey, 1906, p. 331. VIRGINIA (Fort Monroe).
*virginica* Casey, 1906, p. 330. VIRGINIA (Fort Monroe).

Western species

*columbica* Casey, 1911, p. 76. BRITISH COLUMBIA (Metlakatla).
*discreta* Casey, 1906, p. 331. IDAHO (Coeur d'Alene).
*monticola* Casey, 1906, p. 328. IDAHO (Coeur d'Alene).

Tribe Aleocharini

*Aidochara* Casey (1906, p. 145)

*planiventris* Casey, 1906, p. 145. CALIFORNIA (San Francisco).

*Aleochara* Gravenhorst (1802, p. 67)

*algonquina* Casey, 1906, p. 139. OHIO (Cincinnati).
*americana* Casey, 1906, p. 142. MASSACHUSETTS.

*collusor* Casey, 1906, p. 143. RHODE ISLAND (Boston Neck).
*ellipsicollis* Casey, 1906, p. 141. KANSAS (Douglas Co.).
*fusicornis* Casey, 1906, p. 138. NORTHEASTERN STATES.
*kansana* Casey, 1906, p. 141. KANSAS (Douglas Co.).
*lata* Gravenhorst, 1802, p. 186. EUROPE. North America.
*lustrica* Say, 1834, p. 468; Casey, 1906, p. 138. New York-Louisiana.
*medialis* Casey, 1906, p. 139. NEW YORK (Catskill Mts.).
*pleuralis* Casey, 1906, p. 141. NEW YORK (New York).
*sternalis* Casey, 1906, p. 138. NEW YORK (Catskill Mts.).
*texana* Casey, 1906, p. 137. TEXAS.
*thoracica* Casey, 1893, p. 286; 1906, p. 143. CANADA (Grimsby).

*montanica* Casey, 1906, p. 142. MONTANA (Kalispell).
*postpicta* Casey, 1906, p. 142. COLORADO (Buena Vista).
*tahoensis* Casey, 1906, p. 140. CALIFORNIA (Lake Tahoe).

*Baryodma* Thomson (1858, p. 31; Casey, 1906, species groups V, VI)
*Coprochara* Mulsant and Rey (1874, p. 430).
*bimaculata* (Gravenhorst), 1802, p. 187; Casey, 1906, p. 159. NORTH AMERICA.
*nanella* Casey, 1906, p. 160. TEXAS (Brownsville).
*nitidicollis* Casey, 1906, p. 159. TEXAS (Austin).
*ontarionis* Casey, 1916, p. 71. ONTARIO (Ottawa).
*pumilio* Casey, 1911, p. 6. IOWA (Cedar Rapids).
*verna* Say, 1839, p. 156; Casey, 1906, p. 161. NORTH AMERICA.
*anthomyiae* Sprague, 1870, p. 370.

*acuminata* Casey, 1906, p. 162. COLORADO (Leadville).
*densissima* (Bernhauer), 1906, p. 345. CALIFORNIA (Palm Springs).
*deserticola* Casey, 1906, p. 160. ARIZONA (Benson).
*humboldti* Casey, 1910, p. 108.
*densiventris* Casey, 1906, p. 158. NEW MEXICO (Las Vegas).
*innocua* Casey, 1906, p. 160. CALIFORNIA (Newhall).
*minuta* Casey, 1906, p. 161. CALIFORNIA (Pomona Mts.).
*obsolescens* Casey, 1906, p. 158. CALIFORNIA (Monterey Co.).
*recta* Casey, 1906, p. 159; Hatch, 1957, p. 140. NEW MEXICO (Las Vegas).
*suffusa* Casey, 1906, p. 161. COLORADO (Breckenridge).
*tolerata* Casey, 1911, p. 6. CALIFORNIA (Dunsmuir).

*Calochara* Casey (1906, p. 149)
*rubripennis* Casey, 1906, p. 150. CALIFORNIA (Lake Co.).

*Echochara* Casey, (1906, p. 176)
*lucifuga* (Casey), 1893, p. 288; 1906, p. 177. KENTUCKY (Lexington).
*cavicola* Garman, 1894, p. 81.

*Emplenota* Casey (1884, p. 17)
*maritima* Casey, 1884, p. 17; 1906, p. 174. NEW JERSEY (Atlantic City).

*arenaria* Casey, 1893, p. 289; 1906, p. 174, Hatch, 1957, p. 140. CALIFORNIA (San Francisco).
*longiceps* Casey, 1911, p. 9. BRITISH COLUMBIA (Metlakatla).
*pacifica* Casey, 1893, p. 290; 1906, p. 174. CALIFORNIA (Santa Barbara).
*quadrifer* Casey, 1906, p. 175. CALIFORNIA (Redondo).

*trilimbata* Casey, 1906, p. 175. CALIFORNIA (Alameda).

*Funda* Blackwelder, (1952, p. 166)

*Eucharina* Casey (1906, p. 165).
*cylindrella* (Casey), 1906, p. 167. CALIFORNIA (San Diego).
*debilicornis* (Casey), 1906, p. 166. CALIFORNIA (San Diego).
*rugosa* (Casey), 1906, p. 166. BRITISH COLUMBIA (Massett).
*sulcicollis* (Mannerheim), 1843, p. 225; Casey, 1906, p. 166; Hatch, 1957, p. 140. ALASKA (Sitka).
*tibialis* (Casey), 1906, p. 165. CALIFORNIA (Monterey Bay).

?*semicarinata* (Say), 1834, p. 470. MISSOURI. (Doubtfully congeneric).

*Isochara* Bernhauer (1901, p. 440)

*Baryodma* (Thomson) Casey, 1906 (species groups II, III, IV).
*idonea* (Casey), 1906, p. 157. NEW JERSEY.
*perturbans* (Fenyes), 1921a, p. 32. MANITOBA (Treesbank).
*sculptiventris* (Casey), 1893, p. 285. NEW YORK (Catskill Mts.).

*affluens* (Casey), 1906, p. 156. BRITISH COLUMBIA (Kamloops).
*densiventris* (Bernhauer), 1906, p. 346. CALIFORNIA (Pasadena).
*imbricata* (Casey), 1906, p. 157. CALIFORNIA (San Francisco).
*salicola* (Casey), 1906, p. 157. CALIFORNIA (Salton Desert).
*wallawallae* Hatch, 1957, p. 139. WASHINGTON (Walla Walla).

*Maseochara* Sharp (1883, p. 154; Casey, 1906, p. 168)

*basalis* Casey, 1906, p. 171. CALIFORNIA (Arrowhead).
*californica* (Casey), 1885, p. 309. CALIFORNIA (San Diego).
*decipiens* Casey, 1906, p. 168. ARIZONA (Benson).
*musta* Casey, 1911, p. 7. ARIZONA (Benson).
*ponderosa* Casey, 1906, p. 170. ARIZONA.
*puberula* Casey, 1893, p. 284. ARIZONA (Benson).
*ruficauda* Casey, 1906, p. 170. ARIZONA (Benson).
*semivelutina* (Solsky), 1868, p. 120. MEXICO. Arizona (?).
*valida* (LeConte), 1858, p. 16; Casey, 1906, p. 169. CALIFORNIA (southern).

*Oreochara* Casey (1906, p. 148)

*laramiensis* Casey, 1906, p. 148. WYOMING (Laramie).

*Pinalochara* Casey (1906, p. 177)

*wickhami* Casey, 1906, p. 178. ARIZONA (Santa Rita Mts.).

*Polychara* Mulsant and Rey (1874, p. 348)

*Baryodma* (Thomson) Casey (species group I).
*defecta* (Casey), 1906, p. 155. NEW YORK (Catskill Mts.).
*gracilicornis* (Bernhauer), 1901a, p. 372. MASSACHUSETTS.
*speculicollis* (Bernhauer), 1901a, p. 371. TEXAS.

*acoma* (Casey), 1906, p. 154. NEW MEXICO (Santa Fe).
*castaneipennis* (Mannerheim), 1843, p. 224; Casey, 1906, p. 151; Hatch, 1957, p. 137. ALASKA (Sitka).
*concurrens* (Casey), 1911, p. 5. BRITISH COLUMBIA (Metlakatla).
*eludens* (Casey), 1911, p. 5. CALIFORNIA (Marin Co.).

*glenorana* (Casey), 1906, p. 152. BRITISH COLUMBIA (Glenora).
*insulana* (Casey), 1906, p. 154. BRITISH COLUMBIA (Massett).
*mannerheimi* (Casey), 1906, p. 154. BRITISH COLUMBIA (Kamloops).
*oregona* (Hatch), 1957, p. 138. OREGON (Benton Co.).
*robustula* (Casey), 1906, p. 152. CALIFORNIA (Pomona).
*soror* (Bernhauer), 1906, p. 347. CALIFORNIA (Pasadena).
*sparsicollis* (Bernhauer), 1906, p. 347. CALIFORNIA (Monterey).
*uvidula* (Casey), 1906, p. 153. CALIFORNIA (San Francisco).

*Rheobioma* Casey (1906, p. 180)
*disjuncta* Casey, 1906, p. 180. CALIFORNIA (Tehachapi Pass).
*marcida* Casey, 1911, p. 8. CALIFORNIA (Tahoe).
*terrena* Casey, 1911, p. 7. CALIFORNIA (Mokelumne River).

*Rheochara* Mulsant and Rey (1874, p. 294; Casey, 1906, p. 178)
*rotundicollis* Casey, 1906, p. 153. BRITISH COLUMBIA (Queen Charlotte Islands).
*rubricalis* Casey, 1911, p. 4. BRITISH COLUMBIA (Metlakatla).

*nebulosa* Casey, 1906, p. 179. PENNSYLVANIA (Westmoreland Co.).
*rubripes* (Blatchley), 1910, p. 365. INDIANA (Posey Co.).

*Rheocharella* Casey (1906, p. 181)
*fenyesi* (Bernhauer), 1905, p. 255. CALIFORNIA (Pasadena).

*Xenochara* Mulsant and Rey (1874, p. 344)
*bipartita* (Casey), 1893, p. 287; 1906, p. 146. TEXAS (Galveston).

Tribe Hoplandriini

*Genosema* Notman (1920a, p. 720)
*pulchra* (Kraatz), 1857, p. 5 (*Hoplandria*). LOUISIANA.
*sexualis* Notman, 1920a, p. 720. FLORIDA (Monticello).

*Hoplandria* Kraatz (1857, p. 4)
*arizonica* Casey, 1910, p. 175. ARIZONA (Tucson).
*brittoni* Casey, 1911, p. 161. CONNECTICUT (Westville).
*carinata* Casey, 1910, p. 175. IOWA (Iowa City).
*laeviventris* Casey, 1910 (Sept. 24), p. 176. PENNSYLVANIA (Westmoreland).
*acudentata* Dury, 1910 (Oct. 1), p. 65. OHIO (Cincinnati).
*lateralis* (Melsheimer), 1844, p. 32. PENNSYLVANIA.
*ochracea* Kraatz, 1857, p. 6. GEORGIA.
*texana* Casey, 1910, p. 174. TEXAS (Brownsville).

*Lophomucter* Notman (1920a, p. 722)
*laevicollis* Notman, 1920a, p. 722. FLORIDA (Fort Myers).

*Nosora* Casey (1911, p. 145)
*meticola* Casey, 1911, p. 146. ARIZONA (Nogales).

*Platandria* Casey (1893, p. 345)
*carolinae* Casey, 1910, p. 172. NORTH CAROLINA (Asheville).
*deductor* Casey, 1910, p. 173. KANSAS (McPherson).
*truncula* Casey, 1910, p. 172. NEBRASKA (Lincoln).

*columbica* Casey, 1910, p. 173. OREGON (Portland).

*knausi* Casey, 1910, p. 171. NEW MEXICO (Cloudcroft).
*mormonica* Casey, 1893, p. 346. UTAH (Provo).

*Tetrallus* Bernhauer (1905, p. 252)
*bernhaueri* Casey, 1911, p. 163. CALIFORNIA (Pasadena).
*bicolor* Bernhauer, 1906, p. 343. CALIFORNIA (Cole).
*densepunctatus* Bernhauer, 1905, p. 254. CALIFORNIA (Mill Valley, Marin Co.).
*fenyesi* Bernhauer, 1905, p. 253. CALIFORNIA (Sierra Madre).
*trinitatis* Casey, 1911, p. 162. CALIFORNIA (Hoopa Valley).

*Tinotus* Sharp (1883, p. 170; Casey, 1911, p. 64)
*amplus* Notman, 1920a, p. 723. FLORIDA (Enterprise).
*brunneus* Casey, 1911, p. 65. PENNSYLVANIA (Philadelphia).
*brunnipes* Notman, 1920a, p. 724. FLORIDA.
*coelebs* Casey, 1911, p. 68. TEXAS (Austin).
*densiventris* Casey, 1911, p. 70. TEXAS (Waco).
*fusinus* Casey, 1911, p. 68. TENNESSEE (Nashville).
*imbricatus* Casey, 1893, p. 317. NEW YORK (Catskill Mts.).
*lateralis* Notman, 1921, p. 154. NEW YORK (Chautauqua Co.).
*pallidus* Casey, 1911, p. 65. IOWA (Cedar Rapids).
*parvicornis* Casey, 1911, p. 69. TEXAS (Austin).
*planulus* Notman, 1920a, p. 724. FLORIDA (Gainesville).
*texanus* Casey, 1911, p. 67. TEXAS (Galveston).

*binarius* Casey, 1911, p. 66. ARIZONA (Tucson).
*caviceps* Casey, 1893, p. 316. NEVADA (Reno).
*paratus* Casey, 1911, p. 64. MONTANA (Kalispell).
*pectinellus* Casey, p. 69. ARIZONA (Tucson).
*trisectus* Casey, 1906, p. 320. IDAHO (Coeur d'Alene).

Tribe FALAGRIINI

*Aleodorus* Say (1830, p. 60)
*Chitalia* Sharp, 1883, p. 235; Casey, 1906, p. 232.
*bilobatus* (Say), 1839, p. 156. MISSOURI, INDIANA.
*canadensis* (Casey), 1906, p. 235. ONTARIO (Ottawa).
*floridanus* (Casey), 1906, p. 237. FLORIDA (southwest coast).
*granulosus* (Casey), 1906, p. 234. MISSISSIPPI (Vicksburg).
*illustris* (Casey), 1906, p. 235. MISSISSIPPI (Vicksburg).
*intricatus* (Casey), 1906, p. 233. NEW MEXICO (Gallup).
*nigrescens* (Casey), 1906, p. 236. IOWA (Iowa City).
*novellus* (Casey), 1911, p. 176. TEXAS (Austin).
*partitus* (LeConte), 1866, p. 371 (*Falagria*). FLORIDA.
*scutellaris* (LeConte), 1866, p. 370. (*Falagria*). NEW YORK (Coney Island).
*turbatus* (Casey), 1911, p. 176. NEW JERSEY (Elizabeth).

*Anaulacaspis* Ganglbauer (1895, p. 256)
*Leptagria* Casey, 1906, p. 249.
*hudsonica* (Casey), 1906, p. 251. NEW YORK (Catskill Mts.).
*perexilis* (Casey), 1906, p. 250. TEXAS (Brownsville).

*Borboropora* Kraatz (1862, p. 405)

*Aneurota* Casey, 1893, p. 347.

*Orthagria* Casey, 1906, p. 260.

*quadriceps* (LeConte), 1866, p. 371 (*Falagria*); Casey, 1906, p. 259 (*Orthagria*).

*grandis* Bernhauer, 1905b, p. 21.

*sulcifrons* (Casey), 1893, p. 348 (*Aneurota*). FLORIDA.

*Cordalia* Jacobs (1925, p. 82)

*Cardiola* Mulsant and Rey, 1874, p. 38; Casey, 1906, p. 231.

*obscura* (Gravenhorst), 1802, p. 74. EUROPE. Eastern North America.

*Falagria* Leach (1819, p. 177)

*dissecta* Erichson, 1839, p. 49. PENNSYLVANIA.

*erythroptera* Melsheimer, 1844, p. 30. PENNSYLVANIA.

*globosa* Melsheimer, 1844, p. 30. PENNSYLVANIA.

*iowana* Casey, 1906, p. 247. IOWA (Cedar Rapids).

*ithacana* Casey, 1906, p. 247. NEW YORK (Ithaca).

*longicornis* Sachse, 1852, p. 116. GEORGIA.

*texana* Casey, 1906, p. 248. TEXAS (Austin).

*angulata* Casey, 1906, p. 248. UTAH (St. George).

*sterilis* Casey, 1911, p. 178. UTAH (Southwestern).

*subsimilis* Casey, 1906, p. 247. COLORADO (Cañon City).

*Falagriota* Casey (1906, p. 255)

*asperula* Casey, 1906, p. 257. CALIFORNIA (Pomona Mts.).

*collaris* Casey, 1906, p. 258. CALIFORNIA (Hoopa Valley, Humboldt Co.).

*evanescens* Casey, 1906, p. 257. CALIFORNIA (Sonoma Co.).

*occidua* (Casey), 1885, p. 285 (*Falagria*); 1906, p. 256. CALIFORNIA (Santa Clara Co.).

*lucida* Casey, 1906, p. 256 (with *occidua* in Casey coll.).

*parvipennis* Casey, 1906, p. 258. CALIFORNIA (San Bernardino Mts.).

*picina* Casey, 1906, p. 257. CALIFORNIA (Los Angeles Co.).

*Lissagria* Casey (1906, p. 252)

*impressifrons* Casey, 1906, p. 254. CALIFORNIA (Santa Cruz Mts.).

*fissilis* Casey, 1906, p. 253. CALIFORNIA (Giant Forest, Tulare Co.).

*laeviuscula* (LeConte), 1866, p. 371; Casey, 1906, p. 253. CALIFORNIA (south of San Francisco).

*longicollis* Casey, 1906, p. 254. CALIFORNIA (Lake Co.).

*minuscula* Casey, 1906, p. 254. CALIFORNIA (Los Angeles Co.).

*robusta* Casey, 1906, p. 254. CALIFORNIA (Santa Cruz Co.).

*Myrmecopora* Saulcy (1864, p. 429)

*vaga* (LeConte), 1866, p. 371; Casey, 1906, p. 259. LAKE SUPERIOR region.

*Omoschema* Notman (1920a, p. 731)

*laticeps* Notman, 1920a, p. 732. FLORIDA (Titusville).

*Stenagria* Sharp (1883, p. 237)

*Lorinota* Casey, 1906, p. 238.

*bilimbata* (Casey), 1906, p. 244. IOWA.

*cingulatus* (LeConte), 1866, p. 370; Casey, 1906, p. 242. PENNSYLVANIA.

*gracilis* (Casey), 1906, p. 243. NORTH CAROLINA (Tryon).

*parva* (Casey), 1906, p. 244. FLORIDA.
*sinuosa* (Casey), 1911, p. 178. WISCONSIN (Bayfield).
*tenuicornis* (Casey), 1906, p. 242. IOWA (Iowa City).

*acomana* (Casey), 1906, p. 242. NEW MEXICO (Cloudcroft).
*arizonica* (Casey), 1906, p. 241. ARIZONA.
*caviceps* (Casey), 1906, p. 240. NEW MEXICO (Las Vegas).
*fontinalis* (Casey), 1906, p. 241. COLORADO (Colorado Springs).
*pinalica* (Casey), 1906, p. 240. ARIZONA (Pinal Mts.).

Tribe SCEPTOBIINI

*Apteronina* Wasmann (1901, p. 146)
*schmitti* Wasmann, 1901, p. 147. COLORADO (Cotopaxi).

*Dinardilla* Wasmann (1901, p. 145)
*liometopi* Wasmann, 1901, p. 145. COLORADO (Cotopaxi).

*Sceptobius* Sharp (1883, p. 211)
sp. (probably *dispar* Sharp, 1883, p. 211). MEXICO. New Mexico.

*Symbiochara* Fenyes (1909a, p. 325)
*lativentris* Fenyes, 1909a, p. 326. CALIFORNIA (Nordhoff).

Tribe MYRMEDONIINI

*Apalonia* Casey (1906, p. 323)
*divisa* Casey, 1911, p. 75. KANSAS (Mt. Hope).
*seticornis* Casey, 1906, p. 323. FLORIDA.

*Drusilla* Leach (1819, p. 177)
*Astilbus* Dillwyn, 1829, p. 63.
*Myrmedonia* Erichson, 1837, p. 287.
*canaliculata* (Fabricius), 1787, p. 221. EUROPE. Eastern North America (introduced).
*cavicollis* (Casey), 1906, p. 322. ALASKA.

*Myrmoecia* Mulsant and Rey (1874, p. 130)
*Nototaphra* Casey, 1893, p. 327.
*lauta* (Casey), 1893, p. 327. NEW YORK.
*pictus* Wasmann, 1894, p. 206. MASSACHUSETTS.
*lugubris* (Casey), 1893, p. 328. COLORADO.

*Xenodusa* Wasmann (1894, p. 205)
*caseyi* Wasmann, 1897, p. 273. COLORADO (Pueblo).
*angusta* Fall, 1901, p. 219. CALIFORNIA (Pasadena).
*cava* (LeConte), 1863, p. 30.
*hirsuta* Wasmann, 1893, p. 102. MICHIGAN.
*lobata* Casey, 1911, p. 71. IOWA.
*major* Wasmann, 1899, p. 410. CONNECTICUT (Cromwell).
*montana* Casey, 1886, p. 202. CALIFORNIA (Truckee).
*probata* Casey, 1911, p. 71. PENNSYLVANIA (Westmoreland Co.).
*reflexa* (Walker), 1866, p. 317. BRITISH COLUMBIA (western).

*Xesturida* Casey (1906, p. 325)
*laevis* Casey, 1906, p. 325. MISSISSIPPI (Vicksburg).

*Zyras* Stephens (1835, p. 430)

*Platyusa* Casey, 1885, p. 305.
*angustulus* (Casey), 1893, p. 323 (*Myrmedonia*). FLORIDA.
*caliginosus* (Casey), 1893, p. 323 (*Myrmedonia*). NEW YORK (Catskill Mts.).
*criddlei* (Casey), 1911, p. 73. MANITOBA (Aweme).
*cremastrogastris* (Wasmann), 1894, p. 207 (*Myrmedonia*). OHIO.
*fauveli* (Sharp), 1883, p. 199 (*Myrmedonia*); Casey, 1893, p. 323.
*haworthi* (Stephens), 1832, p. 126. EUROPE. Northern North America.
*obliquus* (Casey), 1893, p. 325. NEW YORK. **New synonym.**
*loricatus* Casey, 1893, p. 324 (*Myrmedonia*). ONTARIO (Grimsby).
*planifer* (Casey), 1893, p. 326 (*Myrmedonia*). NORTH CAROLINA (Asheville).
*recisus* (Casey), 1911, p. 74 (*Myrmedonia*). PENNSYLVANIA.
*rudis* (LeConte), 1866, p. 372 (*Myrmedonia*). DISTRICT OF COLUMBIA.
*schmitti* (Hamilton), 1895, p. 346 (*Myrmedonia*). PENNSYLVANIA (St. Vincent).
*schwarzi* (Wasmann), 1894, p. 207 (*Myrmedonia*). DISTRICT OF COLUMBIA.
*carolinae* (Casey), 1911, p. 72. NORTH CAROLINA (Tryon).

*sonomae* (Casey), 1885, p. 305 (*Platyusa*). CALIFORNIA (Santa Rosa, Sonoma Co.).

## Species Associated with Army Ants (Dorylinae)

*Dinocoryna* Casey (1893, p. 319; Seevers, 1959, p. 71; 1965, p. 257)

*Ecitonusa* Wasmann, 1897a, p. 281; Seevers, 1959, p. 71.
*akrei* Seevers, 1965, p. 258. KANSAS (Riley Co.).
*arizonensis* Seevers, 1959, p. 73. ARIZONA (Wickenberg).
*bisinuata* Casey, 1893, p. 320. FLORIDA.
*foreli* (Wasmann), 1899, p. 410. NORTH CAROLINA (Faisons).
*carolinensis* Seevers, 1959, p. 75. NORTH CAROLINA (Southern Pines).
*schmitti* (Wasmann), 1897a, p. 282. NORTH CAROLINA (Gaston).
*tibialis* Seevers, 1959, p. 74. KANSAS (Lawrence).

*Ecitonidia* Wasmann (1900, p. 283)

*wheeleri* Wasmann, 1900, p. 284; Brues, 1904, p. 21; Seevers, 1959, p. 76, fig. 10; 1965, p. 264.

*Ecitoxenidia* Wasmann (1909, p. 179)

*alabamae* Seevers, 1959, p. 77. ALABAMA (Hurricane Creek).
*brevicornis* Seevers, 1959, p. 79. NORTH CAROLINA (Southern Pines).
*brevipes* (Brues), 1902, p. 185 (*Ecitoxenia*); Wasmann, 1909, p. 179; Seevers, 1959, p. 76, figs. 13,14.

*Microdonia* Casey (1893, p. 318)

*kansana* Seevers, 1959, p. 69, figs. 6,7. KANSAS (Lawrence).
*laticollis* (Brues), 1902a, p. 368 (*Ecitopora*); Seevers, 1959, p. 70. TEXAS (Austin).
*nitidiventris* (Brues), 1904a, p. 250 (*Ecitopora*); Seevers, 1965, p. 244. TEXAS (Austin). Arizona, Kansas.
*occipitalis* Casey, 1893, p. 319; Seevers, 1959, p. 68, fig. 3,4. TEXAS (Austin). Arizona.
*retrusa* Casey, 1911, p. 74; Seevers, 1959, p. 68. ARIZONA.
*tenella* (Wasmann), 1900, p. 284 (*Ecitopora*); Seevers, 1959, p. 68. TEXAS.

*Tetradonia* Wasmann (1894, p. 209)

*Chlorotusa* Casey, 1906, p. 324; Seevers, 1965, p. 249.

*megalops* (Casey), 1906, p. 325; Seevers, 1965, p. 250. TEXAS.

Tribe DORYLOMIMINI

*Beyeria* Fenyes (1910, p. 118)

*vespa* Fenyes, 1910, p. 119; Seevers, 1965, p. 214. ARIZONA (Rincon Mts.).

*Probeyeria* Seevers (1965, p. 213)

*pulex* (Sanderson), 1943, p. 137 (*Beyeria*); Seevers, 1965, p. 213. ARKANSAS (Fayetteville). Kansas. Arizona.

Tribe GYROPHAENINI

*(BOLITOCHARINI of authors)*

Subtribe Gyrophaenae

*Agaricochara* Kraatz (1856, p. 361)

*anomala* (Notman), 1920a, p. 718; Seevers, 1951, p. 741, fig. 121. FLORIDA (Monticello, Jefferson Co.). Indiana.

*apacheana* (Seevers), 1951, p. 743, fig. 122. NEW MEXICO (Cloudcroft).

(?) *geniculata* (Maeklin), 1853, p. 184; Seevers, 1951, p. 745. ALASKA (Chtagaluk Island).

*hubbardi* (Seevers), 1951, p. 741, fig. 121. ILLINOIS (Apple River Canyon State Park). Missouri, Michigan, District of Columbia.

*ojibway* (Seevers), 1951, p. 743, fig. 121. WISCONSIN (Mellen).

*simplex* (Seevers), 1951, p. 745, fig. 122. INDIANA (LaPorte Co.).

*Encephalus* Kirby (1832, p. 163)

*americanus* Seevers, 1951, p. 753, fig. 124. MONTANA (Bear Paw Mts.).

*Eumicrota* Casey (1906, p. 280)

*atoma* Casey, 1906, p. 284; Seevers, 1951, p. 738, fig. 120. NORTH CAROLINA (Asheville). Florida, Tennessee, Illinois, Wisconsin, Missouri, Kansas, Nebraska.

*oligotina* Casey, 1911, p. 183. MISSOURI (St. Louis).

*corruscula* (Erichson), 1839, p. 189; Casey, 1906, p. 281; Seevers, 1951, p. 733, fig. 120. The CAROLINAS. Eastern North America—Massachusetts south to Georgia; west to Kansas and south to Texas.

*minutissima* Casey, 1906, p. 284; Seevers, 1951, p. 739, fig. 120. MISSISSIPPI (Vicksburg). Louisiana, Indiana, Florida.

*pinalica* Casey, 1906, p. 283; Seevers, 1951, p. 737, fig. 120. ARIZONA (Pinal Mts.). New Mexico.

*sayi* (Seevers), 1951, p. 739, fig. 120. LOUISIANA (Harahan). Alabama.

*socia* (Erichson), 1839, p. 189; Casey, 1906, p. 282; Seevers, 1951, p. 734, fig. 120. The CAROLINAS. Eastern North America—Maine south to Florida; west to Kansas and south to Texas.

*humeralis* Casey, 1906, p. 282; Seevers, 1951, p. 734.

*texanella* Casey, 1906, p. 282; Seevers, 1951, p. 734.

*melania* Casey, 1906, p. 283; Seevers, 1951, p. 734.

*pallidula* Casey, 1906, p. 283; Seevers, 1951, p. 734.

*insolita* Notman, 1920, p. 719; Seevers, 1951, p. 734.

*spinosa* (Seevers), 1951, p. 737, fig. 120. ARIZONA (Huachuca Mts.).

*Gyrophaena* Mannerheim (1831, p. 488)

*affinis* Sahlberg, 1834, p. 383; Seevers, 1951, p. 695, fig. 108. EUROPE. North America—Maine to British Columbia; south to North Carolina, Missouri, and New Mexico.

*subpunctata* Casey, 1906, p. 299.

*lacustris* Casey, 1906, p. 299.

*lacustris inconspicua* Casey, 1906, p. 299.

*antennalis* Casey, 1906, p. 295; Seevers, 1951, p. 704, fig. 111. NEW YORK (Catskill Mts.). Massachusetts, North Carolina.

*arizonae* Seevers, 1951, p. 701, fig. 109. ARIZONA (Williams).

*barberi* Seevers, 1951, p. 701, fig. 110. NEW MEXICO (Las Vegas).

*bilobata* Seevers, 1951, p. 680, fig. 101. NEW MEXICO (El Porvenir). Arizona, Montana, Wisconsin.

*blackwelderi* Seevers, 1951, p. 713, fig. 113. DISTRICT OF COLUMBIA. Virginia, West Virginia, North Carolina, Kentucky, Indiana, Missouri.

*blatchleyi* Seevers, 1951, p. 700, fig. 109. INDIANA (LaPorte Co.). Michigan.

*brevicollis* Seevers, 1951, p. 682, fig. 102. INDIANA (Dunes State Park). Illinois, Missouri, North Carolina.

*californica* Casey, 1906, p. 353; Seevers, 1951, p. 725. CALIFORNIA (Ojai). British Columbia, Colorado.

*caseyi* Seevers, 1951, p. 684, fig. 102. MICHIGAN (Lakeside). Pennsylvania, New York, North Carolina.

*chippewa* Seevers, 1951, p. 705, fig. 112. WISCONSIN (Mellen). Michigan, North Carolina.

*compacta* Casey, 1906, p. 302; Seevers, 1951, p. 728, fig. 118. RHODE ISLAND (Boston Neck), Indiana, Missouri, Mississippi, Louisiana.

*micans* Casey, 1906, p. 303. Seevers, 1951, p. 728. MISSISSIPPI.

*coniciventris* Casey, 1906, p. 297; Seevers, 1951, p. 698, fig. 109. MISSOURI (St. Louis). Maryland, District of Columbia, South Carolina, Tennessee, Kentucky, Indiana, Michigan, Wisconsin, Illinois, Missouri, Kansas.

*genitiva* Casey, 1906, p. 298; Seevers, 1951, p. 698. MISSOURI

*criddlei* Casey, 1911, p. 184; Seevers, 1951, p. 707, fig. 111. MANITOBA (Aweme).

*dybasi* Seevers, 1951, p. 697, fig. 108. INDIANA (LaPorte Co.). Wisconsin, Illinois, Missouri, North Carolina.

*egena* Casey, 1906, p. 303; Seevers, 1951, p. 693, fig. 107. PENNSYLVANIA (Philadelphia). Massachusetts, Rhode Island, Ontario, North Carolina.

*exilis* Casey, 1906, p. 304; Seevers, 1951, p. 693.

*flavicornis* Melsheimer, 1844, p. 31; Casey, 1906, p. 291; Seevers, 1951, p. 722, fig. 115. PENNSYLVANIA. Eastern North America—Ontario west to the Mississippi River; south to North Carolina and Tennessee.

*franciscana* Seevers, 1951, p. 678, fig. 100. ARIZONA (San Francisco Mts.).

*frosti* Seevers, 1951, p. 716, fig. 114. MASSACHUSETTS (Framingham). New Jersey, Indiana.

*fuscicollis* Casey, 1906, p. 296; Seevers, 1951, p. 712, fig. 113. NEW YORK (Catskill Mts.). Pennsylvania, District of Columbia, Illinois, Wisconsin.

*gaudens* Casey, 1906, p. 292; Seevers, 1951, p. 719, fig. 116. WISCONSIN (Bayfield). Illinois, Indiana, Michigan, Ontario, Pennsylvania, Massachusetts.

*gerhardi* Seevers, 1951, p. 728, fig. 118. ILLINOIS (Oswego).

*gilvicollis* Casey, 1906, p. 296; Seevers, 1951, p. 709, fig. 111. NEW YORK (Catskill

Mts.). Pennsylvania, District of Columbia, Virginia, West Virginia, Indiana, Michigan.

*gracilis* Seevers, 1951, p. 727. WISCONSIN (Mellen).

*huachucae* Seevers, 1951, p. 703, fig. 109. ARIZONA (Huachuca Mts.).

*illiana* Seevers, 1951, p. 688, fig. 104. ILLINOIS (Oswego). Indiana, Wisconsin.

*indiana* Seevers, 1951, p. 716, fig. 114. INDIANA (LaPorte Co.).

*insolens* Casey, 1906, p. 295; Seevers, 1951, p. 705, fig. 111. MICHIGAN (Isle Royale National Park). Canada.

*involuta* Casey, 1906, p. 294; Seevers, 1951, p. 691, fig. 106. NEW YORK (Catskill Mts.). Maine, Massachusetts, Wisconsin.

*kansana* Seevers, 1951, p. 721, fig. 116. KANSAS (Bonner Springs).

*keeni* Casey, 1911, p. 185; Seevers, 1951, p. 681, fig. 102. BRITISH COLUMBIA (Metlakatla). Washington, Montana, Wyoming, Maine, New Mexico, Massachusetts, New York, Tennessee, Florida.

*laetula* Casey, 1906, p. 300; Seevers, 1951, p. 685, fig. 103. NEW YORK (Catskill Mts.). Massachusetts, Pennsylvania, District of Columbia, Virginia, Tennessee, Kentucky, Indiana, Illinois, Wisconsin.

*fustifer* Casey, 1906, p. 300; Seevers, 1951, p. 685.

*centralis* Casey, 1906, p. 301; Seevers, 1951, p. 685.

*laurana* Casey, 1906, p. 297; Seevers, 1951, p. 707. COLORADO (Boulder Co.).

*lobata* Casey, 1906, p. 294; Seevers, 1951, p. 693, fig. 107. NEW YORK (Catskill Mts.). District of Columbia, Michigan, Indiana, Illinois, Wisconsin, Kansas.

*longispinosa* Seevers, 1951, p. 718, fig. 115. KANSAS (Topeka). Missouri, Louisiana, Texas.

*michigana* Seevers, 1951, p. 720, fig. 115. MICHIGAN (Lakeside). Illinois, Wisconsin.

*modesta* Casey, 1906, p. 296; Seevers, 1951, p. 710, fig. 112. NEW YORK (Catskill Mts.). New Hampshire, Michigan, Indiana, Illinois, Minnesota.

*monticola* Casey, 1906, p. 293; Seevers, 1951, p. 682, fig. 102. COLORADO (Boulder Co.). New Mexico, Arizona.

*nana* (Paykull), 1800, p. 408; Seevers, 1951, p. 675, fig. 100. EUROPE. North America—British Columbia, Montana, Wyoming, Manitoba, Wisconsin, Michigan, Ontario, Maine, Massachusetts.

*perpolita* Casey, 1906, p. 301; Seevers, 1951, p. 675. WISCONSIN.

*nanoides* Seevers, 1951, p. 684, fig. 102. INDIANA (Porter Co.). Wisconsin, Iowa, Indiana, Ontario, District of Columbia, Virginia.

*neomexicana* Seevers, 1951, p. 692, fig. 106. NEW MEXICO (El Porvenir, San Miguel Co.).

*neonana* Seevers, 1951, p. 679, fig. 101. INDIANA (LaPorte Co.). Pennsylvania, Wisconsin, North Carolina.

*obesula* Casey, 1906, p. 303; Seevers, 1951, p. 729. PENNSYLVANIA (Westmoreland Co.).

*rhodeana* Casey, 1906, p. 300; Seevers, 1951, p. 686. RHODE ISLAND (Boston Neck).

*rufa* Melsheimer, 1844, p. 31. PENNSYLVANIA. Species inquirenda.

*sculptipennis* Casey, 1906, p. 298; Seevers, 1951, p. 689, fig. 105. NEW YORK (Catskill Mts.). Massachusetts, New Hampshire, Wisconsin.

*sierrae* Seevers, 1951, p. 677, fig. 100. CALIFORNIA (Sugar Pine, Madera Co.)

*simpliciformis* Seevers, 1951, p. 709, fig. 112. INDIANA (Dune Acres, Porter Co.). Illinois.

*simulans* Seevers, 1951, p. 707, fig. 112. ILLINOIS (Joliet). Maryland.
*spatulata* Seevers, 1951, p. 702, fig. 110. ARIZONA (Huachuca Mts.).
*stroheckeri* Seevers, 1951, p. 708, fig. 111. INDIANA (LaPorte Co.). Wisconsin, North Carolina.
*subnitens* Casey, 1906, p. 302; Seevers, 1951, p. 725, fig. 117. ONTARIO (Sudbury). Maine, New York, Michigan, Wisconsin, Manitoba, Minnesota, Illinois, Missouri, Kansas.
*tenebrosa* Casey, 1906, p. 302; Seevers, 1951, p. 677, fig. 100. COLORADO (Boulder Co.). New Mexico.
*uteana* Casey, 1906, p. 292; Seevers, 1951, p. 718, fig. 116. UTAH (Provo). Colorado, California, British Columbia.
*pacifica* Casey, 1906, p. 293; Seevers, 1951, p. 718.
*vitrina* Casey, 1906, p. 291; Seevers, 1951, p. 714, fig. 114. NEW YORK (Catskill Mts.). Maine, Pennsylvania, West Virginia, North Carolina, Tennessee, Kentucky, Indiana, Michigan, Ontario, Wisconsin, Illinois.
*attonsa* Casey, 1911, p. 184; Seevers, 1951, p. 714.
*wisconsinica* Seevers, 1951, p. 689, fig. 104. WISCONSIN (Mellen). Illinois.

*Phanerota* Casey (1906, p. 285)

*carinata* Seevers, 1951, p. 750. LOUISIANA (Harahan). Florida, Texas.
*dissimilis* (Erichson), 1839, p. 186; Casey, 1906, p. 288; Seevers, 1951, p. 750. The CAROLINAS. Eastern North America—Pennsylvania south to Florida; west to Kansas; south to Texas.
*fasciata* (Say), 1834, p. 469; Casey, 1906, p. 286; Seevers, 1951, p. 747, fig. 123. PENNSYLVANIA. North America—New York south to Florida; west to Kansas; south to Louisiana.
*vinula* (Erichson), 1839, p. 186; Seevers, 1951, p. 747.
*flavocincta* (Jekel), 1873, p. 49.
*ocularis* Casey, 1906, p. 287; Seevers, 1951, p. 747.
*angularis* Casey, 1906, p. 287; Seevers, 1951, p. 747.
*floridana* Casey, 1906, p. 288; Seevers, 1951, p. 747.

Subtribe Bolitocharae

*Bolitochara* Mannerheim (1831, p. 75)

*Ditropalia* Casey, 1906, p. 263.
*Pleurotobia* Casey, 1906, p. 273.
*Silusida* Casey, 1906, p. 270.
*Stictalia* Casey, 1906, p. 264.
*Venusa* Casey, 1906, p. 272.

Eastern species

*blanchardi* Casey, 1893, p. 369; 1906, p. 273 (*Venusa*). NEW YORK (Catskill Mts.).
*laetula* (Casey), 1906, p. 273 (*Venusa*). MISSOURI (St. Louis).
*marginella* (Casey), 1893, p. 370; 1906, p. 270 (*Silusida*). NEW YORK (Catskill Mts.).
*picta* (Casey), 1906, p. 272 (*Venusa*). NEW YORK.
*suturalis* (Casey), 1906, p. 274 (*Pleurotobia*). OHIO (Cincinnati).
*tenuicornis* (Notman), 1920a, p. 714 (*Silusida*). FLORIDA (Enterprise).
*texana* (Casey), 1906, p. 274 (*Pleurotobia*). TEXAS.
*trimaculata* (Erichson), 1839, p. 105 (*Homalota*). PENNSYLVANIA.
*tristigma* (Casey), 1906, p. 274 (*Pleurotobia*). MISSOURI (St. Louis).

Western species

*arcuata* (Casey), 1906, p. 267 (*Stictalia*). BRITISH COLUMBIA (Victoria).
*aspera* (Casey), 1906, p. 266 (*Stictalia*). CALIFORNIA (Mendocino Co.).
*bakeri* (Casey), 1906, p. 267 (*Stictalia*). CALIFORNIA (Mts. near Claremont).
*brevicornis* (Casey), 1906, p. 269 (*Stictalia*). CALIFORNIA (Humboldt Co.).
*californica* (Casey), 1885, p. 307 (*Stictalia*). CALIFORNIA (Hoopa Valley).
*carlottae* (Casey), 1911, p. 182 (*Stictalia*). BRITISH COLUMBIA (Massett).
*collaris* (Casey), 1906, p. 268 (*Stictalia*). CALIFORNIA.
*densicollis* (Casey), 1906, p. 265 (*Stictalia*). BRITISH COLUMBIA.
*laxicornis* (Casey), 1906, p. 268 (*Stictalia*). CALIFORNIA (Mokelumne Hill).
*minor* (Casey), 1906, p. 269 (*Stictalia*). CALIFORNIA.
*nigrina* (Casey), 1885, p. 308 (*Ilyobates*); 1906, p. 269 (*Stictalia*). CALIFORNIA (Hoopa Valley).
*notata* Maeklin, 1852, p. 305. ALASKA.
*obsolescens* (Casey), 1906, p. 267 (*Stictalia*). CALIFORNIA (Santa Cruz Mts.).
*punctiventris* (Casey), 1906, p. 266 (*Stictalia*). CALIFORNIA.
*rugipennis* (Casey), 1906, p. 266 (*Stictalia*). CALIFORNIA (Santa Cruz Mts.).
*unicolor* Fenyes, 1909, p. 198. CALIFORNIA (Tahoe City).

*Leptusa* Kraatz (1856, p. 60)

*brevicollis* Casey, 1893, p. 363. PENNSYLVANIA.
*canonica* Casey, 1906, p. 351. MISSISSIPPI (Vicksburg).
*elegans* Blatchley, 1910, p. 342. INDIANA (San Pierce, Pulaski Co.).
*exposita* Casey, 1911, p. 201. OHIO (Cincinnati).
*iowensis* Casey, 1911, p. 200. IOWA (Iowa City).
*nebulosa* Casey, 1911, p. 199. OHIO (Cincinnati).
*obscura* Blatchley, 1910, p. 343. INDIANA (Marion Co.; Putnam Co.).
*opaca* Casey, 1893, p. 364. PENNSYLVANIA.
*seminitens* Casey, 1893, p. 364. NEW YORK.
*semirufa* Casey, 1906, p. 351. NORTH CAROLINA (Tryon).
*tricolor* Casey, 1906, p. 351. IOWA (Iowa City).
*caseyi* Fenyes, 1907, p. 61.

*americana* Bernhauer, 1905, p. 251. CALIFORNIA (Pasadena).
*atrocephala* Bernhauer, 1905, p. 250. CALIFORNIA (Pasadena).

Subgenus *Eucryptusa* Casey (1906, p. 345)

*Dianusa* Casey, 1906, p. 346; 1911, p. 205.
*Ulitusa* Casey, 1906, p. 347.
*cribratula* (Casey), 1906, p. 347 (*Ulitusa*). OHIO (Cincinnati).
*immunis* Casey, 1911, p. 204. IOWA (Cedar Rapids).
*laticollis* Notman, 1921, p. 153. NEW YORK (Westfield).
*nanula* Casey, 1893, p. 352; 1906, p. 345. RHODE ISLAND (Boston Neck).
*pavida* Casey, 1911, p. 203. NEW YORK (New York).
*pusio* (Casey), 1906, p. 348 (*Ulitusa*). OHIO (Cincinnati).

*bakeri* (Casey, 1911, p. 205 (*Dianusa*). CALIFORNIA (Claremont).
*fragilis* Casey, 1911, p. 204. CALIFORNIA (Hoopa Valley, Humboldt Co.).
*pasadenae* Casey, 1906, p. 346 (*Dianusa*). CALIFORNIA (Pasadena).

*Sipalia* Mulsant and Rey (1853, p. 32)

(Not *Sipalia* (M. and R.), *sensu* Casey, 1910, 1911; Fenyes, 1918,

1920, 1921; Bernhauer and Scheerpeltz, 1926). Casey, 1893, used *Sipalia* in the correct sense, but in other places in the sense of *Geostiba* Thomson.)

*frontalis* Casey, 1893, p. 366. CALIFORNIA.
*gracilis* Sachse, 1852, p. 119. GEORGIA.
*virginica* (Casey), 1911, p. 202 (*Pasilia*). VIRGINIA (Norfolk).

Subtribe Silusae

*Apheloglossa* Casey (1893, p. 348)
*Amenusa* Casey, 1906, p. 349.
*Pectusa* Casey, 1911, p. 197.
*oblonga* (Casey), 1911, p. 198 (Pectusa). MISSISSIPPI (Vicksburg).

*angustula* (Casey), 1906, p. 349 (*Amenusa*). CALIFORNIA (Pomona).
*rufipennis* Casey, 1893, p. 348. ARIZONA (Benson).
*spissula* (Casey), 1911, p. 197 (*Amenusa*). CALIFORNIA (Pomona).

(?) *funebris* Sharp, 1883, p. 252. MEXICO. United States?

*Elachistarthron* Notman (1920a, p. 715)
*ambiguum* Notman, 1920a, p. 715. FLORIDA.

*Orthodiatelus* Notman (1920a, p. 716)
*innotabilis* Notman, 1920a, p. 716. FLORIDA (Enterprise).

*Schistacme* Notman, (1920a, p. 712)
*obtusa* Notman, 1920a, p. 712. FLORIDA (Enterprise).

*Silusa* Erichson (1837, p. 377)
*alternans* Sachse, 1852, p. 118. GEORGIA. Species inquirenda.
*senescans* Casey, 1911, p. 191. IOWA (Cedar Rapids).
*valens* Casey, 1906, p. 344. NEW YORK (Catskill Mts.).

*californica* Bernhauer, 1905, p. 249. CALIFORNIA (Pasadena).
*decolorata* Casey, 1906, p. 345. CALIFORNIA (Mokelumne River).
*densa* Fenyes, 1909b, p. 418. CALIFORNIA (Pasadena).
*opaca* Fenyes, 1909b, p. 418. CALIFORNIA (Pasadena).
*vesperis* Casey, 1893, p. 351. CALIFORNIA.

Species not congeneric
*modica* Casey, 1911, p. 190, IOWA (Cedar Rapids). *Bolitochara*?
*rutilans* Casey, 1911, p. 190. PENNSYLVANIA (Philadelphia). *Leptusa*?

Subtribe Homalotae

*Anomognathus* Solier (1849, p. 338)
*Thectura* Thomson, 1858, p. 32.
*Theetura* Thomson (misspelling)
*americanus* (Casey), 1893, p. 360. NEW YORK.

*Homalota* Mannerheim (1831, p. 487)
*flexibilis* Casey, 1911, p. 192. PENNSYLVANIA (Allegheny).
*funesta* Casey, 1911, p. 192. OHIO (Cincinnati).
*humilis* Casey, 1911, p. 195. NEW YORK (Catskill Mts.).

*lepidula* Casey, 1911, p. 196. TEXAS (Houston).
*plana* (Gyllenhal), 1810, p. 402. EUROPE. Cosmopolitan.
*wickhami* Casey, 1911, p. 194. IOWA (Iowa City).

*depressiuscula* Mannerheim, 1831, p. 80. ALASKA.
*frigidula* Casey, 1911, p. 194. IDAHO (Coeur d'Alene).
*hesperica* Casey, 1911, p. 193. CALIFORNIA (Hydesville, Humboldt Co.).

*Placusa* Erichson (1837, p. 370)
*despecta* Erichson, 1839, p. 197. CAROLINA MERIDIONALI.
*frosti* Casey, 1911, p. 186. MASSACHUSETTS (Framingham).

*arizonica* Casey, 1911, p. 186. ARIZONA (Williams).
*petulans* Casey, 1911, p. 188. CALIFORNIA (Hydesville, Humboldt Co.).
*strata* Casey, 1911, p. 187. CALIFORNIA (Sonoma Co.).
*tacomae* Casey, 1893, p. 350. WASHINGTON (Spokane).
*turbata* Casey, 1911, p. 188. BRITISH COLUMBIA (Metlakatla).
*vaga* Casey, 1911, p. 189. CALIFORNIA (Santa Cruz Mts.).

*Thecturota* Casey (1893, p. 357)
*Hemithecta* Casey, 1911, p. 211.
*Oligurota* Casey, 1893, p. 361; 1911, p. 211.
*capito* Casey, 1893, p. 358. TEXAS (Galveston).
*demissa* Casey, 1893, p. 358. NEW YORK (Catskill Mts.).
*exigua* Casey, 1893, p. 360. IOWA (Cedar Rapids).
*histrio* Casey, 1911, p. 210. VIRGINIA (Fort Monroe).
*laticeps* Casey, 1911, p. 208. TEXAS (Austin).
*pusio* (Casey), 1893, p. 362 (*Oligurota*). INDIANA.
*tenuissima* Casey, 1893, p. 358. RHODE ISLAND.

*fracta* Casey, 1911, p. 209. ARIZONA (Tucson).
*nevadica* Casey, 1911, p. 209. NEVADA (Reno).
*ruficollis* Casey, 1911, p. 211. CALIFORNIA (Pomona Mts.).
*subtilior* Bernhauer, 1907, p. 396. CALIFORNIA (Pasadena).

Subtribe EUVIRAE

*Euvira* Sharp (1883, p. 278)
*Crimalia* Casey, 1911, p. 206.
*quadriceps* (Casey), 1911, p. 207. MISSISSIPPI (Vicksburg).

Subtribe CYPHEAE

*Cyphea* Fauvel (1863, p. 220)
*wallisi* Fenyes, 1921a, p. 19. MANITOBA (Winnipeg).

Tribe AUTALIINI

*Autalia* Leach (1819, p. 177)
*brevicornis* Casey, 1911, p. 181. BRITISH COLUMBIA (Metlakatla).
*copiosa* Casey, 1911, p. 180. CALIFORNIA (Santa Cruz Co.).
*elegans* Casey, 1886, p. 204. CALIFORNIA (Lake Co.).
*truncatula* Casey, 1911, p. 180. BRITISH COLUMBIA (Massett).

Tribe PHILOTERMITINI

*Philotermes* Kraatz (1857, p. 13)

*cubitopilis* Seevers, 1957, p. 255. FLORIDA (Tampa). Alabama, District of Columbia, Arkansas.

*emersoni* Seevers, 1938, p. 435. INDIANA (Indiana Dunes State Park).

*fuchsii* Kraatz, 1857, p. 15; Seevers, 1938, p. 433. TENNESSEE. Virginia, Florida.

*pennsylvanicus* Kraatz, 1857, p. 15; Seevers, 1938, p. 434; 1957, p. 256. PENNSYLVANIA. New York, District of Columbia, Tennessee, Indiana, Illinois, Texas.

*pilosus* Kraatz, 1857, p. 14; Seevers, 1938, p. 432; 1957, p. 252. TENNESSEE. Massachusetts, New York, District of Columbia, Indiana, Illinois.

*werneri* Seevers, 1957, p. 255. SOUTH CAROLINA (Murrells Inlet, Georgetown Co.). Florida.

Tribe PHYTOSINI

*Amblopusa* Casey (1893, p. 355)

*borealis* Casey, 1906, p. 354; Moore, 1956b, p. 128. BRITISH COLUMBIA (Massett). Alaska-California (Moore).

*brevipes* Casey, 1893, p. 356; Moore, 1956b, p. 128. ALASKA (Fort Wrangel).

*pallida* Casey, 1911, p. 212; Moore, 1956b, p. 128.

*Bryobiota* Casey (1893, p. 367)

*bicolor* (Casey), 1885, p. 311 (*Phytosus*); Moore, 1956b, p. 130. CALIFORNIA (San Diego).

*Bryothinusa* Casey (1904, p. 312)

*catalinae* Casey, 1904, p. 313; Moore, 1956b, p. 132. CALIFORNIA (Catalina Island).

*Diaulota* Casey (1893, p. 353)

*densissima* Casey, 1893, p. 353; Saunders, 1928, p. 542, figs; Chamberlin and Ferris, 1929, p. 157, figs; Moore, 1956b, p. 120. ALASKA (Fort Wrangel). British Columbia, California.

*insolita* Casey, 1893, p. 355. BRITISH COLUMBIA (Massett).

*fulviventris* Moore, 1956, p. 121. CALIFORNIA (San Diego Co.).

*harteri* Moore, 1956, p. 123. MEXICO (Baja California). California.

*megacephala* Moore, 1956, p. 124. MEXICO (Baja California). California.

*vandykei* Moore, 1956, p. 125. CALIFORNIA (Pacific Grove, Monterey Co.).

*Liparocephalus* Maeklin (1853, p. 191)

*brevipennis* Maeklin, 1853, p. 192; Casey, 1893, p. 353; Chamberlin and Ferris, 1929, p. 143; Moore, 1956b, p. 117. ALASKA (Insula Chtaguluk—Hinchinbrook Island, Prince William Sound, Moore, 1956b).

*cordicollis* LeConte, 1880, p. 177; Moore, 1956b, p. 118. CALIFORNIA (Mendocino). British Columbia—California.

*Thinusa* Casey (1893, p. 371)

*fletcheri* Casey, 1906, p. 353; Moore, 1956b, p. 135. BRITISH COLUMBIA (Massett). Alaska.

*divergens* Casey, 1911, p. 213; Moore, 1956b, p. 135. BRITISH COLUMBIA.

*nigra* Casey, 1911, p. 214; Moore, 1956b, p. 135. BRITISH COLUMBIA.
*robustula* Casey, 1911, p. 215; Moore, 1956b, p. 135. BRITISH COLUMBIA.
*maritima* (Casey), 1885, p. 312 (*Phytosus*); 1893, p. 371; Moore, 1956b, p. 134. CALIFORNIA (Oakland). Washington.
*obscura* Casey, 1906, p. 353. CALIFORNIA (Santa Barbara).

Tribe DIGLOTTINI

*Diglotta* Champion (1887, p. 228)

*Diglossa* Haliday, 1837, p. 252.
*pacifica* Fenyes, 1921a, p. 17. CALIFORNIA (Coronado Beach, San Diego).
*littoralis* (Horn), 1871, p. 331 (*Phytosus*). NEW JERSEY. **New combination.**

Tribe GYMNUSINI

*Gymnusa* Gravenhorst (1806, p. 173)
*atra* Casey, 1911, p. 233. MASSACHUSETTS (Cambridge).
*grandiceps* Casey, 1915, p. 395. RHODE ISLAND (Boston Neck).

Tribe Deinopsini

*Deinopsis* Matthews (1838, p. 193)
*americana* Kraatz, 1857, p. 38. LOUISIANA.
*harringtoni* Casey, 1911, p. 234. ONTARIO (Ottawa).
*myllaenoides* Kraatz, 1857, p. 38. LOUISIANA (New Orleans).
*rapida* Casey, 1911, p. 235. IOWA (Cedar Rapids).

Tribe MYLLAENINI

*Myllaena* Erichson (1837, p. 382)

Eastern species
*abdita* Casey, 1911, p. 237. NEW JERSEY (Elizabeth).
*arcana* Casey, 1911, p. 239. IOWA (Cedar Rapids).
*audax* Casey, 1911, p. 236. NEW YORK (New York).
*brevivestis* Casey, 1911, p. 240. RHODE ISLAND (Boston Neck).
*cuneata* Notman, 1920a, p. 710. FLORIDA (Enterprise).
*currax* Notman, 1920a, p. 710. FLORIDA (Enterprise).
*fuscipennis* Kraatz, 1857, p. 36. LOUISIANA.
*immunda* Casey, 1911, p. 240. ONTARIO (Ottawa).
*insipiens* Casey, 1911, p. 237. PENNSYLVANIA (Philadelphia).
*insomnis* Casey, 1911, p. 236. MASSACHUSETTS.
*ludificans* Casey, 1911, p. 239. RHODE ISLAND (Boston Neck).
*obscurata* Casey, 1911, p. 238. NEW JERSEY (Atlantic City).
*procidua* Casey, 1911, p. 238. NEW YORK (Catskill Mts.).
*vulpina* Bernhauer, 1907, p. 381. PENNSYLVANIA (Jeannette).

Western species
*brevicollis* Casey, 1911, p. 241. CALIFORNIA (Paraiso Hot Springs, Monterey Co.).
*decreta* Casey, 1911, p. 241. CALIFORNIA (Truckee).
*dissimulans* Casey, 1911, p. 244. CALIFORNIA (Lake Tahoe).
*esuriens* Casey, 1911, p. 242. CALIFORNIA (Cloverdale, Sonoma Co.)
*fenyesi* Bernhauer, 1907, p. 381. CALIFORNIA (Pasadena).
*frivola* Casey, 1911, p. 242. NEVADA (Elko).
*impellens* Casey, 1911, p. 241. CALIFORNIA (Hoopa Valley, Humboldt Co.).

*molesta* Casey, 1911, p. 244. CALIFORNIA (Booneville, Mendocino Co.).
*scobinella* Casey, 1911, p. 244. BRITISH COLUMBIA (Metlakatla).
*umbra* Casey, 1911, p. 243. CALIFORNIA (Hoopa Valley, Humboldt Co.).
*vegeta* Casey, 1911, p. 243. CALIFORNIA (Pomona).

Tribe OLIGOTINI

*Anacyptus* Horn (1877, p. 87)

*Microcyptus* Horn, 1883, p. 1.
*testaceus* (LeConte), 1863, p. 30 (*Hypocyptus*); Seevers, 1938, p. 437. GEORGIA.

*Cypha* Leach (1819, p. 176)

*Hypocyphtus* Gyllenhal, 1827, p. 294 (*Hypocyptus* Stephens, 1832, error).
*crotchi* (Horn), 1877, p. 86. BRITISH COLUMBIA.
*nigritulus* (LeConte), 1879, p. 510. COLORADO.
*ziegleri* (LeConte), 1863, p. 30. PENNSYLVANIA.

*Holobus* Solier (1849, p. 335)

*abrupta* Casey, 1911, p. 228. MISSISSIPPI (Vicksburg).
*claviger* Casey, 1893, p. 380. IOWA (Keokuk).
*lustrans* Casey, 1911, p. 228. MISSOURI (St. Louis).
*nugator* Casey, 1893, p. 379. PENNSYLVANIA.
*pallexens* Casey, 1911, p. 227. IOWA (Keokuk).

*oviformis* Casey, 1893, p. 381. CALIFORNIA (Los Angeles Co.).

*Oligota* Mannerheim (1831, p. 486)

*effugens* Casey, 1911, p. 227. OHIO (Cincinnati).
*exigua* Say, 1839, p. 156. INDIANA.
*linearis* Casey, 1911, p. 232. NEW YORK (New York).
*parallela* Casey, 1911, p. 232. NEW YORK (Willets Point, L.I.).
*pedalis* LeConte, 1866, p. 372. DISTRICT OF COLUMBIA.
*puncticollis* Casey, 1911, p. 229. IOWA (Iowa City).
*texana* Casey, 1911, p. 231. TEXAS (Austin).

*californica* Casey, 1911, p. 230. CALIFORNIA (San Francisco).
*congruens* Casey, 1911, p. 230. CALIFORNIA (Pomona).
*esmeraldae* Casey, 1911, p. 231. NEVADA (Esmeralda Co.).

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