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A REVISION OF NEARCTIC NITIDULIDAE (COLEOPTERA)

By Carl T. Parsons

With Thirteen Plates

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BY CARL T. PARSONS

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INTRODUCTION

During the discreet years of the 1870's, the stork almost invariably arrived at night. This happy phenomenon enabled a Philadelphian obstetrician, Dr. George Horn, to devote his daylight hours to entomology and his evenings to his profession. Dr. Horn not only wrote but printed his entomological papers. The Doctor's type-setting was as painstaking as his discrimination in entomology, and these combined talents led to the appearance in 1879 of an extremely careful review of a family of rather shiny clavicorn beetles appropriately called Nitidulidae. Since that time the family has been so neglected that the succeeding sixty years have placed our knowledge of the group seriously in arrears. The present paper attempts to atone for this neglect.

Acknowledgements. This work was carried out under Prof. C. T. Brues, to whom the writer is indebted for infinite patience and constructive advice. To other members of the staff of the Museum of Comparative Zoölogy, Prof. F. M. Carpenter, Dr. P. J. Darlington, Jr.,

¹ Published with the aid of a special gift from Mr. George R. Agassiz.
and Prof. Nathan Banks, the writer is also deeply obliged. Too numerous to mention by name are the curators and collectors in this country and Europe, who have permitted the writer unlimited access to the collections in their charge and even dissection of valuable specimens when necessary.

Sources of material. This paper is so much the result of a synthesis of material that it is difficult to single out particular sources for mention here. Certainly the Museum of Comparative Zoölogy contained the most indispensable collection. Here were the types of Leconte, Horn (several holotypes and cotypes of all but three species), Melsheimer, Fall, Crotch, some of Casey, cotypes of Mäklin and Mannerheim, and paratypes of Schaeffer and the author. The United States National Museum contains some of Schaeffer’s types, Wickham’s type, and a very large and nearly complete series with excellent data. At the Philadelphia Academy of Sciences the writer examined the valuable but obsolete Horn collection. Much critical material was seen at the British Museum (Murray’s types and the complete set of Middle American species), Berlin Museum (Erichson’s types), the Carnegie Museum (Hamilton and Ulke’s types), California Academy of Natural Sciences, American Museum of Natural History, and numerous public and private collections. Also the writer’s collection was of great value, because it contained the Leng (Nearctic), Em. Reitter (Palaeartic) collections, specimens compared with most of the other types, is world-wide in scope, and supplied almost all of the material for dissection.

Historical. Linnaeus, in 1758, was the first to describe some cosmopolitan nitidulids which have since been found to occur in North America. He placed them in Dermecestes under the silphids. Then Fabricius, 1775-1798, described from the West Indies the first American species. Fabricius placed his species in Nitidula. Latreille, Herbst, Kugellain, Stephens, Shuckard, broke up the genus and added new genera. To them we owe the genera Cateretes Herbst (Cercus Latreille), Brachypterus Kugellain, Carphophilus Stephens, Meligethes Stephens, Cyphramus Kugellain, Cryptarcha Shuckard, as well as several exotic ones.

But it was not until 1843 that the family underwent a critical examination. In that year Erichson published the most important work ever written on the family, his “Versuch einer systematischen Einteilung der Nitidularien.” The main divisions (now subfamilies) laid down by Erichson are followed almost exactly in the present work. Erichson described in a most complete and accurate manner a large number of genera (“coupes”), of which Colastus, Brachypeplus, Cono-
telus, Epuraea, Soronia, Prometopia, Amphotis, Lobiopa, Omosita, Phenolia, Stelidota, Thalyera, Pocadius, Camptodes, Cyclodes, Amphi-
crossus, Pallodes, Oxyemurus, occur in the Nearctic region. In the
same work Ericson described a number of species from eastern
United States.

Following Ericson, Leconte added two genera and a large number
of species. In 1879 Horn published his careful “Revision of the Nit-
dulidæ of the United States,” describing two new genera and several
species. Since Horn, there have been only scattered descriptions, ex-
cept for the revision of one genus (Glischrochilus) by Brown in 1932.

Erichson (1843, 1844) included Rhizophagus, Cybocephalus, and
Ostomatidae in the family. Horn, 1879, likewise included Rhizophagus,
Cybocephalus, and also Smicrips (now placed in the Cucujidae) but
excluded the Ostomatidae. Grouvelle, 1913, excluded Rhizophagus
which has since constituted a separate family. Murray, 1864, and
recently Peyerimhoff, 1933, Böving and Craighead, 1931, have ex-
cluded Cybocephalus to form a separate family. The present writer
concurs in this arrangement. The relationships of the Nitidulidæ with
its nearest relatives, Rhizophagidæ and Cybocephalidæ, are given
under “Morphology” (p. 129).

The subfamilies here treated as the Cateretinae and Meliethinae
have been made a separate family (Brachypteridae) by Verhoeff, 1928,
on the basis of larval characters. Since the larvae of many aberrant
genera are still unknown, it is premature to make new families. The
writer believes that the classification within a family can often be
made to show the anomalous character of a subfamily without creating
a new family. As for the Nitidulidæ the present subfamilies are on the
whole so nebulous that they could easily be made tribes under the
Nitidulinae, which would then rank equally with the Cateretinae and
Meliethinae.

Nomenclatorial Units

On the origin of species and genera in the Nitidulidæ. The basic unit
used in naming the groups of individuals is the species. Unfortunately,
due to lack of sufficient material, the term species is sometimes used
to define a rather vague and sometimes highly variable syngamium.

Most of the species seem to be monotypic (Rensch’s Ar), that is to
say are not differentiated into subspecies. In many cases the affinities
between monotypic species are clear, and in such cases the relationships
are indicated by comparisons which appear after the descriptions.
Since no intergradations are apparent, these species are thought of
as monotypic.
Polytypic species (Rensch's *Formenkreis*) are species which are differentiated into two or more subspecies. Again due to lack of material, the few forms that appear to be subspecies are treated as species even though intergradations are evident. In some other cases, variations which may well be of subspecific value are lumped under one species.

The writer believes that, in a work of this kind, the only key to the origin of species lies in a study of the polytypic species. Among the terrestrial vertebrates and many invertebrates (such as Carabidae and Molluses) Huxley, Rensch, and others believe that the most important manner of originating new species is by the formation of geographical subspecies. As for the Nitidulidae, the writer believes from the sketchy evidence that the geographical splitting up of species is less important than ecological separation of species. A good example is *Carpophilus melanopterus* and *rufus*. Herefore, *rufus* has been thought to be either synonymous with or a mere color variety of *melanopterus*. But it was found that *melanopterus* is restricted to *Yucca* blossoms, whereas *rufus* is found on flowers of cacti. The ranges of the two forms overlap, but because of the distinct ecology, constant color differences, and slight sculptural tendencies to vary, the forms are considered distinct species.

There are some cases whereby special isolation has been enough to make new species. In North America the most important factor limiting distribution is the lack of rainfall in the Great Plains region. Although many species are found from Quebec to Florida, the western limit of their range is, in almost every case, along the ninety-seventh parallel. Some species, however, extend from coast to coast across Canada and then range southward in the east and in the Rocky Mountains. In that way *Perthalyca* may have become split into an eastern and western species.

Oceans, of course, are more definite barriers to distribution. Thus we find *Thalyca* with a species in Europe and another in Michigan. The cosmopolitan and even Holarctic species are clearly distributed by man.

Another possible method of species formation is hybridization, a method seldom discussed with respect to insects. Since botanists and vertebrate zoologists often mention hybrids without experimental evidence, there seems to be no reason why entomologists cannot do likewise. Among the nitidulids, *Carpophilus sayi* and *lugubris* evidently hybridize along a region extending from Virginia to Illinois. The intermediate form has distinctive facies and may well be an incipient species. In *Oxycnemus* there are two species which are occa-
sionally found together in the same fungus yet retain constant and distinctive structural and color differences. Very rarely occur two forms of apparent hybrids. Both of these forms have characters which belong to one or the other of the parent species or are intermediate. Significantly one of the forms is much larger than either of the parent species, a characteristic often found in hybrids of other animals and plants.

Thus in writing this paper at least three methods of speciation became evident. The method of hybridization, although hypothetical, is clearly indicated and could be tested experimentally. Of the other two, the occupation of a new habitat seems to be a more important method of speciation than geographical isolation. Just how it takes place would be a most pertinent problem for investigation.

The geographical subgenus or genus (Rensch’s Artenkreis) is a group of related forms clearly meriting specific rank, but showing geographical replacement to a degree which makes it certain they have arisen by geographical differentiation. Huxley wrote the above definition having in mind mainly vertebrates and molluscs. The Nitidulidae (and also insects in general) offer evidence that the definition should be extended to include ecological and biological replacement, as well as geographical. Many a morphologically aberrant species is found to differ ecologically from its congeners. For example, the most distinctive species of Nearctic Eupuraea is monogama. This species occurs in the fungus Polyporus volvatus, whereas the others are found under bark, at flowers, etc. An example of geographical replacement would be the Nearctic Cateretes of the subgenus Pulion, which differs from the Palearctic species in the subgenus in one character of generic importance, namely, the eighth abdominal segment visible in the male. Both the Eupuraea and the Cateretes seem to the writer to be incipient genera.

True genera which appear to have arisen by geographical replacement would be Boreades (annectant between the Neotropical Cercometes and the Palearctic Heterhelus) and both Perthalyra and Quadrifrons (probably from the Holarctic Thalyra). Also Phenolia is an eastern Nearctic derivative of the cosmopolitan Soronia. Significantly these are the only endemic Nearctic genera (except Anthonaenus, Orthopeplus, mentioned below). The other genera are too widely distributed to hazard a guess as to their geographical origin.

On the other hand, so many of the genera have such distinctive habits that they may have originated by ecological replacement. For instance, of the endemic genera, Anthonaenus is a depressed Amartus modified for flowers of Agave, and Orthopeplus is an Eupuraea evidently
adapted for living in tunnels. *Pocadius, Cychramus, Cylloides,* and *Oxyenemus* are four rather closely related genera each of which is restricted to a different genus of fungus. Many more examples could be given of genera that are ecologically distinct.

Since the most anomalous species of a genus is often also ecologically aberrant, and since the genera are mostly very widespread, with overlapping ranges, yet ecologically distinct, the writer believes that nitidulid genera arose chiefly by the assumption of a new habitat by a species.

When the new genus (or subgenus) comes into existence by occupying a new habitat, the environmental pressure would, in many cases, be suddenly relaxed. This relief of competition would mean that the pressure of natural selection is also lessened. Thus many mutations that would be lethal in the old habitat would be viable in the new one. But once the new habitat is thoroughly occupied, the pressure of natural selection would again be so strengthened that the evolution of new forms would be greatly impeded or even halted. One would then expect to find the nitidulids split up into a large number of distinct genera, each in a separate ecological sphere and each embracing very few species. And such is the case, for there are about one-fourth as many genera as species of Nearctic Nitidulidae. The proportion of genera to species would be very much higher if it were not for two large genera which have succeeded in occupying a variety of habitats. The genera of the future may be expected to come from the still actively evolving species of these genera. The two genera are *Carpophillus* (29 species) and *Epuracea* (29 species). As one would expect, the discrimination of species is most difficult here.

The genus is generally considered to be an artificial and arbitrary unit of classification, but the writer believes that it need not be. When examined in the above manner, the geographical or ecological genus appears to be a natural taxonomic unit. Certainly, it is necessary to know well not only the complete morphology but the biology of each species (and its forms) before a natural classification can be wrought. Unhappily our knowledge of the Nitidulidae permits only an approximation to such perfection.

*Evolution and the relative value of morphological characters in the family Clues to how the family is evolving may be found by examining the characters used in taxonomy. The more carefully the taxonomic work has been done, the greater are the number of available clues. The subfamily characters are mainly highly tenuous and of only generic magnitude. The subfamily does seem to be valuable, however, in indicating the evolutionary trends evinced by groups of genera. The*
Cateretinae is the most primitive and discrete subfamily, whereas the Cryptarchinae is the most derivative, if more nebulous, unit.

The characters of value in defining genera are many and usually very definite. Interestingly, they are almost entirely different from specific characters. The specific characters have to do with variations in sculpture, pubescence, and color. Color is a highly unreliable criterion. Whereas variations in sculpture are sometimes present but then only within definite limits diagnostic for each species. For instance, as the figures show, the profile of the prosternum in *Pocadius* is variable but only within specific limits. Individuals of *Pocadius* vary sculpturally only in this manner. The differences can hardly have a selective value. Evidently, such variation seems to be an external, phenotypic manifestation of the genetic mutations which have differentiated the species of *Pocadius*.

**Zoogeography**

A perusal of Table I will show the preponderance of the Nitidulinae over the other subfamilies. One would assume that this is the most successful, if it were not heterogeneous and probably in need of being partitioned into several subfamilies. At present, evolution seems to be in progress in all of the subfamilies, because, of the Nearctic genera, there is at least one genus in each subfamily in which speciation is now active.

<table>
<thead>
<tr>
<th>Subfamilies</th>
<th>No. of genera</th>
<th>%</th>
<th>No. of species</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cateretinae</td>
<td>6</td>
<td>15</td>
<td>11</td>
<td>7</td>
</tr>
<tr>
<td>Carpophilinae</td>
<td>4</td>
<td>12</td>
<td>40</td>
<td>27</td>
</tr>
<tr>
<td>Nitidulinae</td>
<td>21</td>
<td>62</td>
<td>76</td>
<td>50</td>
</tr>
<tr>
<td>Meligethinae</td>
<td>1</td>
<td>3</td>
<td>5</td>
<td>3</td>
</tr>
<tr>
<td>Cryptarchinae</td>
<td>3</td>
<td>8</td>
<td>20</td>
<td>13</td>
</tr>
</tbody>
</table>

| Total        | 35            | 100| 152            | 100|

An examination of Table II offers clues to the history and origins of the Nearctic genera. In the first place, most of the genera must be ancient (of early tertiary or even Cretaceous origin) since more than half are cosmopolitan or nearly so. Where these widespread genera started cannot be conjectured. About an equal number of genera are Holarctic or American in distribution. The Holarctic genera, except for *Brachypterolus*, seem to have arrived in North America from Siberia. The New World and two of the tropicopolitan genera appear to be relatively recent arrivals from the tropics into the United States. Six genera are endemic to North America.
Thus a surprisingly small proportion of the Nearctic fauna is autochthonous. Evidently the bulk of the present fauna immigrated several times during the Tertiary period.

Table II

<table>
<thead>
<tr>
<th>Genera of Nearctic Nitidulidae</th>
<th>Cosmopolitan</th>
<th>Holarctic</th>
<th>New World</th>
<th>Nearctic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cateretes</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Boreades</td>
<td>+</td>
<td></td>
<td></td>
<td>+</td>
</tr>
<tr>
<td>Brachypterus</td>
<td>+ 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brachypterolus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amartus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anthonaeus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conotelus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brachypeplus</td>
<td>tropicopolitan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colopterus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Carpophilus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Haptoncus</td>
<td>tropicopolitan, also</td>
<td>subtropics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Epuraea</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Orthopeplus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Stelidota</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omosita</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nitidula</td>
<td>+ 1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Prometopia</td>
<td>tropicopolitan, also</td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Lobiopa</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soronia</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phenolia</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphotis</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thalycra</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Perthalycra</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quadrifrons</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pecadius</td>
<td>+ except Australian</td>
<td>tropics</td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Camptodes</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Amphicrossus</td>
<td>tropicopolitan, also</td>
<td>+</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cydrampus</td>
<td>+ except Ethiopian</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pallodes</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyllodes</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oxydemus</td>
<td>+ except Ethiopian and Austr.</td>
<td></td>
<td>+</td>
<td></td>
</tr>
<tr>
<td>Meligethes</td>
<td>+ except Neotropical</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cryptarcha</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pityophagus</td>
<td>+</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glischrochilus</td>
<td>+ except Ethiopian</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 = neither Australian nor Oriental.
Biology

The habits of the Nitidulidae are remarkably variable. In the most primitive subfamily (Cateretinae) the larvae live in the seed capsules of various plants and the adults feed on the pollen and petals of the same plants or sometimes of others. The members of the other subfamilies are primarily saprofagous and mycetophagous. Although some live in flowers, the majority live in decaying fruits, fermenting plant juices, and in fungi. Some genera live in a particular fungus peculiar to that genus. *Epuraea depressa*, according to Dodge, breeds in the nests of bumblebees, and the larvae are considered fungivorous. Cockerell has collected *Epuraea integra* in the nest of *Bombus juxitus*. This habit is similar to the Australian *Brachypeplus auritus* of which the larvae and adult feed on the wax and honey of a wild bee. *Amphoris* occurs in ant nests; *ulkei* is strictly myrmecophilous in the early spring but in the fall of the year is found in decaying fungi. *Nitidula* and *Omosita* breed in carrion. In Europe the larvae of certain *Glischrochilus*, *Nitidula*, and *Pityophagus* are predaceous on Scolytids and may have similar habits in the United States.

In temperate regions most of the species hibernate beneath logs. Pupation takes place in the earth, which indicates that the pupae may hibernate also. In the tropics the life cycle seems to be continuous, although there must be aestivation over extremely dry seasons.

Morphology

The antennae are eleven-segmented. The three-segmented club is variable; it may be hardly noticeable, as in *Cateretes*, or compactly circular as in *Camptodes*. In the Rhizophagidae the ten-segmented antennae have a two-segmented club. Among the Nitidulidae a tendency to this reduction is evinced in the Oriental *Chalonecrus wallacei*.

Many genera have a pair of narrow grooves on the under side of the head, on each side, for the reception of the basal portions of the antennae. These extend backward obliquely or parallel with each other. The presence or absence of the grooves is a useful generic character, but the degree of convergence is of doubtful value.

The mandibles are rather broad, with a brush of hairs on the inner margin, often bidentate at the apex, the inner tooth often being smaller and shorter than the outer. They may be unequal in length, as in the males of *Cryptarcha*. Also only one may be bidentate, or there may be a number of small teeth behind the apex.
The maxillae are bilobed (galea present) in the Cateretinae but with a single lobe (lacinia) among the remaining groups. The galea is always slender and never has more than a few hairs at tip. In some *Brachypterus* and *Amartus*, at least, there is a small vesicle at or near the extremity, which may have some gustatory function. The lacinia is rather narrow in the Cateretinae but broader in the other groups, with a brush of hairs at the extremity and often on the inner margin. The relative sizes and shape of the laciniae and palpi are useful in indicating generic affinities.

The ligulae are rather variable in shape. The three-segmented labial palpi are inserted on a distinct palpiger on the ventral side of the ligula. Placed more or less dorsally on the anterior and lateral margins of the ligula are the pair of paraglossae, which may be large and horn-shaped, reduced, or absent. The palpi in particular offer good characters for generic differentiation.

The mentum is usually trapezoidal, bisinuate in front, and rather invariable, consequently not very useful for generic differences. The mentum of *Amphotis*, however, shows specific differentiation.

The labrum is transverse, and usually more or less bilobed. It is exposed, except in *Meligethes* where it is concealed by the clypeus. The labrum is articulated by a pair of slender struts produced posteriorly from each posterior angle and also by a short, median, triangular projection.

The clypeus is distinct in some of the Cateretinae but is usually indistinguishable from the front.

The eyes are lateral, rounded, and large. The degree of coarseness of the facets varies generically in the Nitidulinae.

The prothorax is highly variable in form but there is a general tendency for the lateral margin to be explanate. The prosternum is produced posteriorly into a lamellate process which extends between the coxae and sometimes overlaps the mesosternum. The anterior coxal cavities are obtuse at the proximal end and terminate in a point directed obliquely antero-laterally. The anterior cavities are open behind only in the Cateretinae.

The mesothorax is short; the episternum large with a narrow epimeron along its outer margin. The scutellum is usually triangular, but it may be pentagonal, semicircular, or quadrangular. The sternum is sometimes carinate and the coxal cavities are closed and strongly transverse. The elytra tend to be shortened but often only part of the pygidium is exposed. All the Carpophilinae have shortened elytra exposing two or three tergites. Thus *Conotelus* resembles Staphylinidae
of the tribes Piestini or Phloeocharini. The epipleurae are usually broad and often extend to the apices.

The metathorax is large; the rather broad episternum extends along its entire length. The sternum is often divided by a suture medianly from its posterior margin. In many genera there is a triangular space on each side of the sternum bounded by the mesocoxa, the episternum, and an oblique raised line, evidently not a suture. Blackburn (1891) calls it for convenience the “intermediate plate” and thinks it is the mesosternal epimeron. As noted above, the writer thinks another sclerite is the mesosternal epimeron and that this space is much too posterior to be a mesopleurite. Since the space may be variously developed and even absent within a single genus (Carpophilus) or even species (Carpophilus lugubris), the writer believes it is part of the metasternum. In Carpophilus sayi the space is strongly transverse, with only a suggestion of obliquity at the distal end of the suture. Murray (1864) calls it the axillary piece. This writer, following Fall (1910), refers to it in the text as the “axillary space”. The posterior coxal cavities are closed behind, strongly transverse, and extend to the margins of the body.

The wings of all but one of the Nearctic genera are figured. The figures show that the degree of development of the veins is proportional to the size of the species. Venation is almost absent in the smaller genera and well developed in the larger genera. Evidently it is impossible to draw up family characters of venation from a sample genus, as has been done in the past. The folding is extremely complex, so that the venation of the distal half of the wing is almost absent. A median, cubitus, and some anal veins are more or less normal, whereas the veins anterior to the median are greatly anastomosed and crowded near the base of the wing near its anterior margin. The wing is lobed at its base. The absence of the lobe in the figures of two of the genera is probably due to errors in dissection.

The legs are rather short and somewhat retractile. The coxae are strongly transverse but never contiguous. Actually the anterior coxae are probably always contiguous beneath the prosternal process. The femurs are sometimes canaliculate for the reception of the tibiae. The tarsi are almost always dilated with a cushion of hairs beneath; the fourth segment is minute, the fifth about as long as the first three, and the claws are either toothed or simple.

The abdomen is composed of seven tergites and five sternites. The characteristically shield-shaped seventh tergite and fifth sternite are the pygidium and hypopygidium respectively. Contrary to Gangle-
bauer (1899) the writer believes with Lesne (1939) that the hypopygigium represents the seventh sternite. Since only five sternites are visibly distinct, two basal sternites have anastomosed. There are six spiracles on the antero-lateral margins of the tergites.

The male has a well developed additional or eighth tergite always present and visible in most genera. Reitter and Horn speak of the additional dorsal segment of the male as the sixth. Murray says it is either the seventh or eighth. Ganglebauer (1899), Lesne (1938), and the present writer call it the eighth. Lesne (loc. cit.) speaks of the male eighth segment as the pygidium. Since, with Coleoptera, it is impossible to speak of the true pygidium and since the additional segment is not visible in some male and all female nitidulids, the writer believes that the characteristically shaped seventh dorsal segment of both sexes should be termed pygidium.

The genitalia, as described here, are mainly the highly modified distal abdominal segments. An examination of the plates will elucidate the following descriptions.

In the male the eighth tergite is well developed but the eighth sternite is much reduced. To the sternite is attached a strut. The ninth tergite (epandrium) and sternite (hypandrium) form a highly sclerotized tubular structure or tegmen, which serves to guide the ejaculatory duct into the vulva. A pair of parameres, articulated to the tegmen, may or may not be present. As the figures show, the structure of the male genitalia varies greatly between genera but the writer has been unable to detect useful specific differences.

The female genitalia are less specialized than the male. The eighth tergite and sternite are only slightly modified. As in the male, the sternite is attached to a ventral strut or spiculum ventrale. The eighth segment is connected by a long intersegmental membrane to the valvifer and paraproct. The paraproct is dorsal and evidently borne on the distal part of the valvifer. The valvifer bears ventrally a pair of appendages termed coxites, which in turn bear a pair of probably tactile styli. Between the coxites near their base on the ventral side is the vulva, which connects with a large bursa copulatrix by way of the vagina. A slender duct joins the consistently oval spermatheca (with its gland) to the bursa copulatrix.

Wandollek (1905) maintains that the paraproct, valvifer, and coxite compose the ninth tergite and sternite. Verhoeff (1894) added the styli to the ninth sternite. Wheeler (1893), Crampton (1925), and Tanner (1927) say the coxites, with their styli, are appendages of the ninth sternites and that the proctiger is the tenth tergite. The
Nitidulidae indicate nothing in disagreement with this view. Tanner (1927) proposes the term baculi for the rod-like structures of the paraprocts, valvifers, and coxites.

The female genitalia present two principal types. The first is relatively little sclerotized, elongate, slender, and with well developed styli. It occurs exclusively in the Cateretinae and in the other subfamilies, except Meligethinae. In the other type the genitalia are strongly sclerotized distally; the coxites are greatly shortened and even modified into a blade or serrate; the styli are greatly reduced and laterally placed. It occurs in the Meligethinae and sporadically in all the other subfamilies but the Cateretinae. Apparently no phylogenetic significance can be attributed to these types, nor can any correlated development of male and female genitalia be detected.

For the purpose of separating and relating species, the female genitalia are superior to the male. The coxites, in particular, offer the clearest characters.

The Rhizophagidae differ from the Nitidulidae in having ten-segmented antennae, heteromerous tarsi in the males, seven abdominal spiracles, galea present (as in the Cateretinae), and distinctive larva. They seem to be intermediate between the Nitidulidae and the Ostepomatidae. The Cybocephalidae differ in having four-segmented tarsi, body retractile, mandibles in repose resting against the meta-sternum, five abdominal spiracles, and distinctive larvae. For these reasons it seems best to separate the two families as the nearest relatives of the nitidulids.

**Taxonomy**

*Nomenclature.* In determining problems of nomenclature the writer has followed the *International Rules of Zoological Nomenclature* (1926, Proc. Biol. Soc. Wash., 39: 75–104). The designation of genotypes in this family has never been accomplished. This omission is remedied for the Nearctic genera. Whenever the genus is not monotypic or the type is not designated in the original description, the first valid species mentioned by the describer of the genus is employed. In order to corroborate the inclusion of the type species in the genus, the writer has examined the genotype in almost every case.

For all names binomials only are employed. Occasionally varieties will be raised to subspecies or species relegated to subspecific status. When this is done, the writer believes trinomials should be used.

In finding the proportions of the prothorax and elytra the writer has measured the greatest possible width and length.
Explanation of terms. One of the chief excuses for the account of morphology is to make the descriptions as explicit as possible. At least two terms, however, may be explained here. The epistoma of previous authors is the clypeus. By “dorsal segments” is meant the abdominal tergites exposed behind the elytra, including the pygidium. The abbreviation “M.C.Z.” stands for the Museum of Comparative Zoology.

Diagnosis of the family: adults. Very variable in shape; small or medium in size. Antennae inserted under the frontal margin in front of the eyes; eleven-segmented; a three-segmented club usually very distinct but sometimes only slightly developed. Antennal grooves usually present. Mouthparts normal; galea present only in the Cateretinae. Elytra entire, sometimes shortened to expose two or three abdominal segments. Prosternum with a process produced between the front coxae. The metepisterna attaining the metacoxal cavities. All coxae transverse and separated. Anterior coxae with free trochantin and either open or closed behind. Middle and hind coxae closed behind. Hind coxae almost attaining the lateral margins of the body. Legs short and moderately retractile. Tarsi five-segmented, first segment of normal size, the fourth very small, and the fifth longest. Abdomen with six spiracles; five visible sternites; seven tergites, and in the male often an eighth tergite is visible.


Key to subfamilies of Nitidulidae

1. Maxillae with one lobe (lacinia); antennae distinctly capitate .... 2
   Maxillae with two lobes; antennae feebly capitate. .... Cateretinae
2. Abdomen covered, at most with the pygidium exposed ............ 3
   Abdomen with or without segments exposed. . Carpophilinae (p. 150)
3. Labrum free, more or less visible .................................... 4
   Labrum connate with the clypeus ................................. 5
4. Mesosternum not carinate; or the prosternum depressed behind the coxae and not prolonged, or the pronotum margined at base .................. Nitidulinae (p. 182)
   Mesosternum carinate; prosternum elevated and prolonged behind, the tip enlarged, free, and overlapping the mesosternum; pronotum not margined at base; all tarsi dilated . Meligethinae (p. 251)
5. Suture of the labrum more or less distinct .... Cryptarchinae (p. 257)
   (no alternate)
PARSONS: A REVISION OF NEARCTIC NITIDULIDAE 135

CATERETINAE

*Cateretes* Er., 1843, in Germar, Zeitschr. für Ent., 4: 226 Brachypterinae auct.

This subfamily contains fifteen genera, none of which contain many species. Six genera, two endemic, are found in the Nearectic region.

*Key to genera of Nearctic Cateretinae*

1. Claws simple .......................................................... 2
   Claws distinctly dentate at base .................................. 4
2. Length under 3 mm ................................................... 3
   Length over 3 mm .................................................... 5
3. Color of elytra testaceous to piceous .................................. *Cateretes*
   Color of elytra metallic blue-green .................................. *Boreades*
4. Posterior pronotal angles obtuse ........................................ *Brachypterus*
   Posterior pronotal angles rectangular .................................. *Brachypterolus*
5. Body convex .......................................................... *Amarthus*
   Body depressed ....................................................... *Anthonacae*

*Cateretes* Herbst

Plates 1, 12

*Kateretes* Herbst, 1793, Natur. aller bek. u. ausl. Insekten 5, 11, ex parte.

Type: *Nitidula pedicularis* L.


*Cercus* Latreille, 1796, Précis Caract. gen. Ins., p. 68. Type: *C. rufilabris* Latr.

*Anisoscerca* Stephens, 1832, Ill. Brit. Ent., 5, 438. Type: *C. pedicularis* L.

*Anomaeocera* Shuckard, 1840, Col. delin., p. 25. Type: *C. pedicularis* L.


Head much narrower than the pronotum, emarginate, front separated from the elytra by a transverse furrow or by a fine transverse line. Antennae with a rather narrow, indistinct club; in the male of the subgenus *Cateretes* s. str. the first two segments or only the first are enlarged. Labrum transverse, deeply emarginate, with broadly rounded lobes. Mandibles broadened on the outer side of the base, with a single untoothed apex. Lacinia terminating in a point which is bent inwards almost at right angles, a tuft of hair at the bend; galea is very slender and glabrous. Maxillary palpi short and thick, first segment a little shorter and slenderer than the second; second and third of equal width, third somewhat longer than the second, the apical segment as long but slenderer than the second. Mentum strongly transverse. First segment of labial palpi very small, second short and clavate; the apical segment as long as the other two seg-
ments combined. Pronotum as broad or somewhat narrower than the elytra, rounded on the sides, often more strongly narrowed anteriorly than posteriorly, with rounded angles; sides narrowly arcuate; at the base slightly rounded. Scutellum large, triangular. Elytra with narrow epipleuræ; pygidium free and broadly truncate. The prosternal process between the front coxae narrow. The mesosternal process broader, middle coxae further apart than the front coxae. Metasternum about as long as the first two ventral segments together. Metepisternum pointed posteriorly. First ventral segment, in the middle, as long or longer than the second and third together, second and third short, fourth and fifth longer. A dorsal segment visible behind the pygidium in the male of the American but not the European species. Femurs rather short, tibiae gradually broader towards the apex. The first three tarsal segments dilated, of equal length, long thick hairs on the under side; third tarsal segment deeply bilobed; the fourth very small, the fifth about as long as the first four combined. Claws simple.

Since Cateretes is the most generalized nitidulid, its description is made particularly complete.

Of the New World genera Cateretes is nearest to Boreades new genus but differs in a number of ways, as shown in the figures; Cateretes is also close to the European Heterhelus but differs in the shape of the pronotum, labial palpi, mentum, and maxillae.

The larva of C. rufilabris (Latr.) has been described by Perreis, 1876, Ann. Soc. Ent. Fr. p. 214; Larves de Coleopt. 1877, pp. 38–39.

In Europe the larvae live in the flowers of Juncus (Juncaceae) and pupate in the earth; the adults are found on the flowers of Spiræa (Rosaceae), sedges (Cyperaceae), rushes (Juncus), and generally in swampy places.

The genus Cateretes is strictly Holarctic. Two species are Nearctic and five are Palaearctic. The types of the Nearctic species have been examined in the British Museum, and all of the species, except C. flavicans Fairm. (Algeria), have been examined in the writer’s collection.

**Key to subgenera**

1. In the males the first or also the second antennal segment dilated. Antennæ usually in the female extending beyond the hind margin of the pronotum. Head strongly transverse, with small, strongly prominent eyes; a deep transverse line between the bases of the antennæ. Pronotum with evenly rounded hind angles, weakly convex, coarsely and sparsely punctate... Subg. *Cateretes* s. str.
2. Antennae simple in both sexes, not attaining the hind margin of the pronotum. Head weakly transverse, with larger, weakly prominent eyes and finer clypeal suture. Pronotum with evenly rounded or more or less quadrate hind angles, more strongly convex; less coarsely and sparsely punctate......Subg. Pulion.

Key to species of subgenus Pulion
Elytra sparsely punctate, the distance between the punctures greater than the size of the punctures ..............pennatus.
Elytra densely punctate, the distance between most of the punctures less than the size of the punctures ..............sericans.

Cateretes (Pulion) pennatus (Murray)
Plate 1, figs. 1–4, 7; 12, fig. 1

Cercus crinitus Murray ♂, loc. cit., p. 237.
Types: of pennatus from “Canada, Pennsylvannia, and other parts of North America”; of crinitus, from Tennessee, are in the British Museum.

Oval; moderately robust; typically dull fulvous or dark piceous but may be testaceous or ferrugineous; moderately shining; sparsely pubescent. Head moderately densely punctate, front feebly bi-impressed, with a transverse black line joining the two impressions. Thorax with width and length as 1.5 to 1; apex hardly if at all emarginate; sides rather strongly arcuate, in the female slightly sinuate posteriorly, in the male evenly arcuate, margin narrowly reflexed; disc rather strongly convex, moderately densely punctate. Scutellum coarsely but sparsely punctate. Elytra with length to width as 1 to 8, apices truncately but evenly rounded, surface not coarsely nor densely punctate. Pygidium sparsely punctulate, the entire hind margin of the tergite anterior to the pygidium showing from beneath the elytra. Body beneath sparsely punctulate. Legs and antennae are usually paler than the body. Length 1.9–2.5 mm.

This species is so closely related to sericans that the two cannot always be separated with certainty. But pennatus is larger, more robust, apices of the elytra more rounded, more of the abdomen showing, more densely and coarsely punctate elytra, antennal club more distinctly of two not three segments and the pronotum proportionately wider.

This species occurs (May–July, mainly May) from Quebec to North Carolina (Gray Beard Mt.) west to Kansas (Douglas Co., Argentine) across Canada to British Columbia (Terrace, Frazer Valley, Kaslo,
Cawston, Steelhead) south in the coastal region to California (Ventura, S. Paula, Berkeley on Sambucus) where it seems to intergrade with sericans.

CATERETES (Pulion) sericans (Leconte)

Plate 1, figs. 9, 12

Type: from “Tejon” Fort Tejon, California, lectotype ♀, M.C.Z. no 6988 and
4 cotypes (3 ♀, 1 ♂). A cotype is in the British Museum.

Oval; slightly oblong; usually testaceous, often with head and elytra piceous, occasionally entirely castaneous to dark piceous above with pale legs and antennae; surface feebly shining; sparsely pubescent. Head sparsely punctate, front with fine black transverse line. Antennal club feebly three segmented. Thorax with width to length as 1.3 to 1, apex not emarginate, disc strongly convex, moderately densely punctured, margin very narrowly reflexed, sides not strongly arcuate, in the female slightly sinuate posteriorly, in the male evenly arcuate. Scutellum rather coarsely and sparsely punctate. Elytra with length to width as 1.2 to 1, surface densely and coarsely punctate, apices obliquely, truncate, rounded. Only the outer angles of tergite anterior to pygidium show from beneath the elytra. Length 1.5 to 2.3 mm.

For the relationships of sericans see under pennatus. In central and northern California specimens tend to be larger, darker and more robust than usual.

This species occurs (May-August) from Washington (Cooks) to southern California (San Diego) east to Nevada (Lovelock), Utah (Ogden, Wasatch), Arizona (Flagstaff, Williams, Globe) and New Mexico (Cloudcroft).

CATERETES (Cateretes) scissus spec. nov.

Plate 1, figs, 5, 6

Cateretes bipustulatus Payk. auct. in parte

Closely related to the European pedicularis L. but averaging a little smaller, antennal club a little more compact, and the second antennal segment subglobose instead of elongate in the female. Color a rich reddish brown or black; shining; a broad oblique band on each elytron, or in the black specimens a black v-shaped spot on the anterior part of the elytra and the rest of the elytra testaceous; clypeus, antennae, and legs testaceous. Head closely, coarsely punctate; thorax coarsely but
rather sparsely punctate, feebly alutaceous; elytra coarsely and more closely punctate than the thorax. Thorax with length to width as 1 to 1.7, lateral margins very narrowly reflexed. Thorax and elytra finely and sparsely pubescent, pygidium more strongly pubescent. Beneath finely punctate, sparsely pubescent. Length 2.1 mm., width 1.1 mm.

Holotype ♂ and allotype collected July 8, Edmonton, Alberta (F. S. Carr) in Mus. Comp. Zool. (H. C. Fall collection); paratypes Tewksbury, Mass. in M.C.Z. (Blanchard collection); one Tewksbury and another Mass. (S. Henshaw) specimen in the New England Museum of Natural History, Hopkinton, Mass. (Frost coll.); and several from Edmonton, Alberta (May 24–August 7) in the collections of the Univ. of California, Univ. of Kansas, C. A. Frost, and the writer.

This species has been recorded by Horn, 1879, under the name bipustulatus Payk., but it is really nearer to pedicularis Linn.

Boreades genus nov.

Plates 1, 12


Head much narrower than pronotum, front separated from clypeus by an incomplete transverse furrow. Antennae with a distinct three-segmented club, the terminal segment bluntly sub-appendiculate at tip. Eye facets fine. Labrum transverse, not strongly emarginate, with truncately rounded lobes. Mandibles only slightly broadened with a single untoothed apex. Lacinia attenuate at tip, galea slender. Maxillary palpi rather long and thick; the apical segment not thicker than the others but as long as the second and third combined. Mentum not strongly transverse. First segment of labial palpi small, second about twice as long as the first and second combined. Pronotum not as broad as the elytra, the sides moderately arcuate, and the posterior angles obtusely but not broadly rounded. Scutellum large and bluntly triangular. The narrow epipleurae only along the anterior half of the elytra; pygidium free and rounded. Prosternal process narrow, subparallel, tip rounded, and extending to posterior margin of coxae. Mesosternal process twice as broad as the prosternal process, broadly rounded. Metasternum at middle about as long as first two ventral segments combined. Metepisternum pointed posteriorly. First ventral segment at middle as long as the second and third combined. Second segment short, third a little longer, fourth a little longer than the third, and the fifth a little longer than the fourth. In the male a
broadly rounded dorsal segment appears behind the emarginate pygidium. The first three tarsal segments dilated, of equal length, the fourth segment very small, the fifth as long as the first two combined. Claws simple. Genotype: Cercometes abdominalis (Er.), described under Cercus.

Reitter says of Cercometes that the labial palpi are four-segmented (evidently assuming that the palpiger is a segment) and that the first three segments are minute, the claws are dentate, the clypeus by no means distinct, and the pygidium simple in both sexes. All of these characters necessitate separating abdominalis to form a new genus. Boreades seems to be intermediate between Cateretes and Brachypterus and rather close to Heterhelus in which Reitter placed abdominalis when he described the South American politus. Reitter subsequently made politus the type of his new genus Cercometes.

The genus Boreades contains one North American species. The adults have been collected by the writer on the blossoms of blackberry, Rubus (Eubatus) spp., and elderberry, Sambucus canadensis.

Boreades abdominalis (Erichson)

Plate 1, figs. 13–21; pl. 12, fig. 2

Cercus abdominalis Erichson, 1843, in Germar, Zeitschr. für die Ent., 4:229.
Cateretes abdominalis (Er.) auct.
Type: "North America", probably Pennsylvania in the Berlin Museum (Knoch Collection).

Oval, convex, metallic blue-green, shining, antennæ, abdomen, and legs rufous, antennal club piceous. Head, pronotum and elytra very feebly pubescent; underside and abdomen more strongly pubescent. Head densely punctate. Thorax convex; width to length as 1.6 to 1; base a little wider than the apex; sides moderately arcuate, narrowly reflexed, feebly sinuate near the subrectangular basal angles; surface equally punctate, punctures moderately coarse not dense. Scutellum blunty and broadly rectangular, moderately densely punctate. Length to width of elytra conjointly as 1.1 to 1, sides feebly arcuate, narrowly reflexed, convex, a little more coarsely and densely punctate than the pronotum. Prosternum densely and coarsely punctate, body beneath less so, and abdomen still less so. Length 2-3 mm.

This species is found (April-August) from eastern Canada to Georgia (Clayton) west to Texas (Dallas), Missouri, Nebraska (Lincoln), Kansas (Argentine, Muncie, Kansas Co.), Iowa (Burlington) and Manitoba (Aweme).
Brachypterus Kugelann

Plates 1, 12

Brachypterus Kugelann, 1794, in Schneider's Mag., 1, 560. Genotype: Dernestes urticae Fab.

Virbius Des Gozis, 1886, Recherche de l'esp. ţyp., p. 11.

Head narrower than pronotum, front separated from the clypeus by an incomplete transverse furrow. Antennae with a distinct but loosely connected club. Labrum transverse, not strongly emarginate. Mandibles not broadened on the outer side of the base, with a fine tooth near the apex. Lacinia and galea slender. Maxillary palpi rather long and thick; the apical segment thinner than the others and as long as the second and third combined. Mentum triangular, the anterior angle deeply emarginate. First and second segments of the labial palpi very small, the third large, subglobose, twice as long as the first two combined. Pronotum almost as broad as the elytra, sides more or less strongly arcuate; posterior angles obtusely rounded. Scutellum large, triangular. Epipleurae narrow, not extending half way posteriorly. Pygidium free and rather acutely rounded. Prosternal process becoming broader posteriorly, truncate, not extending beyond the coxae. Mesosternal process not quite twice as broad as the prosternal process, broadly rounded. First ventral segment in the middle longer than the next two combined. Second and third of equal length, fourth longer, fifth much longer than the fourth. In the male a broadly rounded dorsal segment behind the feebly emarginate pygidium. Tarsi dilated, the fifth segment as long as the first three combined. Claws strongly dentate.

Brachypterus is intermediate between Boreades and Heterhelus on one hand and Brachyleptus and Amartus on the other. The Australian Notobrachypterus, placed by Grouvelle between Brachypterus and Brachyleptus, is unknown to the writer.

In Europe the larvae and adults live in the flowers of nettles (Urtica) and pupation is in the earth.

The genus Brachypterus occurs in the Holarctic and Neotropical regions with one species in East Africa. Sixteen species are Palaearctic, four are Nearctic (one of which is Holarctic), and three are Neotropical. The genus seems to be ancient, since two species are restricted to the Canary Islands, another occurs on the Canaries and in southern Europe; one is found in Algeria, Sardinia, and Corsica; another in Algeria and the Balearics; a species occurs in Sardinia and the Canaries; and one in the Grenadines of the Lesser Antilles. Most of the species are re-
stricted to arid regions but they cannot very well be called relicts of a
time when the earth was generally arid, because the earth was prob-
ably never so arid as now.

1. Sides of pronotum meeting the base in a continuous curve, prothorax
   pale brown (Texas). ................................. 1. *schaefferi*
   Sides of pronotum not meeting the base in a continuous curve, pro-
   thorax dark brown .................................. 2

2. Sides of pronotum usually not sinuate posteriorly (California) ....
   .................................................. 2. *trogloodytes*
   Sides of pronotum usually sinuate posteriorly (Rocky Mountains
   eastward) ........................................ 3

3. About 2.2 mm. long, sutural angles of elytral apices slightly rounded
   (Cordilleran region) ............................... 3. *globularius*
   About 1.9 mm. long, sutural angles of elytral apices very slightly if
   at all rounded (Eastern States, Europe) ........... 3. *urticae*

*Brachypterus schaefferi* Grouvelle

146. (non *rotundicollis* Murray, 1864).
Type: No. 42560 collected in April at St. Tomas, Brownsville, Texas, in the
U. S. N. M.

Oval, brownish, thorax paler, elytra with slight aeneous tinge, shining,
sparsely pubescent. Head coarsely punctate. Antennae rufous. Pro-
 thorax, at its broadest part, as wide as the elytra at base, coarsely not
very densely punctate, sides evenly arcuate, meeting the base in a con-
 tinuous curve. Elytra more coarsely and densely punctate than the
pronotum, apices truncate, sutural angles slightly rounded. Pygidium
sparsely and obsolete punctate. Prosternum in front with a few
scattered punctures; metasternum coarsely punctate; abdomen ob-
soletely punctate, legs rufous. Length 1.5 mm.

Sharp, 1889, Biol. Centr.-Amer. Coleopt. 2: 265, records specimens
from Cordova, Mexico (400 miles south of Brownsville) as doubtfully
*urticae*, because the pronotum was shaped as in *schaefferi*. Evidently
*schaefferi* is an offshoot from *urticae* but a little more distinctly
punctate.

This rare species is known (Jan., March, April, October) from Texas
(olmito, on stinging nettle, Victoria, and Brownsville at St. Tomas
and Esperanza Ranch) and possibly Cordova, Mexico (B.M.).
Brachypterus troglodytes Murray

Type: from California in the British Museum.

Oval; convex; brown to black, usually piceous, with a slight aeneous tinge, antennae and legs rufous, sparsely finely pubescent. Head coarsely punctate except along an obscure, median, longitudinal line; also a shallow transverse furrow, enlarged at each end, between the eyes. Pronotum usually with the sides evenly arcuate but sometimes with a trace of sinuation posteriorly; surface sparsely, coarsely punctate. Elytra more sparsely punctate than the pronotum, apices nearly transversely truncate. Beneath alutaceous, the metasternum sparsely punctate; its epimeron more strongly alutaceous. Length 1.8-2 mm.

This species differs from urticae in that the sides of the pronotum are usually evenly rounded not sinuate, the pronotal punctations coarser, the clypeal suture more pronounced, the elytral humeri less pronounced, and the elytral apices more truncate.

This species occurs (March-August) from British Columbia (Victoria, and doubtfully Metlakatla), through Washington (Skokomish R. Tenino), Oregon, to southern California (Mono Lake, Los Gatos, Pomona, Pasadena), east to Arizona.

Brachypterus globularius Murray


cotypes: from Connecticut and Mexico in the Lefert collection.

The location of this portion of the Lefert collection is unknown but may be in the Paris Museum or in the R. Oberthur collection at Rennes.

Very similar to urticae but larger, punctuation coarser, and sutural angles of the elytral apices less obtuse. The metasternum sparsely, coarsely punctate; the epimeron less sparsely, more finely punctate, and strongly alutaceous. Piceous, antennae and legs paler. The types have not been seen, and Murray says the sides of the pronotum are evenly rounded. Yet in all the specimens I have seen the sides of the pronotum are sinuate posteriorly; so the types may be termed “atypical.” In both troglodytes and urticae the pronotum may or may not be sinuate. The clypeal suture and elytral humeri are as in urticae. Length about 2.3 mm.

Specimens from northern California and British Columbia seem to
intergrade with *troglodytes*, but *globularius* is usually larger, more strongly punctate, pronotum more distinctly sinuate.

This species was described from Mexico and Colorado, and Murray adds Connecticut but this is probably a mistake. Authentic specimens have been seen from Alberta (Edmonton), Colorado (Glenwood Springs), and California (Half Moon Bay) and specimens that are doubtfully this species from California (San Francisco, San Mateo, Alameda Co.) and British Columbia (Metcalfatla). The dates run from April to August.

**Brachypterus urticae** (Fabricius)

Plate 1, figs. 22–28; pl. 12, fig. 3

*Dermestes urticae* Fabricius, 1792, Ent. Syst., 1, 235.
Types: of *urticae* on *Urtica* in Germany (Helwig) and possibly in Kiel; of *pusillus* from Pennsylvania in M. C. Z. (Melsheimer collection).

Oval; convex; surface shining and very sparsely pubescent; piceous or brownish with a slight aeneous tinge, antennae and legs rufous. Sparsely, moderately coarsely punctate. Elytra slightly more sparsely and finely punctate than the pronotum, the apices variably truncate. Clypeal suture fine. Sides of the pronotum arcuate and posteriorly usually sinuate, but the sinuation may be absent and the sides almost parallel. Elytral humeri moderately prominent. Metasternum alutaceous, finely and sparsely punctate. Length 1.5—2 mm.

Murray, 1864, places the American specimens as a variety of *urticae* because the sinuation of the pronotum is evanescent, but this character is not at all constant. The relationships of *urticae* are discussed under the other species.

The adults are found on the flowers of nettles (*Urtica*).

This widespread species is found over most of the Palaeartic region and may possibly be introduced into North America, because in 1879 it was known only from the Atlantic states. Whereas at present it is known (June-September) from Ontario (Ridgway, Prince Edward Co.) and Quebec to Virginia, west to Missouri (St. Louis), Iowa, Wisconsin, north to Alberta (Edmonton) and British Columbia (Bear Lake, Kaslo) south to Washington (Seattle) and Colorado (Montrose, Placerville, La Veta, Garland, Powder River).
Brachypterolus Grouvelle

Plates 1, 12


Head much narrower than pronotum; no visible line between the clypeus and front. Antennae with a distinct three-segmented club, the terminal segment sub-appendiculate at tip. Labrum transverse, weakly emarginate. Mandibles broad, untoothed, with long tips. Lacinia terminating in a point which is bent inwards almost at right angles, a tuft of hair on each side of the point; galea very slender and doubtfully glabrous. Maxillary palpi short and thick, the apical segment thinner and shorter than the second and third combined. Mentum small, very strongly transverse, anterior angles very broadly rounded. First segment of labial palpi rather large, the second rather long and slender, the apical segment large, clavate, longer than the first two combined. Pronotum very nearly as broad as the elytra, posterior margin on each side broadly emarginate. Scutellum large, triangular. Elytra with only a vestige of the epipleurae at the humerus; the sixth and seventh abdominal tergites visible from above. Pygidium truncate above the eighth dorsal segment in the male. Prosternal process parallel, narrow, and not extending posterior to the coxae. Mesosternal process emarginate, about three times as broad as the prosternal. Metasternum feebly emarginate posteriorly. First ventral segment, at middle, and fourth of equal length, either one longer than the second and third combined; fifth longer than the fourth. Tarsi dilated, with dense, long hairs beneath, the fourth tarsal segment very small, the fifth as long as the first two combined. Claws toothed.

Grouvelle (1913) places _Brachypterolus_ between _Amartus_ and the aberrant Oriental _Chalomecrus_. I believe _Brachypterolus_ is nearer to _Brachypterus_ than to _Amartus_.

In Europe the larvae feed on the pollen of _Antirrhinum_ and _Linaria_ (Scrophulariaceae) and pupate in the earth. In America the larvae appear to breed only in the seed capsules of _Linaria_, but the adults are found on the flowers of many plants. See Cornelius, 1863, Stett. Ent. Zeit. pp. 113-115; Perris, 1877, Larves des Coleop. pp. 35-36, fig. 23-26; and the references given below.

Until recently _Brachypterolus_ (8 species) was confined to the Palaeartic region. About 1918 the following European species was introduced into eastern United States.
Brachypterolus pulicarius (Linn.)

Plates 1, figs. 29–35; pl. 12, fig. 4

Dermestes pulicarius Linn., 1758, Syst. Nat., ed. 10, 1, 357.
Heterostomus pulicarius (L.) Britten, 1922, Journ. Econ. Ent., 15, 311; 1924,
Coll. Forestry, 24, 297.

Brachypterolus pulicarius (L.) Schaeffer, 1927, Bull. Brooklyn Ent. Soc., 22,
170; Hervey, 1927, Journ. Econ. Ent., 20, 809–814, fig. 381; Hatch, 1928,

For complete synonymy vide Grouvelle, 1913.


Oval; convex; shining black, antennae and legs pale to dark piceous. Rather thickly covered with long brownish to grey pubescence. Head, pronotum, scutellum, and elytra coarsely and closely punctate; abdomen above and below more finely punctate; metasternum coarsely punctate. Prothorax strongly emarginate in front, sides moderately arcuate, narrowed in front, hind angles rectangular. The legs, from fore to hind pair, are progressively darker. Length 1.8—2.5 mm.

Notman, 1920, separated the American specimens by description only. I am unable to discern any differences between specimens from the Old and New World.

Judging from its distribution, pulicarius seems to have been introduced first into eastern Canada, although the earliest record the writer knows about is in 1918 at Keene Valley, Essex Co., New York. Since then it has been collected (May-August) from Ontario (Prince Edward Co.) Quebec (Gaspé), and Nova Scotia (Bass River) south to Pennsylvania (Norwood), west to Iowa and Wisconsin. It is found generally over Europe and Siberia, where several varieties have been described on the basis of size and color of pubescence. Size is of no importance, but pubescence color is sometimes distinctive.

This species breeds in the United States in Linaria, is sometimes injurious to Fragaria, and the adults may be found on the flowers of dandelion, buttercup, wild mustard, clover, apple, and panicked dogwood.

Amartus Leconte

Plates 2, 12

Amartus rufipes Lec.

Brachyleptus Motsch., 1870, (non 1845), Bull. Soc. Imp. Moscow, 42, pt. 2,
pp. 352–4. Type of the 1870 description is Strongylus tinctus Mann.
Pronotum more than one and one-half as broad as the head, front separated from the clypeus by a long but incomplete transverse furrow. Antennae with a distinct but loose three-segmented club, the terminal segment sub-appendiculate at tip. Labrum transverse, broadly emarginate. Mandible with a single, untoothed, rather blunt apex. Lacinia not attenuate, tip bent inwards almost at right angles. Galea slender, with an enlarged hyaline vesicle at tip. Maxillary palpi long and thick, the apical segment slenderer but as long as the second and third combined. Mentum not strongly transverse. First segment of labial palpi rather large, third attenuate apically, about as long as the second. Pronotum nearly as broad as the elytra, posterior angles broadly rounded. Scutellum large, more or less trapezoidal, mostly covered by the pronotum. Elytra rather short, exposing the penultimate tergite. The narrow epipleurae only along the anterior half of the elytra. Prosternal process very narrow, reflexed, extending to posterior margin of coxae. The mesosternal process about five times as broad as the prosternal, emarginate; mesocoxae farther apart than the metacoxae. Metasternum divericate posteriorly. First ventral segment at middle as long or longer than the second and third combined; the fourth as long as the second and third combined. In the male a dorsal segment appears behind the truncated pygidium. First three tarsal segments broadly dilated, the fourth small, the fifth almost as long as the first four together. Claws simple, merely with the usual dilation.

*Amartus* occupies the dry regions of the southwest as its very close relative *Brachyceptus* Motsch. inhabits the dry Mediterranean region. It is evidently very close to *Brachyceptus*, differing in the shape of the mentum, labial palpi, pronotum, and claws. *Amartus* is further removed from *Brachypterus* and differs in the shorter elytra, simple claws, and differently shaped mentum, labial palpi, and mandibles.

In North America the adults feed on the pollen of certain Leguminaceae and Acanthaceae.

The genus *Amartus* is restricted to extreme western North America and southwestern Asia. Three of the six known species have been examined in the writer's collection.

**Key to the species of Amartus**

Form very robust, thorax very convex, apex distinctly narrower than the base ............................................................ *tinctus*

Form less robust, thorax moderately convex, not narrower at the apex ..................................................... *rufipes*
AMARTUS TINCTUS (Mannerheim)


Oval; robust; subopaque; moderately thickly clothed with long, greyish pubescence; color varying from dark piceous with fuscous antennae and legs to entirely testaceous. Head coarsely and very thickly punctate, pronotum less coarsely as thickly punctate, elytra more coarsely and sparsely punctate than the pronotum. Thorax with width to length as 1.3 to 1, apex a little narrower than the base and very feebly emarginate, sides feebly arcuate, hind angles broadly rounded, base broadly rounded and slightly sinuate on each side, disc convex. Elytra conjointly as wide as long, slightly narrowed toward apex, apices truncate rounded; a feeble scutellar depression. Abdomen above and below densely, finely punctate; metasternum more coarsely and less densely punctate. Length 3.9—5.5, width 1.7—2.2 mm.

This species is found (April-June) from Oregon to San Diego Co., California east in southern Arizona to the Chiricahua Mts.

AMARTUS RUFIPES Leconte

Plates 2, figs. 1—11; pl. 12, fig. 5

Types: of rufipes from Mendocino, Calif. (A. Agassiz) in the M.C.Z. (Leconte collection); of lateralis from central Calif., presumably in the Zoöl. Mus., Univ. Moscow.

Oblong oval; moderately convex; covered with long, rather sparse, cinereous pubescence. Head, pronotum, and scutellum black; elytra varying from black with ferrugineous sides to entirely ferrugineous. Abdomen above varying from dark piceous to ferrugineous. Beneath piceous, antennae and legs ferrugineous, posterior femurs piceous. Densely punctate all over, coarsely punctate on head and pronotum, a little less coarsely punctate on elytra, and still less coarsely punctate on the pygidium and beneath. Pronotum with length to width as 1 to 1.4, only slightly narrowed in front; hind angles and base very broadly
rounded. Elytra conjointly a little longer than wide, wider than the pronotum, narrowed a little anteriorly. Length 3.2—4 mm.

In addition to the characters given in the key, rufipes differs from tintus in averaging a little smaller and never being entirely testaceous. This species ranges (April-June) from San Francisco to southern California east into Arizona.

**Anthonaeus Horn**

Plates 2, 12


Head much narrower than pronotum, front separated from the clypeus by an incomplete transverse furrow. Antennae with an indistinct three-segmented club, the terminal segment conical and sub-appendiculate at tip. Labrum transverse, strongly emarginate, with broadly rounded lobes. Mandibles broadened on the outer side of the base and a large blunt tooth on the inner margin. Lacinia terminating in a point which is bent inwards almost at right angles, a tuft of hair on each side of the point; galea is very slender and glabrous. Maxillary palpi short and thick; the apical segment thicker and longer than the first, second, and third combined. Mentum strongly transverse, anterior angles broadly rounded. First segment of labial palpi very small, second short and clavate, the apical segment as long as the other two segments combined. Pronotum not as broad as the elytra; the sides and posterior angles broadly and evenly rounded. Scutellum large, triangular. Elytra anteriorly with broad epipleurae which abruptly narrow posteriorly; pygidium free and broadly truncate. The prosternal process parallel, narrow, and not extending beyond the coxae. The mesosternal process twice as broad as the prosternal process, truncate; metasternum about as long as the first three abdominal segments combined. First ventral segment, in the middle, not as long as the second and third combined; second and third short; fourth as long as second and third combined; and fifth as long as third and fourth combined. In the male a large obliquely truncate dorsal segment behind the emarginate pygidium. Tarsi dilated, the fifth as long as the preceding three combined. Claws simple.

*Anthonaeus* is evidently a depressed *Amartus*, but varies in so many minor points as to necessitate separating the two genera.

The adults are found in the flowers of *Agave*; so the larvae probably live in the seed capsules.
The genus *Anthonaeus* contains only a single species which occurs in southern California.

**Anthonaeus agavensis** (Crotch)

Plates 2, figs 13–22; pl. 12, fig. 6

Type: from California, no. 8313 and 4 paratypes in the M.C.Z. (Leconte collection).

Oblong oval; depressed; usually ferrugineous, sometimes black, but the elytra always testaceous. Head, pronotum, and elytra moderately punctate, sparsely pubescent. Prothorax with width to length as 1.5 to 1; sides strongly and evenly arcuate, lateral and posterior margins very narrowly reflexed. Scutellum moderately punctate. Pygidium and preceding segment exposed, more closely punctate and more thickly pubescent than the elytra. Pygidium with reflexed margins; in the male emarginate for the reception of the oval, slightly concave additional segment. Elytra conjointly a little longer than wide, becoming broader posteriorly. Prothorax beneath minutely and sparsely punctate. Metasternum coarsely punctate laterally, and the ventral segments moderately punctate. Length 3.8–4.5, width 1.8–2 mm.

This species is found (March 26–June) in the flowers of *Agave* along the coastal region of California from Santa Barbara Co. to San Diego Co.

**CARPOPHILINAE**

Carpophinae Er., 1843, in Germar, Zeitschr. für Ent., 4, 226 et 233.

This subfamily contains 31 genera of which four occur in the Nearctic region. Grouvelle placed Meligethinae between Catteretinae and Car- pophilinae. But the Meligethinae are most closely related to the Niti- dulinae and since there are gradations between the Carpophilinae and the latter, the Meligethinae will have to be placed after the Nitidulinae. Gauglebauer placed the Meligethinae in the Nitidulinae and the present writer is strongly inclined to agree with him. More of the exotic genera will have to be dissected, however, before a definite opinion can be formed.

*Key to genera of Nearctic Carpophilinae*

1. Body very elongate................................................. 2
   Body at most oblong.............................................. 3
2. Body convex, hypopygidium and pygidium long, conical. *Conotetus*
   Body depressed, hypopygidium and pygidium short, depressed......
   ................................................................. *Brachypeplus*
3. Ventral segments 1-4 short, fifth as long as the other combined. . . .

................................................................. Colopterus
Ventral segments 2-3 short, first, fourth, and fifth longer . . . .
................................................................. Carpophilus

Conotelus Erichson

Plates, 3, 12


Narrow, convex, elongate, tapering posteriorly. Head nearly as broad as the pronotum. Clypeus indistinct, slightly porrect, margined by a depression on each side. Eyes large and projecting. Antennae scarcely so long as the head with a large flattened club of globular outline. Antennal grooves long and slightly or strongly convergent. Labrum short, transverse, very feebly emarginate. Mandibles sharp at tip; two or three small teeth behind the tip. Lacinia short and rounded at apex. Maxillary palpi short and thick, first segment small, second and fourth about of equal length, much longer than the third. Ligula with small paraglossae, the palpi robust, first segment very small, second and third large and very thick. Mentum strongly transverse, feebly emarginate in front. Pronotum nearly as broad as the elytra. Scutellum broadly rounded posteriorly. Eipleurae broad and almost the elytral length. Elytra abbreviated, exposing the last three dorsal segments. The first two ventral segments short, of equal length; the next two segments longer, of equal length; the last segment very long, almost as long as the rest combined. Prosternal process produced behind the coxae. Meso- and metaxoxae about equally separated, nearly twice as much as the procoxae. An additional tubular segment in the male. Legs short, femurs feebly canaliculate. Tarsi dilated, the fifth segment about as long as the first four. Claws simple.

Conotelus is much more closely related to Colopterus, and to Brachypleplus in particular, than to Carpophilus, next to which Grouvelle placed it. In fact Conotelus grades imperceptibly into Brachypleplus. Its exact relationships cannot be stated until more exotic genera have been dissected.

The genus Conotelus comprises about 23 species, all but one confined to the tropical and subtropical regions of the New World. Four species are found in the United States, one of which extends into eastern Canada.
Key to species of Conotelus

1. Abdomen acutely margined. Head prolonged behind the eyes.
   Sides of thorax posteriorly sinuate.................. stenoides
   Abdomen slightly if at all margined. Head very slightly prolonged behind the eyes. Sides of thorax not sinuate posteriorly........ 2

2. Pronotum not rugulose, finely granular between the punctures....
   .......................................................... punctatus
   Pronotum distinctly and finely rugulose between the punctures... 3

3. Tibiae testaceous (Rocky Mts. eastward)..................... obscurus
   Tibiae almost always piceous (southwestern United States and Middle America).............................. mexicanus

Conotelus stenoides Murray

Type: from Panama (Motschulsky) in the British Museum.

Elongate, subdepressed, sparsely pubescent, color varying from brown to black. Head finely, subrugulose punctate. Prothorax as wide as long, sides very feebly arcuate, abruptly sinuate at the posterior angles. Margin moderately prominent and more or less distinctly crenulate, surface subrugosely, closely, variolose. Scutellum strongly transverse. Elytra conjointly with width to length as 1.1 to 1, finely striate, intervals with a row of shallow, coarse punctures, each bearing a semierect hair, surface finely, subgranularly alutaceous. Abdomen acutely margined, alutaceous, and sparsely punctate; pygidium in the male truncate, not emarginate. Prosternum rugulose. Antennae and legs testaceous, antennal club fuscous. Length 3.5–4 mm.

This species occurs (March-November, mainly April and May) from Florida (many localities) through Alabama (Kushla), Louisiana (Vowell’s Mill, Winfield) to Oklahoma (Ada) and eastern Texas (many localities) south through Mexico (Vera Paz, Cordova, Jalapa), Guatemala (S. Geronimo), Nicaragua (Chontales), to Panama (Bugaba, Volcan de Chiriqui).

Conotelus punctatus Schaeffer

Type: from Lake Worth, Florida (O. Dietz) in the U.S.N.M.

Elongate, moderately convex, sparsely pubescent, piceous with pale brown elytra. Head subrugosely, subgranularly, moderately closely punctate. Prothorax with width to length as 1.3 to 1, sides feebly ar-
cuaté, slightly narrowed anteriorly, lateral margins very narrow, smooth, posterior margin bisinuate, surface granular, sparsely but distinctly punctate. Elytra conjointly slightly longer than wide, surface finely granular with rows of punctures, each with a subereect hair. Abdomen sparsely punctate, pygidium in the male acutely emarginate. Prosternum finely alutaceous. Antennae and legs testaceous. Length 3.5–4.2 mm.

Evidently punctatus is intermediate between stenoides and obscurus and nearer the former. An apparently unnamed species, closely allied to punctatus but from British Guiana, is in the collections of the British Museum and the writer.

This species occurs, throughout the year but chiefly in the spring, in southern and central Florida (from Matecumbe Key to Lake County). Specimens from St. Thomas, Virgin Islands (B. M., Cambridge Univ. Mus.) are apparently identical.

**Conotelus obscurus** Erichson

Plates 3, figs. 1–10; pl. 12, fig. 7

*Conotelus obscurus* Erichson, 1843, in Germar, Zeitschr. für Ent., 4, 252.

Type: from “North America” (eastern United States), in the Knoch collection and from Zimmermann, in the Berlin Museum.

Elongate, moderately convex, sparsely pubescent, color varying from dark piceous to black, the elytra from light to dark piceous. Head subrugosely, sparsely punctate. Prothorax with width to length as 1.5 to 1, sides feebly arcuate, obliquely narrowed anteriorly, lateral margins very narrow, posterior margin feebly bisinuate, surface subrugosely, subgranularly, variolosely punctate. Elytra conjointly as long as wide, surface granular, closely, irregularly covered with rows of variolose punctures. Abdomen finely granular, sparsely punctate. Pygidium in the male acutely emarginate. Prosternum finely granular. Antennae and legs testaceous, the antennal club, often the coxae, and femurs fuscos or piceous. Length 3.5–4.5 mm.

This species is most nearly related to *mexicanus* from which it was probably derived. See under *mexicanus* for differences.

This species occurs (June-September) from Ontario (Ft. Erie) to South Carolina (Batesbury), Georgia (Rayburn Co., Clayton) west through Kentucky (Henderson) to Arkansas (Polk Co.), Kansas (Miami Co.), Iowa (many localities), north to Manitoba (Treesbank); also in Colorado (Denver).
Conotelus mexicanus Murray

Type: from Mexico (A. Sallé) in the British Museum.

Elongate, moderately convex, sparsely pubescent, uniformly dark piceous or black, the legs becoming somewhat paler towards their extremities, very rarely testaceous. Prothorax with width to length as 1.3 to 1, sides feebly arcuate, slightly narrowed anteriorly, lateral margins very narrow, posterior margin feebly bisinuate, surface finely, sparsely, longitudinally rugose. Abdomen narrowly margined, subrugosely, subgranularly punctate. Pygidium in the male shallowly emarginate. Prosternum subrugosely granular. Length 3.5–4 mm.

This species is closely related to obscurus, but the prothorax is a little narrower, the upper surface more opaque and more rugose, legs and elytra darker, and the male pygidium less deeply emarginate.

This species occurs (April-November) from southern California, Arizona (Prescott, Phoenix, Tempe, Stafford, Chiricahua Mts.), and Paris, Texas (not typical, legs testaceous) south through Lower California to Cape San Lucas and through Mexico, Honduras, Guatemala to Panama (Volcan de Chiriqui, Tobago Island).

Brachypeplus Erichson

Plates 3, 12

Brachypeplus Er., 1842, Arch. für Naturgesch., 8, 148. Genotype: B. planus Er.

Body elongate, usually depressed. Head not much narrower than the pronotum. Clypeus feebly emarginate in front, obscurely distinct; a vague fovea opposite the base of each antenna. Antennae a little longer than the head, first segment enlarged, the third elongate, the club flattened nearly round in outline. Antennal grooves short and slightly or strongly convergent. Eye facets very fine. Labrum broad, more or less indistinctly bilobed, sometimes with a notch on each side. Mandibles usually with two small teeth behind the apex. Lacinia rather short, rounded at tip, a brush of hairs on apex and inner margin. Maxillary palpi rather short and thick, first segment minute, the second unequal and large, about as long as the fourth, the third shorter than the second. Ligula large, with rather broad paraglossae. First segment of labial palpi very small, the second large and thick, the
third subseciriform. Mentum strongly transverse, more or less emarginate in front. Pronotum about as broad as the elytra, hind angles almost rectangular. Scutellum variable, more or less transverse. Epipleurae broad, reaching the elytral apices. Elytra much abbreviated, exposing the last three segments. First two abdominal segments of equal length, shorter than the next two, which are of equal length; the last longer than the preceding. Prosternal process may or may not be produced; in glaber it is greatly expanded beyond the coxae. Mesosternal process truncate. Mesocoxae and metacoxae equally separated, about twice as much as the procoxae. An additional transverse dorsal segment in the male. Tarsi feebly dilated; claws simple.

*Brachypeplus* seems to be nearer to *Cillaeus* than to *Colopterus*, next to which it was placed by Grouvelle. Its relationship to the peculiar Hawaiian genera is not clear to the writer. *Nitidulopsis* was synonymized by Grouvelle but may very well be a distinct genus.

The genus *Brachypeplus* is tropicopolitan, except that a few species extend southward through Australia into Tasmania. Only a single rare species is found in the United States.

**Brachypeplus glaber** Leconte

Plates 3, figs. 11–17; pl. 12, fig. 8


Type: collected by Hubbard and Schwarz, June 8, at Enterprise, Florida, no. 6961 in the M. C. Z. (Leconte collection).

Elongate; parallel; much depressed; glabrous; reddish brown, abdomen and metasternum dark piceous, antennal club dark rufous. Clypeus finely, sparsely punctate, finely granular. Rest of head moderately densely, coarsely punctate. Prothorax with width to length as 1.6 to 1, apex very feebly emarginate, sides nearly parallel, slightly narrowed in front, margin narrowly explanate posteriorly, hind angles rectangular, hind margin truncate, surface finely granular, moderately densely, coarsely punctate, except for a smooth median longitudinal line. Scutellum very sparsely punctate, finely granular. Elytra conjointly very slightly longer than wide, surface striate, striae finely punctate, intervals with rows of larger punctures, closely placed. Each elytron evenly truncately rounded. Abdomen above more finely, sparsely punctate than the pronotum, beneath more coarsely, densely punctate than above. Prosternum very sparsely punctate, the process strongly expanded behind the coxae and truncate. Length 3.3; width 1 mm.
This rare species occurs (May–July 17) in Florida (Dunedin, Capron, Lake Worth, Enterprise) and Georgia (St. Simon’s Island).

**Colopterus** Erichson

Plates 3, 12

*Colopterus* Er., 1842, Arch. für Naturgesch., 8, pt. 1, p. 149. Genotype: *Nitidula rupta* Fab.

*Colastus* Er., 1843, in Germar, Zeitschr. für Ent., 4, 236.

Very flat and often broad. Head small, transverse, much narrower than the pronotum; no line or furrow separating the clypeus from the front. Antennae short, with a large, loose, oval club; antennal grooves short and convergent. Eye facets very fine. Labrum broad, bilobed. Mandibles usually with a large tooth on the inner margin. Lacinia broad and rounded at apex, usually heavily bearded. Maxillary palpus long, first segment small, the third often much shorter than the second, the fourth elongate and slender. Mentum strongly transverse, deeply emarginate. Ligula large, first segment of labial palpi small, second larger, third much larger and subsecuiriform. Paraglossae very large and greatly expanded laterally. Pronotum about as broad as the elytra. Scutellum large. Epipleuræ broad, reaching the elytral apices. Elytra abbreviated, exposing the last three dorsal segments. Last ventral segment recurved dorsally on the sides and in the male emarginate posteriorly. First four ventral segments of about equal length, the fifth about as long as the rest combined. Prosternal process small, barely extending beyond the coxae. Mesosternal process truncate, about three times the width of the prosternal process. In the male an additional dorsal segment. Anterior tarsi broadly, middle and hind tarsi less broadly dilated; last segment as long as first four combined. Claws simple.

*Colopterus* is most nearly related to *Carpophilus*; the differences mainly concern the abdominal segments and the additional segment of the male.

As may be inferred from the depressed shape of *Colopterus*, the members of this genus live under bark and feed on sap. A specimen of *C. truncatus*, in the writer’s collection, was collected by H. B. Weiss in New Jersey in the shelf fungus *Polyergus graveolus*.

The genus *Colopterus* is confined to the New World where many species are known in the tropics and six species extend into or are confined to the United States.

The species of this genus are so variable that it is useless to enum-
erate many of the usual characters. Even those that are given are to be interpreted with latitude.

Key to species of Colopterus

1. Hind angles of thorax distinct ......................................................... 2
   Hind angles of thorax obtuse, rounded ......................................... truncatus
2. Scutellum smooth at tip ................................................................. 3
   Scutellum densely punctate, uniformly colored ................................... unicolor
3. Form broadly oval ............................................................................. 4
   Form oblong, much depressed .......................................................... semitectus
4. Thorax with an oblique sulcus in each hind angle ......................... 5
   Thorax without sulcus, elytra maculate ............................................ maculatus
5. Length 4–5 mm., black, each elytron depressed ................................  niger
   Length 3.5 mm., testaceous, each elytron broadly convex .................. gerhardi

Colopterus truncatus (Randall)

Colastus infimus Erichson, 1843, in Germar, Zeitschr. für Ent. 4, 245.
Colastus limbatus Leconte, loc. cit.

Types: This species was described from specimens collected in Maine at sap under the bark of a prostrate sugar maple in spring. Randall’s types have disappeared. There are, however, two specimens from Maine which may be autotypes in the T. W. Harris collection on deposit in the Museum of Comparative Zoology. The types of infimus, from North America, Porto Rico, and Brazil, are in the Berlin Museum. The types of obliquus (no. 6959) and limbatus (no. 6960), both from California on the Colorado River near the mouth of the Gila River, are in the M. C. Z. (Leconte collection).

Oblong oval, sparsely pubescent, color varying from piceous with a large oblique paler spot on each elytron to rufo-testaceous. In the dark specimens the antennae are fuscous and the legs rufous; in the pale specimens the antennae and legs are testaceous. Head moderately coarsely and densely punctate. Pronotum very feebly emarginate, very nearly twice as wide as long, surface rather densely, sparsely punctate. Elytra with width to length as 1.3 to 1, the apex of each elytron obliquely rotundo-truncate, densely punctate. Prosternum smooth; prosternal process much reduced. Last ventral segment only showing narrowly from above on each side of the pygidium. Length 1.5–2.7 mm.
Although the specimens from California and Arizona tend to be larger and darker than those of the east, the differences in the shape and punctation of the thorax and of color, on which Leconte and Murray separated several species, are entirely too variable, even in specimens from the type locality, to warrant separation. Murray (1864, p. 282) described *Colastus triangularis* from Brazil. This species will very likely turn out to be *truncatus*, particularly since some of the cotypes of Erichson’s *infimus* were from Brazil.

For biology see under the genus. This species occurs (mainly April–July, also September, February and March) from Quebec to British Columbia (Terrace) south to Florida (Haulover) west to southern California, thence south through Middle America to Brazil. In the West Indies it is known from Porto Rico and Guadeloupe.

**Colopterus unicolor** (Say)

*Plate 12, fig. 9*

*Nitidula unicolor* Say, 1825, Journ. Acad. N. S. Philad., 5, 183.

*Colastus obscurus* Erichson, 1843, in German, Zeitschr. für Ent., 4, 244.

Types: The type of *unicolor* is lost. It was collected in October under the bark of yellow pine presumably in southeastern United States. There is an autotype from North Carolina in the T. W. Harris collection on deposit in the Museum of Comparative Zoology. This specimen is here designated the neotype. The type of *obscurus*, collected in South Carolina by Zimmermann, is in the Berlin Museum.

Oblong to oblong oval, moderately depressed, subopaque, dark piceous to rufo-testaceous, finely and sparsely pubescent. Head with coarse confluent punctures. Prothorax with width to length as 1.6 to 1, feebly emarginate in front, sides feebly and evenly arcuate, narrowing anteriorly only slightly, base very feebly sinuate on each side, surface densely covered with large shallow punctures. Scutellum and elytra densely punctate; dorsal segments more sparsely punctate. Apex of each elytron rotundulo-truncate. Prosternum very obsolescently punctate, the thorax and ventral segments rather densely, finely punctate. In the male the emargination of the hypopygidium is feebly bisinuate. Length 3–4.5, width 1.2–2 mm.

Some specimens from North Carolina, Florida, and Arkansas are aberrant in being smaller, narrower, and more parallel in shape than usual. But other differences cannot be found. A male from Jacksonville, Florida (U.S.N.M.) evidently represents a distinct species since it is much broader, more convex, more coarsely and sparsely punctate than *unicolor*. Another male from the Santa Rita Mts., Arizona
(U.S.N.M.) represents another species since it is testaceous, more convex, and more sparsely punctate than *unicolor*.

This species occurs (April–September) from New Hampshire to Florida (Enterprise, Tampa, Crescent City), west to Texas, Iowa, and Michigan (Detroit).

**COLOPTERUS SEMITECTUS** (Say)


The type, from eastern United States, is lost.

Elongate oval; much depressed; very sparsely pubescent, the abdomen more pubescent; moderately shining; rufo-piceous; the elytra rufo-testaceous except along the lateral and posterior margins, which are rufo-piceous. The antennae and legs are rufous; antennal club fuscous. Head sparsely and coarsely punctate. Thorax with width to length as 1.9 to 1, anterior margin rather strongly emarginate, sides feebly arcuate, narrowed anteriorly, posterior margin feebly sinuate, surface alutaceous, with sparse, large, shallow punctures. Elytra more densely and feebly punctate than the thorax, the apices almost truncate. Prosternum very sparsely punctate, alutaceous. Emargination of the hypopygium feebly bisinuate in the male. Length 3–4.5, width 1.2–1.9 mm.

This species occurs (March–August) from Ontario and Quebec (Montreal) to North Carolina west to Texas (Columbus, Dallas), Missouri, Nebraska, Iowa (Burlington), north to Lake Superior; also New Mexico (Albuquerque) and Oregon.

**COLOPTERUS MACULATUS** (Erichson)

*Colastus maculatus* Er., 1843, in Germar, *Zeitschr. für Ent.*, 4, 244.

Type: from North America (probably Pennsylvania) in the Berlin Museum (Knoch collection).

Broadly oval, depressed, moderately shining, sparsely covered with rather long testaceous pubescence. Above rufo-piceous, but the lateral margins of the pronotum, an oblique spot on the elytral humeri, and a spot on the inner two-fifths of each elytron extending from the anterior margin to near the apex (except the sutural margin) are rufous. There is also a rufous spot on the outer apical angle of each elytron. The long inner spot may be absent except at each extremity. Beneath light to dark rufous, antennal club fuscous. Head with coarse confluent punctures. Prothorax with width to length as 2.2 to 1,
anterior margin emarginate, sides strongly narrowed anteriorly, base
sinuate on each side, surface sparsely, coarsely punctate. Elytra more
densely punctate than the pronotum; dorsal segments more sparsely
and feebly punctate than the elytra. Prosternum sparsely punctate,
smooth. Emargination of the hypopygidium bisinuate in the male.
Length 4–5, width 2–2.5 mm.

One pair from Arizona in the Leconte collection is aberrant in being
smaller than average, entirely testaceous, pygidium of the male
emarginate in the middle, and punctuation of the pronotum and dorsal
segments much denser. But adumbrations of these differences are
present in typical specimens. One from “N. Y.” (U.S.N.M.), possi-
bly introduced, is aberrant in being more depressed, more elongate,
more parallel, and more obsolescely punctate than usual.

This species occurs (May–August) from New York to Florida
(Orange Co.), west to Texas (Victoria, Dallas), north to Iowa (Mt.
Pleasant); also Arizona (Leconte coll.).

Colopterus niger (Say)
Plate 3, figs. 18–25

Types: Say’s types are lost. They were collected in Missouri and Pennsylvania.

The type of morio, from North America (presumably Pennsylvania) is in
the Berlin Museum (Knoch collection).

Broadly oval, depressed, piceous black, moderately shining, very
sparsely covered with short pubescence. Head coarsely and densely
punctate. Prothorax with width to length as 2.1 to 1, apex feebly
emarginate, sides feebly arcuate, strongly narrowed anteriorly, base
sinuate on each side, a vague depression on each side of the scutellum,
posterior angles rectangular and containing an oblique sulcus, disc
sparsely, coarsely punctate. Elytra more finely and densely punctate
than the pronotum; dorsal segments more densely and finely punctate
than the elytra. Elytral apices separately evenly arcuate. Beneath
piceous, antennae and feet rufous, antennal club fuscous. Prosternum
obsolescely and rather densely punctate. Emargination of hypopy-
igidium feebly bisinuate in the male. Length 4–5, width about 2.5 mm.

Heretofore this species has been known by Ericson’s name, but
Say’s description is so definitely of this species that there is no alterna-
tive than to use his name.

This species occurs (April–September) from Washington, D. C. to
Florida (Enterprise) west to Ohio (Cincinnati), Illinois, south to Louisiana and Arkansas; also Panama (April 9, Alhajuelo, March 14, Porto Bello). Specimens in the U.S.N.M. from Costa Rica (San Pedro de Montes de Oca) and Colombia (Medellin) probably represent a different species since the pronotal disc is more obsolesly punctate and the sulci in the hind angles of the pronotum are absent. Another specimen from Costa Rica (U.S.N.M.) is similar to *morio* but has a more convex pronotum; it is labelled *punctiventris* Sharp.

**Colopterus gerhardi** Dodge


Type: collected Oct. 7, 1909, under sycamore bark, at Olive Branch, Illinois by W. J. Gerhard, in the Field Museum of Natural History.

Broadly oval; depressed; nearly uniform testaceose brown; the head, scutellum, outer and apical elytral margins, and oval median thoracic spot vaguely darker; antennae testaceae at base, gradually darkening to the club; moderately shining; sparsely covered with short pubescence. Head moderately punctate. Thorax 2.25 times as wide as long, sides regularly arcately narrowed to the apex, basal margin sinuate on each side, disc with a well defined sulcus extending medianly from the basal angles and continued by a vague depression which recurves to the basal margin, surface sparsely coarsely punctate. Each elytron broadly convex when viewed from the side or behind, each apex rotund-truncate. Length 3.5, width 2.23 mm.

The above account is condensed from Mr. Dodge's excellent description. Mr. Dodge says that *gerhardi* is related to *morio* but differs in the convex elytral outline, in this respect approaching the Mexican *inflatipennis* Sharp.

The species is known only from the holotype.

**Carpophilus** Stephens

Plates 3, 12


Genotype: *Dermestes hemipterus* Linn.


Genotype: *T. caudalis = C. decipiens* Horn.

Usually elongate, more or less depressed. Head broad but distinctly narrower than the pronotum. Clypeus indistinct, slightly porrect,
margined by a depression at each side. Eyes usually large. Antennae
a little longer than the head, first segment enlarged and often widened
on the outside, second and third cylindrical, about of equal length,
club compact, flattened, rounded or oval in outline. Antennal grooves
moderately deep and convergent. Labrum bilobed, the lobes rounded.
Mandibles usually with a large tooth on the inner side, behind the
apex. Lacinia broad and rounded at tip. Maxillary palpi variable,
rather short and thick, first segment small, the third usually shorter
than the second. Ligula with rather large laterally projecting para-
glossae; the palpi robust, first segment small, the next two about of
equal length. Mentum more or less transverse, not strongly emar-
ginate. Pronotum nearly or as broad as the elytra. Scutellum usually
broadly rounded posteriorly. Epipleurae narrow to broad, extending
about half the length of the elytra or to the apex. Elytra abbreviated,
rarely exposing three, usually two abdominal segments. Ventral
segments two and three very short; one, four, and five long. Prosternal
process widened and rounded posteriorly, reaching the mesosternum.
Mesocoxae and metacoxae about equally separated. An additional
strongly deflexed segment in the male. Legs short, tarsi dilated.
Claws simple.

Carpophilus is rather closely related to both Colastus and the
Oriental Tetrisus, and serves to connect the Carpophilinae with the
Nitidulinae.

Species of this genus occur most commonly in flowers and at sap
under bark, less commonly in decaying or dried fruit and in fungi.

Approximately 130 species of this world wide genus are known,
the great majority confined to the tropics.

In such a large genus some sort of grouping of the species is nec-
ecessary. Murray recognized eight subgenera, but on such variable
characters that most of them seem to be useless. The only subgenera
here employed are Urophorus and Carpophilus s. str. Since the species
could not all be keyed in order of their relationships, the numbers
after the names in the key refer to the species as they are described.
No one realizes more clearly than the writer how imperfect the key is.
The most trustworthy characters are to be found in the male hypop-
pygidium and the pygidium of the female.

*Key to subgenera of Nearctic Carpophilus*

Elytra rather short, exposing three abdominal segments... *Urophorus*
Elytra longer, exposing two abdominal segments... *Carpophilus* s. str.
Subg. Urophorus Murray

Subgenotype: Ips rubripennis Heer.

This small subgenus is cosmopolitan and is usually shining, and nearly glabrous.

Carpophilus humeralis (Fabricius)

Brachypterus picinus Boheman, 1851, Insecta Cafraria, 1, 560.
Carpophilus foveicollis Murray, 1864, loc. cit., p. 344.
Types: of humeralis, from Cape of Good Hope, is unknown to the writer; of foveicollis, from Celebes, is in the British Museum; of picinus, from the Limpopo River, Africa, in the National Museum, Stockholm; of rickseckeri, from California, in the M.C.Z. (Fall collection).

Rather broadly oblong oval; convex; sparsely pubescent; brown to black, usually a small pale spot within the humerus of each elytron, legs rufous or rufo-piceous, antennae rufous, club piceous. Upper surface strongly shining, polished, alutaceous, sometimes alutaceous only towards the sides and elytral apices. Above coarsely punctate, more sparsely so on the pronotal disc. Beneath less shining and moderately densely punctate. Prothorax slightly more than one-half wider than long, arcutely narrowed in front, subparallel basally, not at all sinuate before the hind angles, which are a little obtuse and feebly defined. Elytra as wide as prothorax, one-sixth wider than long. Additional male segment deflexed but visible from above; pygidium of female longitudinally impressed at sides. Length 3.3–4, width 1.6–1.9 mm.

A world-wide species, humeralis is distributed in foodstuffs, and also damages growing corn. In the United States it is known (May, June, also September to March) from Georgia (Savannah), Florida (Sanford, Enterprise, Gulfport, Brooksville), California (Indio, San Diego, Vista, Tustin), Arizona (Yuma), and Utah.

Carpophilus s. str.

1. Elytra more or less fimbriate ........................................2
   Elytra not at all fimbriate .......................................10
2. Mesosternum divided into two cells by raised spaces, between
   the front of which the prosternal process is accommodated.
   ......................................................... hemipterus (1)
Mesosternum not so divided, simple ................. .3
3. Under 4.2 mm. long, form more or less oval ........... 4
   Over 4.2 mm. long, elongate, parallel ................. .9
4. Elytra dark testaceous to black ..................... 5
   Elytra yellow-testaceous .............................. .pallipennis (2)
5. Pronotum bicolorous .................................... nigrorividatus (3)
   Pronotum unicolorous ................................... .6
6. Pronotum rufous ......................................... .8
   Pronotum piceous ....................................... .7
7. Pronotum strongly convex, sides feebly arcuate .......... .floralis (4)
   Pronotum less strongly convex, sides strongly arcuate.
   .................................................................. longiventris (5)
8. Elytra piceous or black .................................. .melanopterus (6)
   Elytra rufous .............................................. rufus (7)
9. Pronotum and elytra closely fimbriate .................. longus (8)
   No alternate.
10. An oblique, raised line cutting off the anterior angle of the meta-
    sternum, forming the “axillary space” ................. .24
    Oblique, raised line on metasternum absent (just indicated in
    sayi) .................................................... .11
11. Less than 3.6 mm. long ................................. .19
    More than 3.6 mm. long ................................ .12
12. Length 4.5–6 mm., distinctly depressed ................ yuccae (9)
    Length usually less than 4.5 mm., moderately depressed .... .13
13. Form more oval than oblong ............................. .14
    Form more oblong than oval ........................... .15
14. Uniformly piceous to black above ...................... sayi (10)
    Black above, each elytron with a large red spot .californicus (12)
15. Color black .................................................. funebris (15)
    Color piceous ............................................. .16
16. Pronotal margins lightly impressed before the posterior angles
    .............................................................. deflexus (14)
    Pronotal margin lacking such impressions ............... .17
17. Abdomen rufous ........................................... rufiventris (13)
    Abdomen fuscous to piceous .......................... .18
18. Pronotum very slightly narrower at apex than at base, median impunctate pronotal line present.................brevipennis (17)
   Pronotum distinctly narrower at apex than at base, median impunctate pronotal line absent ..................lugubris 11

19. Pronotal posterior angles broadly rounded, the angle itself very small and retracted.................................20
   Pronotal angles distinct, prominent, and not retracted...........22

20. Elytra paler than the pronotum (rarely only slightly so)...........21
   Uniformly dark piceous or black..................brachypterus (22)

21. Prosternum in front nearly smooth ..................discoideus (23)
   Prosternum densely punctate........................decipiens (24)

22. Pronotal margin broadly reflexed..............................zuni (25)
   Pronotal margin very narrowly reflexed.........................23

23. Pronotum feebly convex, distinctly emarginate anteriorly........
   Pronotum convex, very feebly emarginate...........corticinus (21)
   Pronotum convex, very feebly emarginate..................obsoletus (16)

24. Axillary space extending about one-fifth of the episternal suture...
   Axillary space extending at least one-third of the episternal suture..........................25
   Axillary space extending about one-third of the episternal suture.................................26
   Axillary space extending more than one-third of the episternal suture..............................27

26. Hind tibiae of male gradually widened..................dimidiatus (18)
   Hind tibiae of male rather abruptly widened...........floridanus (19)

27. Uniform chestnut brown, convex..........................nittens (20)
   Elytra more or less rufous, with darkened apices..............28

28. Pronotum widest at the acute posterior angles.........marginatus (28)
   Pronotum widest at middle, hind angles obtuse................antiquus (27)

1. CARPOPHILUS HEMIPTERUS (Linn.)

Vide Grouvelle, 1913, for full synonymy.
Type: Presumably in the collection of the Linnaean Society of London.

Oblong; feebly shining; sparsely pubescent; castaneopiceous, elytra with humeral spot and large irregular apical space testaceous, beneath rufo-testaceous. Head sparsely punctate. Prothorax one-third wider than long, sides very feebly arcuate, narrowing anteriorly, hind angles
obtuse, disc with a vague impression on each side near the base, at
center moderately densely punctate, more densely towards the sides.
Elytra conjointly wider than long, more finely punctate than the
pronotum; abdomen above still more finely punctate. Hypopygidium
simple in the male; additional segment not visible from above; middle
tibiae a little stouter than in the female. A suggestion of a carina on
the female pygidium. Length 2–4 mm.

This species has been carried in foodstuffs all over the world. It is
particularly abundant, at all times of the year, in tropical and sub-
tropical regions. In the United States hemipterus occurs as far north
as Massachusetts (Boston, Brookline), Illinois, Ohio (Columbus),
Kansas, Colorado (Denver) and California (Santa Cruz Mts., Fresno).

2. Carpophilus pallipennis (Say)

Plates 3, figs. 26–33; pl. 12, fig. 10

Carpophilus pallipennis var. pollens Sharp, 1889, Biol. Cétr.-Amer., Col., 2,
300.

Types: of pallipennis from eastern Colorado, near the Rocky Mountains, is
lost; of pollens, from northern Mexico, is in the British Museum.

Oblong oval; robust; sparsely pubescent; piceous, elytra, antennae,
and legs testaceous, antennal club fuscose. The parts that are piceous
may be rufo-testaceous except for the metasternum, scutellum, and
disc of the pronotum. Head sparsely punctate. Prothorax with width
to length as 1.4 to 1, convex, narrowed in front, sides moderately
arcuate, hind angles broadly rounded, surface densely punctate.
Elytra conjointly with width to length as 1.2 to 1, surface regularly,
densely punctate. Abdomen above more finely and sparsely punctate
than the elytra. Prosternum nearly smooth. In the male the hypopy-
gidium has a depression preceded by a bare space, the additional
segment visible from above, middle and hind legs stouter than in the
female. In the female a sharp point may or may not be present near
the posterior margin of the pygidium. Length 2.5–4 mm.

Sharp’s variety was based on a variation in the ventral depression
of the male, and variations in size and color. These differences have
no geographic relationships and seem to indicate no definite evolu-
tionary tendency; so the var. pollens should be synonymized.

This species is abundant on the flowers of prickly pear (March–
July) New York to Medicine Hat. Alberta south to Florida and
Lower California into Mexico (San Pedro in Coahuila, Chihuahua City,
Hidalgo).
3. **Carpophilus nigrovittatus** spec. nov.

Oblong, feebly shining, sparsely covered with yellow pubescence. Anterior portion of head and antennae testaceous, rest of head black; pronotum above testaceous to rufous with a median longitudinal stripe of black, about one-fourth the width of the pronotum; scutellum black; elytra black with sides and rarely a narrow posterior margin testaceous; abdomen above dark rufous to black; beneath testaceous, except that the metasternum or most of the venter may or may not be black. Prothorax with width to length as 1.5 to 1, convex, narrowed in front, sides evenly moderately arcuate, hind angles broadly rounded, surface densely, rather coarsely punctate, very finely and obsolesce granulate. Elytra conjointly with width to length as 1.2 to 1; sides evenly, feebly, but distinctly arcuate, very finely fimbriate; surface distinctly and finely granulate, as coarsely but more sparsely punctate than the pronotum. Abdomen above more finely and sparsely punctate than the elytra. Prosternum sparsely punctate. In the male the hypopygidium has a very shallow round depression preceded by a smooth space, the additional segment visible from above; legs about equally stout in both sexes. Female pygidium is moderately convex posteriorly. Length 3.7–4.2 mm.; width 1.7–1.9 mm.

This species is closely related to *pallipennis*, but is differently colored, lateral margins of elytra evenly arcuate not straight at middle, pronotum and elytra more coarsely and sparsely punctate, pronotum slightly less convex and proportionately broader.

Holotype (♂), allotype, and two paratypes from Arizona in the collection of the University of California, Berkeley. One paratype from Pyramids, Mexico, June 9, 1935 at the University of California; one paratype Pyramids, Mex. and one from Arizona in the writer’s collection. One of the Mexican specimens has the elytra entirely testaceous.

4. **Carpophilus floralis** Erichson

*Carpophilus floralis* Er., 1843, in Germar, Zeitschr. für Ent., 4, 261.
Type: from Mexico (Chevrolat) in the Berlin Museum.

Oblong oval; robust; sparsely pubescent; uniformly fuscous, the elytra and legs slightly paler. Head densely punctate. Prothorax with width to length as 7.5 to 5, convex, sides very feebly arcuate, narrowed in front, hind angles broadly rounded, surface finely granular, densely punctate. Elytra conjointly with width to length as 8.2 to 7, irregularly, sparsely punctate and finely granular. Elytral fimbriae
usually distinctly present but short. Abdomen above as coarsely but more closely punctate than the elytra. Prosternum finely, sparsely punctate. In the male a minute depression just preceding the posterior margin of the hypopygium; additional segment visible from above. In the female the pygidium produced to a variable degree into a point preceding the hind margin. Length 2.5–3.5 mm.

This species is closely related to pallipennis but differs in the more convex, more coarsely and densely punctate pronotum, the more distinctly granular surface and the uniformly fusaceous color. From longiventris, floralis differs in the more convex pronotum, less arcuate pronotal sides, and in the secondary sexual characters.

This species occurs on the flowers of prickly pear from New York (Staten Island) and New Jersey south to Florida (Key West, Enterprise, Capron) west to Kansas (Belvidere), Oklahoma (Fort Cobb), New Mexico (Wooten), and Texas (Dallas, Victoria, Denton, Arlington), south into Mexico (Mexico City, Esperanza, Jalapa, Cordova, Guanajuato). In the north floralis is found in June, in the south from March to August. Specimens from Brownsville, Tex. (U.S.N.M.) are aberrant in having the pronotum more coarsely punctate, the head dark piceous, disc of pronotum fusaceous, and the rest rufo-testaceous.

5. Carpophilus longiventris Sharp

Type: male from Ventanas, Durango, Mexico (Hoge) in the British Museum.

Oblong oval; robust; sparsely covered with long, yellow pubescence; rufo-piceous; elytra dark testaceous; antennae, legs and abdomen rufous; posternal process, mesosternum, and metasternum dark piceous. Head densely, coarsely punctate. Prothorax with width to length as 1.4 to 1, convex, sides evenly arcuate, feebly sinuate behind the hind angles so that the hind angles are just evident, surface finely granular, moderately densely punctate. Elytra conjointly with width to length as 1.1 to 1, punctate like the pronotum. Abdomen above more finely, sparsely punctate than the elytra. Prosternum very sparsely punctate. In the male the hypopygium has a fovea at the hind margin and on each side of this a polished transverse tubercular elevation; additional segment visible from above and produced downward; hind tibiae not enlarged but more curved than in the female. In the female the pygidium is somewhat recurved and often produced into a point at or near the hind margin. Length 3.2–4 mm.

Evidently longiventris is closely related to pallipennis but the
pronotum is less convex, pronotal sides more arcuate, and the pronotal punctuation more sparse. The best difference is in the male hypopygidium. One female from Oak Creek, Arizona (Kansas Univ. coll.) is aberrant in being darker, more coarsely and densely punctate, and pronotal sides less arcuate. A male from Texas (U.S.N.M.) differs in having less arcuate pronotal sides, the hypopygidium more simple, and the eighth segment not produced downward.

Aside from the type locality in Mexico, *longiventris* has been collected on *Yucca elata* (April–August) in Lower California, “Cal.”, Arizona (Pinal Mts., Catalina Springs, Santa Rita Mts., Huachuca Mts., Chiricahua Mts.) and the aberrant specimen from Texas.

6. *Carpophilus melanopterus* Erichson

*Carpophilus melanopterus* Er., 1843, in Germar, Zeitschr. für Ent., 4, 262.

Type: from South Carolina (Zimmermann) in the Berlin Museum.

Oblong oval; sparsely covered with fine pubescence; bright rufous except for piceous or black elytra and black antennal club. Head and pronotum densely, variolosely punctate. Prothorax with width to length as 1.8 to 1, sides very feebly arcuate, narrowing anteriorly, abruptly sinuate before the hind angles and sinuate behind the hind angles. Elytra conjointly a little wider than long, broadening posteriorly, humeri and apices sometimes rufescent, more densely and finely punctate than the pronotum. Dorsal segments more sparsely punctate than the elytra. Prosternum finely punctate. In the male a large, vague, semicircular impression before the hind margin of the hypopygidium; additional segment not visible from above. In the female a blunt carina on the pygidium. Length 3.2–4.5 mm.

This species occurs in the flowers of *Yucca* (May–July) from New York (Rye), New Jersey (Bergenfield), and Illinois to Florida, west to Iowa (Lee Co.), Texas (Dallas), south into Mexico.

7. *Carpophilus rufus* Murray


Type: from Mexico in the Paris Museum.

This species is usually considered a variety of *melanopterus*. It is similar to that species, but averages larger, the elytra are rufous, the pronotum somewhat more finely and sparsely punctate, the antennal club fuscous not black, and the underside entirely rufous. Length 4–5 mm. Also the pronotum and sutural margins of the elytra tend to
become fuscous and the elytra to become testaceous. This tendency is similar to that which is achieved in *pallipennis*. Dodge (Ent. News, 50: 291) indicates an ecological differentiation between *melanopterus* and *rufus* by stating that *rufus* is found on cactus blossoms whereas *melanopterus* occurs on flowers of yucca. There is, however, one specimen from Dallas, Texas (U.S.N.M.) colored like *melanopterus* and recorded from *Yucca*, but punctate like *rufus*; so perhaps *rufus* should be placed as a subspecies of *melanopterus*.

This species occurs on the flowers of prickly pear (*Opuntia*) from May to July, South Dakota (Rapid City) through Kansas (Reno Co., Medora, Rago), Nebraska (Pine Ridge, Meadville), Utah (Arch Canyon), Oklahoma (Texas Co., Noble Co.), Colorado (Denver, Las Animas), "Cal.", New Mexico (Moses), Texas (Dallas), into Mexico (Vera Cruz, Jicaltepec).

8. *Carpophilus longus* Fall


Type: collected June 6, 1891, Santa Rita Mts., Arizona in the M.C.Z. (Fall collection).

Elongate; parallel; convex; sparsely pubescent; piceous; antennae, legs, abdomen beneath, and usually the elytra dark rufous. Head and pronotum densely punctate, elytra more finely and less densely punctate than the pronotum, and the abdomen more finely and less densely punctate than the elytra. Prothorax with width to length as 1.4 to 1, sides very feebly arcuate, very slightly narrowed in front, hind angles broadly rounded. Prosternum obsolescently punctate. In the male the hypopygium is simple; the additional segment not visible from above. In the female there is a vague suggestion of a carina on the pygidium. Length 4.2–5, width 1.5–1.8 mm.

This species has been collected (April–June) in leaves of *Yucca macrocarpa* only in southern Arizona (Santa Catalina Mts., Santa Rita Mts., Chiricahua Mts.).

9. *Carpophilus yuccae* (Crotch)


Type: from the unopened flower heads of *Yucca* in the Mohave Desert, California in the M.C.Z. (Leconte collection).

Oblong oval; depressed, sparsely covered with fine pubescence, uniformly dark piceous, sometimes rufo-piceous. Head and pronotum
densely punctate. Prothorax with width to length as 1.6 to 1, sides moderately arcuate, slightly narrowed in front, hind angles broadly rounded, the angle itself very small due to a slight sinuation just preceding and behind it. Elytra and dorsal segments more finely punctate than the pronotum. In the male the hypopygidium is simple; the additional segment not visible from above. In the female the pygidium is feebly, bluntly carinate. Length 4.5–6.2, width 2–2.5 mm.

This species is remarkable for its large size and oval, depressed form.

This species occurs in the flowers of Yucca (April–July) from Texas (Rivers collector), through New Mexico (Sacramento Mts., Alamogordo), Arizona (Chiricahua Mts., Santa Rita Mts., Santa Catalina Mts.), to California (Mohave Desert, Los Angeles Co., Argus Mts., Onyx, March 13).

10. Carophillus sayi spec. nov.

Carophillus niger (Say) of authors, in error = Colastus niger (Say).

Holotype (♂) and allotype from Bear Lake, Warren County, Pennsylvania in the collection of the author. Paratypes from New York to Virginia west to Illinois in the author’s collection.

Oval, slightly oblong, subopaque, sparsely pubescent, dark piceous, legs and antennae (except club) dark rufous, pronotal margins and humeri often rufous. There is a tendency for the humeri and margins of the pronotum to be paler. Head very densely punctate. Prothorax with width to length as 1.5 to 1, sides moderately arcuate, narrowed in front, margins bluntly crenulate, hind angles moderately prominent, hind margin sinuate on each side, disc slightly flattened, a feeble oblique impression on each side of the scutellum, surface densely, variously punctate. A narrow smooth median line on the posterior half of the pronotum. Elytra conjointly with width to length as 1.2 to 1, slightly narrowed posteriorly, disc slightly flattened, surface a little more sparsely punctate than the pronotum. Abdomen much more finely punctate than the elytra. Prosternum densely punctate. In the male a large, vague, shallow depression on each side, before the hind margin of the hypopygidium (these depressions may be moderately deep and connected); additional segment not visible from above. The female with a distinct, blunt carina on the pygidium. Length 3–4.5 mm.

This species is closely related to lugubris, but differs in being more oval, darker, and shallower foveae on the male hypopygidium. A female from Albuquerque, New Mexico (writer’s coll.) is evidently this species.
This species occurs (April–October) from Quebec to Georgia, west to Texas (Dallas), Iowa (Mt. Pleasant), and Manitoba (Aweme); also New Mexico (Albuquerque).

11. Carpophilus lugubris Murray

Types: from Caracas, Venezuela and Florida in the British Museum.

Oblong oval; moderately convex; sparsely pubescent; uniformly fusous (rarely black with paler elytra) except for rufescent elytral humeri and dark piceous antennal clubs. Head and pronotum rather coarsely, very densely punctate. Prothorax with width to length as 1.5 to 1; sides moderately arcuate, slightly narrowed in front, margins narrowly reflexed; sinuate before and behind the moderately prominent hind angles. Elytra conjointly with width to length as 1.1 to 1, densely, very shallowly punctate. Dorsal segments more finely, sparsely punctate than the elytra. Prosternum densely obsolesently punctate. In the male two deep, circular, depressions on the hypopygidium; additional segment not visible from above. In the female the pygidium is more or less bluntly carinate, the carina shining and tuberculiform at its apex. Length 3–4.5 mm.

This species is very near *sayi* but more parallel, paler, and has different male characters. Some specimens from Virginia, Pennsylvania, Ohio, and Illinois seem to be intermediate between *sayi* and *lugubris*, but are here treated as *sayi*.

This species occurs (June–October) from Brazil through Middle America to Arizona (Globe, Huachuca Mts., Duncan, Cornville), New Mexico (Las Vegas Hot Sprgs., Jemez Mts., Taos Co., Albuquerque), Texas (Cypress Mills), Utah (Green River), "W.T." (A.N.S.P.), Colorado (Masonville, Colorado Springs, Denver), Kansas, and Iowa; also Black Mts., N. C.

12. Carpophilus californicus Schaeffer

Type: from Tulare County, California (O. Dietz) in the U.S.N.M.

Very closely related to *sayi* but differing in having narrower pronotal margins, pronotal disc not so evidently flattened, pronotum usually darker, elytra bright rufous with suture, apices, and lateral margins piceous or black, and a more or less deep transverse depression preceding the hind margin of the pygidium, and the pygidium bluntly
carinate in the female. Male hypopygidium with a crescentic, shallow depression before the hind margin. Length 3.5–4.5 mm.

Although usually distinguished by the large, bright rufous elytral spots, some specimens in the U.S.N.M. from Wash. Terr. and California (Santa Cruz Mts., Los Gatos) have the rufous spots obsolete and only shown clearly by large humeral spots.

This species occurs (June-August) in Wash. Terr., California (Tulare Co., Kaweah, Madera Co., Sylmar, Los Gatos, Santa Cruz Mts., Los Angeles Co.), Arizona (Huachuca Mts., Tucson, McNary, 7200 ft.) and Texas (Brewster Co.).

13. **Carpophilus rufiventris** Schaeffer


Type: from the Huachuca Mts., Arizona in the Cornell Univ. Coll.

Elongate oval, depressed, covered with rather dark pubescence, piceous or black, underneath rufous, legs and antennae paler. Head rather coarsely, closely punctate. Prothorax with basal and apical margin nearly equal, sides feebly arcuate, anterior angles broadly rounded, basal angles distinct, punctures on the disc distinctly separated. Elytra more sparsely punctate than the pronotum. Dorsal segments more finely and densely punctate than the elytra. In the male the hypopygidium is simple; the additional segment not visible from above. Length 5–5.5 mm.

Known only from the Huachuca Mts., Arizona.

14. **Carpophilus deflexus** Sharp


Types: from Mexico (Hoge) and Guatemala (Champion) in the British Museum.

Moderately depressed; strongly punctate; nigroferrugineous; humeri feet, and antennae rufous, antennal club fuscous. The margin of the pronotum is lightly impressed before the posterior angles. In the male a single broad depression on the middle of the hypopygidium; basal half of the middle tibiae much slenderer than the apical half. In the female the pygidium is slightly convex toward the apex. Length 4–4.5 mm.

Sharp states that *deflexus* can be separated from *lugubris* by the unusually coarse punctuation, the depression on the pronotal margins,
and the peculiar middle tibiae of the male. Also lugubris is less convex than deflexus.

This species, known to the writer only by the types, was described from Mirador, Mexico and Cerro Zunil and Dueñas, Guatemala. Schaeffer doubtfully referred two females (now in Cornell Univ. coll.) from the Huachuca Mts., Arizona to this species.

15. CARPOPHILUS FUNEBRIS Sharp

_Carpophilus funebris_ Sharp, 1889, Biol. Centr.-Amer., Col., 2, 288; pl. 9, fig. 10. Types: from Guatemala and Panama (Champion) in the British Museum.

Oblong, feebly convex, very sparsely and finely pubescent, uniformly black, except that the antennae and feet are piceous, antennal club darker. Head and pronotum densely, rugosely punctate. Prothorax with width to length as 1.9 to 1, sides moderately arcuate, slightly narrowed anteriorly, margins very narrowly reflexed, sinuate before and behind the small hind angle. Elytra conjointly as wide as long, shallowly, variosely punctate. Dorsal segments more finely and much more sparsely punctate than the elytra. Prosternum densely, rugosely punctate. In the male a vague, shallow depression on each side, near the hind margin of the hypopygidium. In the female the pygidium is carinate.

The types are from Cerro Zunil, Guatemala and Volcan de Chiriqui, Panama. Sharp also mentions atypical specimens from Mexico. The above description is based on a single male collected July 15, 1938, Santa Catalina Mts., Arizona in the M.C.Z. (Fall collection).

16. CARPOPHILUS OBSOLETUS Erichson

_Carpophilus obsoletus_ Er., 1843, in Gersch, Zeitschr. für Ent., 4, 259.


Types: of obsoletus in the Berlin Museum, of cribellatus from East Africa and Corsica and of striigipennis from Ceylon and Siam both presumably in the Zoöl. Mus., Univ. of Moscow, of funereus from Japan presumably in the National Museum in Budapest.

Oblong oval, convex, sparsely covered with long cinerous, rarely testaceous, pubescence. Occasionally all black above, or piceous, usually black with elytra dark piceous and the humeral umbone pale. Antennae and legs fusaceous, the legs often becoming testaceous towards the extremities. Antennal club piceous. Head densely, rather coarsely
punctate, finely alutaceous. Prothorax with width to length as 1.5 to 1, apex very feebly emarginate, sides feebly arcuate, slightly narrowed in front, densely punctate at center and very densely, more coarsely, rugosely punctate at the sides; finely alutaceous; a large vague depression near the hind angles but not near the margin. Hind angles variably subrectangular. Scutellum pentagonal. Elytra conjointly with width to length as 1.3 to 1, slightly longer than the pronotum, about as coarsely but more densely punctate than pronotum at center, punctures becoming obsolete apically and rugose at margin. Prosternum densely punctate, prosternal process carinate. Male hypopygidium simple or with two vague foveae. Male and female pygidium simple or variably acuminate and reflexed. Length 2.5–3.5 mm.

Like most widespread species *obsoletus* varies greatly in secondary sexual characters, punctuation, convexity, proportions, etc.

This species occurs in Madagascar, Corsica, China, Japan, and the Oriental region, and apparently is recently introduced into the United States where it is found in California (Indio, M.C.Z.: Fall collection; Castro Valley, Feb. 27, 1938, in the Univ. of Calif. coll. and writer’s coll.). These agree with specimens from China in the writer’s collection.

17. *Carpophilus brevipennis* (Blanchard)

*Nitidula brevipennis* Blanchard, 1842, Voy. d’Orbigny, Am. mer. Ins., p. 64.

Types: of *brevipennis* from Arica, Peru presumably at Paris, of *lacertosus* and *purpureipennis* both from Venezuela in the British Museum, of *ignobilis* from the Santa Rita Mts., Arizona in the M.C.Z. (Fall collection).

Moderately elongate oval, subdepressed, sparsely pubescent, castaneo-piceous, legs and antennae, except club, paler. Head coarsely, moderately densely punctate. Prothorax with width to length as 1.4 to 1, sides evenly feebly arcuate, very slightly narrowed in front, margins very narrow, hind margin sinuate on each side behind the moderately prominent hind angles, punctuation rather coarse and dense, the punctures on the disc usually separated by less than their diameters, disc with a very narrow, median, impunctate line on basal half. Elytra conjointly with width to length as 1.1 to 1, punctate about as the pronotum. Dorsal segments much more finely punctate than the elytra. In the male the hypopygidium is simple, the additional segment not visible from above. The female pygidium is very bluntly carinate
and the lateral margins more or less reflexed. Length 3.5, width 1.6 mm.

This species is perhaps most closely related to *lugubris* but is more depressed and parallel. It also tends to approach *californicus*, but the latter is larger, more convex, and more coarsely punctate. In the Fall coll. (M.C.Z.) are specimens from the Huachuca Mts., Arizona with rufous elytra.

This species is found in *Yucca macrocarpa* and *Agave palmeri* (May-July) in Arizona (Oracle, Tucson, Santa Rita Mts., 5-8000 ft., Huachuca Mts.), New Mexico, Texas, through Mexico, Guatemala (Cape-tillo), Venezuela, to Peru and Brazil.

18. **Carphophilus dimidiatus** (Fabricius)

*Nitidula dimidiatus* Fabr., 1792, Ent. Syst., 1, 261.


*Carphophilus mutilatus* Erichson, 1843, in Germar, Zeitschr. für Ent., 4, 258.

For complete synonymy see Grouvelle, 1913.

Types: of *dimidiatus*, from the West Indies, possibly at Kiel; of *luridus* from Europe, North America, South America, East Indies, Ceylon in the British Museum; of *mutilatus* from Brazil, West Indies, Portugal, Sicily in the Berlin Museum.

Oblong, convex, surface finely granular, feebly shining, sparsely pubescent; color varying from piceous to testaceous with the elytra always paler. Head rather densely, coarsely punctate, clypeus much more sparsely, finely punctate. Prothorax with width to length as 1.5 to 1, sides very feebly arcuate, narrowed in front, hind angles obtuse not prominent, surface sparsely, coarsely punctate. Elytra con-jointly a little longer than wide, as sparsely but much more finely punctate than the pronotum. Prosternum densely punctate. In the male the hypopygidium is simple, the additional segment not visible from above. Pygidium simple in the female. Length 2—3.5 mm.

The above description is of typical *dimidiatus*. The species is so variable that a number of variations or possible distinct species have been described. The form *mutilatus* is larger and narrower, more finely and shallowly punctate; the form *luridus* has the prothorax more quadrate than in *mutilatus* and approaches *dimidiatus* in punctuation. Since all three forms are cosmopolitan and intergrade, it seems best to make them all one variable species.

This species occurs in all tropical and temperate parts of the world. In the United States *dimidiatus* is found at all times of the year from Quebec to Florida west through Texas and Kansas to California (as far north as Redlands).
19. Carpophilus floridanus Fall

Type: from Enterprise, Florida in the M.C.Z. (Fall collection).

Closely related to *dimidiatus*, but the head, prothorax, and elytra concolorous (rarely the elytra more pale), brown; dorsal surface of the abdomen and sometimes the metasternum darker. Also differs from *dimidiatus* in finer punctation, slightly stouter legs, the hind tibiae of the male subcylindrical for a short distance at base, then rather abruptly widening, the inner outline arcuate. Length 2—2.5 mm.

This species is easily distinguished from *dimidiatus* by the male hind tibiae.

This species is known (April-October) in South Carolina (Yenassea), Florida (Enterprise, Sanford, Marathon), and Alabama (Mobile).

20. Carpophilus nitens Fall

Type: from Mobile, Alabama (H. P. Loding) in the M.C.Z. (Fall collection).

Oblong, subovate, moderately convex, surface shining, sparsely pubescent; piceous brown, beneath paler. Head moderately punctate. Prothorax with width to length as 1.5 to 1, subparallel basally, sides arcuately narrowed in front, hind angles well defined, surface coarsely, sparsely punctate, with a median, basal, impunctate line. Posterior half of scutellum impunctate. Elytra conjointly with width to length as 1.1 to 1, a little more finely punctate than the pronotum and the punctures becoming obsolete at the apices. Prosternum densely coarsely punctate. In the male the hypopygidium is simple, the additional segment almost visible from above. The pygidium is simple in the female. Length 2.7—3 mm.

This species occurs (April-June, Sept.-March) from New Jersey (Avenel, Lakehurst) and Ohio (Columbus) to Georgia (Tybee Isl., Millidgeville in *Ergot*), west through Alabama (Mobile), to California (Santa Barbara, Santa Ana, Fresno, north to Alameda Co.).

21. Carpophilus marginatus Erichson

*Carpophilus marginatus* Er., 1843, in Germar, Zeitschr. für Ent., **4**, 262.
Type: from North Carolina (Zimmermann) in the Berlin Museum.

Oval, slightly oblong, sides of prothorax and elytra continuous, finely sparsely pubescent, moderately shining, rufous or rufo-piceous, pos-
terior fourth of elytra and sometimes the sutureal margins somewhat
darker. Head rather finely, densely punctate. Prothorax with width
to length as 1.8 to 1, sides straight, arcately narrowed in front, widest
at the rectangular hind angles, surface densely punctate. Scutellum
pentagonal. Elytra conjointly with width to length as 1.2 to 1, nar-
rrowed posteriorly, apices squarely truncate, more densely, obsolely
punctate than the pronotum. Prosternum sparsely punctate. In the
male the hypopygidiun is simple, the additional segment not visible
from above. The female pygidium often has a faint suggestion of a
carina. Length 1.5–2 mm.

The peculiar outline and very small size distinguishes *marginatus*.

This species occurs on freshly cut oak (May-November, chiefly July)
from “Poughkeepsie” (N. Y. State List), and New Jersey (Camden),
to Florida, west to Alabama (Tuskegee), north to Michigan (Detroit)
and Lake Superior; also Oregon (Leconte coll.).

22. Carpophilus corticinus Erichson

*Carpophilus corticinus* Er., 1843, in Germar, Zeitschr. für Ent., 4, 263.
Type: from eastern United States (Knoch) in the Berlin Museum.

Oval, slightly oblong, subdepressed, feebly shining, sparsely pube-
scent, castaneo-piceous, rarely dark piceous, legs rufo-piceous, antennal
club fuscous. Head and pronotum moderately densely, finely punctate.
Prothorax with width to length as 1.6 to 1, as broad at base as at
apex, sides broadly arcuate, margins rather broadly reflexed, hind
angles subrectangular. Elytra conjointly a little wider than long,
punctate as in the pronotum but with the interstices more granular.
Prosternum densely punctate. In the male the hypopygium is deeply
emarginate for the additional segment, which is nearly visible from
above. Length 2.8–3.4 mm.

Most closely related to *brachypterus*, *corticinus* differs in being larger,
more depressed, and in the differently shaped pronotum.

This species occurs (April-Sept., chiefly June) from New York
(Harrison), New Jersey (Fort Lee), and Ohio (Cincinnati) to Georgia,
west to Texas, north to Michigan (Detroit, Gd. Ledge).

23. Carpophilus brachypterus (Say)

*Nitidula brachypterus* Say, 1825, Journ. Acad. N. S. Philad., 5, 183.
Types: of *brachypterus* from eastern United States is lost, of *carbonatus* from
Nebraska and Lake Superior in the M.C.Z. (Leconte collection).
Oblong oval, subdepressed, surface finely granular, very sparsely pubescent, piceous to black. Head and pronotum sparsely punctate. Prothorax with width to length as 1.6 to 1; apex and base equal, sides moderately arcuate, hind angles small but distinct. Elytra conjointly with width to length as 1 to 1.1, apices strongly truncate, face more finely, sparsely punctate than the pronotum. Prosternum nearly smooth. In the male the hypopygidium is not emarginate, but the additional segment is not visible from above. Length 1.8—2.5 mm.

This species occurs (April-August) from Ontario (Prince Edward Co.) and Quebec (Rigaud) to North Carolina (Southern Pines, March 26), west to Texas, Nebraska (Lincoln), Kansas (Douglas Co., Benedict, Onaga), Iowa (Mt. Pleasant), South Dakota (Sioux Falls) and White Fish Point, Lake Superior.

24. CARPOPILUS DISCOIDEUS Leconte


Types: of *discoideus* (no. 6963) from Arizona; of *apicalis* from Georgia and Nebraska; of *caudalis* (no. 6964) from Nebraska are all in the M.C.Z. (Leconte collection).

Oval, slightly oblong, subdepressed, sparsely pubescent; rufo-piceous to piceous, legs paler, each elytron with a large pale discal spot. Head and pronotum moderately sparsely punctate. Prothorax with width to length as 1.7 to 1; apex and base equal, sides moderately arcuate, hind angles small but distinct. Elytra conjointly as wide as long, punctate like the pronotum, but more obsolesly punctate toward the apices. Prosternum smooth or nearly smooth. Male hypopygidium simple but deeply emarginate for the additional segment. Female pygidium deflexed at apex, so that it appears truncate from above. Length 2.2—3 mm.

Evidently closely related to *decipiens*, *discoideus* differs in being usually darker, smaller, less depressed, and narrower. But the key character and the female pygidium seem to offer the only dependable differences.

This species occurs (April-August) in Washington, California (Los Gatos, Santa Cruz Mts., Sisson, Sylvania, Pomona, Imperial Co.), Wyoming (Nat. Park), Nevada (Reno), Arizona (Ft. Yuma, Santa Rita Mts.), Utah (Uinta Co.), Colorado (Telluride), New Mexico (Gallup, Silver City, Albuquerque), Texas, Nebraska, Michigan (Port
Huron) and Lake Superior; also “Ill.” (A.N.S.P.), “Geo.” (Leconte coll.) and “Mass.” (A.N.S.P.).

25. Carpophilus decipiens Horn


Oblong oval, depressed, sparsely pubescent, piceous, elytra and legs paler. Head and pronotum sparsely, rather coarsely punctate. Prothorax with width to length as 1.5 to 1, base very slightly narrower than the apex, sides moderately arcuate, slightly sinuate posteriorly, hind angles distinct but slightly retracted, disc flat. Elytra conjointly very little longer than wide, more granular and more finely, sparsely punctate that the pronotum. Prosternum densely punctate. In the male the hypopygium is deeply emarginate for the additional segment, which is nearly visible from above. Female pygidium not truncate at apex. Length 2.4–3.5 mm.

This species occurs (March-Nov., Jan., chiefly July) from Alaska (Nome), through Canada to California (Castro Valley, Alameda Co., Santa Clara Co., Canta Cruz Co., Fresno Co., Pomona, Los Angeles, San Bernardino Mts., 6000 ft.), east through Arizona (Williams, Pinal Mts., Tucson, Huachuca Mts.), New Mexico (Albuquerque) and Texas (Chisos Mts.) to Nebraska and Louisiana (Opelousas).

26. Carpophilus zuni Casey

*Carpophilus zuni* Casey, 1884, Contr. Coleopt. N. A., pt. 1, p. 34.
Type: from Arizona (Morrison) in the U.S.N.M. (Casey collection). Evidently this specimen came from the Leconte collection because there is in that collection (apparently substituted) an *Eupriaea* labelled “zuni type” in Casey’s handwriting.

Elongate, depressed, pubescence sparse and very fine; piceo-castaneous, beneath rufous, including the legs and antennae. Head minutely punctulate and rugulose. Prothorax one-half wider than long, width at base and apex equal, sides arcuate, strongly sinuate before the hind angles, margins broadly reflexed (rarely moderately so), surface minutely and very closely punctulate. In both sexes the pygidium has three strong posteriorly convergent carina. Length 3.1 mm.
This species resembles an *Euripus* and is remarkable in the broadly reflexed pronotal margins and the singular pygidium.

A rare species, *zuni* occurs (July 9-August 17) in Arizona (Williams) and New Mexico (Beulah, Albuquerque).

27. **Carpophilus tempestivus** Erichson

*Carpophilus tempestivus* Er., 1843, in Germar, Zeitschr. für Ent., 4, 260.

Types: both from Cuba (Gundlach) in the Berlin Museum.

Oblong, moderately elongate, finely granular, moderately convex, shining, very finely and sparsely pubescent, pale rufous, suture and apices of elytra often narrowly piceous, antennal club sometimes darker. Prothorax with width to length as 1.4 to 1, sides feebly arcuate, sinuate before the hind angles, which are small and retracted, surface sparsely punctate. Elytra conjointly a little longer than wide, more sparsely punctate than the pronotum. Prosternum very sparsely punctate. In the male the hypopygidium is simple, the additional segment not visible from above. In the female the pygidium is bluntly carinate. Length 1.7-2.5 mm.

Murray described the variety *terminatus* for those specimens with only the elytral apices piceous; a variation so slight that it cannot be dignified with a name.

This species occurs throughout the year from Georgia to Florida (Enterprise, Haulover, Lake Harney, Indian River, St. Lucie, Biscayne Bay), west to Louisiana (Lake Mary, Winnfield) and Arkansas (Hot Springs); also in the West Indies (Cuba, Porto Rico, Montserrat).

28. **Carpophilus antiquus** Melsheimer


Type: from Pennsylvania in the M.C.Z. (Melsheimer collection).

Oblong, moderately convex, surface finely granular, moderately shining, very sparsely, very finely pubescent; rufous to rufo-piceous, paler beneath, at least the apical fourth of elytra always piceous. Head and pronotum sparsely, rather coarsely punctate. Prothorax with width to length as 1.7 to 1, base and apex of equal length, sides feebly arcuate, hind angles subrectangular. Scutellum mostly impunctate. Elytra conjointly as wide as long, a little more coarsely and sparsely punctate than the pronotum. Prosternum at middle very sparsely
punctate. In the male the hypopygidium is simple, the additional segment not visible from above, and the pygidium reflexed at apex. The female pygidium is simple. Length 2–3 mm.

This species occurs (April–September) from “Can.” (A.N.S.P.), Massachusetts (Sagamore), and New York (Flatbush), to Florida (Atlantic Beach), west to Texas, Missouri (Webster Groves, St. Charles), Kansas (Neosho Co.), and Iowa (Mt. Pleasant).

**NITIDULINAE**

Nitidulinae Er., 1843, in German, Zeitschr. für Ent., 4, 226.

This subfamily grades imperceptibly into Carpophilinae, so that the differences seem superficial. The Nitidulinae are more heterogeneous than the other subfamilies and probably should be subdivided. In the following key the genera could not be placed in the order of their relationships. Since they are described in their natural order, the numbers after the genera in the key refer to this arrangement.

**Key to genera of Nearctic Nitidulinae**

1. Prothorax not margined at base; head horizontal ......................... 2
   Prothorax margined at base; head vertical .......................... 15

2. Prosternum depressed behind the coxae, not prolonged ............ 3
   Prosternum elevated behind, often prolonged ..................... 12

3. All tarsi very distinctly dilated .................................... 4
   Tarsi not dilated, or but feebly so ................................ 7

4. Antennal grooves strongly convergent ............................... 5
   Antennal grooves parallel, passing directly backwards ..........  
     .................................................. Stelidota (4)

5. Labrum bilobed ...................................................... 6
   Labrum feebly emarginate ........................................... Nitidula (6)

6. Posterior tibiae of the male slightly arcuate, slender at basal half, suddenly broadened apically (not true of all exotic species); middle tibiae slender, similar in both sexes .... Haptoncus (1)
   Posterior tibiae of both sexes slender, similar, or the middle tibiae dissimilar, that of the male being sinuate within and thickened at tip .................................................. Epuraea (2)

7. Mentum broad, covering the base of the maxillae. Prometopia (7)
   Mentum not covering the maxillae .................................. 8
8. Front not lobed over the antennae ........................................... 9
   Front lobed over the insertion of the antennae ......................... 10
9. Tip of mandibles slightly bifid ............................................ Phenolia (10)
   Tip of mandibles not bifid ............................................... Omosita (5)
10. Antennal grooves strongly convergent behind ....................... Soronia (9)
    Antennal grooves parallel ............................................ 11
11. Elytra not, or merely apparently costate ............................. Lobiopa (8)
    Elytra distinctly costate .............................................. Amphotis (11)
12. Head without antennal grooves ......................................... 13
    Head with distinct antennal grooves ................................ 14
13. Anterior tibia bidentate at middle ..................................... Perthalycrea (13)
    Anterior tibia not toothed externally ............................... Thalycrea (12)
    Anterior tibia with outer apical angle greatly prolonged in the
    form of a large triangular tooth .................................... Quadrifrons (14)
14. Tarsi not dilated; body oval, pubescent ............................. Pocadius (15)
    Front tarsi dilated; body parallel and glabrous ................. Orthopeplus (3)
15. Mesosternum protuberant in front; middle coxae widely separ-
    ated ............................................................................... 16
    Mesosternum small, oblique, not protuberant ....................... 18
16. Prosternum prolonged, broadly dilated at tip; body glabrous .... 17
    Prosternum less prolonged, feebly dilated at tip, body pubescent
    ................................................................. Amphicrossus (17)
17. Labrum deeply bilobed; hind tarsi longer than middle ..........  
    ........................................................................ Oxyenemus (21)
    Labrum feebly bilobed, hind and middle tarsi of equal length .  
    ........................................................................ Camptodes (16)
18. Metasternum not protuberant; middle coxae narrowly separ-
    ated ............................................................................... 19
    Metasternum protuberant, widely separating the middle coxae;
    prosternum not prolonged at tip ....................................... Cylodes (20)
19. Hind tarsi longer than the others; body glabrous ............... Pallodes (19)
    Hind tarsi equal to the others; body pubescent ................. Cychramus (18)

1. Haptoncus Murray

Plates 4, 12

Genotype: Haptoncus tetragonus Murr. = Haptoncus ocularis (Fairm.).
Genotype: Euparea luteola Er.
Body small, slightly convex. Head broad, clypeus indistinct, slightly porrect. Antennae a little longer than the head, first segment enlarged on the outside, second convex as long as the third, club large, oval, pubescent. Antennal grooves short, convergent. Labrum long, deeply bilobed. Mandibles strongly or feebly bidentate. Lacinia broad and rounded at tip, heavily bearded. Maxillary palpi with first segment small, second much larger and clavate, third smaller than the second, fourth cylindrical and much longer than the second. Ligula with rather large laterally projecting paraglossae, the palpi with first two segments small, the third greatly enlarged. Mentum transverse, more or less emarginate in front. Pronotum as broad as the elytra. Scutellum not round posteriorly. Epipleurae broad and attaining the elytral apices. Elytra long, the pygidium and penultimate segment ordinarily visible from behind, but not from above. Prosternal process widened and rounded posteriorly, sometimes reaching the metasternum. Mesocoxae a little further apart than the procoxae; the metacoxae about twice as far apart as the mesocoxae. In the male there is an additional segment, behind the pygidium, which is visible from above. Femurs canaliculate, tarsi feebly dilated, front tarsi more strongly dilated. Claws simple.

This genus connects the Nitidulinae with the Carpophilinae. It is very similar to Carpophilus, but differs in the longer elytra, different labial palpi, and the undeflexed eighth abdominal segment of the male.

Haptoncus contains 34 species. Except for one Brazilian species and the tropicopolitan luteolus, the genus is Old World.

HAPTONCUS LUTEOLUS (Erichson)

Plates 4, figs. 1–8; pl. 12, fig. 11

Eupuraena luteola Er., 1843, in Germar, Zeitschr. für Ent., 4, 272.
For complete synonymy see Grouvelle, 1913.
Types: of luteolus from Cuba (Otto) in the Berlin Museum; of texana from Texas, no. 8310 in the M.C.Z. (Leconte coll.).

Oval, slightly oblong, moderately shining, sparsely pubescent; uniformly testaceous, except for the black eyes and fulvous antennal club. Head finely, sparsely punctate. Prothorax with width to length as 1.9 to 1, sides feebly arcuate, narrowing anteriorly, margins narrowly reflexed, hind angles rectangular, surface rather finely, densely punctate. Elytra a little longer than wide, narrowed posteriorly, apices truncate, surface a little more sparsely and coarsely punctate than the pronotum. Middle tibiae simple in both sexes. In the male the
posterior tibiae have the basal two-fifths slender and the apical portion suddenly about twice as wide; the additional segment is acutely rounded. Length 2–2.5 mm.

A tropicopolitan species, *luteolus* occurs throughout the year in the United States from California (Elsinore Lake, Pasadena, Tustin, Vista), Arizona (Yuma), Texas (Fedor), Alabama (Mobile), to Florida (many localities); also Tennessee, Ohio (Columbus) and New Jersey (Hopatecong). The recent northern records indicate that *luteolus* is being spread by human agency.

2. *Euphraceae* Erichson

Plates 4, 12

*Euphraceae* Er., 1843, in Germar, Zeitschr. für Ent., 4, 267.


Genotype of *Euphraceae*: *Nitidula decemguttata* Fabr.

Body rather small, more or less oblong. Head rather small, clypeus indistinct. Antennae a little longer than the head, first segment strongly enlarged anteriorly, second convex as long as the third, third to fifth elongate, sixth and seventh short, eighth more or less transverse, club rather large and oval. Antennal grooves rather feeble, strongly convergent posteriorly. Labrum rather deeply bilobed. Mandibles with a single tooth behind which is a smaller tooth and a beard. Lacinia broad and rounded at tip, heavily bearded. Maxillary palpi with first segment very small, the second clavate, the third very short and transverse, the fourth cylindrical and nearly as long as the others together. Mentum strongly transverse, feebly emarginate anteriorly. Labial palpi with first segment small, second clavate, the third greatly enlarged and rounded or secureform (subg. *Dadopora*). Pronotum as broad or nearly as broad as the elytra. Elytra truncate or entire; epipleurae broad and attaining the apices. Prosternal process widened and rounded behind the coxae. Mesocoxae about as far apart as the procoxae, the hind coxae far apart (Subg. *Euphraceanella*) or not. Middle and hind tibiae variously developed, sometimes sexually dimorphic (see key). The three middle ventral segments shorter than the first and fifth. In the male the additional eighth segment is visible from above (from beneath in *liebecki*). Tarsi dilated; sometimes the
posterior tarsi are feebly dilated. Claws simple or toothed (Subg. Microtrula).

This genus is most closely related to Haptoncus from which it differs in details of the mouthparts.

The genus Epuraea contains nearly 200 species found in all regions of the earth except South America. Epuraea is particularly well developed in the Holarctic region.

The members of this genus are most commonly found at sap in the spring. Some are found in fungi, in bees’ nests, on flowers, or under old leaves.

Since the species could not all be keyed in the order in which they are described, the number after each species refers to its order in the natural arrangement.

**Key to Nearctic Epuraea**

1. Middle tibiae dissimilar in the two sexes, that of the male sinuate within and thickened at tip, that of the female slender ........... 2
   Middle tibiae similar in the two sexes, slender .................. 21

2. Intercoxal process of abdomen broad, truncate ................... 3
   Intercoxal process of abdomen narrow, acute, metasternum usually notched for its reception ............................ 7

3. Length 5 mm. or more, form broadly oblong ..................... 4
   Length less than 5 mm., form more oval than oblong .......... 5

4. Pronotal margins moderately explanate, hind angles rectangular
   ............................................................... monogama (1)
   Pronotal margins not explanate, hind angles obtuse ... liebecki (2)

5. Color yellow, elytra conjointly as wide as long ............... horni (3)
   Color testaceous to piceous, elytra conjointly longer than wide 6

6. Elytra narrower at apex, margins reflexed ..................... helvola (4)
   Elytra scarcely narrower at apex, margins very narrowly reflexed ................................. rufa (5)

7. Elytra obliquely prolonged, not truncate ....................... 8
   Elytra truncate at apex ................................... 10

8. Length 3 mm. or longer, pronotum not at all or moderately sinuate before the hind angles ......................... 9
   Length 2.4-3.2 mm., pronotum strongly sinuate before the hind angles .......................... papagona (8)

9. Middle tibiae of male feebly dilated at tip .................. integra (7)
   Middle tibiae of male rather strongly dilated ............... ambiguosa (6)
10. Form oblong oval.............................................. 11
    Form elongate, parallel; middle tibiae of male feebly sinuate. 18
11. Middle tibiae of male strongly sinuate within; the inward pro-
    longation of the tip well marked.................................. 12
    Middle tibiae of male feebly sinuate, tip merely thickened...... 14
12. Prothorax broadest at or near the base, hind angles rectangular...
       erichsoni (11)
    Prothorax distinctly narrowed at base.............................. 13
13. Sides of pronotum simply arcuate, hind angles not prominent...
       rufida (9)
    Sides of pronotum sinuate posteriorly, hind angles rather acute...
       corticina (10)
14. Large, pale yellow species with sides of thorax curved at base. 17
    Smaller, testaceous to fusaceous, with sides of thorax obliquely
    narrowed and more or less sinuate at base........................ 15
15. Hind angles of pronotum acute (perhaps also rectangular)........
       terminalis (14)
    Hind angles of pronotum subrectangular or rectangular........ 16
16. Fusaceous above, elytral margins very narrowly reflexed...........
       adumbrata (12)
    Pale testaceous to rufo-testaceous above, elytral margins less
    narrowly reflexed.................................................. avara (13)
17. Hind angles of thorax obtuse, margin very narrowly reflexed.......
       fulvescens (15)
    Hind angles of thorax acute and prominent, margin broadly
    reflexed.............................................................. duryi (16)
18. Prothorax one-half wider than long................................ 19
    Prothorax one-third wider than long.................................
19. Antennal segment 3 elongate, 4–8 short............................ 19
    Antennal segments 3–5 moderately elongate........................ 20
20. Surface moderately shining, distinctly punctate................... truncatella (18)
    Surface subopaque, obsoletely punctulate........................ linearis (17)
21. Abdominal intercoxal process broad, obtuse........................ 22
    Abdominal intercoxal process triangular, more or less acute... 26
22. Elytra not spotted................................................. 23
    Elytra spotted..................................................... 25
23. Elytra very broadly truncate behind, apex subequal in width to
    base; male first ventral with 2 longitudinal rows of hairs....
       alternans (21)
    Elytra narrowing to the truncate apex; male first ventral not
    modified............................................................ 24
24. Elytra narrowly margined; pubescence above gray, not conspicuous. .......... *obtusicollis* (22)
   Elytra more widely margined; pubescence above long, conspicuous due to silvery lustre. ....... *populi* (23)
25. Disc of pronotum uniformly dark colored; posterior male femora simple; body oblong, depressed. ........ *flavomaculata* (24)
   Pronotum with a median longitudinal pale stripe; posterior male femora obtusely subangulate; body form more oval and convex ........................................... *peltoides* (25)
26. Last antennal segment much larger than preceding. *depressa* (26)
   Last antennal segment smaller than preceding........................................ 27
27. Prothoracic margin narrowly explanate ........................................ 28
   Prothoracic margin broadly explanate ...................................................... 29
28. Less than 3 mm. long, apex of pronotum distinctly emarginate...
   Length of 3 mm. or more, apex of pronotum feebly emarginate ............... *labilis* (27)
   ........................................................................................................... *umbrosa* (28)
29. Elytra conjointly emarginate at apex ........ *seaphoides* (29)
   No alternate.

The species of this genus are extremely variable, and consequently very difficult to key accurately. The females can only be named by guess work, by association with similar males. Almost every collection contains some aberrant specimens and even distinct, unnamed species. These cannot be described until each is represented by a series of both sexes.

1. **Epuraea monogama** Crotch

Type: from Vancouver and Sierra Nevada, California in a small globular fungus on dead pine, lectotype no. 7957 from Calif. in the M.C.Z. (Leconte coll.).

Very large, broadly oblong, depressed; above rufo-piceous to dark piceous, more rufous beneath; moderately shining; sparsely covered with short brown pubescence. Head moderately densely punctulate. Antennae rufous; segments 3, 4, 5 equal; 6, 7, 8 equal, each half the length of the three preceding segments. Prothorax feebly convex; its width to length as 1.7 to 1; narrowed in front; sides moderately arcuate, explanate, slightly reflexed, not fimbriate; hind angles rectangular; hind margin bisinuate. Elytra conjointly with width to length as 1 to 1.1; sides feebly arcuate, margin rather broadly and strongly reflexed; disc punctate as in the pronotum. Male and female
pygidia fimbriate. Middle tibiae of male sinuate within and thickened at tip, of the female simple. Male eighth dorsal segment visible from above. Length 5–5.5, width 2.6–3 mm.

Comparisons with liebecki are to be found under the latter species. This species occurs (May–July) from British Columbia (North Bend, Salmon Arm, Vancouver) through Washington (Easton), Idaho (Moscow Mt.), to California (Napa, Cameno, along the Sierra Nevada) in Nevada and Texas (Rivers collector).

2. *Epuraea liebecki* spec. nov.

Very large, broadly oblong, depressed, feebly shining, sparsely pubescent. Color above dark ferrugineous, beneath (except antennal club) pale ferrugineous. Prothorax very feebly convex, with width to length as 1.6 to 1, narrowed in front, sides moderately arcuate, not explanate, finely fimbriate, hind angles broadly rounded, hind margin slightly bisinuate; surface finely alutaceous, densely, rather coarsely punctate, each puncture bearing a short recurved dark seta. Elytra conjointly with width to length as 1 to 1.1, lateral margins evenly and very feebly arcuate, not explanate, very narrowly reflexed, finely fimbriate. The sutural half of each elytron with about seven vague rows of obsolete tubercles, each tubercle bearing a moderately long recumbent dark seta. Surface of elytra more finely and sparsely punctate than the pronotum, each puncture bearing a short recumbent seta. Pygidium with long pale fimbriae. Middle tibiae of male feebly sinuate within and feebly thickened at tip. Male eighth dorsal segment visible only from beneath. Length 5–6.3, width 2.8–3.4 mm.

Although resembling *monogama*, liebecki is broader, duller, lateral pronotal margins fimbriate but not explanate, head more flat, pronotum more strongly emarginate at apex, hind angles more obtuse, and surface more coarsely punctate.

This species is known from three males from Arizona, holotype in the M.C.Z. (Liebeck coll.); a paratype in the collection of the author; and a paratype collected July 14 at Carr Canyon, Huachuca Mts. (A.M.N.H.).

3. *Epuraea horni* Crotch


Type: from Grimsby, Canada (Pettit coll.) in the Philadelphia Acad. Nat. Sci.

Broadly oval, moderately shining, sparsely covered with short fulvous pubescence, color fulvous to testaceous. Head rather densely
punctulate; antennae proportioned as in *monogama*; anterior fourth of prosternum transversely wrinkled. Prothorax with width to length as 1.6 to 1, sides moderately arcuate and gradually narrowed from base to apex, feebly sinuate before the subrectangular hind angles, apex moderately emarginate, lateral margins more widely explanate posteriorly and very slightly reflexed, surface moderately densely punctulate. Elytra conjointly as wide as long, broadest near the middle, margins rather broadly explanate and feebly reflexed, surface more sparsely punctulate than the pronotum. Epipleurae very sparsely punctate. Male middle tibiae feebly sinuate within, and only moderately thickened and prolonged at tip. Length 3.7–4.5, width 2–2.4 mm.

The form of *horni* is nearest *helvola* but even broader.

This species occurs from Canada (Grimsby) and Pennsylvania (Crooked Creek) south to North Carolina, west to Illinois.

4. *Epuraea helvola* Erichson

Plates 4, figs. 9–16; pl. 12, fig. 12

*Epuraea helvola* Er., 1843, in Germar, Zeitschr. für Ent., 4, 273.


Types: of *helvola* from Pennsylvania in the Berlin Museum; of *castanea* from Pennsylvania in the M.C.Z. (Melsheimer coll.); of *rufa* from North Carolina probably in the Hungarian National Museum, Reitter coll."

Broadly oval; moderately convex; moderately shining, covered with short, sparse, pale pubescence; color rufous to dark piceous, usually piceous brown, epipleurae and legs paler. Head coarsely, densely punctate. Prothorax with width to length as 1.6 to 1, apex deeply emarginate, base feebly bisinuate, sides strongly arcuate and narrowing at base, feebly sinuate in front of the subacute hind angles, margins broadly explanate and slightly reflexed, surface densely punctate and subgranulate. Elytra conjointly with width to length as 1 to 1.1, suture slightly elevated, margin reflexed, obsoletely punctate and subgranular. Male middle tibiae strongly sinuate and dilated at tip. Length 2.7–3.7 mm.

Closely resembling *rufa*, *helvola* differs in the more deeply emarginate prothorax, the more attenuate elytra, and the broadly reflexed elytral margins.

This species occurs (May–Oct.) from New Hampshire to Virginia (Afton, Crooked Corner) and Kentucky, west to Iowa (Mt. Pleasant), and Mantiba (Aweme, Winnipeg).
5. *E المعارئ لـ* *الSERVICIAE* *RUEFA* *(Say)*


*E المعارئ لـ* *الSERVICIAE* *rotundicollis* Reitt., 1873, Verh. Nat. Ver. Brünn., 12, 25, 34.

Types: of *rufa* from eastern United States is lost; of *badia* from Pennsylvania is in the M.C.Z. (Melshheimer coll.); of *rotundicollis* from boreal America in the National Museum, Budapest (Reitter coll.).

Oval; moderately convex; color sometimes rufous, usually rufopiceous, beneath rufous; moderately shining; sparsely covered with short fulvous pubescence. Head densely punctate. Prothorax with width to length as 1.7 to 1, apex moderately emarginate, base feebly bisinuate, sides strongly arcuate and narrowing at base, feebly sinuate before the subacute and moderately prominent hind angles, margin broadly explanate but not reflexed, surface subgranular but not densely punctate. Elytra conjointly with width to length as 1 to 1.2, suture slightly elevated, margin narrow and slightly reflexed, surface densely punctate, subgranular. Male middle tibiae strongly sinuate and dilated at tip. Length 2.9–3.5 mm.

Comparisons with its nearest relative, *helvolola*, will be found under the latter. This species occurs (March–October, chiefly June) beneath leaves, at sap, and in fungi from Ontario (Prince Edward Co.) and Quebec (Montreal) to Georgia (Clayton), west to Missouri, Kansas (Lawrence), Nebraska (Lincoln), Minnesota (Goodhue Co., bred from fallen seeds of *Acer saccharum*), and Lake Superior (White Fish Point, Isle Royale).

6. *E المعارئ LAMBEIGUA* *MANNEHEIM*

*E المعارئ LAMBEIGUA* *ambigua* Mann., 1843, Bull. Moscow, 16 (pt. 2), 256.

Type: from Kenai Peninsula, Alaska. A cotype (no. 7959) is in the M.C.Z. (Leconte coll.) and cotypes are presumably in the Zool. Mus., Helsingfors.

Oblong oval, fulvous to dark rufous, elytra often clouded with fuscous, moderately shining, very sparsely covered with fulvous pubescence. Prothorax with width to length as 1.6 to 1, apex feebly emarginate, base very feebly bisinuate, sides moderately arcuate, obliquely narrowing (but slightly if at all sinuate) before the sub-rectangular hind angles, margin narrowly explanate (posterior third more broadly) and slightly reflexed, surface rather densely punctate. Elytra conjointly with width to length as 1 to 1.4, apices prolonged not truncate, margin very narrowly reflexed, slightly more coarsely
punctate than the pronotum. Male middle tibiae feebly sinuate within and strongly prolonged inward. Length 3.4–3.8 mm.

This species occurs (May–August) from Alaska (Kenai) through British Columbia (Quesnel Lake) and Washington (Olympia) to California (Siskiyou Co., Eldorado Co., Santa Cruz Mts., San Mateo Co., Fieldbrook, Los Gatos).

7. EPURAEA INTEGRA Horn


Type: cotypes from Fort Whipple, Arizona (Palmer) and Colorado (Morrison) are in the Philad. Acad. Nat. Sci. and the M.C.Z. (Leconte coll.).

Oblong oval, rufo-testaceous, elytra sometimes fuscous, moderately shining, sparsely covered with short fulvous pubescence. Head densely punctate. Prothorax with width to length as 1.7 to 1, base slightly wider than apex; sides moderately arcuate, near the base obliquely narrowed and slightly sinuate before the rectangular, moderately prominent hind angles; margin moderately explanate, slightly reflexed; apex moderately emarginate; base slightly bisinuate, surface densely punctulate and subgranular. Elytra conjointly with width to length as 1 to 1.3, margin narrowly reflexed, apices conjointly rounded and covering the pygidium, suture slightly dehiscent at tip, surface densely punctulate and subgranular. Male middle tibiae feebly sinuate and feebly dilated at tip. Length 2.8–3.5 mm.

Although related to _ambigua, integra_ differs in the male middle tibiae and the more prominent hind angles of the pronotum.

This species occurs (April–July) in Nevada and Colorado, south to Arizona (Williams, Fort Whipple, Pinal Mts., Globe, Santa Rita Mts., Chiricahua Mts.) and New Mexico (Beulah). Sharp records _integra_ from Guatemala (7000–9000 ft., Quiche Mts.). Cockerell collected it in the nest of _Bombus juxtus_ at Beulah, New Mexico, in July.

8. EPURAEA PAPAGONA Casey

Type: from Arizona (Morrison) no. 6967, labelled “type” in Casey’s handwriting, in the M.C.Z. (Leconte coll.).

Oblong oval, flavo-testaceous, moderately shining, sparsely covered with short fulvous pubescence. Head densely punctate. Prothorax with width to length as 1.5 to 1, base slightly wider than apex, sides moderately arcuate, near the base strongly sinuate, before the acute or rectangular hind angles, margins narrowly explanate except for
posterior halves which are broadly explanate, base bisinuate, surface densely punctulate. Elytra conjointly with width to length as 1 to 1.2, margin narrowly reflexed, the apex of each elytron evenly rotundotruncate, suture not dehiscent at tip, surface a little more coarsely and sparsely punctate than the pronotum. Male middle tibiae very feebly sinuate within and very feebly thickened at tip. Length 2.4–3.2 mm.

Very closely related to integrata, papagona tends to differ in its smaller size, acute posterior pronotal angles, more truncate elytral apices and apical sutural angles not dehiscent.

This species occurs in June on Populus tremuloides in Colorado, Arizona (Williams), and New Mexico (Albuquerque). Sharp’s record of northern Sonora is almost certainly based on specimens Morrison collected in what is now southern Arizona.

9. Epuraea rufida (Melsheimer)


Type: from Pennsylvania is not in the Melsheimer collection (M.C.Z.) but may yet be found in the general collection, among which Melsheimer’s specimens were distributed by Samuel Henshaw.

Oblong oval, testaceous to dark rufous, moderately shining, sparsely covered with short fulvous pubescence. Head densely, rather coarsely punctate; antennal segments 4, 5 as long as 3. Prothorax with width to length as 1.6 to 1, apex feebly emarginate, base feebly bisinuate, sides moderately arcuate, feebly narrowed but not sinuate before the subrectangular hind angles; margins moderately widely explanate and very slightly reflexed; surface moderately coarsely and densely punctate, subgranular. Elytra conjointly with width to length as 1 to 1.1, margin narrowly reflexed, apices truncate, surface densely punctate, subgranular. Male middle tibiae very strongly sinuate within and strongly thickened and prolonged inward. Length 3.5–4.1 mm.

Comparisons with its closest relative corticina, will be found after the description of the latter. Although resembling erichsoni, rufida is larger, more finely punctate, pronotal margin broader, and the pronotum more narrowed posteriorly.

This species occurs (April–Sept.) beneath bark of oak and on flowers of linden from Ontario (Rosseau) to South Carolina (Charleston), west to Louisiana (Vowell’s Mill) north to Michigan (Gd. Ledge).
10. Epuraea corticina Erichson

_Epuraea corticina_ Er., 1843, in German, Zeitschr. für Ent., 4, 270.
Type: from North America (probably eastern Pennsylvania) in the Berlin Museum (Koch coll.).

Oblong oval, fulvous to fuscous, usually rufo-testaceous with disc of pronotum and elytra often clouded with a darker color, moderately shining, sparsely covered with short fulvous pubescence. Antennal segments 4 and 5 shorter than 3. Prothorax with width to length as 1.5 to 1, apex slightly narrower than base, rather strongly arcuate, feebly narrowed and sinuate before the usually acute (rarely rectangular) hind angles, margins narrow and very feebly reflexed, surface densely and rather finely punctate, finely alutaceous. Elytra conjointly with width to length as 1 to 1.3, margin narrowly reflexed, surface more coarsely and sparsely punctate than the pronotum. Male middle tibiae sinuate within and greatly dilated at tip. Length 3.1–3.6 mm.

The convexity of the prothorax and the sinuation of its sides are variable. This species is closely related to _rufida_ but is slightly smaller, more convex, prothorax wider, its sides more arcuate and hind angles more acute, usually darker, and the male middle tibiae less prolonged inwards.

This species occurs (April–Sept., Dec.) under oak bark from New York (Rochester, N. Y. State List) to Florida (St. Augustine), west through Alabama (Mobile) to Louisiana (Winnfield), Mississippi (Meridian, Lucedale), Kansas (Douglas Co.), Iowa (Burlington, Mt. Pleasant), and Wisconsin; also “Nev.” (A.N.S.P.).

11. Epuraea erichsoni Reitter

Type: from North America, cotypes in the Vienna Museum and Paris Museum (Marseul coll.).

Oblong oval, fulvous to dark rufous, usually luteo-testaceous, margins of elytra more or less fuscous, moderately shining, sparsely covered with short yellow pubescence. Head sparsely punctate. Prothorax with width to length as 1.6 to 1, apex very feebly emarginate, base feebly sinuate, sides feebly arcuate, only slightly narrowed before the rectangular hind angles, margin narrowly and feebly reflexed, surface densely, rather coarsely punctate. Elytra conjointly with
width to length as 1 to 1.2, margin narrowly reflexed, apices truncate, surface less densely punctate than the pronotum. Male middle tibiae strongly sinuate within and strongly thickened at tip. Length 2.2–3 mm.

It is similar to labilis but has a less emarginate pronotum and different middle male tibiae.

This species occurs (April–August) in the early spring beneath bark and at sap, later on flowers of maple, huckleberry, and various marsh plants from Ontario (Rosseau) and Quebec (Montreal) south to Florida, west to Texas, Nebraska, and Manitoba (Cedar Lake).

12. Epuraea adumbrata Mannerheim


Type: from Sitka, Alaska, a cotype (no. 7960) is in the M.C.Z. (Leconte coll.) and cotypes are presumably in the Zool. Mus. at Helsingfors.

Oblong oval, moderately shining, color of cotype fuscous, beneath pale, except for antennal club, underside of meso- and metathorax and abdomen which are fuscous; covered with fine yellow pubescence. Head rather finely, densely punctate. Prothorax with width to length as 1.6 to 1, apex feebly emarginate, base moderately bisinuate, sides rather feebly arcuate, moderately narrowed and very slightly sinuate before the subrectangular hind angles, margins moderately broadly explanate and very slightly reflexed, surface densely punctate, subgranular. Elytra conjointly with width to length as 1 to 1.2, margins very narrowly reflexed, apex of each elytron truncately rounded, surface very slightly more coarsely and sparsely punctate than the pronotum. Male middle tibia very feebly sinuate and thickened at tip. Length 3 mm.

The above description is of the cotype. Horn was confused about this species. Specimens from Olympia, Washington (Liebeck coll.: M.C.Z.) have unicolorous antennae, the pronotum more coarsely punctate and with less explanate margins than the cotype. Although very closely related to *terminalis, adumbrata* differs in being darker, pronotum more convex, and more explanate, and more sparsely punctate, and the elytra less explanate.

This species occurs (May–July) from Alaska (Sitka, Tschunuktnu River, Kenai Peninsula) to Washington (Olympia) and Colorado (Douglas Co.), east to Quebec (Montreal) and south to North Carolina
13. Epuraea terminalis Mannerheim

*Epuraea terminalis* Mann., 1843, Bull. Moscow, 16 (pt. 1), 95.


For complete synonymy see Grouvelle, 1913.

Types: of *terminalis* from Finland (at sap on birch) presumably in the Zool. Mus. at Helsingfors; of *immunda* from Germany presumably in the Zool. Mus. at Munich; of *infuscata* from Kenai Peninsula, Alaska, a cotype (no. 8309) is in the M.C.Z. (Leconte coll.) and cotypes are presumably in the Zool. Mus. at Helsingfors.

Oblong oval, moderately shining, sparsely and finely pubescent, color rufo-testaceous, elytra laterally and apically tending to be clouded with fuscous, beneath rufo-testaceous, metasternum darker, antennae unicolorous or with club fuscous. Head densely punctulate. Prothorax with width to length as 1.7 to 1, apex very feebly emarginate, base very feebly bisinuate, sides moderately arcuate, moderately explanate, and slightly reflexed, more or less distinctly sinuate before the prominent, acute hind angles, surface densely punctulate, finely alutaceous. Elytra conjoinly with width to length as 1 to 1.1, sides rather strongly, evenly arcuate, margin narrowly reflexed, surface more coarsely and sparsely punctate than the pronotum. Intercoxal process rather broad and triangular. Male middle tibiae abruptly but only moderately thickened at tip. Length 2.5–3 mm.

The species described by Horn under *immunda* is not this, but another unnamed one mentioned next. Arrow had sent Fall a European specimen of *terminalis* determined by Grouvelle which enabled Fall to determine that Horn's "*immunda*" was another species. The European *terminalis*, with one of its forms, in the writer's collection also show that it occurs in the New World.

This species occurs in Europe, across Siberia, and (May–July) from Alaska (Anchorage) south through British Columbia (Terrace) to Colorado (Douglas Co.), east to Wisconsin (Bayfield), Quebec (Joliette), and Maine (Paris).

*Epuraea* sp. nec *terminalis* (*immunda* auct.)

There is a species, widespread in western United States, that is labelled *immunda* in many collections, but is not *immunda* (=*terminalis*). A series of this species is in the Fall collection with the label "*immunda*" turned down. The Horn collection has a series from Salada Beach, California. It is difficult to determine just what the species is.
14. **Epuraea avara** (Randall)


Types: of *avara* from Maine (at sap on prostrate sugar maple) is lost; of *nubila* from San Jose, California (no. 6908) in the M.C.Z. (Leconte coll.).

Elongate oval, moderately shining, sparsely and finely pubescent, rufo-testaceous, often with three indistinct fuscosus spots on each elytron. Head densely punctate. Prothorax with width to length as 1.5 to 1, apex slightly narrower than base, apex moderately emarginate, base moderately bisinuate, sides feebly arcuate, the posterior third feebly narrowed to the rectangular hind angles, margin moderately broad and slightly reflexed, surface densely punctate, finely alutaceous. Elytra conjointly with width to length as 1 to 1.2, apices rotundotruncate, margins narrowly reflexed, surface finely alutaceous, more sparsely and coarsely punctate than the pronotum. Male middle tibiae very feebly sinuate within and slightly thickened at tip. Length 2.3–3.5 mm.

This is a very variable species. In particular, a specimen from El Dorado Crk., N. W. Terr. (Fall coll.: M.C.Z.) is more widely explanate and more sparsely punctate. Specimens from B. C., Calif., and Maine tend to be darker, pronotum with less explanate margins and more obtuse hind angles.

This species occurs especially at sap of maple and birch (May–August, chiefly June) from Yukon (El Dorado Crk.), British Columbia (Cawston), and Quebec (Joliette) south to California (San Jose), Nevada, New Mexico (Albuquerque), and South Carolina.

15. **Epuraea fulvescens** Horn


Type: from Grimsby, Canada in the Philadelphia Acad. Nat. Sci.

Oblong oval, moderately shining, sparsely covered with yellow pubescence, color above and beneath fulvous, antennal club sometimes darker. Prothorax with width to length as 1.7 to 1, apex feebly emarginate, base feebly bisinuate, sides very feebly arcuate, not sinuate before the more or less obtusely subrectangular hind angles, margin very narrowly explanate, surface rather coarsely and densely punctate, finely alutaceous. Elytra conjointly with width to length as 1 to 1.2, margin moderately narrowed, apex of each elytron broadly rounded, surface very slightly more coarsely and sparsely punctate
than the pronotum. Male middle tibiae slightly stouter than the posterior and feebly thickened at tip. Length 3–3.5 mm.

This very rare species occurs in June from Canada (Grimsby) to Georgia (Clayton).

16. Epuraea duryi Blatchley

*Epuraea duryi* Blatchley, 1910, Coleoptera of Indiana, p. 639, fig. 240.
Type: from Crawford Co., Indiana in the Blatchley coll. at Purdue University, Lafayette, Ind.

Broadly oval, subdepressed. Uniform pale yellow, sparsely pubescent, distinctly shining. Head finely and sparsely punctate. Thorax two-thirds wider than long, widest at middle, the sides thence converging and nearly straight to apex, feebly curved to base; disk finely and rather sparsely punctate, broadly and shallowly impressed near the hind angles. Elytra together a little longer than wide, tips subtruncate; disk finely and rather sparsely punctate. Abdomen finely granulate-punctate. Intercoxal process rather broad, but acute at apex. Length 3.5–4.7 mm.

Since *duryi* is unknown to the writer, the above description is copied from Blatchley. In the writer's collection is a female from East Dorset, Vt., which is much nearer *duryi* than any other species. But it is rufo-testaceous and has the pronotum somewhat differently shaped and punctate.

This species is known only from Blatchley's records of Indiana (Crawford Co., June 27–28) and Ohio (Cincinnati, collected by Charles Dury and presumably in his collection).

17. Epuraea linearis Mäklin

*Epuraea linearis* Mäklin, 1853, Bull. Moscow, 26, 205.
Type: cotype (no. 8308) from the interior of the Kenai Peninsula, Alaska is in the M.C.Z. (Leconte coll.) and cotypes are presumably in the Zool. Mus. at Helsingfors.

Oblong to elongate, parallel; subopaque; piceo-rufous, elytra darker than the pronotum; when dark piceous or black the pronotal margins may be testaceous; sparsely covered with pale pubescence. Head sparsely, obsoletely punctulate. Antennae rufous, segments 6–8 very short. Prothorax with width to length as 1.5 to 1, very little wider at base than at apex, sides evenly very feebly arcuate, margin very narrowly reflexed, apex very feebly emarginate, base very feebly
bisinuate, hind angles subrectangular, surface variably obsoletely punctulate, subgranulate. Elytra conjointly with width to length as 1 to 1.5, apices rotundo-truncate, margin very narrowly reflexed, surface slightly more coarsely and sparsely punctate than the pronotum. Length 2.7–3 mm.

A specimen from Quesnel Lake, B. C. (Kans. Univ. coll.) has the lateral margins more broadly explanate and the apex of the pronotum more distinctly emarginate. Examples from the southwest (U.S.N.M.) have the discs of the pronotum and elytra mainly black.

This species occurs on pine and spruce (May–Sept.) from Alaska (Kenai Peninsula, Seward, Sitka) through British Columbia (Quesnel Lake, Vancouver), Alberta (Edmonton), Oregon (Astoria), Montana (Sula), South Dakota (Black Hills), Colorado (Veta Pass) to Arizona (Chiricahua Mts.) and New Mexico (Cloudercroft); also New Hampshire (Waterville: U.S.N.M.). This last record should be rechecked.

18. EUPHARIA TRUNCATELLA Mannerheim

Euparia truncatella Mann., 1846, Bull. Moscow, 19 (pt. 2), 514.
Euparia nigra Mäklin, 1853, Bull. Moscow, 26 (pt. 3), 204.

Types: of truncatella from Sitka, Alaska presumably in the Zool. Mus. at Helsingfors; of nigra a cotype from Kenai Peninsula, Alaska is in the M.C.Z. (Leconte coll.) and cotypes are presumably in the Zool. Mus. at Helsingfors.

Elongate, parallel, sparsely pubescent, moderately shining, color piceo-testaceous to nearly black, antennae unicolorous or with club darker. Head sparsely punctate. Prothorax with width to length as 1.3 to 1, apex feebly emarginate, base truncate, sides feebly arcuate and at posterior third narrowed and more or less strongly sinuate before the subrectangular or rectangular hind angles, margin narrowly explanate but more widely posteriorly, more or less feebly reflexed, surface densely punctate, finely alutaceous. Elytra conjointly with width to length as 1 to 1.4, narrowly reflexed, slightly more sparsely punctate than the pronotum, finely alutaceous. Male middle tibiae sinuate within and strongly dilated at tip. Length 2.5–3 mm.

In color and degree of elongation truncatella varies considerably. It is easily confused with planulata and is compared under the latter.

This species occurs (April–August) from Alaska (Kenai Peninsula, Seward) through Yukon (Klondike), British Columbia (Terrace), Alberta (Edmonton), Ontario (Rooseau), Quebec (Hull) to Labrador (Ungava Bay), south to California (Sisson, Los Gatos, Lassen Co. on
Pinus jeffreyi), Nevada, Colorado (La Veta), New Mexico (Cloud-croft, Las Vegas, 11000 ft.), Indiana (Lawrence Co. in decaying fungi), West Virginia (Kingmont), and Virginia (Lee Co.).

19. Epuraea planulata Erichson

*Epuraea planulata* Er., 1843, in Gernar, Zeitschr. für Ent., 4, 271.


Types: of *planulata* from Sitka, Alaska in the Berlin Museum; of *placida* a
cotype (no. 8311) from Kenai Peninsula, Alaska is in the M.C.Z. (Leconte
coll.) and cotypes are presumably in the Zool. Mus. at Helsingfors.

Elongate, rufous to piceous usually rufo-piceous, when pale the
eytra often clouded with a darker color; moderately shining; sparsely
covered with pale pubescence. Head sparsely punctulate; antennal
segment 3 moderately elongate, 4 and 5 shorter. Prothorax with
width to length as 1.4 to 1, apex feebly emarginate, slightly narrower
at apex than at base, sides very feebly arcuate, more or less feebly
narrowing and more or less feebly sinuate before the rectangular hind
angles, base truncate, margin very narrowly or moderately explanate
and slightly or not at all reflexed, surface densely punctate, finely
alutaceous. Elytra conjointly with width to length as 1 to 1.4, each
eytral apex broadly rounded, margin very narrowly reflexed, surface
slightly more coarsely punctate than the pronotum. Length 2.5–3 mm.

It is not easy to separate *planulata* from *truncatella*, but the former
has differently formed antennae; the pronotum is more depressed,
its sides less arcuate and sinuate posteriorly, its margins less explanate.

In Leng’s Catalogue *boreella* Zetterst. is given as possibly the same
as *planulata*. In the writer’s collection is a series from Europe which
show *boreella* to be more closely related to *truncatella*, from which it
differs in the sides of the pronotum being more arcuate, more sinuate,
etc.

This species occurs (May–July) from Alaska (Kenai Peninsula,
Sitka) through British Columbia (Terrace), Alberta (Edmonton), to
Quebec (Montreal), south to Washington, Nevada, Colorado (Ouray,
8000 ft.), and in the east to North Carolina (Toxaway Lake).

20. Epuraea ornatula Notman


Type: from Cochrane, Ontario (August 22–30) in the collection of Howard
Notman.
Oblong, slightly elongate, rather convex, rufo-testaceous. Prothorax one-half wider than long, narrowed in front, sides moderately arcuate from apex to one-third from the base, thence obliquely narrowed to the posterior angles which are obtuse, distinct, but finely rounded. Pronotal margins widely explanate, narrowly, strongly reflexed. Third antennal segment twice as long as wide, one-third longer than fourth, fourth and fifth equal, six-eight shorter. Elytra twice the length of the prothorax. Intercoxal process narrow and triangularly acute. Male middle tibiae faintly sinuate on inner edge and strongly dilated at tip. Length 2.25, width 1 mm.

Since the type of ornatula was not seen, the exact identity of this species is a question. Notman compares it with boreella (evidently meaning planulata) but says that ornatula is smaller, differently formed and colored. In the writer’s collection is a series from North Elba, New York which agree with Notman’s description except for being rufo-piceous and the antennae somewhat intermediate.

This species is known definitely only from Cochrane, Ontario and possibly from North Elba, Essex co., N. Y. (Oct.).

21. Epuraea alternans Grouvelle


Broadly obtusely oval, testaceous, moderately shining, sparsely covered with fine, yellow pubescence. Head moderately sparsely punctate. Prothorax with width to length as 1.7 to 1, apex strongly emarginate, base feebly bisinuate, sides moderately arcuate, the posterior third narrowed and very slightly sinuate before the subrectangular hind angles, margins moderately explanate and slightly reflexed, surface sparsely punctate and finely granular. Elytra conjoinedly with width to length as 1 to 1.1, convex, margins narrowly reflexed, apices rather distinctly truncate, surface more coarsely and densely punctate than the elytra. First ventral segment with two longitudinal lines of hairs at the middle. Intercoxal process broad, obtuse. Length 2.4, width 1.4 mm.

This species is distinctive in the ventral rows of hairs and the very truncated elytra. It is related to ovata but is more depressed, elytral apices more truncate, the pronotum less explanate, etc.

It is known only from the male holotype (no. 24,486).
22. Epuraea obtusicollis Reitter


Type: Amer. bor. (Mus. Chevrolat); of *ovata*, from Michigan (Schwarz), Canada (Pettit) and California (Crotch) in the Philad. Acad. Nat. Sci. and a cotypte no. 7962 from Michigan is in the M.C.Z. (Lecente coll.).

Oval; rufo-piceous, rarely testaceous, margins paler; moderately shining; convex, particularly the elytra; sparsely covered with pale yellow pubescence. Head moderately densely punctate. Prothorax with width to length as 1.7 to 1, apex narrower than base and moderately deeply emarginate, sides strongly arcuate posteriorly and strongly narrowed to retracted, small, distinct, rectangular hind angles, margins narrowly to widely explanate and moderately reflexed; base very feebly bisinuate; surface rather sparsely punctate and finely alutaceous. Elytra often fuscous, conjointly with width to length as 1 to 1.2, sides gradually narrowing to the apices which are conjointly rounded and not truncate, margins rather narrowly reflexed, surface more coarsely and densely punctate than the pronotum. Male middle tibiae simple. Length 2–3 mm.

Horn’s description of *obtusicollis* was based on the type. Subsequently he received specimens from the District of Columbia (Ulke) which he named this species. It is similar to *ovata* except that it averages smaller (2 mm.), is more finely punctate, the pronotal and elytral margins more narrow, and the color testaceous or rarely piceous. The form is known from Mass. (Sherborn), New York, District of Columbia, and California (Lake Tahoe). Since the variable *ovata* grades into *obtusicollis*, it seems impossible to retain the former as a distinct species.

This species occurs under beech bark, in fungus, and in the fall under old leaves and in humus (May–Sept., chiefly June) from Quebec (Montreal, Quebec) and Maine (Mt. Katadin, 5060 ft.) to North Carolina (Black Mts.), west through Pennsylvania, Indiana, Nebraska (Nebraska City), Colorado (Garland), Arizona to California (Pasadena, Lake Tahoe), north to Alberta (Edmonton) and Manitoba (Winnipeg).

23. Epuraea populi Dodge


Broadly oblong-oval, uniformly dark piceous, somewhat paler beneath, moderately shining, sparsely covered with rather long, silvery grey pubescence. Head densely punctate, rather deeply foveate between the eyes. Prothorax with width to length as 1.8 to 1, apex moderately emarginate and distinctly narrower than the base, base feebly bisinuate, sides moderately arcuate and very slightly narrowed before the subrectangular hind angles, margin broadly explanate and slightly reflexed, an oblique depression on each side of the disc before the hind angles, surface rather sparsely, obsoletely, and finely punctate, finely alutaceous. Elytra conjointly with width to length as 1 to 1.1, sides evenly, feebly arcuate, apices rather distinctly truncate, margin very narrowly explanate, slightly reflexed, surface slightly more coarsely and sparsely punctate than the pronotum. Intercoxal process broadly triangular. Length 2.9 mm.

This species occurs on the bark of dead or dying aspen *Populus tremuloides* (May 27–July 25) in Minnesota (Itaska Park) and Michigan.

24. **Epuraea flavomaculata** Mäklin

*Epuraea flavomaculata* Mäklin, 1853, Bull. Moscow, 26, 205.

*Epuraea depressa* (Ill.) of authors, in error.

Type: from Kenai Peninsula, Alaska is presumably in the Zool. Mus. at Helsingfors.

Rather broadly oblong-oval, rarely broadly oval, shining, very sparsely pubescent, color brown to piceous, lateral margins and an anterior and posterior spot on the disc of each elytron testaceous, the anterior pair of spots are larger than the posterior and more often tend to be contiguous along the suture, beneath brown to piceous. Head densely, rather coarsely punctate. Prothorax with width to length as 1.8 to 1, apex moderately emarginate, base feebly bisinuate, sides rather feebly arcuate, posterior third moderately narrowed to subrectangular hind angles, margins moderately explanate and feebly reflexed, surface densely punctate and finely alutaceous. Elytra conjointly with width to length as 1 to 1.2, margin moderately narrowly reflexed, apices moderately prolonged, surface more coarsely and sparsely punctate than the pronotum. Male middle tibiae simple. Length 2.5–3.4 mm.

Apparently most closely related to *peltoides, flavomaculata* differs in being more oblong, less convex, with different color and posterior male femora.

This species occurs (May–Sept., chiefly June) from Ontario (Rainy
R. Dist., Beaver Mine) to New Hampshire (Mt. Washington) west through Michigan (Detroit) to Manitoba (Winnipeg) and Alberta (Edmonton); also New Mexico (Clouderoft, 9000 ft.).

25. **Epuraea peltooides** Horn

Type: cotypes from Michigan (Schwarz) and Maryland in the Philadelphia Acad. Nat. Sci. and the M.C.Z. (Leconte coll., no. 7963).

Oval to rather broadly oval, dark piceous above with the following markings testaceous to fuscous: pronotal margins and a median longitudinal stripe on basal half of pronotum, the margin of each elytron and four spots of which one on the humeral umbone and one posterior to it at the elytral two-fifths are of equal size; a larger spot on the suture at the elytral three-fifths, and the largest spot at the inner basal angle of the elytron; beneath testaceous to fuscous; moderately shining, sparsely covered with pale greyish pubescence. Head sparsely punctate. Prothorax with width to length as 1.8 to 1, apex strongly emarginate, base feebly bisinuate, sides rather strongly arcuate, hind angles prominent and rectangular, margin more or less broadly explanate, feebly or moderately reflexed, surface rather sparsely punctate. Elytra conjointly with width to length as 1 to 1.1, sides evenly feebly arcuate, margin narrowly reflexed, apices feebly truncate. Interecoxal process moderately broad and obtuse at tip. Male posterior femora are obtusely subangulate near the tip. Length 2.5–3.2 mm.

This species occurs (May–Sept., chiefly in the spring) from Ontario and Quebec (Montreal) to Virginia, west to Indiana and Wisconsin (Madison).

26. **Epuraea depressa** (Illiger)

*Nitidula depressa* Illiger, 1798, Käfer Preuss., 1, 386.
*Nitidula aestiva* Fabr., 1775, Syst. Ent., p. 77.
*Epuraea convexiuscula* Mann., 1843, Bull. Moscow, 16 (pt. 2), 255.
For complete synonymy see Grouvelle, 1913.
Types: of *depressa* from Germany either in the Naturh. Mus. at Braunschweig or in the Berlin Museum; of *aestiva* from Europe (on flowers) possibly at Kiel or Copenhagen; of *convexiuscula* from Sitka, Alaska, cotypes presumably in the Zool. Mus. at Helsingfors and a cotype no. 8312 in the M.C.Z. (Leconte coll.).

Oval, slightly oblong; convex; rufo-testaceous or rufous, sometimes an elongate fuscous spot on each elytron; moderately shining; sparsely
covered with testaceous pubescence. Head densely punctate; terminal segment of antennae somewhat quadrangular, as large or larger than the two preceding segments together, that of the female larger than that of the male. Prothorax with width to length as 1.8 to 1, apex moderately emarginate and distinctly narrower than the base, base very feebly bisinuate, sides feebly evenly arcuate sometimes very feebly obliquely narrowed before the subrectangular hind angles, margin narrowly explanate and very slightly reflexed, disc with a vague depression on each side near the hind angles, surface densely rather coarsely punctate, finely subrugose. Elytra conjointly with width to length as 1 to 1.25, margin very narrowly reflexed, apices separately rounded and feebly truncate, surface more sparsely truncate than the prosternum. Intercoxal process acutely oval in front. Length 2.5–3.5 mm.

This is more convex than any other Nearctic *Epuracea* and easily recognized by the greatly enlarged terminal segment of the antenna. Comparisons with its closest Nearctic relative will be found under *labilis*.

This species occurs on flowers in the spring (May–July) in Europe, northern Asia, and from Alaska (Unalaska I., Sitka) through British Columbia (North Bend), Manitoba (Aweme), to Ontario (Prince Edward Co.) south to California (Alameda Co., Lake Tahoe), Nevada, New Mexico (Beulah), Texas and Florida.

27. **Epuracea labilis** Erichson

*Epuracea labilis* Er., 1843, in Germar, Zeitschr. für Ent., 4, 272.  
Type: from North America (probably Pennsylvania) in the Berlin Museum.

Oval, slightly oblong, distinctly convex, rufo-testaceous, moderately shining, sparsely covered with pale pubescence. Head rather densely and coarsely punctate. Prothorax with width to length as 1.7 to 1, apex slightly narrower than the base and feebly emarginate, sides feebly arcuate and very slightly obliquely narrowed before the subrectangular hind angles, margin narrowly explanate and slightly or not at all reflexed, surface rather coarsely and moderately densely punctate. Elytra conjointly with width to length as 1.2 to 1, apex rather distinctly truncate, sides very narrowly reflexed, punctate as in the pronotum. Intercoxal process broadly triangular. Length 2–2.5 mm.

Evidently closely related to *depressa*, *labilis* differs in the much
smaller terminal antennal segment, the more acute intercoxal process, body slightly less convex, and the elytral apices more truncate.

This species occurs on flowers of dogwood, elder, etc. (May–Sept., chiefly in the spring) from Ontario (Toronto) and Quebec (Joliette) to Georgia, west to Texas, Kansas (Douglas Co.), and Manitoba (Winnipeg).

28. **Epuræa umbrosa** Horn

Type: from Fort Cobb, Caddo Co., Oklahoma, lectotype no. 3209 in the Philadelphia Acad. Nat. Sci. and cotype no. 7964 in the M.C.Z. (Leconte coll.).

Oval, slightly oblong, moderately shining, rufo-testaceous to ferrugineous (cotype is pale testaceous), elytra usually somewhat clouded with fuscous, so that an oval pale intra-humeral spot and another subapical spot are indicated, sparsely covered with yellow pubescence. Head densely punctate, antennae unicolorous. Prothorax with width to length as 1.5 to 1, apex feebly emarginate, base moderately bisinuate, sides even moderately arcuate and slightly narrower at base than at middle, hind angles subrectangular, margin very narrowly reflexed, surface rather coarsely moderately densely punctate, obsolescent subgranular. Elytra conjointly with width to length as 1 to 1.5, apices truncate, margin narrowly reflexed, surface punctate as in the pronotum. Male middle tibiae simple. Length 3–3.5 mm.

This species seems to be most nearly related to *labilis*, but is larger, the pronotum less emarginate apically and less explanate laterally. A pair from Cloudcroft, New Mexico (Kans. Univ. coll.) is very aberrant in having the pronotum and elytra much more broadly reflexed. Also the pronotum of one is broader than usual. These specimens resemble an elongate ferrugineous *populi*.

This species occurs (March 26–Sept. 1) from Texas (Lee Co., Columbus, Fedor) through Oklahoma (Ft. Cobb, Caddo Co.), Arkansas, Georgia, to North Carolina (Southern Pines) and New York (Lake George); also the aberrant pair from Cloudcroft, New Mexico.

29. **Epuræa scaphoides** Horn

Type: from Colorado (Morrison) in the Philadelphia Acad. Nat. Sci. (holotype no. 3208).

Elongate oval, depressed, uniformly rufo-testaceous, rather feebly shining, very finely and sparsely pubescent. Head moderately densely
punctate; the third and fourth antennal segments of equal length and about three-fourths the length of the second. Prothorax one-third wider than long, slightly narrower in front, apex deeply emarginate, base truncate, sides feebly arcuate, hind angles rectangular, margins broadly explanate and strongly reflexed, surface moderately finely, densely punctate. Elytra conjointly one-third longer than wide, moderately narrower posteriorly, apices circularly conjointly emarginate, margin broadly explanate and strongly reflexed, surface punctate as in the pronotum. Intercoxal process triangular, acute. Length 3 mm., width 1.6 mm.

As Horn says, this is a most peculiar species, since it resembles a miniature *Embaphion* with the elytra conjointly emarginate. It is known only from the male holotype.

3. Orthopeplus Horn

Plates 5, 12


Genotype: *Orthopeplus quadricollis* Horn.

Body elongate, parallel, glabrous, head broad and concave above, clypeus indistinct. Antennae longer than the head, first segment enlarged, second convex, third to fifth about of equal length; club large not compact. Antennal grooves broad, convergent behind. Labrum feebly bilobed. Mandibles acute at tip, feebly toothed on inner surface. Maxillary palpi with first segment small, next two about of equal length, the third thick and truncate at tip. Mentum apparently feebly emarginate in front. Pronotum as broad as the elytra. Prosternal process moderately expanded behind the coxae, elevated at tip, and subconically protuberant. Elytra long, exposing only the tip of the pygidium; epipleurae rather narrow, attaining the apices. Mesosternum not carinate. The procoxae and metacoxae about twice as far apart as the nearly contiguous mesocoxae. First and fifth ventral segments long, about of equal length; the second to fourth short and of equal length. An additional deflexed dorsal segment is clearly seen in the male. Anterior tarsi moderately dilated, other tarsi simple. Claws simple.

This genus is rather closely related to *Epuracea*, differing in details of maxillae, antennae, prosternal process, and tarsi. *Orthopeplus* contains only one rare species from the cordilleran region of the United States.
Orthopeplus quadricollis Horn
Plates 5, figs. 1–5; pl. 12, fig. 13
Type: from Colorado (Morrison) in the Philadelphia Academy of Natural
Sciences.
Elongate, parallel, moderately convex, glabrous, moderately shining, rufo-piceous, elytra darker. Head broadly concave, minutely punctate. Prothorax with width to length as 1.1 to 1, very slightly narrower posteriorly, apex feebly emarginate, sides very feebly arcuate and narrowly margined, base very feebly arcuate, disc moderately convex and transversely flattened anteriorly, surface finely densely punctate. Elytra parallel, very narrowly margined, apices rotundo-truncate, surface more coarsely and sparsely punctate than the pronotum. More distinctly punctate beneath; abdomen sparsely pubescent. Length 2.5, width 1 mm.
This species occurs on Pinus ponderosa (June-Sept.) from Colorado (Estes Park) and New Mexico (Cloudcroft) to Arizona (Grand Canyon, Flagstaff, Santa Catalina Mts.).

4. Stelidota Erichson
Plates 4, 12
Stelidota Er., 1843, in Germar, Zeitschr. für Ent., 4, 300.
Genotype: Nitidula geminata Say.
Body oval, rather convex, moderately small. Head small, clypeus may or may not be distinct. Antennae a little longer than the head, first segment strongly enlarged anteriorly, second convex, third to fifth narrow and elongate, sixth to eighth short, club oval. Antennal grooves subocular, parallel, and moderately deep. Labrum bilobed. Mandibles with a small tooth behind the apex, bearded. Lacinia short, broad, rounded at tip, heavily bearded apically and on inner side. Maxillary palpi with first segment small, second clavate, third short and transverse, fourth cylindrical, about as long as the other three. Ligula with rather small paraglossae; labial palpi with first segment minute, second clavate, third thick, oblong, with or without a seta at apex. Mentum transverse, broadly and deeply emarginate anteriorly. Pronotum as broad or broader than the elytra. Elytra tapering apically; epipleurae broad, attaining the apices. Prosternal process broad, elevated and rounded behind the coxae. Mesocoxae a little further apart than the procoxae. Metacoxae nearly twice as far apart as the mesocoxae. The male additional dorsal segment may
be distinctly visible or scarcely evident. Middle and posterior tibiae sometimes apically dilated in the male. Tarsi moderately dilated. Claws simple.

*Stelidota* is intermediate between *Epiraea* and *Ipidea* and most closely related to *Epiraea*. The Brazilian *Pseudostelidota* is unknown to the writer.

The genus *Stelidota* contains about 40 species which are generally distributed except in continental Africa. It is primarily a tropical genus and the three North American species seem to have a Neotropical origin. The species are found at sap in the spring, and later at rotten fruit, fungi, and under chips.

**Key to Nearctic species**

1. Prothorax at apex deeply emarginate, base distinctly bisinuate, margin broad and deplanate......................... 2
   Prothorax at apex feebly emarginate, base truncate, margin narrow and not deplanate at base....................... *strigosa*

2. Prothorax arcuately narrowed from base to apex, broadest at base .
   ........................................................................... *geminata*
   Prothorax with sides more arcuate at base, so that the thorax is narrower at base than a little in front................... *octomaculata*

**Stelidota strigosa** (Gyllenhal)


*Nitidula lasca* Gyll., *loc cit*.

Types: of both species from St. Eustatius Isl., Lesser Antilles (Forsström) presumably in the Zool. Mus. of the University, Upsala.

Oval, narrower posteriorly, moderately shining, rather sparsely pubescent, testaceous to rufo-piceous, elytra indistinctly maculate in the paler specimens. Prothorax nearly twice as wide as long, narrowed in front, sides arcuate, hind angles subrectangular, margin narrow not deplanate, disc moderately convex, surface coarsely, densely, substrigously punctate. Each elytron not subcostate but with 11 rows of coarse, closely placed punctures, between which are rows of sparsely spaced fine punctures, each of which bears a pale hair. Beneath densely, rather coarsely punctate. Length 1.5—2.5 mm.

This species occurs throughout the year but chiefly in the spring from Michigan (Marquette) and New Jersey to Florida (generally distributed) west to Kansas (Onaga) and Arizona, south through Central America and the West Indies into South America.
Stelidota geminata (Say)

Plates 4, figs. 17–23; pl. 12, fig. 14

Type: of *geminata* from eastern United States is lost.

Oval, narrower posteriorly, moderately shining, sparsely punctate, testaceous to rufo-piceous, elytra with indistinct pale spots. Head coarsely, densely, shallowly punctate. Prothorax twice as wide as long, narrower in front, apex deeply emarginate, base bisinuate, sides regularly arcuate from base to apex, margin broad, deplanate, hind angles rectangular, disc moderately convex, surface coarsely, densely punctate. Elytra slightly broader than the pronotum. Each elytron with 9 costae each of which has a row of fine punctures, each puncture bearing a short pale hair. Between the costae are rows of large, shallow punctures. Beneath moderately densely, coarsely punctate. In the male the middle and posterior tibiae distinctly arcuate, the former suddenly dilated in its distal half, the latter in the distal third. Length 2.2–3 mm.

This species occurs (Feb. 20-Oct. 23) chiefly in the spring from Massachusetts (Tyngsboro, Springfield) to Florida (Capron, Haulover, Edgewater, Miami, Paradise Key), west to Iowa (Mt. Pleasant), Missouri (St. Louis) and Texas (Columbus), south through Middle America to Colombia and Brazil.

Stelidota octomaculata (Say)


Types: of *octomaculata* from the Arkansas River in eastern Colorado is lost; of *biseriata* from Baltimore, Maryland, Cuba, and Brazil presumably in the National Museum, Budapest (Reitter coll.) and a cotype "Am. sept." in the Philadelphia Acad. Nat. Sci.

Oval, narrower posteriorly, moderately shining, sparsely pubescent, dark rufous to piceous, elytra with more or less indistinct pale spots. Thorax twice as wide as long, narrower in front, apex deeply emarginate, base bisinuate, sides arcuate, more abruptly so posteriorly, hind angles subrectangular, margin broad, moderately deplanate, surface densely, coarsely punctate. Elytra as broad as the pronotum. Each elytron with 9 rows of large, very shallow, oval, closely placed punctures between which are rows of very sparsely placed fine punctures, each bearing a short pale hair. Beneath coarsely, densely punctate. In the male the eighth dorsal segment is particularly evident. Length 2.2–3.5 mm.