

Histerid Beetles Associated with Livestock Dung in Canada

By Yves Bousquet

Introduction

[Introduction](#)
[List of species treated](#)
[Method of citation](#)
[References](#)
[Morphology](#)

[Identification key](#)
[Treatment of species](#)
[Acknowledgments](#)

The purpose of this work is to provide an identification tool for the histerid beetles associated with livestock dung in Canada. An illustrated key is provided for the adult stage. Larvae, which also live in livestock dung, are still very poorly known and cannot be included. The key covers 33 native and introduced species in 11 genera and 5 subfamilies occurring in Canada that have been reported in the literature as occurring in livestock dung or that I have collected in such habitat during my investigations over the past five years. It is likely that other histerid species will turn up in livestock dung. For the identification of these species, the reader is referred to Bousquet and Laplante (1999) for eastern Canada and Bousquet and Laplante (in press) for Canada.

In addition to the key, provided for each species are a diagnosis and description to further aid users in distinguishing the species, plus notes on known habitat and distribution. Maps detailing distribution in Canada are linked from 'Geographical distribution'. The species information can be accessed from the list of species provided below or through the respective species name in the key in the html version. The information is also provided as a PDF document. Note that in order to keep the PDF document as small as possible, the accompanying maps have been removed to a [separate file](#) which must also be downloaded if you wish to view them in detail.

List of Species Treated

Subfamily Abraeinae MacLeay, 1819

[Acritus nigricornis](#) (Hoffmann, 1803)

Subfamily Dendrophilinae Reitter, 1909

[Xestipyge conjunctum](#) (Say, 1825)

Subfamily Histerinae Gyllenhal, 1808

[Atholus bimaculatus](#) (Linné, 1758)

[Atholus falli](#) (Bickhardt, 1912)

[Atholus sedecimstriatus](#) (Say, 1825)

[Hister abbreviatus](#) Fabricius, 1775

[Hister curtatus](#) J.E. LeConte, 1844

[Hister depurator](#) Say, 1825

[Hister furtivus](#) J.E. LeConte, 1859

[Margarinotus faedatus](#) (J.E. LeConte, 1845)

[Margarinotus harrisii](#) (Kirby, 1837)

[Margarinotus hudsonicus](#) (Casey, 1893)

[Margarinotus immunis](#) (Erichson, 1834)

[Margarinotus interruptus](#) (Palisot de Beauvois, 1818)

[Margarinotus lecontei](#) Wenzel, 1944

[Margarinotus merdarius](#) (Hoffmann, 1803)

[Margarinotus obscurus](#) (Kugelann, 1792)

[Margarinotus purpurascens](#) (Herbst, 1792)

[*Margarinotus rectus*](#) (Casey, 1916)
[*Margarinotus umbrosus*](#) (Casey, 1893)
[*Phelister subrotundus*](#) (Say, 1825)
[*Spilodiscus ulkei*](#) (Horn, 1870)

Subfamily Onthophilinae MacLeay, 1819
[*Onthophilus deflectus*](#) Helava, 1978
[*Onthophilus pluricostatus*](#) J.E. LeConte, 1844

Subfamily Sapriniinae Lacordaire, 1854
[*Euspilotus assimilis*](#) (Paykull, 1811)
[*Euspilotus scrupularis*](#) (J.E. LeConte, 1859)
[*Saprinus distinguendus*](#) Marseul, 1855
[*Saprinus lugens*](#) Erichson, 1834
[*Saprinus oregonensis*](#) J.E. LeConte, 1844
[*Saprinus profusus*](#) Casey, 1893
[*Saprinus subnitescens*](#) Bickhardt, 1909
[*Xerosaprinus acilinea*](#) (Marseul, 1862)
[*Xerosaprinus lubricus*](#) (J.L. LeConte, 1851)

Method of Citation

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Morphological Characters

[Introduction](#)

[List of species treated](#)

[Method of citation](#)

[References](#)

[Morphology](#)

[Identification key](#)

[Treatment of species](#)

[Acknowledgments](#)

This section presents a general account of the external morphology of adult Histeridae and defines structural terms and expressions used in the identification keys and the descriptions of the taxa. As an aid to recognition of the structures, the reader will find illustrations showing a dorsal view (Fig. 1) and a ventral view (Fig. 2) of a typical Histerinae, as well as a left lateral view of the pronotum and the elytron of a Histerinae (Fig. 3) and of a Sapriniinae (Fig. 4). In the present section, the name of each structure discussed is followed, in parentheses, by the corresponding abbreviation used in Figures 1-4.

Head. Some species have on the dorsum of the head a *frontal stria* (fs), which could be entire or interrupted at the middle. The part anterior to the stria is the *epistoma* (ep) while the part posterior to that stria is the *front* (fr). When the frontal stria is absent or widely interrupted at the middle, the limits of the epistoma and the front are uncertain. In this case we used the term epistoma to designate the part of the head anterior to an imaginary line between the bases of the antennae and the term front to designate the part located posterior to this line.

Visually, the antenna is composed of three parts: the scape, which represents the first segment; the funicle, which comprises the next nine segments, all of similar dimensions; and the club, formed by the last 3 segments which are enlarged. The club is compact and generally covered with dense, short hairs. In most species, it is possible to distinguish a few sutures (or annuli) on the club, which may be more or less straight or bent toward the apex or the base.

Pronotum. In most species of Histeridae, the pronotum has a fine stria along the margin anteriorly and laterally, the *marginal stria* (ms), which defines the lateral and anterior beads. This stria may be interrupted at the middle along the anterior margin or on each side of that margin at the level of the eyes or absent at the base of the lateral margins. Some species, especially in the subfamily Histerinae, also bear two other striae on the side of the pronotum. The stria closest to the marginal stria is the *outer lateral stria* (ols) and the farthest one is the *inner lateral stria* (ils). These striae may be entire and extend from the anterior region of the pronotum to the posterior region or reduced in length to various extents. If only one stria is present, it is designated as the *lateral stria*.

A few species, such as *Acritus nigricornis*, show a transverse row of small, elongate dots at the base of the pronotum. This structure, which looks like a crenulate line, is the *antescutellar stria*.

Elytra. The inflexed part of the elytron usually has two striae. The stria farthest from the lateral margin, which is called the *marginal stria* (mse), starts near the base of the elytron in most species. In some species, this stria extends along the apical margin of the elytron. The second stria is the *epipleural stria* (es) and is located between the lateral edge of the elytron and the marginal stria. Some species bear more than one stria between the lateral edge and the marginal stria.

In most species of Histeridae, the dorsal surface of the elytra bears several striae. The number and the length of these striae vary from one group to another. Starting from the lateral side, there is the *outer subhumeral stria* (oss), the *inner subhumeral stria* (iss) and the *humeral stria* (hs). The last one, if present, is rather short, very fine, usually oblique and restricted to the anterior region of the elytra. These striae are followed by the *dorsal striae* (ds1-5), numbered 1 to 5, and the *sutural stria* (ss) which, as its name implies, lies close to the suture. In numerous species, some of these striae are absent, while in some species all of them may be absent. These striae are said to be entire when they extend from the base, though not quite reaching the basal margin, to the apical region, without reaching the apical margin. In many instances, some of these striae are abbreviated (erased at one extremity, usually at base), intermittent (interrupted several times), or even restricted to a very short segment or a series of dots. Since it is unusual for all striae to be present, their designation can be difficult, particularly when several striae are missing. Therefore, it is important to become familiar with the position of each stria before using the identification keys. Interestingly, the numbering of the dorsal striae in the Histeridae starts with the most lateral stria, or the one farthest from the suture. In other groups of Coleoptera, the numbering is usually done the opposite way. The fact that in the Histeridae the medial striae are more frequently absent than the lateral striae justifies such a numbering system.

The surface of the elytron between dorsal striae 1 and 2 is called interval 1, that between striae 2 and 3 interval 2, etc. The area between the sutural stria and suture is designated as the sutural interval. In many species of Saprininae, the periscutellar area is almost smooth, being covered only with micropunctures or punctules, and contrasts with the surrounding area, which is covered with coarser punctures. This smooth region is the mirror.

Prosternum. This structure is very important in the taxonomy of Histeridae. The central region, which is usually somewhat prominent, is the *prosternal keel* (pk). Some species show two pairs of striae on the keel, the *carinal striae*, or internal prosternal striae, located toward the middle, and the *lateral striae*, or external prosternal striae that, as the name implies, are located lateral to the carinal striae. Some species of Saprininae also bear a pair of foveae in the anterior part of the keel, referred to as the *preapical foveae*. The posterior region of the keel, located between the anterior coxae, is the *prosternal apophysis* (pa). The shape of its posterior margin varies from one group to another, being straight in some taxa, rounded or

notched in others.

Several species of histerids have in front of the prosternal keel a lobe called the *prosternal lobe* (pl) which extends laterally. Many species, in particular the majority of the species of Histerini, have a *marginal stria* (msa) that borders the anterior margin of the lobe; this stria may be entire or interrupted at the top or at the base on each side. Some species also have laterally to the prosternal keel a notch for the reception of the antennal funicle at rest.

One of the important modifications of the prosternum concerns the position of the *antennal cavity* in which the antennal club is held in repose. This cavity may be located near the anterior angle of the prosternum and be open or partially covered by the lateral extension of the prosternal lobe. In other instances, the cavity lies just in front of the anterior coxa or encroaches on the prosternal keel. Finally, in some species the cavity is located on the hypomeron (hy), which is the inflexed part of the pronotum.

Mesosternum and metasternum. The mesosternum (mst) of histerids is short. It is separated from the metasternum by the *meso-metasternal suture* (ms), which in some species is poorly defined or even absent as in species of *Plegaderus*; we used the term meso-metasternal plate to designate the structure formed by the fusion of the mesosternum and the metasternal disc. In most species, the mesosternum has a *marginal stria* (msb) that borders the lateral and anterior margins; this stria may be interrupted at the middle or absent along the anterior margin. Lateral to the mesosternum is the middle coxa (c2) and the mesepimeron (msp).

In several species, the metasternum (mt) bears on each side a *lateral stria* (lsm) which may be straight and more or less abbreviated in the posterior region or regularly curved and extended laterally toward the mesepimeral or metepisternal suture. In species with straight lateral stria, the disc of the metasternum is the region medial to that stria and the lateral portion of the metasternum is the region lateral to that stria. Some species also have a stria that borders the posterior margin of the mesocoxal cavity from the midpoint; this stria is the *postcoxal stria* (ps). The metasternum is bordered laterally by the metepisternum (mpt) and in its posterior region by the metepimeron (mtp) and the hind coxa (c3). In some species, the metepisternum and sometimes the metepimeron bear a lateral longitudinal stria.

Legs. The legs offer a few good taxonomic characters. The number of denticles on the lateral margin of the tibia may vary from species to species; nevertheless this characters has been rarely used because their number and size may vary within a species or they may be worn in old specimens. The majority of histerids have on the dorsal face of the front tibia a *tarsal groove* in which the tarsus is held at rest. The shape of this groove may be taxonomically useful.

Abdomen. The abdomen offers few structural modifications useful in histerid taxonomy except for punctuation on the propygidium (pp) and pygidium (py). In a few species, the pygidium bears a marginal stria or groove; in some species the surface shows a network of irregular

fissures.

Genitalia. The aedeagus of the male is formed by the tegmen and the median lobe. In histerids, the tegmen is divided into a basal region, called the basal piece, and an apical region formed by the parameres, which are usually fused at the base on the dorsal side and along their entire length on the ventral side. In repose, the median lobe is surrounded by the tegmen. In many species, the median lobe is formed by a long, narrow and poorly sclerotized tube, but in the Histerini it becomes more complex and sometimes bears on the dorsum an armature, the shape of which is often useful for species separation.

Surface sculpture. Most structures of histerids are punctate, being covered with punctures or very small pits. The punctation is qualified as fine, moderately fine, intermediate, moderately coarse and coarse. These qualifying terms are used to establish comparisons between various structures of a species. In many instances, some structures of the body are covered with very small, microscopic punctures; in such cases, the surface is said to be punctulate and these micropunctures are called punctules. The punctures are umbilicate when each has a small protuberance inside and simple when they do not have such a protuberance. The surface of the body may be reticulate, *i.e.* covered with a network of microlines (microsculpture) or aciculate, *i.e.* covered with more or less longitudinal microlines like scratches made with a needle.

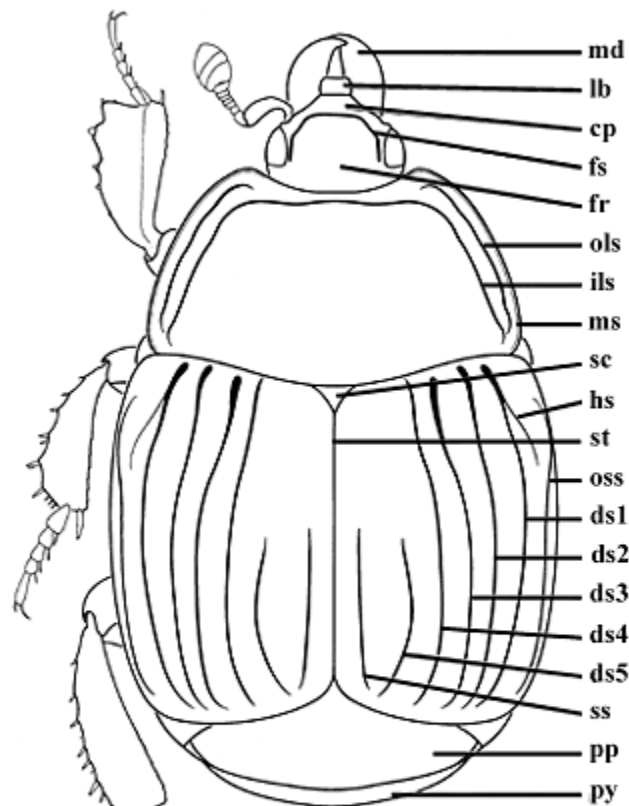


Diagram (dorsal view) of *Margarinotus egregius*.
ds1 - dorsal stria 1; ds2 - dorsal stria 2; ds3 - dorsal stria 3; ds4 - dorsal stria 4; ds5 - dorsal stria 5;
ep - epistoma; fr - front; fs - frontal stria; hs - humeral stria; ils - inner lateral stria; lb - labrum; md - mandible;
ms - marginal stria; ols - outer lateral stria; oss - outer subhumeral stria; pp - propygidium; py - pygidium;
sc - scutellum; ss - sutural stria; st - suture.

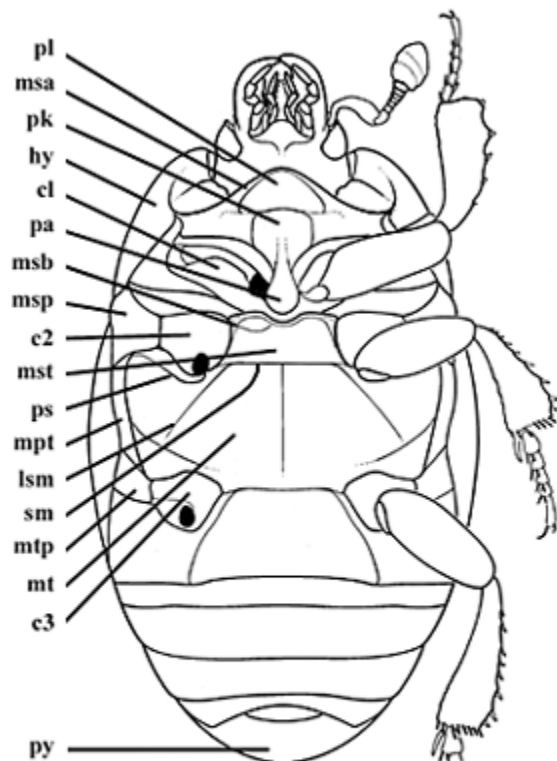


Figure 2. Diagram (ventral view) of *Margarinotus egregius*. c1 - fore coxa; c2 - median coxa; c3 - hind coxa; hy - hypomeron; lsm - lateral stria of metasternum; mpt - metepisternum; ms - meso-metasternal suture; msa - marginal stria of prosternal lobe; msb - marginal stria of mesosternum; msp - mesepimeron; mst - mesosternum; mt - metasternum; mtp - petepimeron; pa - prosternal apophysis; pk - prosternal keel; pl - prosternal lobe; ps - postcoxal stria; py - pygidium

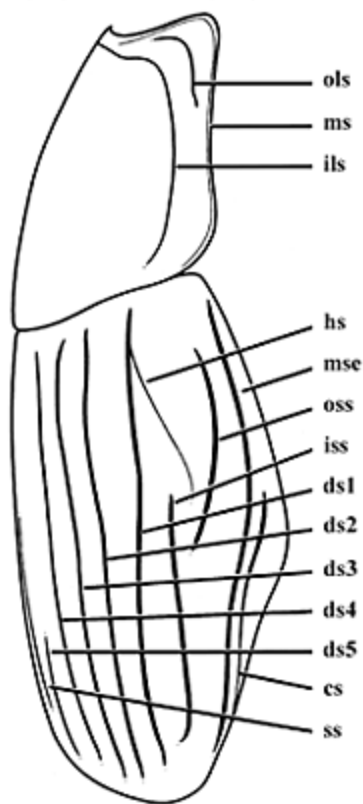


Figure 3. Diagram of pronotum and elytra (lateral view) of *Hister abbreviatus*. ds1 - dorsal stria 1; ds2 - dorsal stria 2; ds3 - dorsal stria 3; ds4 - dorsal stria 4; ds5 - dorsal stria 5; es - epipleural stria; hs - humeral stria; ils - inner lateral stria; iss - inner subhumeral stria; ols - outer lateral stria; oss - outer subhumeral stria; ms - marginal stria of pronotum; mse - marginal stria of elytron; ss - sutural stria.

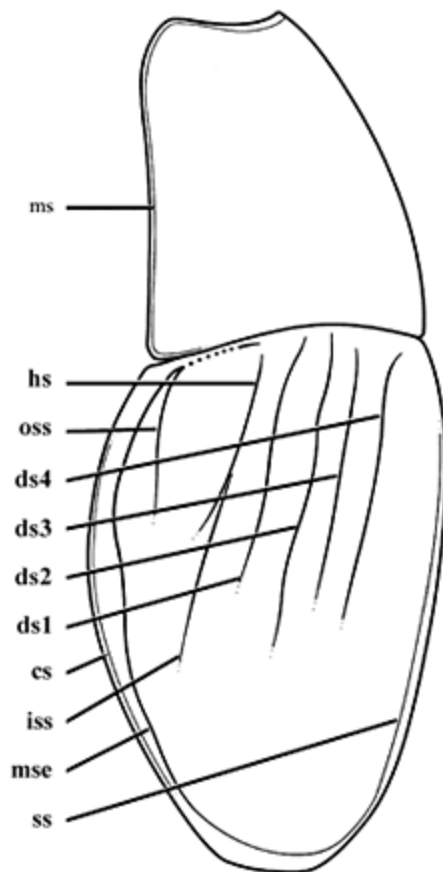


Figure 4. Diagram of pronotum and elytra (lateral view) of *Saprinus lugens*.
 ds1 - dorsal stria 1; ds2 - dorsal stria 2; ds3 - dorsal stria 3; ds4 - dorsal stria 4;
 es - epipleural stria; hs - humeral stria; iss - inter subhumeral stria; os - outer
 subhumeral stria; ms - marginal stria of pronotum; mse - marginal stria of
 elytrum; ss - sutural stria



Illustrated Key to Histerid beetles Associated with Livestock Dung in Canada

- [Introduction](#)
- [List of species treated](#)
- [Method of citation](#)
- [References](#)
- [Morphology](#)
- [Identification key](#)
- [Treatment of species](#)
- [Acknowledgments](#)

1. Prosternum with lateral notch receiving antennal funicle in repose (Fig. 5) 2
 - Prosternum without lateral notch (Fig. 6) 12
2. Prosternum with deep basal groove receiving long apical spine of front tibia. Prosternum with anterior lobe (Dendrophilinae). Surface with micropunctuation set in series of 3 aligned punctules *Xestipyge conjunctum* (Say)
 - Prosternum without basal groove. Prosternum without anterior lobe. Surface with micropunctuation not set in series of 3 aligned punctules 3
3. Elytra without distinct striae. Antennal cavities free, not encroaching upon prosternal keel. Pronotum with an antescutellar

- stria at base. Less than 1.5 mm in length (Abraeinae)
..... [Acritus nigricornis \(Hoffmann\)](#)
- Elytra with dorsal and/or sutural striae present. Antennal cavities situated next to and encroaching upon prosternal keel in most species. Body larger, more than 1.6 mm in length (Saprininae)
..... 4
4. Prosternum without preapical foveae (Fig. [7](#))
..... ([Saprinus](#) Erichson), 5
- Prosternum with pair of preapical foveae in anterior region (Fig. [8](#))
..... 9
5. Hypomeron with setae. Whole body except appendages with bright green or bluish-green lustre
..... [Saprinus profusus](#) Casey
- Hypomeron without noticeable setae. Body without green luster
..... 6
6. Pronotum, in dorso-lateral view, with lateral bead about same width from base to apex
..... 7
- Pronotum, in dorso-lateral view, with lateral bead distinctly (at least 2-3 times) wider at base than at apex
..... 8
7. Coarsely punctured area of elytra distinctly aciculate, without extension medially along the sutural stria; punctures separated on average by less than their diameter. Elytral interval 1 densely and coarsely punctate, intervals 2 and 3 at least partially punctate
..... [Saprinus lugens](#) Erichson
- Coarsely punctured area of elytra not aciculate (except near apical margin), with short forward extension medially along sutural stria; punctures sparser, separated on average by more than their diameter. Elytral interval 1 more sparsely and finely punctate, intervals 2 and 3 not or hardly punctate
..... [Saprinus subnitescens](#) Bickhardt
8. Elytral mirror extended at least to dorsal stria 2 in most specimens; interval 1 usually finely and sparsely punctate in basal half. Elytron with sutural stria more or less erased in basal fourth or fifth in some specimens. Apical pigmented area of ventral surface of male eight abdominal segment less extended (Fig. [9](#))
..... [Saprinus oregonensis](#) J.E. LeConte
- Elytral mirror not quite reaching dorsal striae 2 laterally in most specimens; interval 1 usually more coarsely punctate. Elytron with sutural stria impressed anteriorly. Apical pigmented area of ventral surface of male eight abdominal segment more extended (Fig. [10](#))
..... [Saprinus distinguendus](#) Marseul
9. Hypomeron with hairs. Prosternum with carinal striae not joining lateral striae but extending very close and more or less parallel to lateral striae up to preapical foveae.
..... ([Xerosaprinus](#) Wenzel), 10
- Hypomeron without hairs. Prosternum with carinal striae joining

- lateral striae.
..... (*Euspilotus* Lewis), 11
10. Elytron with mirror sharply delimited posteriorly, the demarcation line oblique; punctures behind coarse, dense, subcontiguous or nearly so; sutural interval with row of very fine punctules, most of them in basal half larger than punctules in mirror; interval 2 with mostly moderately coarse to coarse punctures in most specimens
..... [*Xerosaprinus lubricus* \(J.L. LeConte\)](#)
- Elytron with mirror less clearly delimited posteriorly, the demarcation line rather transversal; punctures behind smaller, sparser, not subcontiguous; sutural interval stria with row of punctules of same size as those in mirror; interval 2 with only or mostly fine punctures in most specimens
..... [*Xerosaprinus acilinea* \(Marseul\)](#)
11. Prosternum with preapical foveae connected by shallow transverse sulcus, separating the prosternal keel from the apex. Pygidium without sulcus. Pronotum without impression behind each anterior angle. Less than 2.5 mm in length
..... [*Euspilotus scrupularis* \(J.E. LeConte\)](#)
- Prosternum with preapical foveae isolated, not connected by transverse sulcus. Pygidium with marginal sulcus, interrupted at apex in males. Pronotum with shallow but distinct impression behind each anterior angle. More than 3.3 mm in length
..... [*Euspilotus assimilis* \(Paykull\)](#)
12. Labrum without setigerous punctures (Histerinae). Pronotum and elytra not costate
..... 13
- Labrum with setigerous punctures (Onthophilinae). Pronotum and elytra with strong costae
..... (*Onthophilus* Leach), 36
13. Anterior margin of mesosternum bisinuate, with short median projection fitting into posterior margin of prosternum (Fig. [11](#)). Less than 2.6 mm in length
..... [*Phelister subrotundus* \(Say\)](#)
- Anterior margin of mesosternum straight or emarginate (Figs. [12](#), [13](#)). More than 3.3 mm in length
..... 14
14. Anterior margin of mesosternum straight or very slightly rounded (Fig. [12](#))
..... (*Atholus* Thomson), 15
- Anterior margin of mesosternum emarginate, sometimes feebly so (Fig. [13](#))
..... 17
15. Pronotum with a depression on each side near anterior angle. Metepimeron with a short punctate lateral stria. Elytron black with a large reddish lateroposterior area
..... [*Atholus bimaculatus* \(Linné\)](#)
- Pronotum without depression on each side near anterior angle. Metepimeron without lateral stria. Elytron uniformly black.
..... 16

16. Elytron with 2 subhumeral striae, the inner one present in apical half, the outer one complete or nearly so. Pronotum with only one lateral stria, outer one absent. Metasternum with lateral stria interrupted posteriorly, the lateral branch separated from the longitudinal branch. Upper surface of mandible with lateral edge rounded, not grooved or elevated
..... *Atholus sedecimstriatus* (Say)
- Elytron without complete subhumeral stria, at most with a short segment representing the inner subhumeral stria near apex. Pronotum with 2 lateral striae, inner one complete or nearly so, outer one variable but usually present at least as a striole or a dotted segment at the level of the anterior angle. Metasternum with lateral stria complete, curved in posterior region toward the metepisternal suture. Upper surface of mandible with lateral edge accentuated by a basal groove more or less abbreviated in front
..... *Atholus falli* (Bickhardt)
17. Pronotal hypomeron with hairs. Elytra reddish with sides and inflexed parts piceous to black
..... *Spilodiscus ulkei* (Horn)
- Pronotal hypomeron without hairs. Elytra uniformly dark, without maculations in most species
..... 18
18. Elytron with outer subhumeral stria entire (except in *M. obscurus* in which the stria is abbreviated apically), inner subhumeral stria absent
..... (*Margarinotus* Marseul), 19
- Elytron with outer subhumeral stria absent or present in basal half only; inner subhumeral stria absent or present in apical half
..... (*Hister* Linné), 33
19. Pronotum with 2 lateral striae, outer one entire or not
..... 20
- Pronotum with one lateral stria, outer one completely wanting
..... 29
20. Pronotum with outer lateral stria abbreviated in basal half, sometimes reduced to a short segment at level of anterior angle
..... 21
- Pronotum with outer lateral stria entire and as long, or almost so, as inner lateral stria
..... 23
21. Metepimeron with punctate lateral stria. Pronotum with inner lateral stria broadly arcuate on each side behind anterior angle (Fig. 14)
..... *Margarinotus hudsonicus* (Casey) (in part)
- Metepimeron without lateral stria. Pronotum with inner lateral stria somewhat angulate on each side behind anterior angle (Fig. 15)
..... 22
22. Propygidium and pygidium with punctures coarse and conspicuously umbilicate. Elytral striae finely crenulate.

- [Western: British Columbia]
 [*Margarinotus umbrosus* \(Casey\)](#)
- Propygidium and pygidium with punctures slightly finer and less distinctly umbilicate. Elytral striae more conspicuously crenulate. [Eastern: Nova Scotia to Manitoba]
 [*Margarinotus faedatus* \(J.E. LeConte\)](#) (in part)
23. Pronotal and elytral discs moderately densely punctate, punctures fine but distinct even at low magnification
 [*Margarinotus harrisii* \(Kirby\)](#)
- Pronotal and elytral discs sparsely punctate, punctures generally microscopic and indistinct at low magnification, though coarser ones may be present in places
 24
24. Metasternum with lateral stria not interrupted, rounded or angulate posteriorly and prolonged to metepisternal suture (Fig. [16](#))
 25
- Metasternum with lateral stria interrupted posteriorly, lateral arm separated, sometimes briefly, from longitudinal arm (Fig. [17](#))
 28
25. Elytron with subapical transverse impression between striae 2-4. Inner lateral stria of pronotum with a distinct sinuosity in basal half (Fig. [18](#)). Pygidium and propygidium with umbilicate punctures
 [*Margarinotus merdarius* \(Hoffmann\)](#)
- Elytron without subapical impression or at most with weak impression. Inner lateral stria of pronotum not distinctly sinuate in basal half. Pygidium and propygidium with simple punctures
 26
26. Mesosternum relatively short, ratio width/length at middle about 2.5. Outer lateral stria of pronotum about as far from lateral margin as from inner stria
 [*Margarinotus immunis* \(Erichson\)](#) (in part)
- Mesosternum elongate, ratio width/length at middle about 2.0. Outer lateral stria of pronotum closer to lateral margin than to inner stria
 27
27. Dorsal stria 5 of elytron usually with short basal appendix (Fig. [19](#)) [Eastern: Québec, Ontario, Manitoba]
 [*Margarinotus interruptus* \(Palisot de Beauvois\)](#)
- Dorsal stria 5 of elytron without basal appendix [Western: British Columbia]
 [*Margarinotus rectus* \(Casey\)](#) (in part)
28. Mesosternum relatively short, ratio width/length at middle about 2.5. Body not particularly elongate [Eastern: Québec to Manitoba]
 [*Margarinotus immunis* \(Erichson\)](#) (in part)
- Mesosternum elongate, ratio width/length at middle about 2.0. Body elongate-oblong [Western: British Columbia]
 [*Margarinotus rectus* \(Casey\)](#) (in part)

29. Elytron with outer subhumeral stria short, erased in apical third; 3 entire dorsal striae
..... [*Margarinotus obscurus* \(Kugelann\)](#)
- Elytron with outer subhumeral stria entire; 4 entire dorsal striae
..... 30
30. Elytra maculate with reddish (rarely all black). Pronotum without coarse punctures medial to lateral stria
..... [*Margarinotus purpurascens* \(Herbst\)](#)
- Elytra without macula. Pronotum usually with coarse punctures medial to lateral stria
..... 31
31. Metepimeron with punctate lateral stria
..... [*Margarinotus hudsonicus* \(Casey\)](#) (in part)
- Metepimeron without lateral stria
..... 32
32. Prosternal lobe with marginal stria well developed, abbreviated basally, interrupted apically in some specimens (Fig. 20). Size smaller: 3.4-4.2 mm
..... [*Margarinotus lecontei* Wenzel](#)
- Prosternal lobe with marginal stria absent or represented by an obsolete apical arc (Fig. 21). Size longer: 4.2-5.8 mm
..... [*Margarinotus faedatus* \(J.E. LeConte\)](#) (in part)
33. Elytron with 3 entire dorsal striae, 4th dorsal either abbreviated, intermittent or represented only by a series of dots, sometimes almost completely wanting
..... 34
- Elytron with 4 entire dorsal striae
..... 35
34. Lateral stria of metasternum with lateral arm extended to at least anterior fourth of metepisternal suture. Pygidium with finer and shallower punctures separated from each other on average by more than 1.5 X their diameter. Distance between inner lateral stria and outer lateral stria of pronotum usually about 3 X the distance between outer lateral and marginal striae [Extreme southern Ontario]
..... [*Hister depurator* Say](#)
- Lateral stria of metasternum with lateral arm extended to about middle of the metasternal suture. Pygidium with coarser and deeper punctures separated from each other on average by about their own diameter. Distance between inner and outer lateral striae of pronotum usually about 4 X the distance between outer and marginal striae [Transcanadian]
..... [*Hister furtivus* J.E. LeConte](#)
35. Elytron with inner subhumeral stria distinct in apical half, outer subhumeral stria distinct in basal half. Metepimeron with a complete punctate lateral stria
..... [*Hister abbreviatus* Fabricius](#)
- Elytron without subhumeral striae or with trace in anterior half. Metepimeron without lateral stria or with trace only

..... [Hister curtatus J.E. LeConte](#)

36. Metasternum more or less uniformly, coarsely punctate, without elevated areas; punctures simple. Pronotum with lateral carinae short, not extended to posterior margin

..... [Onthophilus deflectus Helava](#)

- Metasternum coarsely punctate but with elevated, minutely punctate, discal area on each side; punctures each with additional, small, deep puncture. Pronotum with lateral carinae longer, reaching posterior margin

..... [Onthophilus pluricostatus J.E. LeConte](#)



Treatment of Species

[Introduction](#)

[List of species treated](#)

[Method of citation](#)

[References](#)

[Morphology](#)

[Identification key](#)

[Treatment of species](#)

[Acknowledgments](#)

Acritus nigricornis (Hoffmann, 1803)

Diagnosis. Easily distinguished from other species of Canadian *Acritus* as follows: from *A. exiguus* and *A. depressus* by the presence of the antescutellar stria at the base of pronotum, and from *A. komai* by the lateral metasternal stria recurved forward and forming a regular arch reaching the metasternal-mesepimeral suture.

Description. Body form rather regularly rounded and broadly oval, and dorsal surface quite distinctly convex. Epistome without marginal striae. Pronotum with punctation fine, rather uniform in size, not or hardly coarser along midline; base with transverse bisinuate line of fine raised tubercles (antescutellar stria). Scutellum very small but distinct. Elytron with fine punctation; punctures of disc simple in male, distinctly aciculate in apical half in female. Pygidium without marginal striae, with very fine, sparse punctures. Prosternal keel proportionally short, its length distinctly less than twice its width at middle. Disc of mesosternum convex; meso-metasternal suture reaching lateral mesosternal stria on each side, showing a series of coarse punctures giving a crenulate aspect in lateral three fourths, median fourth arcuate and sometimes less distinctly impressed and crenulate. Metasternum with punctation in lateral area along metepisternal suture relatively fine, comparatively finer than on mesepimeron; lateral stria recurved forward and forming a regular arch reaching metasternal-mesepimeral suture; area between lateral metasternal suture and post-mesocoxal stria reticulate; metepisternal suture entire, running from mesepimeron to metepimeron or almost so. First visible abdominal sternum with post-metacoxal stria straight. Body length: 0.9-1.0 mm.

Geographical Distribution. This species is widely distributed in Europe, north Africa, Asia Minor, Israel, Crimea, and Turkestan. It was accidentally introduced in various countries, including Canada and the United States. We have seen specimens of this species in Canada from Québec, Alberta and British Columbia ([Map 1](#)).

Habitat. In Europe, found in dung, manure, tannery wastes, decaying mushrooms and under dry leaves (Vienna 1980).

Diagnosis. Distinguished from other Canadian *Saprinus* by the presence of short setae on the hypomeron and by the bright green or bluish-green lustre on most of the body surface.

Description. Upper surface black with bright green or bluish-green lustre. Front rather sparsely punctate; surface not reticulate. Pronotum with depression behind each front angle; disc with narrow band of coarse punctures laterally, punctures not coalescent; lateral bead distinctly widened in posterior half. Elytron with coarse punctures restricted to posteromedial area, reaching about level of stria 2 laterally and about middle of elytra along sutural stria; dorsal striae 1-4 distinct, punctate; stria 1 not longer than other dorsal striae; stria 4 arched in front and usually united to sutural stria; sutural stria entire or more or less interrupted in anterior half, rarely almost completely erased in basal half or third; surface of punctate area not aciculate or reticulate. Pygidium with lateral margin raised. Hypomeron with short setae, setae shorter than longest ones on antennal scape. Prosternum with carinal striae reaching lateral striae at about apical third. Mesosternum with coarse punctures. Apex and lateral edge of hind tibia with conspicuous spines. Ventral surface of male eight abdominal segment widely emarginate apically; apex of aedeagus regularly rounded, not dilated. Body length: 3.3-6.6 mm.

Geographical Distribution. This species occurs from New York to southern Ontario and Manitoba ([Map 2](#)), south to Louisiana, west to Arizona.

Habitat. On carrion (in CNC) and dung. According to our distributional data, Summerlin et al. (1982) and most of Blume's (1985) records of *S. pensylvanicus* associated with bovine droppings undoubtedly refer to *S. profusus*.

Note. This species has been confused with *S. pensylvanicus* (Paykull). The latter species differs from *S. profusus* by having the lateral margin of the pygidium not raised and the aedeagus less regularly curved in lateral view. The two species appear allopatric, *S. pensylvanicus* being apparently confined to the Atlantic coast from Massachusetts to Florida. Its presence in Canada is very unlikely.

Saprinus lugens Erichson, 1834

Diagnosis. Most similar to *S. subnitescens* but differ mainly by the coarsely punctured zone of elytra being distinctly aciculate and not extended anteriorly along the sutural striae.

Description. Upper surface black, without lustre. Front sparsely and finely punctate medioposteriorly, more coarsely and densely anteriorly and laterally; surface not reticulate. Pronotum with shallow depression behind each front angle; disc with broad band of coarse punctures laterally extending from apex to near base; punctures not coalescent; lateral bead narrow along entire length. Elytral disc coarsely and densely punctate all over except for smooth, parascutellar region delimited by stria 4 medially; males often with intervals 2 and/or 3 more finely and sparsely punctate or at least

partially impunctate; coarsely punctate area usually not quite reaching middle along sutural stria, without forward extension medially; dorsal striae 1-4 distinct though stria 3 poorly so in many specimens; stria 4 arched in front, though usually partly so, or not; sutural stria erased on basal half or third; coarsely punctured area aciculate at least posteriorly, not reticulate, with punctures separated by less than their diameter. Hypomeron without distinct setae. Prosternum with carinal striae reaching lateral striae at about apical fourth. Mesosternum usually with coarse punctures at least laterally. Apex and lateral edge of hind tibia with conspicuous spines. Ventral surface of male eight abdominal segment not sclerotized apically; aedeagus laterally constricted before apical part; apex regularly rounded, not dilated. Body length: 4.8-7.2 mm.

Geographical Distribution. This species, originally described from Mexico, occurs over a large portion of the continent from southern Québec to British Columbia ([Map 3](#)), south to Mexico.

Habitat. Found mainly on carrion and dung.

Saprinus subnitescens Bickhardt, 1909

Diagnosis. Most similar to *S. lugens* but with the coarsely punctate zone of elytra not or very narrowly aciculate and extended anteriorly along the sutural striae.

Description. Same character states as *S. lugens* except for the following. Pronotum with depression behind each anterior angle usually more obvious. Elytra with coarsely punctured area extended shortly forward along sutural stria; coarsely punctured area not aciculate, except at apical margin, with punctures sparser, separated on average by more than their diameter; interval 1 only partially and more finely punctate, intervals 2 and 3 smooth or hardly punctate. Aedeagus much less constricted laterally before apical part. Body length: 4.9-5.7 mm.

Geographical Distribution. This species inhabits Europe, north Africa, Asia Minor and central Asia; it was accidentally introduced in North America. It is known in Canada from Québec and Ontario ([Map 4](#)).

Habitat. In Europe, associated with carrion, manure, refuse, and decaying vegetable matter (Vienna 1980).

Saprinus oregonensis J.E. LeConte, 1844

Diagnosis. Distinguished from all other *Saprinus* treated, except *S. distinguendus*, by the widening lateral bead of pronotum in posterior half. Differentiated with confidence from *S. distinguendus* by the pattern of sclerotization at apex of the male eight abdominal segment.

Description. Upper surface black, without metallic lustre. Front

rather finely and sparsely punctate medially, more coarsely and densely at sides; surface not reticulate. Pronotum without or with ill-defined depression behind each anterior angle; disc with narrow band of coarse punctures laterally, not reaching posterior margin; lateral bead distinctly widened in posterior half. Elytral disc with posterior half coarsely punctate; mirror extended at least to dorsal stria 2 in most specimens; interval 1 usually finely and sparsely punctate in basal half; dorsal striae 1-4 distinct, punctate; stria 4 arched in front; sutural stria more or less erased in basal fourth or fifth in some specimens, impressed and united with stria 4 in others; surface more or less distinctly aciculate on part of coarsely punctured area, not reticulate. Hypomeron without distinct setae. Prosternum with carinal striae reaching lateral striae at about apical third. Mesosternum usually with coarse punctures at least laterally. Apex and lateral edge of hind tibia with conspicuous spines. Ventral surface of male eight abdominal segment with characteristic sclerotized zone at apex (Fig. 9); apex of aedeagus evenly rounded, not dilated. Body length: 3.0-4.8 mm.

Geographical Distribution. This species inhabits the western part of the continent, from Manitoba to British Columbia ([Map 5](#)) south to California and New Mexico.

Habitat. According to Hatch (1962: 260), found on carrion and dung.

Saprinus distinguendus Marseul, 1855

Diagnosis. Very similar to *S. oregonensis* but differing by features listed below and particularly the pattern of sclerotization at apex of the male eight abdominal segment.

Description. Same character states as *S. oregonensis* except for the following. Pronotum with coarsely punctate area usually more developed. Elytral mirror not quite reaching dorsal striae 2 laterally in most specimens; interval 1 usually more coarsely punctate; sutural stria impressed in basal half and united to stria 4. Ventral surface of male eight abdominal segment with a different pattern of sclerotization at apex (Fig. 10). Body length: 3.2-4.8 mm.

Geographical Distribution. The distribution of this species is incompletely known. We have seen specimens from Québec to Saskatchewan ([Map 6](#)) in Canada and from Michigan, Minnesota and North Dakota in the United States.

Habitat. On carrion and dung.

Euspilotus scrupularis (J.E. LeConte, 1859)

Diagnosis. Distinguished from other *Euspilotus* present in Canada by the preapical foveae of the prosternum being connected by a transverse sulcus. Along with *E. scissus*, this is the smallest species of *Euspilotus* present in Canada (length less than 2.5 mm).

Description. Head piceous, pronotum and elytra dark reddish brown. Front moderately coarsely punctate. Pronotum with fine, sparse punctures on disc and coarser ones laterally; side without impression behind anterior angle. Elytra with moderately coarse, rather sparse, punctures on posterior half and with mostly fine, very sparse punctures on anterior half; dorsal striae 1-4 extended to about middle of elytra; stria 4 arched at base; sutural stria distinct except at basal fourth or fifth; marginal stria broadly interrupted along posterior margin. Pygidium with intermediate punctures, most of them separated by about their diameter; margin without sulcus in both sexes. Preapical foveae on prosternum connected by shallow transverse sulcus separating the prosternal keel from the apex. Metasternal disc with more or less coarse punctures in each anterolateral corner and posteriorly along apical margin; post-mesocoxal stria long, ending close to mesepimeron. Body length: 1.8-2.2 mm.

Geographical Distribution. This species was originally described from Georgia; we have seen specimens only from Texas, Arizona, Utah, California and Washington. It was also reported from southeastern British Columbia, Idaho and Oregon by Hatch. We have not seen any specimen from Canada.

Habitat. Found in dung (Hatch 1962: 262).

Euspilotus assimilis (Paykull, 1811)

Diagnosis. Distinguished from other *Euspilotus* present in Canada by the shallow impression behind each anterior angle of the pronotum. The pygidium bears a marginal sulcus, which is interrupted at apex in the males.

Description. Upper surface black, shiny. Front with intermediate punctures. Pronotum with punctules on disc, with moderately coarse to coarse punctures laterally, and with fine punctures along lateral margin; side with broad, shallow impression behind anterior angle. Elytra with coarse punctures behind striae, reaching about level of dorsal stria 2 laterally and about middle of elytra or slightly less along sutural stria; surface between dorsal striae with very fine punctures; dorsal striae well impressed, crenulate; dorsal striae 1 and 2 extended beyond middle, dorsal striae 3 and 4 extended to about middle or slightly beyond; dorsal stria 4 arched in front and united to sutural stria; sutural stria deeply impressed basally but interrupted near apex; marginal stria broadly interrupted along posterior margin. Pygidium with coarse punctures in anterior half, most of them separated on average by less than their diameter; apex distinctly more finely punctate in male than in female; margin with sulcus in posterior half, interrupted at apex in male. Preapical foveae of prosternum large, without associated depression or sulcus. Metasternal disc with moderately coarse punctures along posterior margin and lateral stria; post-mesocoxal stria long, ending close to mesepimeron. Body length: 3.5-5.5 mm.

Geographical Distribution. This species is widely distributed in eastern North America, from New Brunswick to Manitoba ([Map 7](#))

south to Texas.

Habitat. Found on carrion and dung.

Xerosaprinus lubricus (J.L. LeConte, 1851)

Diagnosis. Distinguished from other Canadian *Xerosaprinus* by the sharply delimited elytral mirror.

Description. Head black, pronotum reddish brown at sides, piceous on disc, elytra reddish brown in most specimens with mirrors and adjacent areas darker, more or less piceous. Disc of pronotum and elytra without microsculpture. Front moderately coarsely punctate. Pronotum with very fine punctures on most of disc and coarse punctures on sides and along posterior margin. Elytron with mirror sharply delimited posteriorly, the posterior demarcation line rather oblique; punctures behind mirror and dorsal striae coarse, dense, subcontiguous or nearly so; surface between suture and sutural stria with row of punctules, most of them in basal half slightly larger than those in mirror; interval 2, in some specimens also interval 3, with mostly moderately coarse to coarse punctures in most specimens; dorsal striae 1-4 reaching about middle of elytra or slightly beyond, fourth arched and joining sutural stria; sutural stria entire. Pygidium densely, coarsely punctate in anterior half, punctures separated on average by half their diameter or less. Prosternum with carinal striae sinuate and more or less parallel to lateral striae on anterior half. Mesosternum with moderately coarse punctures. Metasternal disc of male on average with coarser punctures along middle on posterior half, without protuberances near posterior margin at middle. Body length: 2.4-4.0 mm.

Geographical Distribution. This species is widely distributed in western North America from southern British Columbia ([Map 8](#)) south to California and Texas.

Habitat. Found in dung and carrion (Hatch 1962: 262).

Xerosaprinus acilinea (Marseul, 1862)

Diagnosis. Most similar to *X. lubricus* but differs by features listed below, in particular by the less sharply delimited elytral mirrors and the sparser, not subcontiguous punctures behind the mirrors.

Description. Same character states as *X. lubricus* except for the following. Elytron with mirror less clearly delimited posteriorly, the posterior demarcation line transversal; punctures behind mirror and dorsal striae smaller, sparser, not subcontiguous; surface between suture and sutural stria with row of punctules of same size as those in mirror in basal half; intervals 2 and 3 with only or mostly fine punctures in most specimens. Body length: 2.5-3.8 mm.

Geographical Distribution This species ranges over western North America from western Manitoba to central British Columbia ([Map 9](#))

south to California and Texas.

Habitat. According to Hatch (1962: 262, as *Saprinus fimbriatus*), this species is found in dung and carrion. Found in cow dung by the author.

Note. Adults of this species has often been referred to as *X. fimbriatus* (J.L. LeConte) in the literature and in collections. *Xerosaprinus fimbriatus* resembles *X. acilinea* but can be distinguished by the following character states: setae of margin of hypomeron and on lateral parts of thorax and abdomen distinctly longer and finer; setae on lateral edge of hind tibia longer; elytron with mirror larger and more finely punctulate, often less sharply delimited posteriorly; prosternal carinal stria comparatively more distant from lateral stria and straighter in its anterior section.

Xestipyge conjunctum (Say, 1825)

Diagnosis. Differs most readily from the other species of *Xestipyge* known for Canada, *X. geminatus*, by the sparser punctation on the metasternum laterally.

Description. Pronotum and elytra dark reddish brown to black, rather shining. Pronotum, in addition to punctules, with rather fine punctures on disc, these slightly coarser laterally. Elytra with 5 dorsal striae, striae 1-4 entire or nearly so, wide, rather deep, fifth erased in basal half or basal third, generally more superficial than striae 1-4; sutural stria rather superficial, erased in basal third, often represented only by a row of punctures in basal two-thirds; inner subhumeral stria at least distinct in posterior half; intervals flat; coarse punctures few, usually limited to small area between fourth dorsal and sutural striae. Pygidium of male with deep V-shaped sulcus just posterior to middle. Metasternum, laterally to lateral stria, with intermediate punctures, separated on average by more than half their diameter.

Body length: 2.2-2.5 mm.

Geographical Distribution. This species ranges in eastern North America, from southern Ontario ([Map 10](#)) south to Texas.

Habitat. Some specimens seen from the United States were collected in tree holes. Blume (1985) reports the association of this species with bovine droppings.

Phelister subrotundus (Say, 1825)

Diagnosis. Readily differentiated from the other species of *Phelister* known in Canada, *P. vernus*, by the presence of a lateral stria on the pronotum.

Description. Upper surface dark brown to black, posterolateral area of each elytron reddish. Head with frontal stria distinct laterally,

interrupted at middle. Pronotum with uniform, fine punctation mixed with coarser punctures laterally on disc and along posterior margin; lateral stria entire or nearly so, close to lateral margin, clearly curved medially at level of anterior angle but not prolonged along anterior margin; prescutellar area with shallow rounded fovea smaller than scutellum. Elytron with dorsal striae 1-4 entire; stria 5 entire in many specimens, sometimes interrupted or feebly impressed in basal third; sutural stria distinct in apical half or more; outer subhumeral stria distinct in apical third. Pygidium with fine punctures more or less uniformly distributed. Prosternal striae distinct, long, more or less parallel; surface between striae finely but densely punctate; prosternal lobe with marginal stria distinct, not interrupted apically. Mesosternum with marginal stria entire. Metasternum with 2 lateral, more or less parallel striae, medial one longer, reaching close to posterior coxa.

Body length: 1.8-2.4 mm.

Geographical Distribution. The species ranges over eastern North America, from southern Québec and Ontario ([Map 11](#)) south to Texas.

Habitat. Available data suggest that the species is found in various microhabitats including carcasses, dung, litter, compost, mushrooms and under the bark of dead trees.

Margarinotus harrisii (Kirby, 1837)

Diagnosis. Differs from other species of the genus found in Canada by having the punctules of the pronotum and elytra coarser and distinct at low magnification.

Description. Upper surface black, shiny; disc of pronotum and elytra moderately densely punctate, punctures fine but distinct even at low magnification. Pronotum with 2 lateral striae, outer one entire, inner one often with sinuosity; marginal stria entire; disc with or without coarser punctures along inner striae. Elytron with 4 entire dorsal striae although stria 4 is usually slightly abbreviated at base; dorsal stria 5 and sutural restricted to apical third or half, 5th often with short, basal appendix; apex usually without transverse impression between striae 2-4, in some specimens with weak impression. Pygidium more or less densely punctate in anterior half, punctures usually separated on average by their diameter or less; surface between punctures reticulate. Prosternal lobe rounded at apex; marginal stria entire. Metasternum with lateral stria usually continuous and rounded posteriorly, rarely interrupted in some individuals; metepimeron with punctate lateral stria. Median lobe (Fig. 22) of aedeagus narrowly spoon-shaped (dorsal view); median armature small. Body length: 4.0-6.0 mm.

Geographical Distribution. This species is widely distributed over the United States and southern Canada, from Québec to British Columbia ([Map 12](#)).

Habitat. Blatchley (1910: 605) reports that this species "occurs principally in cows' dung" in Indiana and that it is "frequent beneath chunks on beach of Lake Michigan".

Margarinotus interruptus (Palisot de Beauvois, 1818)

Diagnosis. Very similar to *M. rectus* but most specimens can be differentiated by the presence of a short basal appendix at level of elytral dorsal stria 5 and by the fact that they are less elongate. Both species are also widely allopatric.

Description. Body rather elongate, upper surface black, shiny. Pronotum with 2 lateral striae, outer one entire, inner one regularly curved or with weak sinuosity; marginal stria entire, rarely more or less abbreviated near base; disc without coarser punctures near inner lateral stria. Elytron with 4 dorsal striae entire; stria 5 and sutural restricted to apical third or half, 5th usually with a short basal appendix sometimes represented by a series of punctures; apex without transverse impression or at most with very weak impression between striae 2-4. Pygidium sparsely punctate on anterior half, punctures usually separated on average by more than their diameter. Prosternal lobe rounded at apex; marginal stria entire. Mesosternum rather elongate, width/length at middle about 2.0. Metasternum with lateral stria not interrupted, rounded posteriorly and prolonged to metepisternal suture; metepimeron with punctate lateral stria, this sometimes very short and restricted to anterior half. Median lobe (Fig. 23) of aedeagus narrowly spoon-shaped (dorsal view); median armature small. Body length: 5.2-8.0 mm.

Geographical Distribution. The species ranges from New Brunswick to southern Saskatchewan ([Map 13](#)) south at least to Massachusetts and Illinois.

Habitat. Found in decaying matter such as litter, dung, and carcasses.

Margarinotus rectus (Casey, 1916)

Diagnosis. Most similar to *M. interruptus* but differ by the absence of basal appendix at level of the elytral dorsal stria 5 and by its more elongate body form.

Description. Form elongate, sides subparallel; upper surface black, shiny. Frontal stria entire. Pronotum with 2 entire lateral striae; inner stria usually with slight sinuosity; marginal stria entire; punctation microscopic, without coarser punctures medial to inner lateral stria. Elytron with 4 entire dorsal striae, or 4th slightly abbreviated in front; 5th and sutural restricted to apical third or half; stria 5 without basal appendix in most specimens; apex without transverse impression. Pygidium rather sparsely punctate, most punctures on anterior half separated on average by their diameter or slightly more; surface between punctures reticulate. Prosternal lobe more or less rounded at apex; marginal stria entire, rarely briefly interrupted at apex. Mesosternum elongate, ratio width/length about 2.0. Metasternum with lateral stria interrupted distally, lateral arm separated, often

shortly, from longitudinal arm; metepimeron with punctate lateral stria. Median lobe of aedeagus narrowly spoon-shaped (dorsal view); median armature small. Body length: 5.8-7.5 mm.

Geographical Distribution. Originally described from Kansas, the species is known also from Idaho, Oregon, Washington and southern British Columbia ([Map 13](#)).

Habitat. Found in dung (Hatch 1962: 273).

Margarinotus immunis (Erichson, 1834)

Diagnosis. Most similar to *M. interruptus* but differs by the shorter mesosternum.

Description. Upper surface black, shiny. Pronotum with 2 lateral striae, outer one entire, inner one regularly curved, sometimes with a faint sinuosity in basal half; marginal stria entire; punctation microscopic, usually without coarser punctures along inner stria. Elytron with 4 dorsal striae entire or nearly so, dorsal 4 usually slightly erased at base; dorsal stria 5 restricted to apical half or third, without basal appendix; sutural stria often very short and restricted to apical third or absent; apex usually without transverse impression between striae 2-4, rarely with faint impression. Pygidium with punctures relatively sparse, most of them separated on average by 1-2 times their diameter. Prosternal lobe rounded at apex; marginal stria usually entire, sometimes interrupted at apex. Metasternum with lateral stria usually interrupted distally, rarely uninterrupted; metepimeron usually with punctate lateral stria, rather short in some specimens. Median lobe (Fig. 24) of aedeagus spoon-shaped (dorsal view); median armature moderately long. Body length: 5.5-7.5 mm.

Geographical Distribution. This species ranges over eastern North America from Prince Edward Island to central Saskatchewan ([Map 14](#)) south to Florida.

Habitat. A few specimens seen were collected in forest litter and in carrion.

Margarinotus hudsonicus (Casey, 1893)

Diagnosis. Distinguished from most of the related species by the interrupted lateral stria of metasternum in combination with the presence of a punctate lateral stria on the metepimeron.

Description. Upper surface black, shiny. Pronotum usually with 2 lateral striae; outer stria erased in basal third or two-thirds, sometimes entirely absent; inner stria broadly arcuate on each side behind anterior angle and without sinuosity; marginal stria usually entire, sometimes more or less erased in basal third; punctation microscopic, in some specimens with a few coarser punctures medial to inner lateral stria. Elytron with 4 entire dorsal striae, fifth and sutural restricted to apical third, rarely to apical half; dorsal stria 5 without

basal appendix; apex often with slight transverse impression between striae 2-4. Pygidium with rather dense punctures on anterior half, most of them separated on average by less than their diameter; surface between punctures reticulate. Prosternal lobe more or less truncate at apex; marginal stria of variable length, usually abbreviated in basal area, often erased at apex. Metasternum with lateral stria interrupted distally, lateral arm separated, often shortly, from longitudinal arm; metepimeron with punctate lateral stria. Median lobe (Fig. 25) of aedeagus spoon-shaped (dorsal view); median armature moderately long, most similar to that of *M. immunis*. Body length: 5.2-7.0 mm.

Geographical Distribution. This species inhabits eastern North America, from Nova Scotia to Manitoba ([Map 15](#)) south at least to West Virginia and Indiana.

Habitat. Found in decaying mushrooms, carrion and excrements.

Margarinotus merdarius (Hoffmann, 1803)

Diagnosis. Differs from the related species by the inner lateral stria of pronotum markedly sinuate in basal half in combination with the lateral stria of metasternum uninterrupted and the presence of subapical impression on the elytra.

Description. Upper surface black, shiny. Pronotum with 2 lateral striae, outer one entire, inner one with strong sinuosity in basal half; marginal stria entire; disc usually with a few coarser punctures along inner lateral stria. Elytron with 4 dorsal striae entire or nearly so; dorsal stria 5 and sutural restricted to apical half, dorsal 5 without basal appendix; apex with transverse impression between striae 2-4. Pygidium rather densely punctate in anterior half, punctures usually separated on average by less than their diameter; punctures on propygidium and pygidium umbilicate. Prosternal lobe rounded at apex; marginal stria interrupted at apex. Metasternum with lateral stria not interrupted, rounded posteriorly and prolonged to metepisternal suture; metepimeron with punctate lateral stria, often interrupted. Median lobe (Fig. 26) of aedeagus tubular (dorsal view), with spiniform projection in subapical dorsal region; median armature moderately long. Body length: 6.0-8.5 mm.

Geographical Distribution. This species is widely distributed over the Palearctic Region; it was accidentally introduced into North America. In Canada, it occurs from Nova Scotia to eastern Manitoba and from central Alberta to British Columbia ([Map 16](#)).

Habitat. In Europe, found in dung, fungi, compost, decaying vegetable matter as well as in henhouses and nests of birds (Vienna 1980).

Margarinotus purpurascens (Herbst, 1792)

Diagnosis. Differs from other Canadian *Margarinotus* by the ill-

defined macula on the posterior half of the elytron.

Description. Upper surface black, elytron with reddish, ill-defined macula on posterior half between about striae 1-5. Pronotum with single lateral stria, often slightly sinuate in posterior half; marginal stria erased at base; punctation microscopic, without coarser punctures medial to lateral stria. Elytron with 4 dorsal striae entire or nearly so; striae 1-3 fine, nearly smooth, feebly crenulate; stria 5 and sutural restricted to apical third or half; 5th without basal appendix; apex without transverse impression. Pygidium coarsely punctate in anterior half, most punctures separated on average by less than their diameter. Prosternal lobe rounded; marginal stria entire, rarely narrowly interrupted at apex. Metasternum with lateral stria interrupted distally, lateral arm separated from longitudinal arm; metepimeron without punctate lateral stria. Median lobe of aedeagus tubular, with spiniform projection in subapical dorsal region; basal apodemes very short; median armature moderately long. Body length: 3.5-4.1 mm.

Geographical Distribution. This species is widely distributed over the Palaearctic Region; it has been accidentally introduced in North America, notably in extreme southwestern British Columbia.

Habitat. In Europe found in dung, particularly that of bovine, under decaying vegetable matters and in fox burrows (Vienna 1980).

Margarinotus umbrosus (Casey, 1893)

Diagnosis. Most similar to *M. faedatus* and *M. lecontei* but differs by the coarsely umbilicate punctures of the propygidium and pygidium; specimens of *M. umbrosus* can also be differentiated from most specimens of these two species by the presence of two lateral striae on the pronotum.

Description. Upper surface black, shiny. Pronotum with 2 lateral striae; outer one abbreviated in basal third or more but rarely present only as a short segment near level of anterior angle, stria clearly closer to lateral margin than to inner stria, inner lateral stria without sinuosity, somewhat angulate at level of anterior angle; marginal stria incomplete, erased in basal third or half; punctation microscopic, usually with some coarser punctures along inner lateral stria. Elytron with dorsal striae 1-3 entire; stria 4 usually erased in basal third or half, more rarely nearly entire; dorsal stria 5 restricted to apical third, without basal appendix; sutural stria restricted to apical third or half; apex without transverse impression in some individuals, with weak impression between striae 2-4 in others. Pygidium densely coarsely punctate, most punctures separated on average by half their diameter or less; punctures on propygidium and pygidium strongly umbilicate. Prosternal lobe rounded at apex; marginal stria absent or present as a short apical arc. Metasternum with lateral stria interrupted distally, lateral arm separated from longitudinal arm; metepimeron without lateral stria. Median lobe of aedeagus tubular (dorsal view), with spiniform projection in subapical dorsal region; median armature moderately long. Body length: 4.0-6.0 mm.

Geographical Distribution. This species ranges over western North America from Alberta and British Columbia ([Map 17](#)) south to California, east to Idaho and Montana.

Habitat. Hatch (1962: 273) reports that this species is found on carrion, sometimes in dung.

Margarinotus faedatus (J.E. LeConte, 1845)

Diagnosis. Most similar to *M. lecontei* but differs by the marginal stria of prosternum poorly developed, or absent, and larger size.

Description. Upper surface black, shiny. Pronotum with 1 or 2 lateral striae; outer one erased in basal third or two-thirds, in some specimens completely erased, inner one regularly curved or with a weak sinuosity, slightly angulate at level of anterior angle; marginal stria incomplete, erased in basal third or half; punctation microscopic, usually with coarser punctures along inner lateral stria. Elytron with 4 dorsal striae entire although 4th is usually slightly abbreviated at base; dorsal stria 5 and sutural restricted to apical third or half; 5th dorsal stria without basal appendix; apex without transverse impression in some individuals, with weak impression between striae 2-4 in others. Propygidium with punctures slightly coarser than on pygidium. Pygidium densely punctate, most punctures separated on average by clearly less than their diameter; punctures on propygidium and pygidium umbilicate. Prosternal lobe rounded at apex; marginal stria absent, sometimes with small arc at apex. Metasternum with lateral stria interrupted distally, lateral arm separated from longitudinal arm; metepimeron without lateral stria. Median lobe (Fig. 27) of aedeagus tubular (dorsal view), with large, dorsal, spiniform projection in subapical region and 2 adjoining, small, lateral projections; median armature moderately long. Body length: 4.2-5.8 mm.

Geographical Distribution. This species occurs over eastern North America, from Nova Scotia to Ontario ([Map 18](#)) south to Georgia and Texas.

Habitat. Found in decaying organic matters such as carrion, dung, and rotten mushrooms.

Margarinotus lecontei Wenzel, 1944

Diagnosis. Very similar to *M. faedatus* but differs by features listed below.

Description. Similar to *M. faedatus* but differing by the following character states. Pronotum with single lateral stria which is more angulate at level of anterior angle; surface between lateral stria and marginal stria more convex. Propygidium with punctures distinctly coarser than on pygidium. Marginal stria of prosternal lobe distinct but abbreviated on each side. Median lobe (Fig. 28) of aedeagus usually with spiniform projection situated farther from apex and

without adjoining small spines. Body length: 3.4-4.2 mm.

Geographical Distribution. This species is found in eastern North America, from Nova Scotia to Saskatchewan ([Map 19](#)) south to Georgia and Texas.

Habitat. As for the preceding species, found in carrion, dung and particularly rotten mushrooms.

Margarinotus obscurus (Kugelann, 1792)

Diagnosis. Differs from all other *Margarinotus* species found in Canada by the incomplete outer subhumeral stria of the elytron.

Description. Upper surface black, shiny. Pronotum with single lateral stria; marginal stria entire; surface between lateral stria and marginal stria convex; punctation microscopic without coarser punctures along lateral stria. Elytron with dorsal striae 1-3 entire, dorsal 4 short, restricted to apical fourth, sometimes to apical third; dorsal stria 5 very short and occasionally absent, without basal appendix; sutural stria usually distinct in apical half or less; outer subhumeral stria abbreviated posteriorly, often restricted to basal two-thirds or half; apex with weak transverse impression between striae 2-4 or without impression. Pygidium coarsely punctate, most punctures separated on average by slightly less than their diameter; punctures on propygidium and pygidium not umbilicate. Prosternal lobe slightly rounded or more or less truncate at apex; marginal stria entire. Metasternum with lateral stria interrupted distally, lateral arm separated from longitudinal arm; metepimeron without lateral stria. Median lobe of aedeagus tubular, slightly flattened; median armature rather long, narrow, almost parallel-sided and rather flat. Body length: 5.0-5.8 mm.

Geographical Distribution. This species is widely distributed over the Palearctic Region; it has been accidentally introduced in North America where it is known from southwestern British Columbia, Oregon and Illinois (Mazur 1997).

Habitat. In Europe found in dung, carrion, rotten mushrooms and in fox borrows (Vienna 1980).

Hister furtivus J.E. LeConte, 1859

Diagnosis. Along with *H. depurator*, this species is easily recognized by its truncate (♀) or emarginate (♂) prosternal lobe. Most readily distinguished from *H. depurator* by the shorter lateral stria of metasternum and coarser and deeper punctures on pygidium.

Description. Upper surface black, shiny. Pronotum with 2 lateral striae, inner one entire or nearly so, outer one usually erased in posterior half or third, rarely entire; distance between lateral striae

usually about 4 X as wide as distance between outer lateral and marginal striae. Elytron with 3 entire and weakly crenulate dorsal striae; dorsal stria 4 restricted to apical half, rarely extended in anterior half as interrupted series of short segments or punctures; stria 5 restricted to apical fourth or so; sutural stria usually distinct in apical half or third; inner subhumeral stria absent or represented in apical region by short segment or series of punctures; outer subhumeral stria absent or represented by short series of punctures near middle; apex with transverse impression between striae 2-4. Pygidium moderately coarsely punctate, most punctures on anterior half separated on average by about their diameter; surface between punctures markedly reticulate. Prosternal lobe truncate in female, marginal stria usually entire, sometimes interrupted at apex; lobe emarginate in male, median part with adjoining small projection on each side, marginal stria more or less distinct at apex. Metasternum with lateral stria not interrupted, rounded posteriorly and prolonged laterally to about middle of metepisternal suture; metepimeron with or without lateral stria. Lateroapical projection of front tibia with 2 denticles. Body length: 5.5-8.0 mm.

Geographical Distribution. This species ranges from Nova Scotia to central British Columbia ([Map 20](#)) south to North Carolina and Arizona.

Habitat. Found in carrion, dung, rotting mushrooms and compost.

Hister depurator Say, 1825

Diagnosis. Most similar to *H. furtivus* but differentiated by features listed below.

Description. Same character states as *H. furtivus* except for the following. Distance between inner and outer lateral striae of pronotum usually about 3 X as wide as distance between outer and marginal striae. Elytra with dorsal stria 4 not reaching middle, consisting of series of 7-12 dots or dashes; dorsal 5 reduced to 1-6 dots in the apical area. Punctuation of pygidium usually finer, sparser, and more superficial. Lateral stria of metasternum with lateral arm extended to at least anterior fourth of metepisternal suture. Body length: 5,9-7,8 mm.

Geographical Distribution. This species ranges over eastern North America from southern Ontario south to Florida and Oklahoma. It is known in Canada from a single record in southern Ontario.

Habitat. Blume (1985) reports its association with bovine droppings. Probably to be found in decaying organic matters as *H. furtivus*.

Hister abbreviatus Fabricius, 1775

Diagnosis. Distinguished from other Canadian species of *Hister* by the distinctive inner and outer subhumeral striae on the elytron.

Description. Upper surface black, shiny. Pronotum with 2 lateral striae, inner one entire, outer one erased in posterior half or so. Elytron with 4 entire and distinctly crenulate dorsal striae; dorsal stria 5 usually restricted to apical third or fourth; sutural stria usually present in apical half or so; inner subhumeral stria distinct in apical half, outer subhumeral stria distinct in basal half; apex without impression between striae 2-4. Pygidium much more finely punctate than in *M. furtivus*; surface between punctures smooth. Prosternal lobe rounded at apex, marginal stria entire or interrupted at apex. Metasternum with lateral stria usually interrupted distally, rarely continuous and prolonged to metepisternal suture; metepimeron with punctate lateral stria. Lateroapical projection of front tibia with 4-5 denticles. Body length: 4.1-6.0 mm.

Geographical Distribution. This species is widely distributed in North America from New Brunswick to Vancouver Island ([Map 21](#)) south to Mexico.

Habitat. Found in carrion, dung, decaying mushrooms and compost. Blatchley (1910) noted that the species is common under dead turtles and fishes along lakes and ponds.

Hister curtatus J.E. LeConte, 1844

Diagnosis. Differ from other species of *Hister* in Canada, except some specimens of *H. paykullii*, by the entire dorsal stria 4 of elytron in combination with the absence, or nearly so, of the elytral subhumeral striae. Best distinguished from *H. paykullii* by the shape of the tegmen which has no protruding lateral flanges.

Description. Upper surface black, shiny. Pronotum with 2 lateral striae, inner one entire, outer one variably developed and erased at least in posterior half, sometimes limited to a short arc at level of anterior angle. Elytron with 4 dorsal striae entire and feebly crenulate; dorsal stria 5 usually restricted to apical third or fourth; sutural stria normally distinct in apical half or third; inner and outer subhumeral striae absent or represented by weak marks; apex without impression between striae 2-4. Pygidium more finely punctate than in *H. depurator*, punctures separated by more than their diameter; surface between punctures weakly reticulate. Prosternal lobe rounded at apex, marginal stria usually entire, rarely interrupted at apex. Metasternum with lateral stria not interrupted, rounded posteriorly and prolonged to metepisternal suture; metepimeron without lateral stria. Latero-apical projection of front tibia with 2 denticles. Body length: 4.8-5.6 mm.

Geographic Distribution. This species ranges over eastern North America, from Nova Scotia to southeastern Manitoba ([Map 22](#)) south at least to Illinois.

Habitat. Among the specimens studied, two were found in leaf litter and a third one in carrion.

Spilodiscus ulkei (Horn, 1870)

Diagnosis. This species differs from other members of *Spilodiscus* in Canada by the combination of femora uniformly black, absence of striae between the lateral striae of the pronotum, and presence of the inner subhumeral stria on the apical third of the elytron.

Description. Head and pronotum piceous to black; elytra with large, boot-shaped, reddish spot, with anterior and posterior marginal areas and a periscutellar zone from suture to dorsal stria 4 black, inflexed parts black; middle and hind femora entirely piceous to black. Pronotum with fine, sparse punctures; inner and outer lateral striae entire, strongly impressed; surface between striae without striae. Elytron with dorsal striae 1-3 entire, stria 4 absent to nearly entire, with or without basal appendix; stria 5 very short, restricted to apex or absent; sutural stria distinct in apical half or more in most specimens; inner subhumeral stria distinct in apical third or more; outer subhumeral stria visible at middle in some specimens; apex with slight but distinct transverse impression at level of striae 2 and 3. Propygidium and pygidium in anterior half with coarse punctures in most specimens. Anterolateral angles of mesosternum glabrous or with few setae. Tibia with 2 projections, each with denticle. Body length: 4.4-5.5 mm.

Geographical Distribution. A prairie species, ranging from southwestern Saskatchewan and southern Alberta ([Map 23](#)) south to Mexico.

Habitat. Found in various vertebrate dwellings, such as gopher holes and nests of western meadowlark, but also in cow dung (Caterino 1998).

Atholus bimaculatus (Linné, 1758)

Diagnosis. Distinguished from other *Atholus* treated by the large reddish spot on the elytra and the depression on each side of the pronotum near the anterior angles.

Description. Upper surface black, elytra with orange or reddish spot covering the posterolateral area. Upper surface of mandible with lateral edge rounded, not grooved or elevated. Pronotum with uniform, sparse, very fine punctation and a row of coarser punctures along posterior margin; one lateral stria, erased in basal third and with a distinct sinuosity in anterior part; presence of a depression on each side near sinuosity of lateral stria. Elytra with very fine, sparse punctures covering the disk; dorsal striae 1-4 entire, stria 5 not arched in front, entire or slightly abbreviated in front; sutural stria erased in anterior half; subhumeral striae absent. Propygidium with fine, sparse punctures; pygidium with punctures finer than on propygidium. Mesepimeron with wide, rather smooth, lateral sulcus. Metasternum with lateral stria interrupted posteriorly, lateral arm separated from longitudinal arm. Metepimeron with a punctate lateral stria. Body length: 4.0-4.8 mm.

Geographical Distribution. This species is said to be cosmopolite (Vienna 1980); it has been accidentally introduced in various places in North America. It is known from Québec to Manitoba and from Alberta and British Columbia in Canada ([Map 24](#)).

Habitat. Found in dung and decaying vegetable matter.

Atholus sedecimstriatus (Say, 1825)

Diagnosis. Differs from other Canadian *Atholus* by the well developed subhumeral striae of the elytra.

Description. Upper surface black, shiny. Upper surface of mandible with lateral edge rounded, not grooved or elevated. Pronotum with very fine, rather sparse punctation and a row of coarser punctures near posterior margin; one lateral stria, entire or nearly so, without sinuosity in anterior half. Elytra with very fine, sparse punctures on disc and some coarser ones near posterior margin; dorsal striae 1-5 entire; stria 5 arched in front and usually united to sutural; sutural stria usually entire, rarely more or less obliterated in front; inner subhumeral stria distinct in posterior half, outer subhumeral stria entire or nearly so. Propygidium with moderately coarse punctures, most of them separated on average by slightly more than their diameter. Pygidium with fine punctures, contrasting against those of propygidium. Mesepimeron with narrow, rather coarsely punctate, lateral sulcus. Metasternum with lateral stria interrupted posteriorly, lateral arm separated from longitudinal arm. Metepimeron without lateral stria. Body length: 4.2-4.9 mm.

Geographical Distribution. This species ranges over eastern North America, from southern Québec and Ontario ([Map 25](#)) south to Texas.

Habitat. Found in decaying organic matter such as compost, dung and carrion.

Atholus falli (Bickhardt, 1912)

Diagnosis. Most similar to *A. americanus* and *A. perplexus*, two related species present in Canada, but differs by the more densely punctate propygidium, the punctures being separated on average by less than their diameter.

Description. Upper surface black, shiny. Upper surface of mandible with lateral delineated by a basal groove usually more or less erased in front. Pronotum with punctules rather obvious and dense and with a row of coarser punctures along posterior margin; two lateral striae, inner one entire or nearly so, outer one abbreviated at base, usually distinct on anterior half at least as a short arc or dotted segment near anterior angle. Elytra with punctules often as obvious as on pronotum, apex without coarser punctures; dorsal striae 1-5 entire, 5th arched and united in front to sutural stria; sutural stria entire; subhumeral

striae rarely absent, usually present as an apical segment or dotted line of variable length. Propygidium rather densely punctate, most punctures separated on average by less than their diameter. Pygidium moderately finely punctate, punctures finer but denser than on propygidium, becoming gradually smaller toward apex. Mesepimeron with narrow, rather coarsely punctate, lateral sulcus. Metasternum with lateral stria not interrupted, rounded posteriorly and prolonged to metepisternal suture. Metepimeron without lateral stria. Male genitalia with ventral surface of tegmen granular in apical region; subapical region of tegmen, in dorsal view, with sides distinctly rounded or subangulate; apex rather narrowly rounded. Body length: 3.5-4.5 mm.

Geographical Distribution. This species was originally described from specimens collected in California and Washington. I have seen specimens from Québec, Ontario, Manitoba, Saskatchewan and Alberta in Canada ([Map 26](#)) and from New Hampshire, Massachusetts, Ohio, Indiana, Illinois, Minnesota and South Dakota in the United States.

Habitat. Some of the specimens seen were collected in organic litter.

Onthophilus deflectus Helava, 1978

Diagnosis. Differs readily from *O. pluricostatus*, the other species in this genus known for Canada, by the absence of elevated areas on the metasternum and by the shorter lateral carinae on the pronotum.

Description. Upper surface piceous or very dark reddish brown. Pronotum with lateral sides convergent anteriorly and not reflexed in posterior half; disc with 6 costae; costa 1 (closest to lateral margin) short, straight, not reaching posterior margin; costae 2 and 3 long, straight, not reaching posterior margin. Elytral costae 2 and 4 more strongly developed than costae 1, 3 and 5. Pygidium with transverse sulcus meeting longitudinal one in anterior third. Metasternum slightly convex, coarsely, rather uniformly punctate, without elevated area; punctures shallow, simple. Body length: 1.8-2.2 mm.

Geographical Distribution. This species inhabits eastern North America from southern Ontario south to Mississippi, west to Nebraska. In Canada, it is known only from three localities in southern Ontario ([Map 27](#)).

Habitat. According to Helava (1978: 4), this species has been found in dead polypores, leaf litter, tree holes, cow dung, mouse nests and under carrion.

Onthophilus pluricostatus J.E. LeConte, 1844

Diagnosis. Distinguished from the other *Onthophilus* in Canada by the presence of elevated areas on the metasternum and by the longer lateral carina on the pronotum.

Description. Upper surface piceous or very dark reddish brown. Pronotum with lateral sides rather distinctly angulate at middle, more or less parallel in posterior half and convergent in anterior half; lateral edges markedly reflexed; disc with 6 costae; costa 1 moderately long and reaching posterior margin; costa 2 long, reaching near posterior margin; costa 3 long, not reaching posterior margin. Elytral costae 2 and 4 more strongly developed than costae 1, 3 and 5. Pygidium with both transverse and longitudinal sulci, longitudinal sulcus long, reaching posterior margin. Metasternum with broad, longitudinal depression along midline and a triangular, weakly elevated discal area on each side; punctures on elevated discal areas small, round, shallow; punctures on remaining of metasternum coarse, irregular, each with additional, small, deep puncture. Body length: 2.3-2.7 mm.

Geographical Distribution. This species occurs in eastern United States from Michigan and Massachusetts south to Alabama. The species has not yet been recorded from Canada but is likely to occur in southern Ontario since it has been collected at Detroit, Michigan.

Habitat. Some of the specimens studied were collected under a dog carcass, in a fungus and under cow dung.

updated June 2002 by R.B. Fairchild



Figures

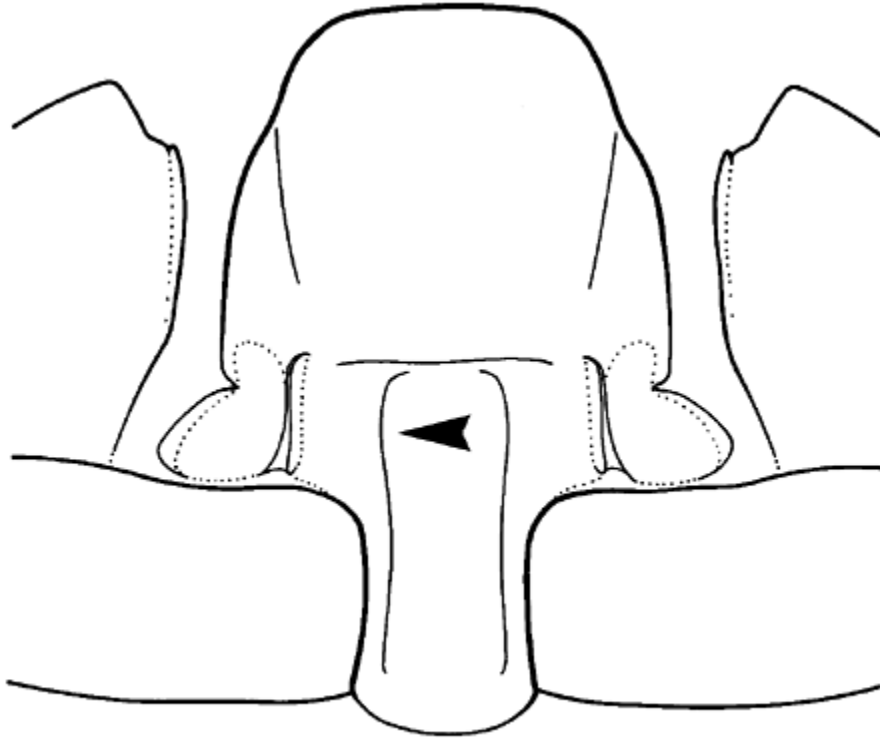


Figure 5. Prosternum of *Platylomalus aequalis*

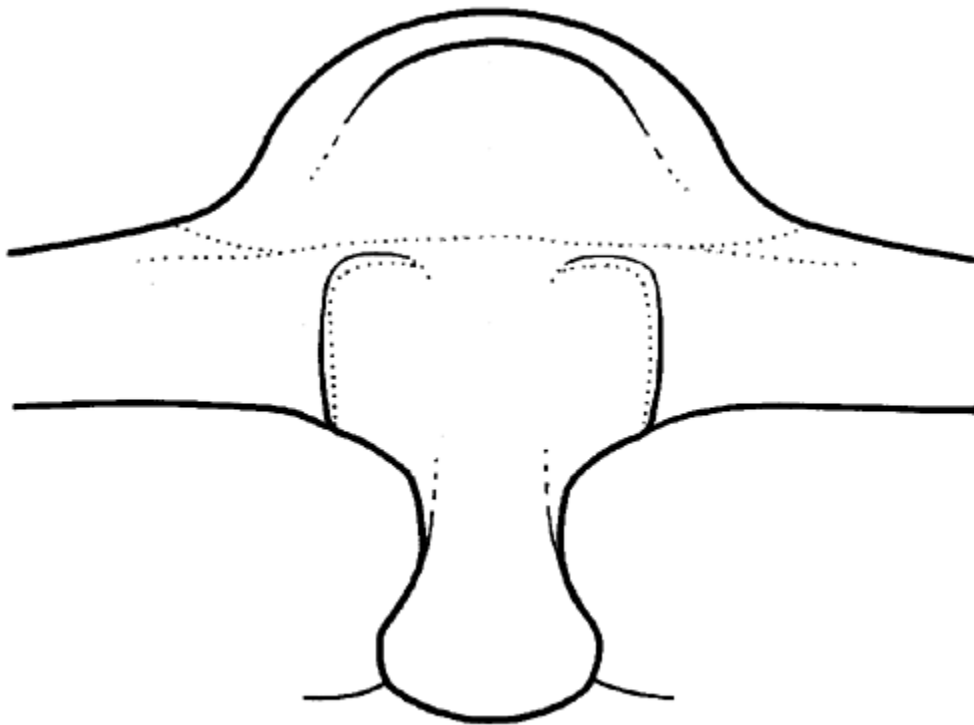


Figure 6. Prosternum of *Margarinotus hudsonicus*

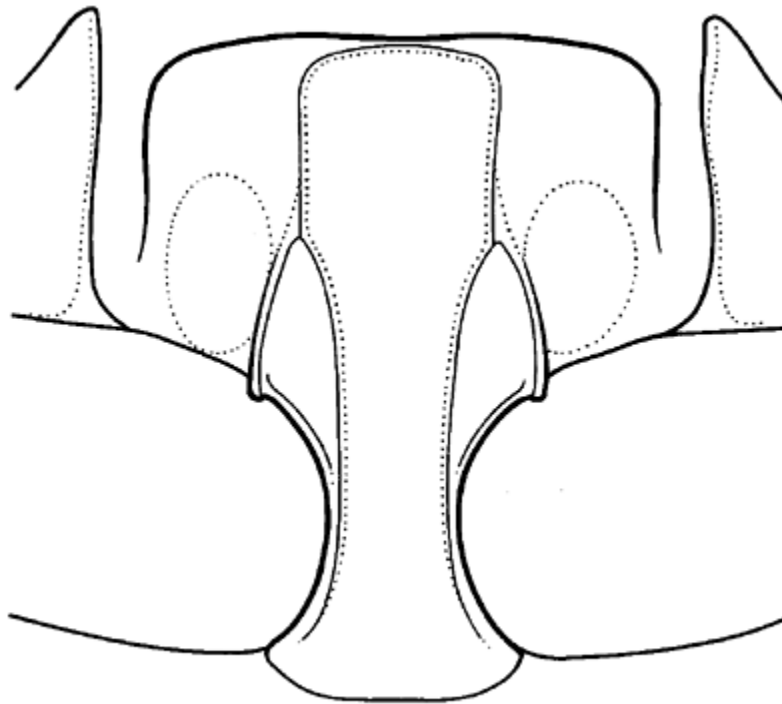


Figure 7. Prosternum of *Saprinus lugens*

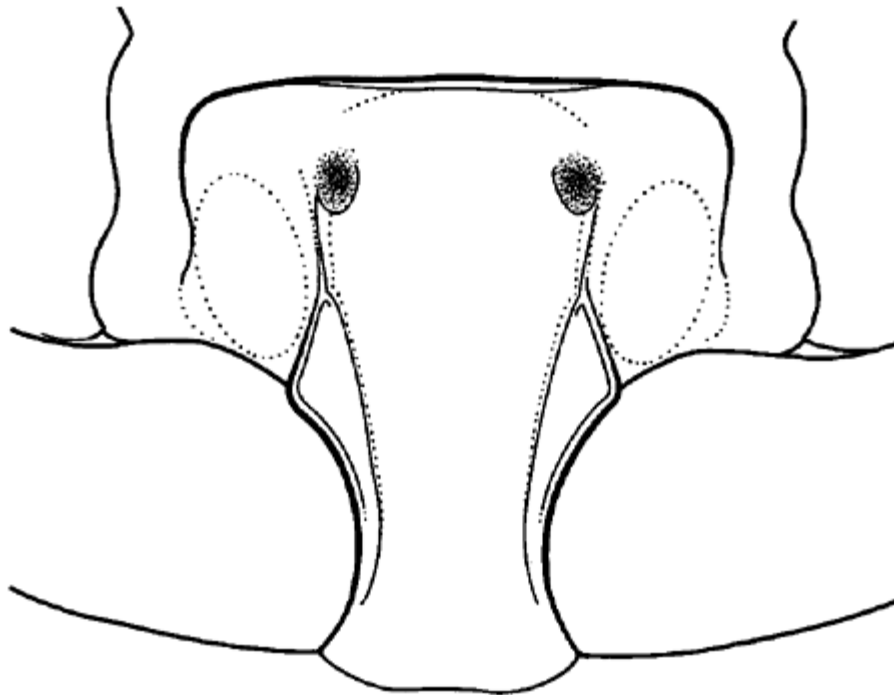


Figure 8. Prosternum of *Euspilotus assimilis*

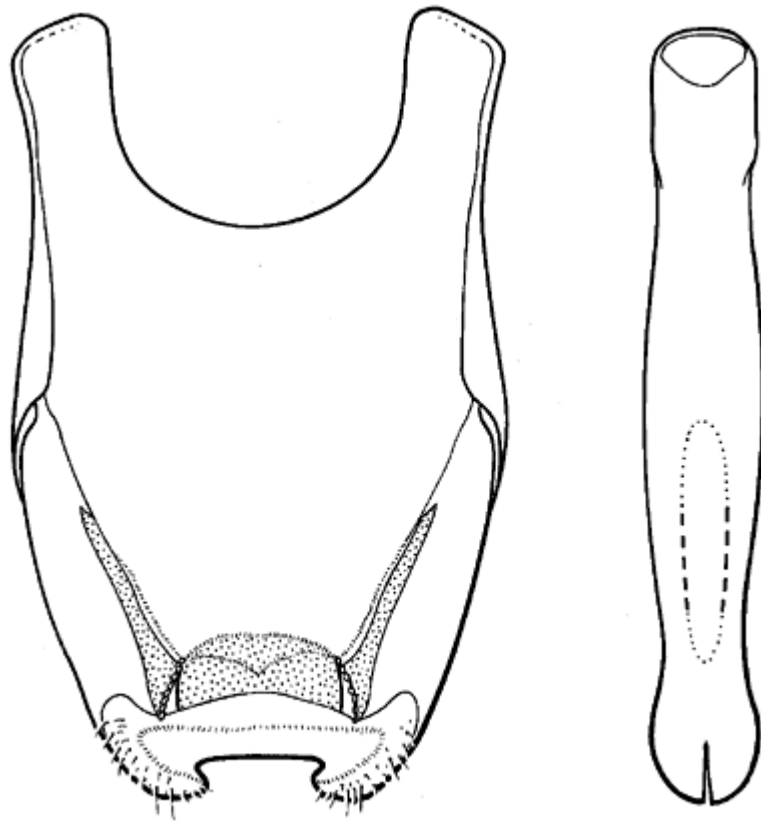
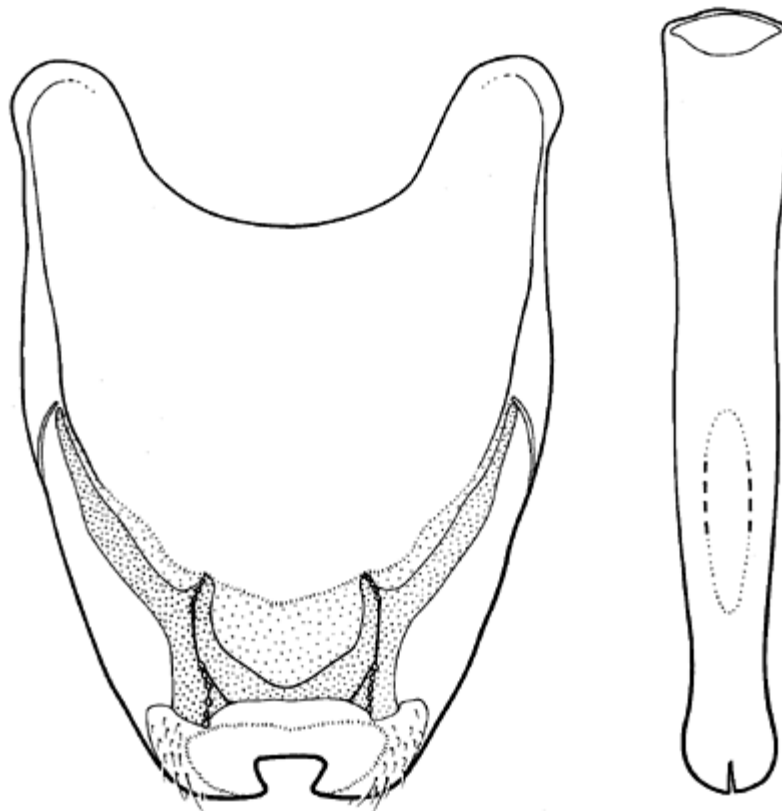


Figure 9. Male eight genital sternite (a) (ventral view) and aedeagus (b) (ventral view) of *Saprinus oregonensis*



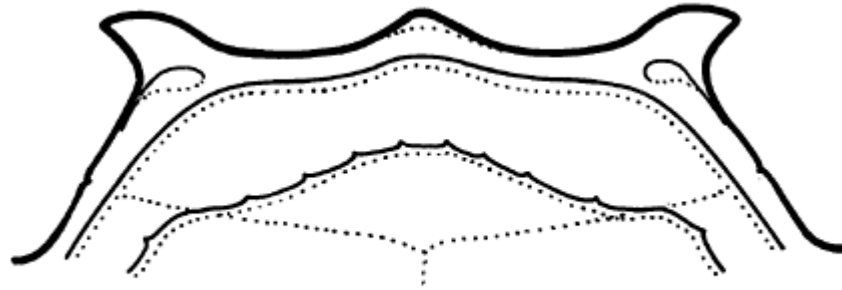


Figure 11. Mesosternum of *Phelister subrotundus*

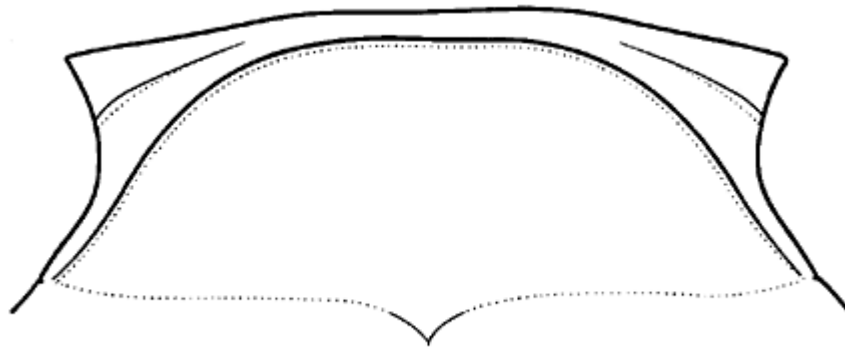


Figure 12. Mesosternum of *Atholus sedecimstriatus*

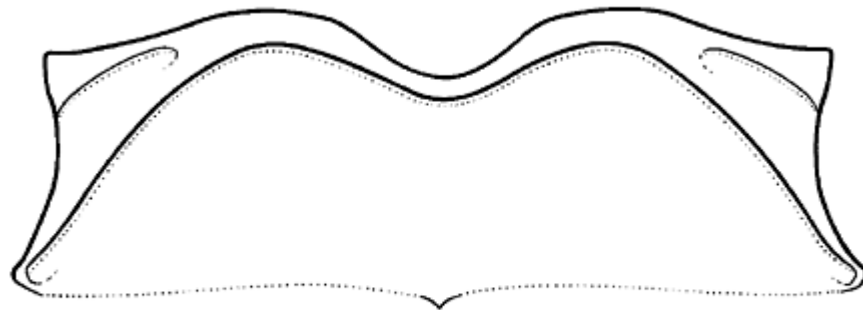


Figure 13. Mesosternum of *Hister abbreviatus*

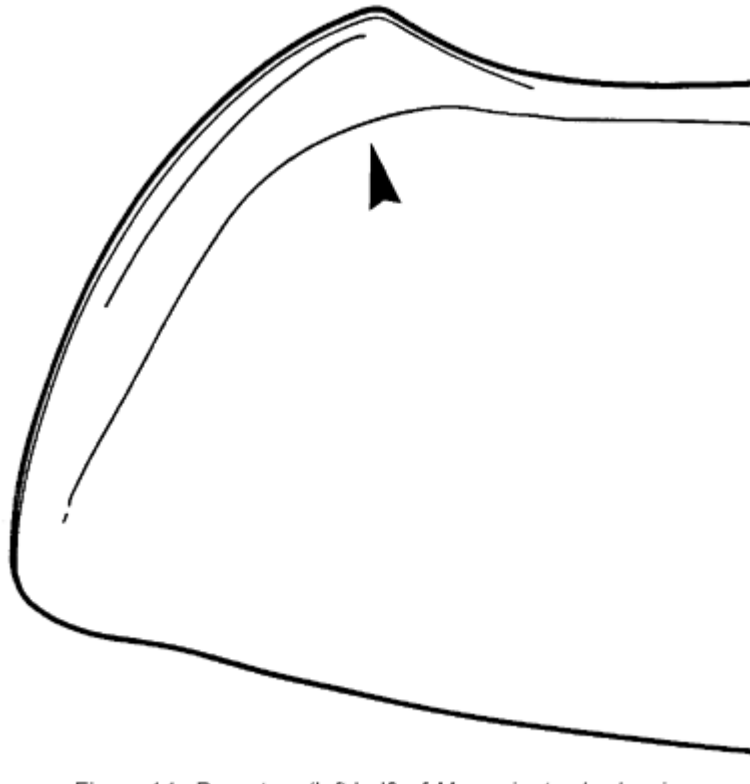


Figure 14. Pronotum (left half) of *Margarinotus hudsonicus*

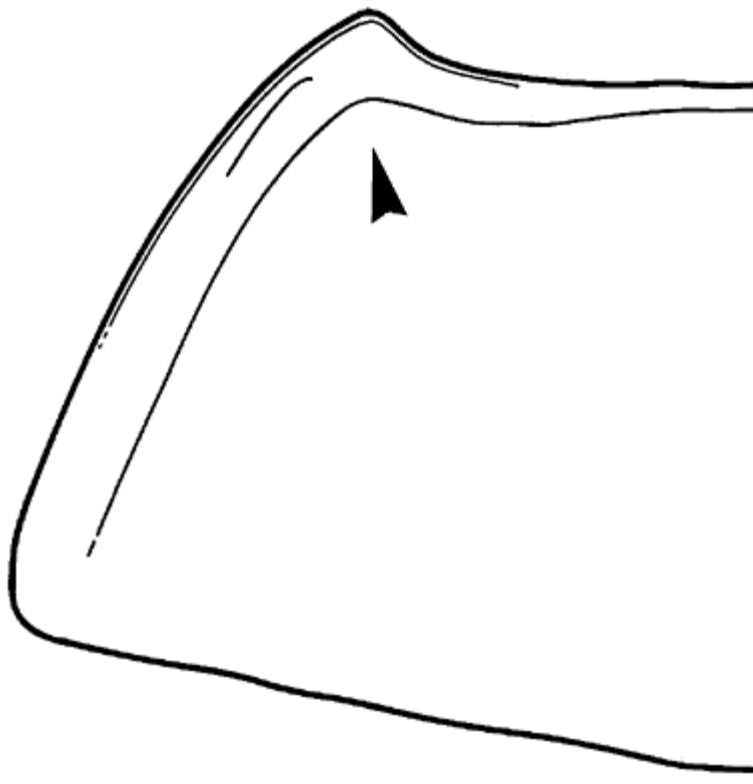


Figure 15. Pronotum (left half) of *Margarinotus faedatus*

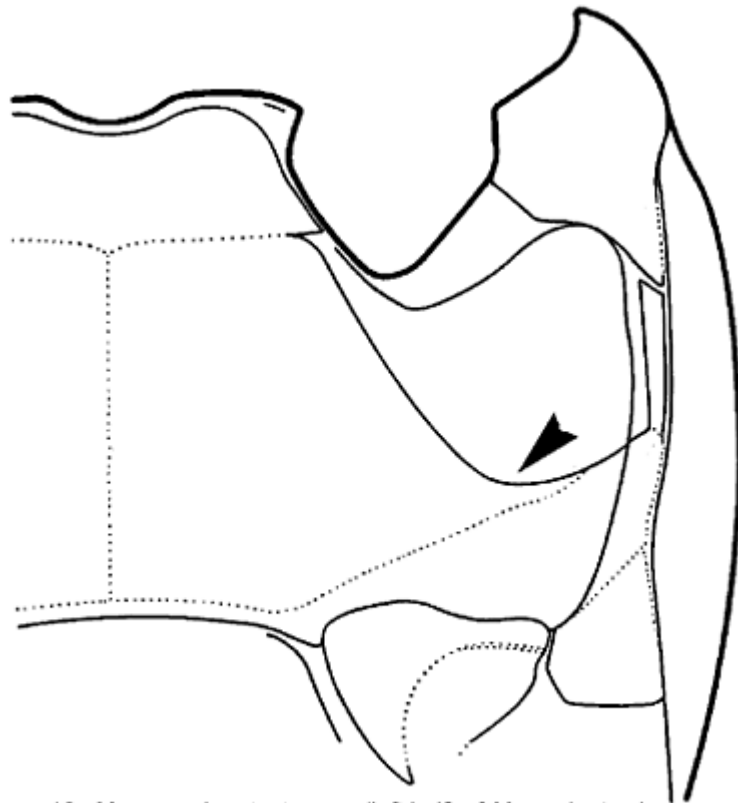


Figure 16. Meso- and metasternum (left half) of *Margarinotus brunneus*

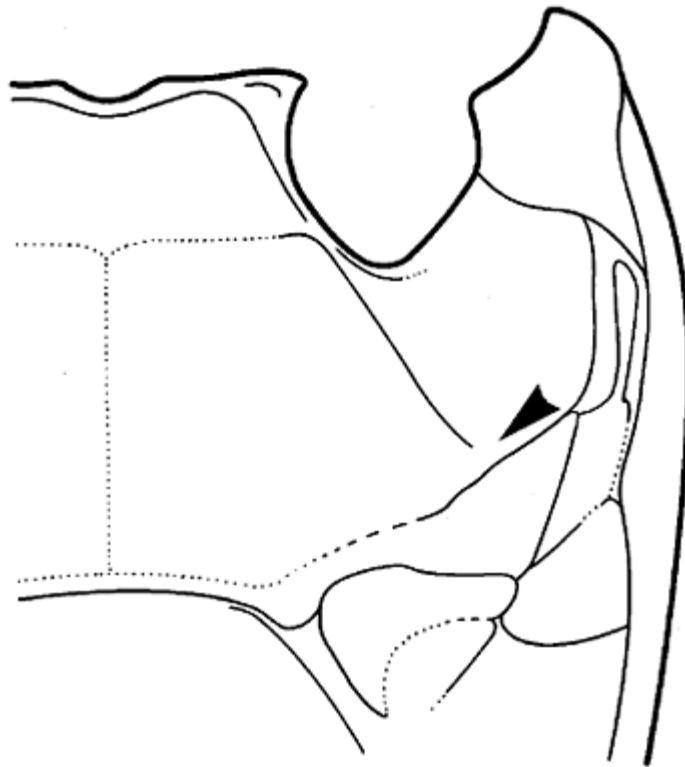


Figure 17. Meso- and metasternum (left half) of *Margarinotus faedatus*

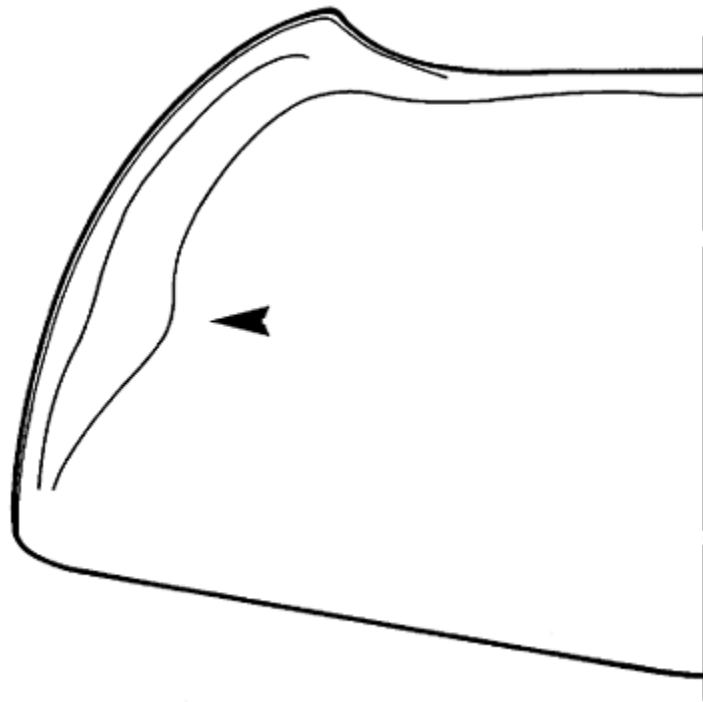


Figure 18. Pronotum (left half) of *Margarinotus merdarius*

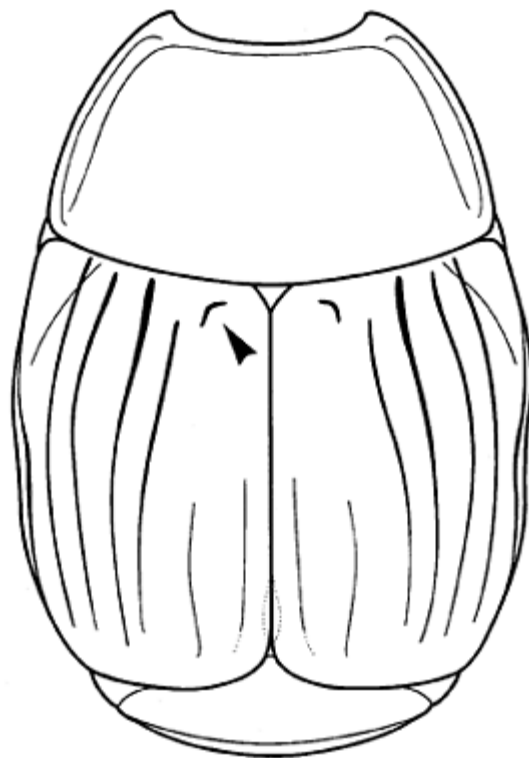


Figure 19. Dorsal surface of *Margarinotus interruptus*

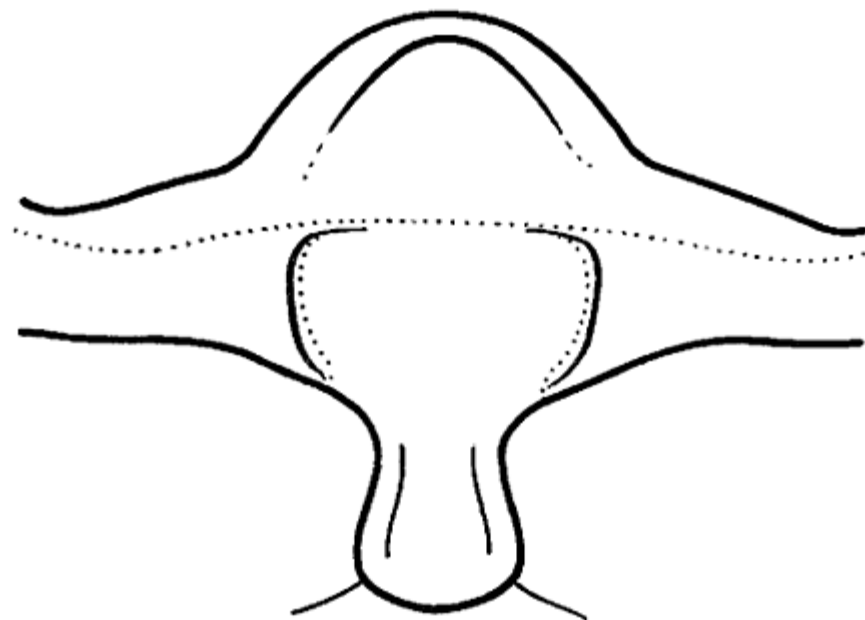


Figure 20. Prosternum of *Margarinotus lecontei*

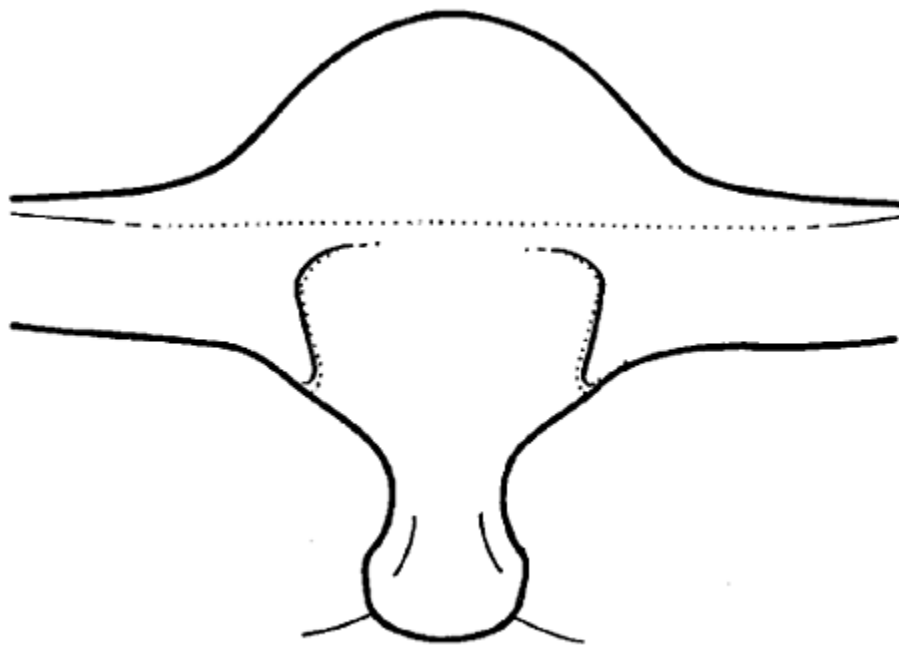


Figure 21. Prosternum of *Margarinotus faedatus*