

**A revision of Canadian *Leptusa* KRAATZ  
(Col., Staphylinidae, Aleocharinae): new species,  
new distribution records, key and taxonomic considerations**

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**Abstract**

A revision of the Canadian species of the genus *Leptusa* KRAATZ is presented. Seventeen valid species are recognized in America north of Mexico, nine of which occur in Canada. Three species are new to science, one represents new Canadian (NCR), and five new provincial (NPR) or state records (NSR): *L. brevicollis* CASEY (New Brunswick, Nova Scotia – NPR, Ontario, Prince Edward Island – NPR, Quebec – NPR; Massachusetts – NSR, Vermont – NSR), *L. canonica* CASEY (Nova Scotia – NPR, Ontario, Quebec – NPR), *L. carolinensis* PACE (Nova Scotia, Quebec – NCR), *L. cribratula* (CASEY) (Ontario – NPR, Quebec), *L. elegans* BLATCHLEY (Ontario, Quebec – NPR), *L. gatineauensis* KLIMASZEWSKI & PELLETIER, sp. nov. (Nova Scotia, Ontario, Quebec – NCR), *L. jucunda* KLIMASZEWSKI & MAJKA, sp. nov. (New Brunswick, Nova Scotia, Ontario, Quebec – NCR), *L. opaca* CASEY (New Brunswick, Nova Scotia – NPR, Ontario – NPR, Prince Edward Island – NPR, Quebec – NPR;) and *L. pseudopaca* KLIMASZEWSKI & MAJKA, sp. nov. (Nova Scotia, Quebec; New Hampshire; West Virginia – NCR, NSR). All species occurring in Canada are redescribed, colour habitus images and line drawings of genitalia are provided and species distribution in Canada is plotted on the maps. In addition, a key to the Canadian species and a checklist of all species of America north of Mexico is given.

**Keywords:** Aleocharinae, Canada, Coleoptera, *Leptusa*, Staphylinidae, diversity.

### Introduction

This paper discusses the species of the genus *Leptusa* that have been previously recorded and recently discovered in Canada. We recognize seventeen valid species occurring in America north of Mexico (PACE 1989, GUSAROV 2003, present data), nine of which are here reported from Canada (see the checklist). Of the nine Canadian species, three are described as new (*L. gatineauensis*, *L. jucunda*, *L. pseudopaca*), one is recorded from Canada for the first time (*L. carolinensis*), and five constitute new provincial records. All species that occur in Canada are provided with new diagnoses and are well illustrated including colour images of their bodies and line drawings of the median lobe of the aedeagus in lateral view, spermatheca and the apical margin of male and female tergite eight. The median lobe and spermatheca of many species except for the new species described here, are illustrated by PACE (1989) and one, *L. pusio* (CASEY), by GUSAROV (2003). The Canadian distribution records are plotted on maps. A new key to identification is provided for Canadian species. New bionomics data are provided when available.

### Material examined

Some 500 adults of the genus *Leptusa* from Canada and the United States were examined. The great majority of non-type specimens and all the types examined were dissected, and the genital structures dehydrated in absolute alcohol, transferred to xylene, mounted in Canada balsam on celluloid microslides, and pinned with the specimens from which they originated. Drawings of the genital structures were made by tracing photographs obtained from an image processing system (Nikon SMZ800 microscope, Nikon digital camera Coolpix 950, ScanDisc and Adobe Photoshop software) that were subsequently inked on V-C tracing film. The images of forebodies, except for *L. jucunda* (Figs 1-2), were generated using an image processing system consisting of a Wild M420 stereoscopic microscope, RT Slider-Spot camera, computer and Adobe Photoshop software. Separate pictures of antenna, head, pronotum, elytra and abdomen were taken, cleaned in Adobe Photoshop to remove large pieces of dirt and defects by patching the defected areas with undefected patches from symmetrical areas and then producing the entire picture of beetles by combining the body parts together in different layers.

The dorsal and lateral external images of *L. jucunda* (Figs 1-2) were taken through a Nikon SMZ-U stereo-microscope with a ProgRes 3012 digital camera set at a resolution of 3856 × 2900 pixels. Image sets of 15 scans were taken of the specimen at various focal planes. These image sets were then processed through AutoMontage V3.04 software to produce a completely in-focus image. Further enhancing and cleaning of the images were carried out with Adobe Photoshop software.

Terminology mainly follows that used by SEEVERS (1978), KLIMASZEWSKI (1984), KLIMASZEWSKI & WINCHESTER (2002) and ASHE (2001). The ventral

part of the median lobe of the aedeagus is considered that with the foramen mediale of the bulbus with *ductus ejaculatorius* and the opposite side is considered as the dorsal part.

### Conventions

**Authorship of new taxa.** Authorship of the new species names as indicated in the text.

**Localities and specimen data.** All information related to material examined is provided separately (Appendix 1). Canadian localities are listed under province or territory. Additional data on the specimens examined from the United States are also included in a separate paragraph whenever appropriate (Appendix 1).

Abbreviations of the collections used in the text are: **AFC:** Natural Resources Canada, Canadian Forest Service, Atlantic Forestry Centre, Fredericton, New Brunswick, Canada. **CMC:** Christopher Majka collection, Halifax, Nova Scotia, Canada. **CNC:** Canadian National Collection of Insects, Agriculture and Agri-Food Canada, Ottawa, Ontario, Canada. **DEI:** Deutsches Entomologisches Institut, Eberswalde, Germany. **LFC:** Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, Sainte-Foy, Quebec, Canada. **NHNV:** Naturhistorisches Museum Wien, Vienna, Austria. **NSPM:** Nova Scotia Museum of Natural History, Halifax, Nova Scotia, Canada. **PURC:** Purdue University, West Lafayette, Indiana, United States. **SEM:** Snow Entomological Museum, The University of Kansas, Lawrence, Kansas, United States. **SPC:** Stewart Peck collection, Carleton University, Ottawa, Canada. **USNM:** Smithsonian Institution, United States National Museum of Natural History, Washington, District of Columbia, United States.

### Systematics

#### Tribe Homalotini HEER 1839

(=Bolitocharini THOMSON 1859)

Homalotida HEER, 1839: 305. Type genus: *Homalota* MANNERHEIM, 1831 (*sensu latiore* of ERICHSON, 1837). See also NEWTON & THAYER 1992: 50.

#### Diagnosis

**Adults.** Structurally diverse group of aleocharine beetles that may be recognized by the following combination of characters: tarsi 4,4,5-segmented, mandibles bear minute denticles in the ventral molar region, bases of medial setae of prementum very close together, and medial pseudopore field of prementum very narrow (SEEVERS 1978, ASHE 2001, KLIMASZEWSKI et al. submitted).

#### Subtribe Bolitocharina THOMSON, 1859

Bolitocharina THOMSON 1859: 31; ASHE 2001: 365. Type genus: *Bolitochara* MANNERHEIM. For details, see NEWTON & THAYER 1992: 51.

### Diagnosis

**Adults.** Integument often coarsely asperate, body usually convex, sometimes subcylindrical, labial palpi 3-segmented and not styliform, with basal two segments indistinctly separated in *Leptusa* KRAATZ, ligula slender and elongate, mandibles with large patch of densely arranged denticles in ventral molar region, medial setae of prementum arranged one behind the other, medial "pseudopore field" of prementum narrow and without pseudopores, male tergites seven and eight often with secondary sexual structures consisting of carinae or knobs and tergite eight often emarginated and bearing dents or denticles (SEEVERS 1978, ASHE 2001). Adults and larvae occur in association with macrofungi, especially the Polyporaceae and lignicolus Agaricales (ASHE 2001).

### *Leptusa* KRAATZ, 1856

(Figs 1-61)

*Leptusa* KRAATZ 1856: 60; BERNHAUER & SCHEERPELTZ 1926: 553; SMETANA 1973: 3; LOHSE 1974: 42; MOORE & LEGNER 1975: 483; SEEVERS 1978: 164; PACE 1989: 25; ASHE 2001: 366; ASSING 2002: 971, 972; GUSAROV 2002: 115, 2003: 113; GUSAROV & HERMAN 2003: 191.

Type species: *Bolitochara pulchella* MANNERHEIM (GUSAROV & HERMAN 2003).

### Diagnosis

Body convex, subparallel, integument usually asperate, pronotum often granulose and broadest at apical third, elytra variable in length, sometimes shorter than pronotum, abdomen subparallel or broadening apically, eyes small, three basal antennal segments elongate, remaining segments quadrate to transverse, maxillary palpus 4-segmented, apical segment narrow, about third length of penultimate segment (Fig. 16, PACE 1989: 26), labial palpi 3-segmented but basal two segments indistinctly separated (Fig. 15, PACE 1989: 26), last segment narrow, glossa slender and entire (Fig. 15, PACE 1989: 26), mandible robust with small molar areas (Figs 17, 18, PACE 1989: 26), labrum transverse, mesocoxae narrowly separated by narrow and pointed mesosternal process which is about two thirds the length of mesocoxae (Fig. 20, PACE 1989: 26), tarsal formula 4-4-5, basal segment of metatarsus approximately as long as the two following segments or slightly longer; median lobe of aedeagus with strong and usually broad flagellum, predominantly shorter than length of the median lobe but rarely long and coiled in bulbous (subgenus *Adoxopisalia*), internal sac with two well-defined pairs of lamina basalis and apicalis of characteristic shape for different species (Figs 21, 25-27, 32, 36, 40, 44, 48, 53, 57), tubus subparallel and moderately long, spermatheca consists of spherical or moderately elongate capsule, and usually narrow and short stem (Figs 23, 29, 34, 38, 42, 46, 50, 51, 55, 59, 60).

## Bionomics

Adults occur on fungi or in bark, inside scolytid burrows or in forest litter. We have seen the guts of some Canadian species filled with fungal flesh. At least some species overwinter in an adult stage in bark beetle galleries or under bark. Species are known from coniferous and deciduous forests. Larvae: exotic species (TOPP 1978, PACE 1989).

Checklist of *Leptusa* species of America north of Mexico

Conventions: species are listed in alphabetical order, synonyms are indented; the states and provinces in bold represent the new records; species names in bold indicate presence in Canada.

*Leptusa* KRAATZ, 1856

1. *Leptusa (Heteroleptusa) atrocephala* BERNHAUER 1905: 250 (as *Leptusa*); BERNHAUER & SCHEERPELTZ 1926: 554 (as subgenus *Typhlopassilia* GANGLBAUER); LOHSE 1974: 42; MOORE & LEGNER 1975: 483 (as *Sipalia* MULSANT & REY); PACE 1989: 160 (as subgenus *Heteroleptusa* PACE) (UNITED STATES OF AMERICA: California).

*Leptusa americana* BERNHAUER 1905: 251; BERNHAUER & SCHEERPELTZ 1926: 554 (as valid species of subgenus *Leptusa* s. str.); PACE 1989: 160 (as synonym of *L. atrocephala*).

2. *L. (Eucryptusa) brevicollis* CASEY 1893: 363; BERNHAUER & SCHEERPELTZ 1926: 554; MOORE & LEGNER 1975: 483 (as *Sipalia* MULSANT & REY); PACE 1989: 116; GUSAROV 2003: 114 (CANADA: New Brunswick, Nova Scotia, Ontario, **Prince Edward Island, Quebec**; UNITED STATES OF AMERICA: **Massachusetts**, New Hampshire, New York, North Carolina, Pennsylvania, **Vermont**, Virginia).

*L. (Ulitusa) laticollis* NOTMAN, 1921: 153; BERNHAUER & SCHEERPELTZ 1926: 554; MOORE & LEGNER 1975: 483; GUSAROV 2003: 116 (as synonym of *L. brevicollis*).

3. *L. (Heteroleptusa) californiana* PACE 1989: 162 (UNITED STATES OF AMERICA: California).

4. *L. (Boreoleptusa) canonica* CASEY 1906: 351; BERNHAUER & SCHEERPELTZ 1926: 554; MOORE & LEGNER 1975: 483; PACE 1989: 82; KLIMASZEWSKI et al. 2003: 166; GUSAROV 2003: 114 (CANADA: **Nova Scotia**, Ontario, **Quebec**; UNITED STATES OF AMERICA: Iowa, Mississippi, Ohio, Pennsylvania, Texas).

*L. tricolour* CASEY 1906: 351. As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114.

*L. (s. str.) caseyi* FENYES 1907: 61 (replacement name for *L. tricolour*); BERNHAUER & SCHEERPELTZ 1926: 554 (as valid species). As synonym of

- L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114.
- L. modica* (CASEY 1911: 190, as *Silusa*). As *Bolitochara* MANNERHEIM: SEEVERS 1978: 165. As synonym of *S. rutilans*: BERNHAUER & SCHEERPELTZ 1926: 549; MOORE & LEGNER 1975: 481. As synonym of *L. canonica*: KLIMASZEWSKI et al. 2003: 166.
- L. nebulosa* CASEY 1911: 199. As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114. As synonym of *L. caseyi*: BERNHAUER & SCHEERPELTZ 1926: 554.
- L. iowensis* CASEY 1911: 200. As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114. As synonym of *L. caseyi*: BERNHAUER & SCHEERPELTZ 1926: 554.
- L. rutilans* (CASEY 1911: 190, as *Silusa*); BERNHAUER & SCHEERPELTZ 1926: 549; MOORE & LEGNER 1975: 481; SEEVERS 1978: 164. As synonym of *L. canonica*: KLIMASZEWSKI et al. 2003: 166.
5. *L. (Dysleptusa) carolinensis* PACE 1989: 252. (CANADA: Nova Scotia, Quebec; UNITED STATES OF AMERICA: North Carolina).
  6. *L. (Ulitusa) cribratula* (CASEY 1906: 348, as *Utilusa*); BERNHAUER & SCHEERPELTZ 1926: 556 (as *L. (Eucryptusa)*); MOORE & LEGNER 1975: 483; PACE 1989: 116 (CANADA: Ontario, Quebec; UNITED STATES OF AMERICA: Alabama, Florida, Ohio, Pennsylvania, Virginia).
  7. *L. (Adoxopisalia) elegans* BLATCHLEY 1910: 342 (as *L. elegans*); PACE 1989: 24 (as *Meronera* SHARP); GUSAROV 2003: 117 (as valid species of *Leptusa (Adoxopisalia)*) (CANADA: Ontario, Quebec; UNITED STATES OF AMERICA: Arkansas, Minnesota, New Jersey, New York, Pennsylvania, Vermont, Virginia).
- L. fontana* (CASEY 1911: 157, as *Sipalia* REY); BERNHAUER & SCHEERPELTZ 1926: 601 (as *Sipalia* MULSANT & REY); MOORE & LEGNER 1975: 413 (as *Evanystes* GISTEL); LOHSE & SMETANA 1988: 270 (as valid species); CAMPBELL & DAVIES 1991: 107 (as valid species of *Leptusa*); GUSAROV 2003: 117 (as synonym of *L. elegans*).
- L. virginica* CASEY 1911: 202; CASEY 1911: 202 (as *Pasilia* REY); GUSAROV 2003: 117 (as synonym of *L. elegans*).
8. *L. (Heteroleptusa) frontalis* (CASEY 1893: 366, as *Sipalia* MULSANT & REY); PACE 1989: 160. As subgenus *Pasilia* MULSANT & REY: BERNHAUER & SCHEERPELTZ 1926: 557; MOORE & LEGNER 1975: 484 (UNITED STATES OF AMERICA: California).
  9. *L. (subgenus ?) gatineauensis* KLIMASZEWSKI & PELLETIER, sp. nov. (CANADA: Nova Scotia, Ontario, Quebec).
  10. *L. (Boreoleptusa) jucunda* KLIMASZEWSKI & MAJKA, sp. nov.

**(CANADA: New Brunswick, Nova Scotia, Ontario, Quebec).**

11. *L. (Eucryptusa) nanula* (CASEY 1893: 352, As *Silusa* ERICHSON). As *L. (Eucryptusa)* CASEY; BERNHAUER & SCHEERPELTZ 1926: 556; MOORE & LEGNER 1975: 484; PACE 1989: 116 (UNITED STATES OF AMERICA: Iowa, Rhode Island).
- L. immunitis* (CASEY 1911: 204, as *Eucryptusa* CASEY); PACE 1989: 116 (as synonym of *L. nanula*).
12. *L. obscura* BLATCHLEY, 1910: 343; BERNHAUER & SCHEERPELTZ 1926: 555 (as valid species); PACE 1989: 82 (as synonym of *L. canonica*); GUSAROV 2003: 114 (as valid species) (UNITED STATES OF AMERICA: Indiana).
13. *L. (Adoxopisalia) opaca* CASEY 1893: 364; BERNHAUER & SCHEERPELTZ 1926: 555; PACE 1989: 130; GUSAROV 2003: 118 (CANADA: New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Quebec; UNITED STATES OF AMERICA: Arkansas, Georgia, New York, North Carolina, Pennsylvania, Rhode Island, Wisconsin).
- L. seminitens* CASEY 1893: 364. As synonym of *L. opaca*: BERNHAUER & SCHEERPELTZ 1926: 555; PACE 1989: 130; GUSAROV 2003: 118.
14. *L. (Adoxopisalia) pseudopaca* KLIMASZEWSKI & MAJKA, sp. nov. (CANADA: Nova Scotia, Quebec; UNITED STATES OF AMERICA: New Hampshire, West Virginia).
15. *L. (Dysleptusa) pusio* (CASEY, 1906: 348, as *Ulitusa*). As *Leptusa*: BERNHAUER & SCHEERPELTZ 1926: 556; MOORE & LEGNER 1975: 484; PACE 1989: 107; GUSAROV 2003: 115 (UNITED STATES OF AMERICA: Ohio).
16. *L. (Dysleptusa) smetanaiella* PACE 1989: 248 (UNITED STATES OF AMERICA: North Carolina).
17. *L. (Adoxopisalia) smokyensis* PACE 1989: 252 (UNITED STATES OF AMERICA: North Carolina).

**Species excluded from the genus *Leptusa* (PACE 1989: 22-24)**

- Leptusa exposita* CASEY 1911: 201; MOORE & LEGNER 1975: 484. As synonym of *Neodemosoma semirufa* (CASEY 1906: 352); PACE 1989: 23, as *N. semirufum*.
- Leptusa fragilis* (CASEY 1911: 204, as *Eucryptusa* CASEY). As synonym of *Dianusa pavidata* (CASEY 1911: 204); PACE 1989: 23.
- L. haemorrhoidalis* HEER 1839: 332; MOORE & LEGNER 1975: 484. As synonym of *Amischa analis* GRAVENHORST: BERNHAUER & SCHEERPELTZ 1926: 593.

- L. pasadenae* (CASEY 1906: 347, as *Dianusa* CASEY). As *L. (Eucryptusa) pasadenae* (Casey): BERNHAUER & SCHEERPELTZ 1926: 556; MOORE & LEGNER 1975: 484. Transferred to the original combination *Dianusa pasadenae* CASEY by PACE 1989: 23.
- L. bakeri* (CASEY 1911: 205, as *Eucryptusa (Dianusa) bakeri*). As synonym of *L. pasadenae*: BERNHAUER & SCHEERPELTZ 1926: 556; MOORE & LEGNER 1975: 484.
- L. pavidata* (CASEY 1911: 203, as *Eucryptusa* CASEY). As *L. (Eucryptusa) pavidata*: BERNHAUER & SCHEERPELTZ 1926: 556; MOORE & LEGNER 1975: 484. Transferred to *Dianusa* CASEY: PACE 1989: 23.
- L. semirufa* CASEY 1906: 352. As *Leptusa* s. str.: BERNHAUER & SCHEERPELTZ 1926: 555; MOORE & LEGNER 1975: 484. Transferred to *Neodemosoma* CASEY: PACE 1989: 23.

#### Species insertae sedis

- L. gracilis* (SACHSE 1852: 119, as *Silusa* ERICHSON); BERNHAUER & SCHEERPELTZ 1926: 557; KLIMASZEWSKI et al. 2003: 166. As *Silusa*: MOORE & LEGNER 1975: 481. As species *insertae sedis*: PACE 1989: 252. Type (sex unknown): [U.S.A.], Georg.[ia], Gerh., *S. gracilis* SACHSE, coll. KRAATZ, *L. gracilis* Sach., R. PACE 1984 (DE). The specimen has missing genitalia and the head. We confirm this species belongs to the genus *Leptusa* and is similar to *L. canonica* but the positive identification may only be possible by using molecular methods.

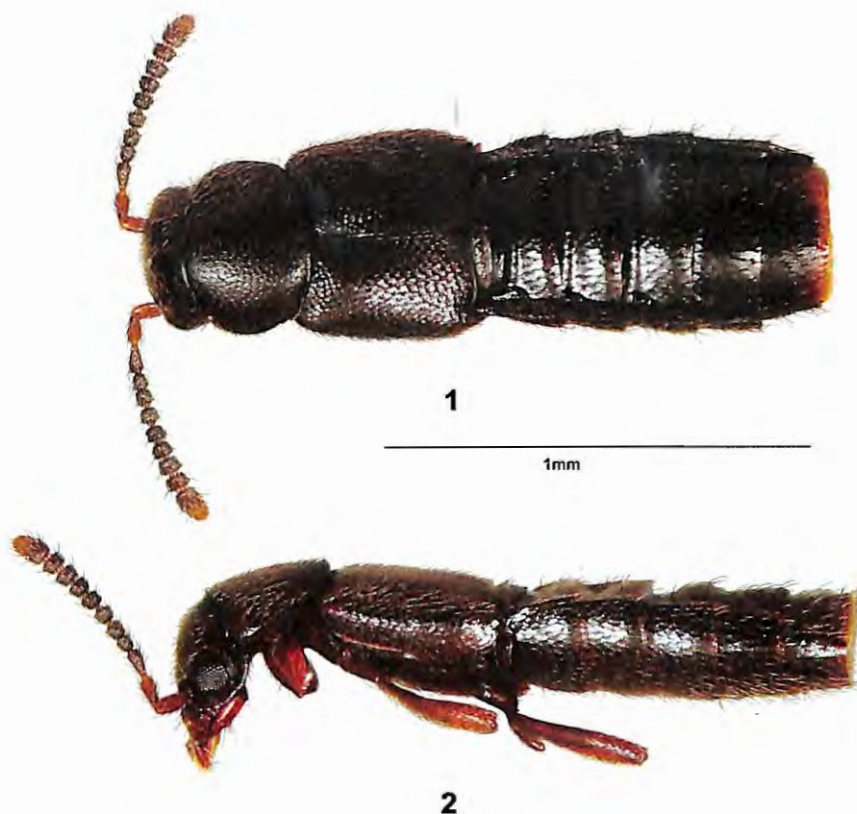
#### Key to adults of the genus *Leptusa* occurring in Canada

1. Elytra extremely short, at suture shorter than pronotum (Fig. 9), body light yellowish-brown with darker head and base of tergites six and seven; median lobe of aedeagus, spermatheca and apical margin of male and female tergite eight as illustrated (Figs 48-52) . . . *L. elegans* BLATCHLEY
  - Elytra at suture as long as pronotum (e.g., *L. pseudopaca*, Fig. 8) or longer (Figs 3-7, 10, 11), body darker, reddish brown or black (Figs 3-7, 10, 11), median lobe of aedeagus and spermatheca differently shaped . . . . . 2
2. Forebody opaque and integument of velvety appearance (Figs 7, 8) . . . . . 3
  - Forebody more or less glossy (except for semiopaque in *L. canonica*, Fig. 3), but integument never of velvety appearance . . . . . 4
3. Elytra larger, broader and longer than pronotum (Fig. 7); body usually black but occasionally reddish brown; terminal antennal segment bright orange yellow and strongly contrasting with penultimate segment; median lobe of aedeagus, spermatheca and male/female apex of tergite eight as illustrated (Figs 40-43) . . . . . *L. opaca* CASEY
  - Elytra about as large, long and broad as pronotum (Fig. 8); body reddish-brown to blackish with rust tinge; terminal antennal segment yellowish

- brown and slightly contrasting with penultimate segment; median lobe of aedeagus, spermatheca and apex of male/female tergite eight as illustrated (Figs 44-47) ..... *L. pseudopaca* KLIMASZEWSKI & MAJKA
4. Body predominantly black (Figs 1, 2, 4, 10) ..... 5  
 - Body predominantly brown or reddish-brown (Figs 3, 5, 6, 11) ..... 6
5. Body narrowly subparallel, maximum width of elytra approximately 0.4 mm (Fig. 10); pronotum about 1.3 as wide as long (Fig. 10); antennal segments 9 and 10 about 1.5 times as wide as long (Fig. 19); male tergite eight deeply and female shallowly emarginated (Figs 54, 56), spermathecal capsule narrowly elongate and sac-shaped (Fig. 55), median lobe of aedeagus as illustrated (Fig. 53) ..... *Leptusa carolinensis* PACE  
 - Body more broadly subparallel, maximum width of elytra approximately 0.6 mm (Figs 1, 4), pronotum about 1.4 times wider than long (Figs 1, 4); antennal segments 9 and 10 about 1.4 times as wide as long (Figs 1, 2, 13); male tergite eight emarginated medially and bearing small denticles (Fig. 28), female tergite eight shallowly emarginated medially but without denticles (Figs 30, 31), spermathecal capsule spherical (Fig. 29), median lobe of aedeagus as illustrated (Figs 25-27) .....  
 ..... *Leptusa jucunda* KLIMASZEWSKI & MAJKA
6. Pronotal punctures extremely coarse, distance between punctures less than their diameter (Fig. 6), median lobe of aedeagus and spermatheca as illustrated (Figs 36, 38) ..... *Leptusa cribratula* CASEY  
 - Pronotal punctures moderately coarse, distance between punctures at least equal to their diameter (Figs 3, 5, 11), genital structures differently shaped (Figs 21, 23, 32, 34, 57, 59, 60) ..... 7
7. Body minute, length 1.5-1.9 mm, broad and compact (Fig. 11), genital structures as illustrated (Figs 57-61) .....  
 ..... *Leptusa gatineauensis* KLIMASZEWSKI & PELLETIER  
 - Body medium sized, length 2.5-3.1 mm, more narrowly elongate (Figs 3, 5), genital structures as illustrated (Figs 21-24, 32-35) ..... 8
8. Pronotum about 1.3 times as wide as long, elytra at suture about as long as pronotum, forebody semiopaque, more or less uniformly reddish-brown (Fig. 3), genital structures as illustrated (Figs 21-24) .....  
 ..... *Leptusa canonica* CASEY  
 - Pronotum about 1.4 times as wide as long, elytra at suture about 1.2 times as long as pronotum, forebody glossy, head and 7-8 abdominal segments dark brown to nearly black and highly contrasting with the rest of reddish-brown body (Fig. 5), genital structures as illustrated (Figs 32-35) .....  
 ..... *Leptusa brevicollis* CASEY

### I. Subgenus *Boreoleptusa* PACE, 1989

*Boreoleptusa* PACE 1989: 82. Type species: *L. norvegica* STRAND. For diagnosis, see PACE 1989: 82.



Figs 1-2. Colour images of *Leptusa jucunda* sp. nov., in dorsal and lateral view.

**Diagnosis.** *Boreoleptusa* may be recognized by the following combination of characters: forebody densely pubescent and punctuated, eyes moderately large; lamina apicalis of the internal sac of aedeagus large and with apical denticles, lamina basalis approximately L-shaped in lateral view (Figs 21, 25-27).

*1. Leptusa (Boreoleptusa) canonica* CASEY  
(Map 1, Figs 3, 12, 21-24; PACE 1989: Figs 401-405)

*Leptusa canonica* CASEY 1906: 351; BERNHAUER & SCHEERPELTZ 1926: 554; MOORE & LEGNER 1975: 483; PACE 1989: 82; KLIMASZEWSKI et al. 2003: 166; GUSAROV 2003: 114. **Lectotype** (male): USA, Mississippi, Vicksburg, USNM type 39583 (USNM/SEM). Designated by PACE 1989. **Non-type material:** Appendix 1.

*L. tricolour* CASEY 1906: 351. As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114.

*L.(s. str.) caseyi* FENYES 1907: 61 (replacement name for *L. tricolour*); BERNHAUER & SCHEERPELTZ 1926: 554 (as valid species). As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114.

*L. modica* (CASEY 1911: 190, as *Silusa*). As *Bolitochara* MANNERHEIM: SEEVERS 1978: 165. As synonym of *S. rutilans*: BERNHAUER & SCHEERPELTZ 1926: 549; MOORE & LEGNER 1975: 481. As synonym of *L. canonica*: KLIMASZEWSKI et al. 2003: 166.

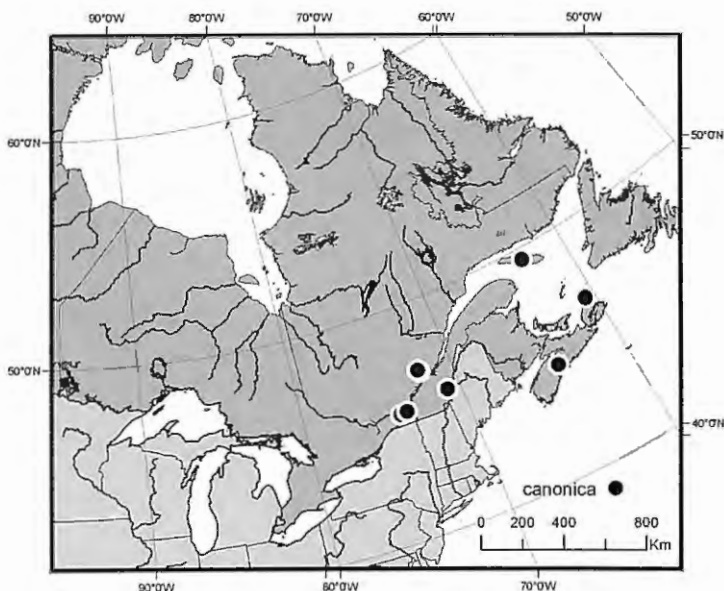
*L. nebulosa* CASEY 1911: 199. As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114. As synonym of *L. caseyi*: BERNHAUER & SCHEERPELTZ 1926: 554.

*L. iowensis* CASEY 1911: 200. As synonym of *L. canonica*: MOORE & LEGNER 1975: 483; PACE 1989: 82; GUSAROV 2003: 114. As synonym of *L. caseyi*: BERNHAUER & SCHEERPELTZ 1926: 554.

*L. rutilans* (CASEY 1911: 190, as *Silusa*); BERNHAUER & SCHEERPELTZ 1926: 549; MOORE & LEGNER 1975: 481; SEEVERS 1978: 164. As synonym of *L. canonica*: KLIMASZEWSKI et al. 2003: 166.

#### Diagnosis

Body length 2.5-3.1 mm; either dark brown with slightly lighter legs and one apical and two basal segments of antennae or body light reddish-brown with dark brown abdominal tergite six and basal part of tergite seven, and with yellowish-brown legs and one apical and two basal segments of antennae (Fig. 3); integument moderately coarsely punctate; antenna: three basal segments strongly elongate, third slightly shorter than the second, fourth slightly elongate, fifth about quadrate, and six to ten slightly to progressively strongly transverse (Fig. 12); pronotum transverse, about as long as elytra at suture, punctation moderately coarse, distance between punctures approximately equal to diameter of a puncture (Fig. 3); elytra transverse; abdomen subparallel with three basal tergites deeply impressed basally and bearing coarse punctation (Fig. 3). MALE. Tergite eight shallowly emarginated apically and bearing several denticles (Fig. 22); sternite eight broadly triangular apically; median lobe of aedeagus (Fig. 21): crista apicalis of bulbus narrowly elongate, tubus short, moderately projecting ventrad, ventral edge nearly straight; internal sac with flagellum shorter than length of median lobe, lamina basalis approximately L-shaped and broadening posteriorly, lamina apicalis broadly falciform. FEMALE. Tergite eight shallowly emarginated medially at apex (Fig. 24), distance between antecostal suture and basal margin long; sternite eight slightly produced apically, distance between antecostal suture and basal margin moderately long, antecostal suture sinuate; spermatheca: capsule spherical with shallow apical invagination, and stem (chamber) short and nearly straight (Fig. 23).



Map 1. Collection localities in Canada of *L. canonica*.

### Bionomics

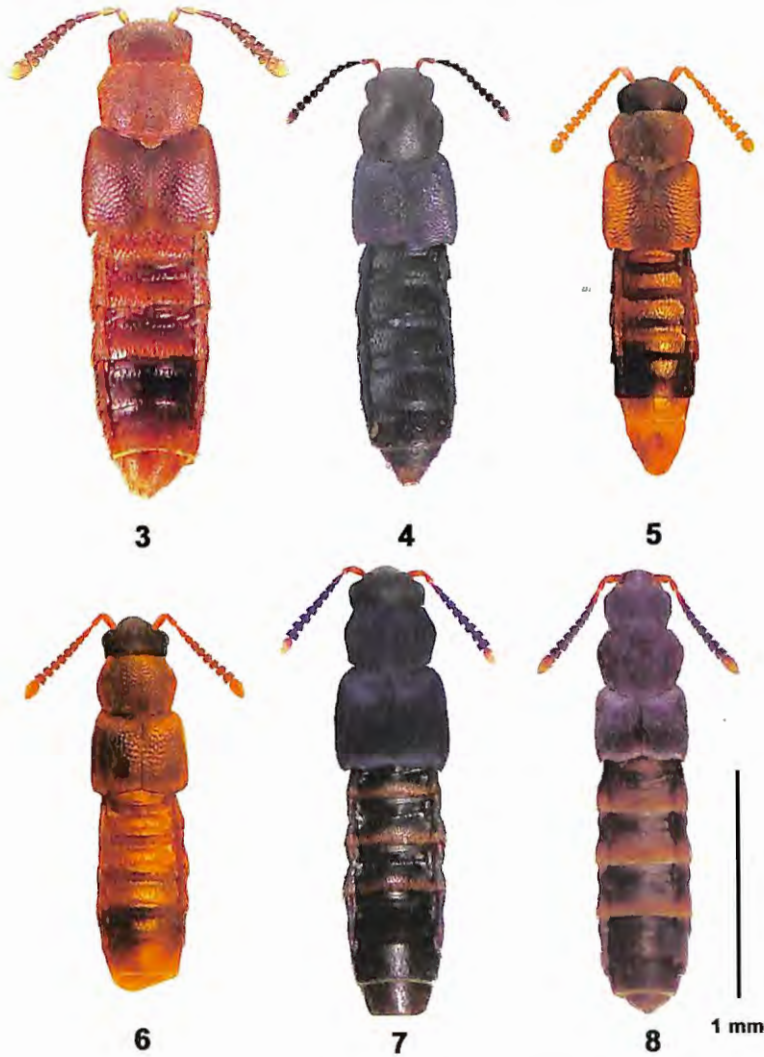
Some specimens were captured from maple forest using Lindgren traps and a number of specimens were captured from yellow birch/balsam fir forest using 4-winged intercept traps (June-August). In Nova Scotia, a specimen was captured in an old growth (>250 years old) red spruce (*Picea rubens* SARG.) forest in a flight-intercept trap. The collecting methods imply that some adults of *L. canonica* have been attracted by tree trunks and that they are active flyers from early June till at least August. Collecting period: June through September.

### Geographic distribution (Map 1).

CANADA: Nova Scotia, Ontario, Quebec; UNITED STATES OF AMERICA: Iowa, Mississippi, Ohio, Pennsylvania, Texas.

### Comments

Females of *L. canonica* are somewhat similar to those of *L. brevicollis*. The spermatheca of *L. canonica* has a slightly shorter stem and the female tergite eight is shallowly emarginated apically (Fig. 24) while in *L. brevicollis*, tergite eight has truncated apex without distinct emargination (Fig. 35). The pronotum of *L. canonica* is 1.3 times as wide as long and gradually converging basally while it is 1.4 times as wide as long and rapidly converging basally in *L. brevicollis* (Figs 3, 5).



Figs 3-8. Colour images of *Leptusa* species: 3, *L. canonica* CASEY; 4, *L. jucunda* sp. nov.; 5, *L. brevicollis* CASEY; 6, *L. cribratula* (CASEY); 7, *L. opaca* CASEY (tip of abdomen missing); and 8, *L. pseudopaca* sp. nov.

**2. *Leptusa* (*Boreoleptusa*) *jucunda* KLIMASZEWSKI & MAJKA, sp. nov.**  
(Map 2, Figs 1-2, 4, 13, 25-31)

**Holotype** (male): CANADA, Quebec, Mont Mégantic, Que.[bec], Lindgren 3, Erablière, 99-3-0323 (LFC). **Paratypes**: listed in Appendix 1.

### Etymology

This species name derives from the Latin adjective *jucundus* – “beautiful”, in allusion to the pleasant body form of this species. The gender is feminine.

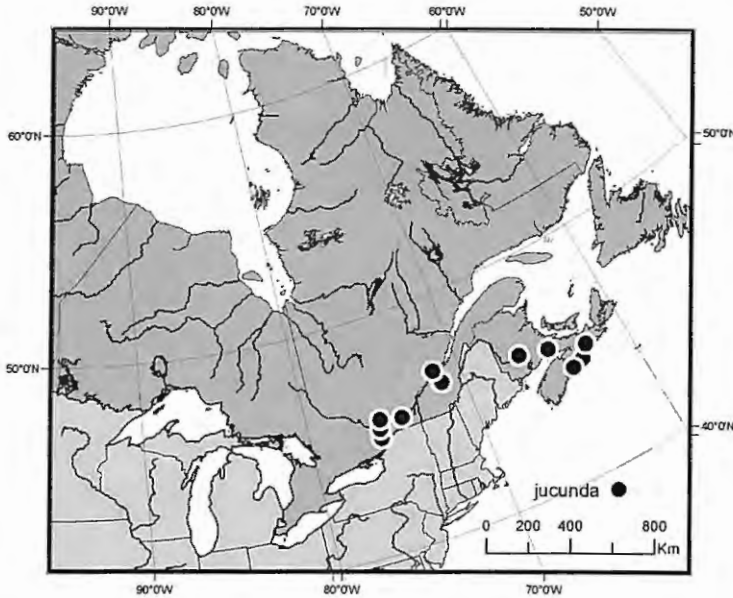
### Diagnosis

Body length 1.8-2.9 mm; black with rust-brown tarsi and one apical and two basal segments of antennae, sometimes elytra and part of abdomen bearing reddish tinge, rarely body appears blackish-brown (Figs 1, 2, 4); integument moderately coarsely punctate with isodiametric microsculpture; antenna: three basal segments strongly elongate, third about as long as the second, fourth slightly elongate, fifth quadrate, and six to ten slightly transverse and more so toward the apex (Figs 1, 2, 13); pronotum transverse, about 1.4 times as wide as long, punctuation moderately coarse and slightly asperate (Figs 1, 4); elytra slightly transverse, at suture about 1.1 times as long as pronotum (Figs 1, 4); abdomen subparallel with three basal tergites deeply impressed basally and bearing moderately coarse punctuation (Figs 1, 4). MALE. Tergite eight shallowly emarginated apically and bearing several denticles (Fig. 28); sternite eight produced medially and with pointed apex; median lobe of aedeagus (Figs 25-27): crista apicalis of bulbus narrowly elongate, tubus short, moderately projecting ventrad, ventral edge slightly sinuate; internal sac with flagellum shorter than length of the median lobe, lamina basalis approximately pipe-shaped, lamina apicalis broadly rectangular anteriorly and narrowed and projecting ventrad posteriorly in lateral view, apical and dorsal edge with minute denticles. FEMALE. Tergite eight with shallow apical emargination (Figs 30, 31), space between antecostal suture and basal margin large; sternite eight slightly produced apically; spermatheca: capsule spherical with shallow apical invagination, and stem (chamber) short and slightly arched (Fig. 29).

### Bionomics

Some specimens in Quebec were captured from a maple forest using Lindgren traps. In New Brunswick, one male was captured inside Scolytine galleries in a coastal white spruce (*Picea glauca* (MOENCH) Voss) forest. These galleries were excavated and inhabited by individuals of *Polygraphus rufipennis* (KIRBY), *Dryocoetes autographus* (RATZEBURG), *Orthotomicus caelatus* (EICHOFF), and *Crypturgus pusillus* (GYLLENHAL).

In Nova Scotia, the species was found to be abundant on fallen limbs and trunks of red spruce (*Picea rubens* SARG.), white pine (*Pinus strobus* LINNÉ), and jack pine (*Pinus banksiana* LAMB.) in the subcortical galleries of scolytines including (chiefly) *Ips pini* (SAY), *Polygraphus rufipennis* (KIRBY), *Pityogenes hopkinsi* SWAINE, *Orthotomicus caelatus* (EICHOFF), *Dryocoetes affaber* (MANNERHEIM), *Crypturgus borealis* (SWAINE), and *C. pusillus* (GYLLENHAL). Other Coleoptera co-inhabiting this environment include *Syntomus americanus* (DEJEAN) (Carabidae: Harpalinae); *Paromalus teres* LÉCONTE (Histeridae: Dendrophilinae); *Nudobius cephalus* (SAY) (Staphylinidae: Staphylininae); *Phloeonomus laesicollis* MÄKLIN (Staphylinidae: Omaliinae); and *Homalota plana* GYLLENHAL and *Placus*



Map 2. Collection localities in Canada of *L. jucunda*.

*tacoma* CASEY (Staphylinidae: Aleocharinae), all of which are present as adults during the winter months (the Scolytines additionally as larvae of various instars). Other arthropods include several species of Oribatid mites and Collembola. There are also a variety of blue-stain (*Ophiostoma*) and soft-rot fungi present in these galleries.

A year-round sampling program reveals that adults of this species are largely present from November 15 to April 27, during the late fall, winter, and spring (there is one exceptional record from September 9). Frequent sampling in the habitat through the remainder of the year shows no adults to be present. Furthermore, sampling during the winter months (December, February, and March) revealed that the adults are quite active diurnally. The bark absorbs sunlight and warms and defrosts the subcortical environment on sunny days. Peeling the bark revealed them moving rapidly and showing no signs of torpor.

Geographic distribution (Map 2).

**CANADA: New Brunswick, Nova Scotia, Ontario, Quebec.**

#### Comments

This species is externally and genitally extremely similar to *L. norvegica* Strand, and only after thorough deliberation we decided to describe Canadian specimens as belonging to a new but closely related species. We have

compared the Canadian specimens with the syntypes of *L. norvegica* represented by both sexes (MNHV) and have found some small but consistent differences. The body colour is brown to reddish-brown in *L. norvegica* but is consistently black in *L. jucunda*. Although we did not see an extensive series of *L. norvegica* to evaluate the colour variation in this species, all major European publications indicate that the species is brown to reddish-brown. Besides the colour and slightly smaller and slimmer body in *L. jucunda*, we have not found other external morphological differences between the two species. Female terminalia and spermatheca are practically indistinguishable in the two species. The spermathecae however, are very similar in closely related species of *Leptusa* (see Figs 23, 29, 34, 38, and PACE 1989). Male tergite eight bears minute apical crenulations in *L. norvegica* but much stronger ones in *L. jucunda* (Fig. 28). The shape of the median lobe of the aedeagus is similar in the two species but the shape of the lamina basalis and lamina apicalis are slightly different and the differences are consistent (Figs 25-27; PACE 1989: Figs 397-399). The lamina apicalis is strongly pigmented and broader apically in *L. jucunda* (Figs 25-27), while it is less pigmented and narrower apically in *L. norvegica* (PACE 1989: Fig. 397). The lamina basalis is differently twisted posteriorly in the two species. In *L. jucunda*, it is more sinuate and strongly twisted first forward dorsally and then slightly posteriorly with only the central part strongly pigmented (Fig. 26), but in *L. norvegica* it is more evenly pigmented, broader and more regularly sinuate with the posterior part curved under and forward on the main body of the lamina (PACE 1989: Fig. 397). The crista apicalis is broader in *L. norvegica* and narrower in *L. jucunda* (Figs 25-27; PACE 1989: Fig. 397). *L. jucunda* is also broadly distributed in eastern Canada and found in mature forests. Large population studies and molecular analysis of both species would be a welcome contribution to remove doubts about the status of the two species.

## II. Subgenus *Eucryptusa* CASEY, 1906

*Eucryptusa* CASEY 1906: 345. Type species: *Eucryptusa nanula* (CASEY) (*Silusa*). For diagnosis, see PACE 1989: 82.

**Diagnosis.** *Eucryptusa* may be recognized by the following combination of characters: forebody densely pubescent and punctated, eyes large; lamina apicalis broadly falciform and without apparent denticles apically, lamina basalis narrow and sinuate medially (approximately Z-formed) in lateral view (Fig. 32).

### 3. *Leptusa (Eucryptusa) brevicollis* CASEY (Map 3, Figs 5, 14, 32-35; PACE 1989: Figs 637-641)

*Leptusa (Eucryptusa) brevicollis* CASEY 1893: 363; BERNHAUER & SCHEERPELTZ 1926: 554; MOORE & LEGNER 1975: 483 (as *Sipalia* MULSANT & REY); PACE 1989: 116; GUSAROV 2003: 114. **Lectotype** (male): USA, Pennsylvania, USNM type 39577. Designated by PACE 1989.

**Non-type material:** Appendix 1.

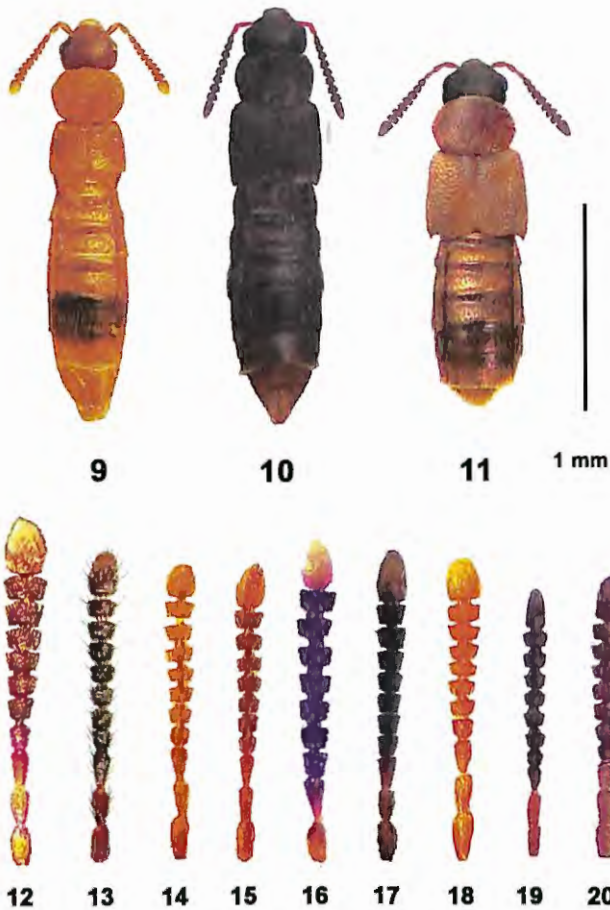
*L. (Ulitusa) laticollis* NOTMAN, 1921: 153; BERNHAUER & SCHEERPELTZ 1926: 554; MOORE & LEGNER 1975: 483; GUSAROV 2003: 116 (as synonym of *L. brevicollis*).

**Diagnosis**

Body length 2.5-3.0 mm [3 exceptionally small males 2 mm long were found in Quebec]; dark rust-brown with slightly paler antennae, legs or tarsi only and base and apex of abdomen, sometimes entire body dark brown with rust-brown edges, legs and antennae (Fig. 5); integument moderately coarsely punctate with isodiametric microsculpture; antenna: three basal segments strongly elongate, third about as long as the second, fourth quadrate, five to ten transverse with seven to ten strongly so (Fig. 14); pronotum transverse, strongly converging basally and broadest in apical third, about 1.4 times as wide as long, punctation moderately coarse and slightly asperate, distance between punctures slightly greater than the diameter of a puncture (Fig. 5); elytra slightly transverse, at suture about 1.2 times as long as pronotum (Fig. 5); abdomen subparallel with three basal tergites deeply impressed basally and bearing coarse punctation (Fig. 5). MALE. Tergite eight broadly rounded apically and lacking denticles (Fig. 33); sternite eight produced medially and with round apex; median lobe of aedeagus (Fig. 32): crista apicalis of bulbus narrowly falciform, tubus moderately long, slightly projecting ventrad, ventral edge sinuate and bearing minute basal protuberance; internal sac with flagellum shorter than length of median lobe, lamina basalis narrow and sinuate, lamina apicalis broadly falciform. FEMALE. Tergite eight truncate apically (Fig. 35), space between antecostal suture and basal margin broad; sternite eight slightly produced apically, space between antecostal suture and basal margin moderately broad; spermatheca: capsule spherical with deep apical invagination, and stem (chamber) short and curved (Fig. 34).

**Bionomics**

Adults were captured using the following methods: Lindgren traps, pitfall traps (unbaited or baited with dung), intercept traps (e.g. Malaise traps, 4-winged intercept traps), sifting forest litter and processing it through Berlese funnels (e.g., alder, birch, or maple/oak forest litter), hand picking from fungi (*Ammanita gemmata* (Fr.) Gill., *Fomes fometarius* (L.: Fr.) J. Kickx fill.), under bark of *Picea glauca* (MOENCH) VOSS, sweeping vegetation in deciduous forest, in rotten tree cankers. This species occurred in alder (*Alnus* sp.), sugar maple (*Acer saccharum* MARSH.), maple/oak (*Acer* sp./*Quercus* sp.), red spruce (*Picea rubens* SARG.), red spruce/hemlock (*Tsuga canadensis* L. CARRIÈRE), balsam fir (*Abies balsamea* L.) and yellow birch (*Betula alleghaniensis* BRITT.), and balsam fir forests. In one locality in a coastal white spruce (*Picea glauca* (MOENCH) Voss) forest in Nova Scotia, they were abundant in Scolytine burrows excavated by *Dryocoetes autographus* (RATZEBURG) together with *Leptusa opaca* CASEY and *Phloeopora* sp. (Staphylinidae: Aleocharinae). On Prince Edward Island, a single individual



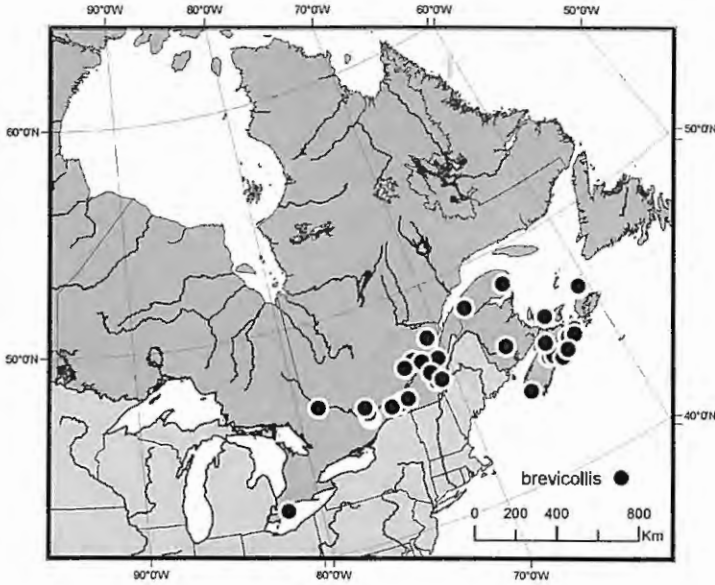
Figs 9-20. Colour images of *Leptusa* species. Habitus: 9, *L. elegans* (BLATCHLEY); 10, *L. carolinensis* PACE; 11, *L. gatineauensis* sp. nov. Antenna: 12, *L. canonica* CASEY; 13, *L. jucunda* sp. nov.; 14, *L. brevicollis* CASEY; 15, *L. cribratula* (CASEY); 16, *L. opaca* CASEY; 17, *L. pseudopaca* sp. nov.; 18, *L. elegans* BLATCHLEY; 19, *L. caroliensis* PACE; 20, *L. gatineauensis* sp. nov.

was found in an old scolytine burrow in red spruce (*Picea rubens* SARG.) where it was found with *Leptusa opaca* CASEY, *Carphonotus testaceus* CASEY (Curculionidae: Cossoninae), and *Paromalus teres* LÉCONTE (Histeridae: Dendrophilinae).

Collecting period: May through October, and in December.

Geographic distribution (Map 3).

CANADA: New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Quebec; UNITED STATES OF AMERICA: Massachusetts, New Hampshire, New York, North Carolina, Pennsylvania, Vermont, Virginia.



Map 3. Collection localities in Canada of *L. brevicollis*.

#### Comments

Three males from Lac des Étangs (Quebec) were unusually small, about 2 mm long, and outside the average size range for *L. brevicollis*. However, we could not find any external and genital morphological characters differentiating them from *L. brevicollis* and therefore we consider them as the extreme size variations for this species.

### III. Subgenus *Ulitusa* (CASEY)

*Ulitusa* CASEY 1906: 347; PACE 1989: 116. Type species: *L. cribratula* (CASEY), designated by CASEY 1911: 206. For diagnosis, see CASEY 1911: 206, and PACE 1989: 116.

**Diagnosis.** *Ulitusa* may be recognized by the following combination of characters: forebody moderately densely pubescent with integument strongly coarsely punctate and particularly so on pronotum (Fig. 6), eyes large; lamina apicalis broadly tape-formed and without apparent denticles apically, lamina basalis narrow and sinuate posteriorly (Fig. 36).

**4. *Leptusa (Ulitusa) cribratula* (CASEY)**

(Map 4, Figs 6, 15, 36-39; PACE 1989: 117, Figs 642-646)

*Leptusa (Ulitusa) cribratula* (CASEY 1906: 348, as *Ulitusa*); BERNHAUER & SCHEERPELTZ 1926: 556 (as *L. (Eucryptusa)*); MOORE & LEGNER 1975: 483; PACE 1989: 116. **Holotype** (female): USA, Ohio, Cincinnati, Chas. Dury, USNM type 39594 (USNM). Non-type specimens are listed in Appendix 1.

**Diagnosis**

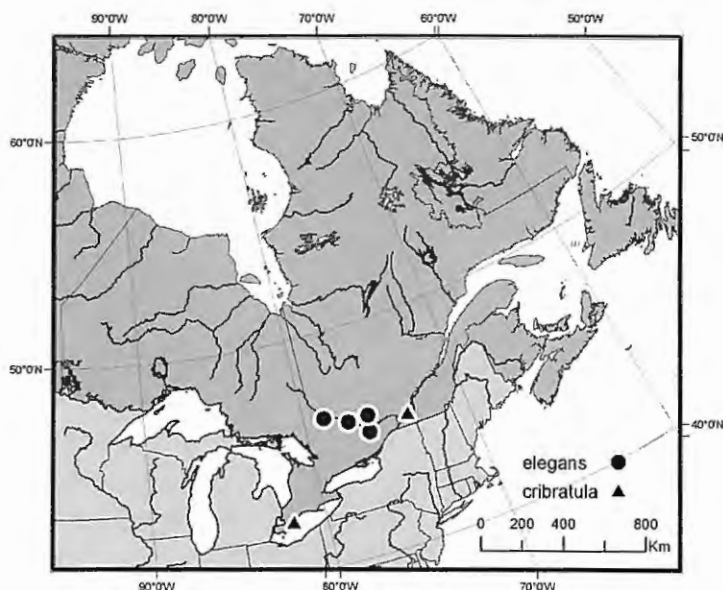
Body length 2.0-2.5 mm; dark rust-brown with slightly paler three basal and often terminal antennal segments, legs or tarsi only and basal and apical part of abdomen, sometimes edges of pronotum and posterior part of elytra appear light reddish-brown or rarely entire body is light rust-brown with darker tergite six (Fig. 6); integument of forebody strongly coarsely punctate (particularly so on pronotum, Fig. 6) and with isodiametric microsculpture; antenna: three basal segments strongly elongate, third about slightly shorter than the second, fourth elongate, fifth about quadrate, six to ten moderately transverse and more so toward the apex (Fig. 15); pronotum transverse, strongly converging basally and broadest slightly above the middle, about 1.3 times as wide as long, punctuation exceptionally coarse, distance between punctures shorter than diameter of a puncture (Fig. 6); elytra approximately as broad as long or slightly transverse, about 1.1 times as long as pronotum (Fig. 6); abdomen subparallel with three basal tergites deeply impressed basally and bearing coarse punctuation (Fig. 6). **MALE**. Tergite eight shallowly emarginated apically but lacking distinct denticles, sometimes with faint crenulations (Fig. 37); sternite eight slightly produced medially and pointed; median lobe of aedeagus (Fig. 36): crista apicalis of bulbus moderately broadly elongate, tubus moderately long, slightly projecting ventrad, ventral edge sinuate; internal sac with flagellum shorter than length of median lobe, lamina basalis broad, short and sinuate laterally, lamina apicalis broadly tape-formed and round apically. **FEMALE**. Tergite eight truncate apically, and with shallow emargination (Fig. 39), space between antecostal suture and basal margin moderately broad; sternite eight slightly produced apically, space between antecostal suture and basal margin moderately broad; spermatheca: capsule spherical, narrowed basally, with shallow apical invagination, and stem (chamber) short and L-curved (Fig. 38).

**Bionomics**

No data on the life history of this species is available. In Canada, adult specimens were captured in May and September and in the United States in January, February, March, and December.

**Geographic distribution (Map 4).**

**CANADA:** Ontario, Quebec; **UNITED STATES OF AMERICA:** Alabama, Florida, Ohio, Pennsylvania, Virginia.



Map 4. Collection localities in Canada of *L. elegans* and *L. cribratula*.

#### Comments

This species is readily recognizable externally by its small size and coarsely punctated forebody and particularly the pronotum (Fig. 6).

#### IV. Subgenus *Adoxopisalia* PACE

*Adoxopisalia* PACE 1989: 130. Type species: *Leptusa opaca* CASEY, designated by PACE 1989: 130. For diagnosis, see PACE 1989: 130.

**Diagnosis.** *Adoxopisalia* may be recognized by the following combination of characters: integument of forebody opaque and usually with velvety appearance, eyes usually large; lamina apicalis of the internal sac of aedeagus variable in shape, either reduced to narrowly elongate structure or narrow apically and posteriorly but broadened medially, lamina basalis reduced or homologous with two small structures at the base of flagellum, flagellum extremely elongate and coiled in bulbous (Figs 40, 44, 48).

#### 5. *Leptusa (Adoxopisalia) opaca* CASEY

(Map 5, Figs 7, 16, 40-43; PACE 1989: 131: Figs 750-754)

*Leptusa (Adoxopisalia) opaca* CASEY 1893: 364; BERNHAUER & SCHEERPELTZ 1926: 555; PACE 1989: 130; GUSAROV 2003: 118;

KLIMASZEWSKI et al. (submitted). **Lectotype** (male): USA, Pennsylvania (USNM). Designated by PACE (1979: 130).

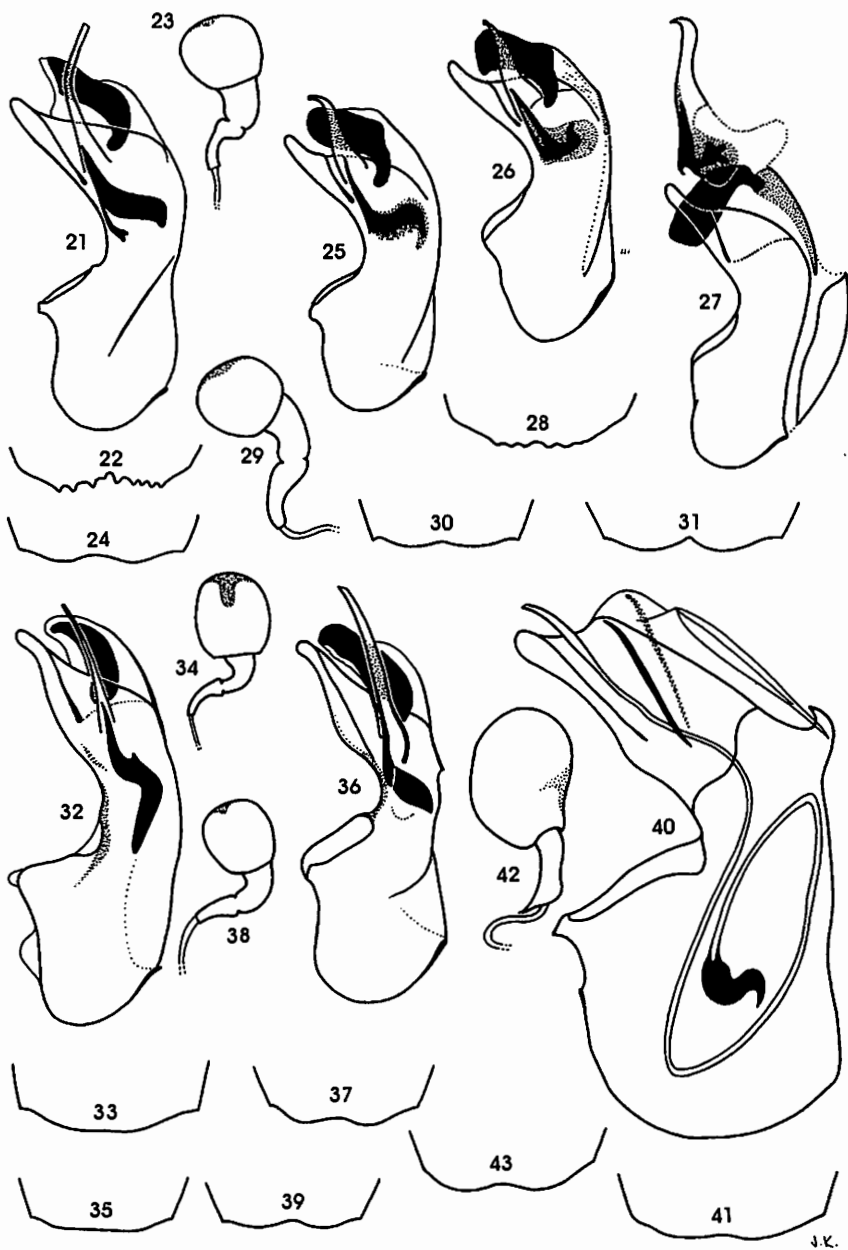
*L. seminitens* CASEY 1893: 364. As synonym of *L. opaca*: BERNHAUER & SCHEERPELTZ 1926: 555; PACE 1989: 130; GUSAROV 2003: 118.

### Diagnosis

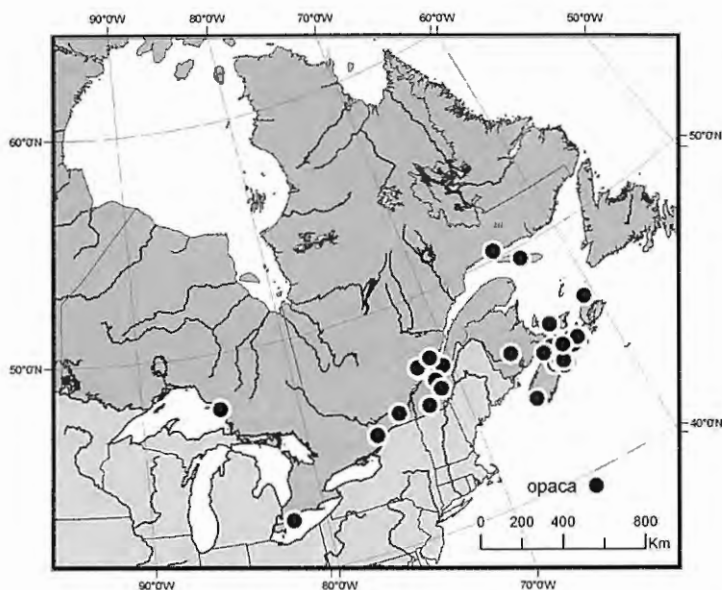
Body length 2.5-3.5 mm; usually black, opaque, with velvety integument of forebody, abdomen glossy, and legs, two to three basal antennal segments, and posterior parts of tergites three to five rust-brown, apical antennal segment bright yellowish-red or forebody appears dark rust-brown with slightly paler three basal and terminal antennal segments, legs and basal and apical part of abdomen, sometimes edges of pronotum and posterior part of elytra light reddish-brown (Fig. 7); integument with fine punctation and distinct granulation particularly on elytra, distance between punctures greater than the diameter of a puncture, isodiametric microsculpture strong on forebody; antenna: three basal segments elongate, third shorter than the second, fourth about quadrate, five to ten transverse and more so toward the apex (Fig. 16); pronotum transverse, about 1.3 times as wide as long, approximately as broad as elytra, moderately strong converging basally and broadest in apical third, distinctly shorter than elytra at shoulders and about 1.2 times as long as elytra at suture (Fig. 7), punctation fine; elytra transverse, granulo-reticulate, longer and larger than pronotum (Fig. 7); abdomen subparallel with three basal tergites deeply impressed basally and bearing moderately coarse punctation (Fig. 7). **MALE**. Tergite eight shallowly emarginated apically and without or with faint crenulations (Fig. 41); sternite eight slightly produced medially and pointed apically; median lobe of aedeagus (Fig. 40): crista apicalis of bulbus narrowly elongate, tubus elongate, moderately strong projecting ventrad, ventral edge straight basally for a short distance and then sinuate and projecting ventrad in lateral view, apex slightly produced ventrad; internal sac with flagellum longer than the length of median lobe, coiled in bulbus and

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Figs 21-43. Outline drawings of genital structures of *Leptusa* species: 21-24, *L. canonica* CASEY: 21, median lobe of aedeagus in lateral view (length 0.3 mm), 22, apical margin of male tergite eight (length 0.1 mm), 23, spermatheca (length 0.1 mm), 24, apical margin of female tergite eight (length 0.1 mm); 25-31, *L. jucunda* sp. nov.: 25, 26, median lobe of aedeagus with inverted internal sac in lateral view (length 0.3 mm), 27, median lobe of aedeagus with everted internal sac in lateral view (length 0.3 mm), 28, apical margin of male tergite eight (length 0.1 mm), 29, spermatheca (length 0.1 mm), 30, 31, apical margin of female tergite eight (length 0.1 mm); 32-35, *L. brevicollis* CASEY: 32, median lobe of aedeagus in lateral view (length 0.3 mm), 33, apical margin of male tergite eight (length 0.1 mm), 34, spermatheca (length 0.1 mm), 35, apical margin of female tergite eight (length 0.1 mm); 36-39, *L. cribratula* (CASEY): 36, median lobe of aedeagus in lateral view (length 0.3 mm), 37, apical margin of male tergite eight (length 0.1 mm), 38, spermatheca (length 0.1 mm); 39, apical margin of female tergite eight (length 0.1 mm); 40-43, *L. opaca* CASEY: 40, median lobe of aedeagus in lateral view (length 0.4 mm), 41, apical margin of male tergite eight (length 0.1 mm), 42, spermatheca (length 0.1 mm), 43, apical margin of female tergite eight (length 0.1 mm).



J.K.



Map 5. Collection localities in Canada of *L. opaca*.

bearing basal sclerotized structure, lamina apicalis narrowly elongate and curved at apex, lamina basalis not apparent (could be incorporated into basal structure of flagellum). FEMALE. Tergite eight truncate apically and with shallow emargination (Fig. 43), space between antecostal suture and basal margin moderately broad; sternite eight slightly produced apically, space between antecostal suture and basal margin moderately broad; spermatheca: capsule broadly elongate, sac-shaped, without distinct invagination, and stem (chamber) short and slightly curved (Fig. 42).

#### Bionomics

This is a fairly common species in eastern North America. Adults have been captured using the following methods: Lindgren traps, pitfall traps, intercept traps (e.g. Malaise traps, 4-winged intercept traps), Luminoc pitfall-light traps, sifting forest litter and processing it through Berlese funnels (e.g., moss, alder, birch, maple, oak litter), under bark of *Picea glauca* (MOENCH) VOSS. The intercept traps, Lindgren traps and sifting forest litter are the most effective methods for collecting this species. *Leptusa opaca* occurred in alder (*Alnus* sp.), sugar maple (*Acer saccharum* MARSH.), oak (*Acer* sp./*Quercus* sp.), red spruce (*Picea rubens* SARG.), red spruce/hemlock (*Tsuga canadensis* L. CARRIÈRE), black spruce (*Picea mariana* (MILL.) BSP), white spruce (*Picea glauca* (MOENCH) VOSS), white pine (*Pinus strobus* L.), balsam fir (*Abies balsamea* L.), yellow birch (*Betula alleghaniensis* BRITT.) balsam fir and other

mixed wood forests. On Prince Edward Island, a single individual was found in an old Scolytine burrow in red spruce (*Picea rubens* SARG.) where it was found with *Leptusa brevicollis* CASEY, *Carphonotus testaceus* CASEY (Curculionidae: Cossoninae), and *Paromalus teres* LÉCONTE (Histeridae: Dendrophilinae). Collecting period: May through September.

Geographic distribution (Map 5).

CANADA: New Brunswick, Nova Scotia, Ontario, Prince Edward Island, Quebec; UNITED STATES OF AMERICA (records): Arkansas, Georgia, New York, North Carolina, Pennsylvania, Rhode Island, Wisconsin.

Comments

*Leptusa opaca* is the most distinct of the Nearctic *Leptusa* species and may be readily recognized externally by its opaque integument of forebody, large size, black or dark rust-brown body colour, and elytra longer, broader and larger than pronotum (Fig. 7).

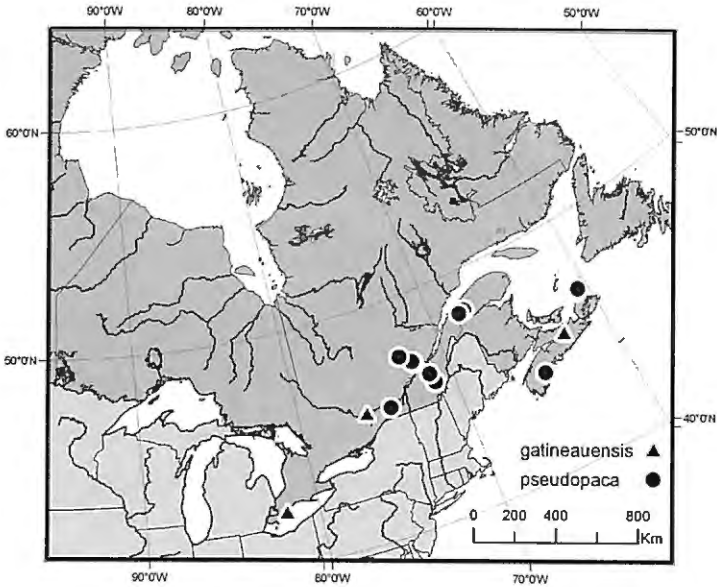
6. *Leptusa (Adoxopisalia) pseudopaca* KLIMASZEWSKI & MAJKA, sp. nov.  
(Map 6, Figs 8, 17, 44-47)

Holotype (male): CANADA, Nova Scotia, Cape Breton Highlands National Park, near Benjies Lake, 17.VI.1984, A. Smetana (CNC). **Paratypes:** listed in Appendix 1.

Etymology. The name of this species derives from the Nearctic species *L. opaca* CASEY, and the prefix *pseudo-* "false".

Diagnosis

Body length 2.3-3.4 mm; usually dark brown or dark reddish-brown to less often blackish, opaque, with velvety integument of forebody, abdomen glossy, and legs, apical and two to three basal antennal segments, and basal tergites three to five light rust-brown (Fig. 8); integument with fine punctation, elytra slightly crenulated (Fig. 8), isodiametric microsculpture strong on forebody; antenna: three basal segments strongly elongate, third about as long as the second, fourth slightly elongate, five to six subquadrate, six to ten slightly transverse and more so toward the apex (Fig. 17); pronotum transverse, about 1.2 times as wide as long, approximately as broad and as long as elytra, strongly converging basally and broadest in apical third, punctation fine, distance between punctures greater than the diameter of a puncture (Fig. 8); elytra transverse, granulo-reticulate, about as large as pronotum (Fig. 8); abdomen subparallel with three basal tergites deeply impressed basally and bearing moderately coarse punctation (Fig. 8). MALE. Tergite eight shallowly emarginated apically and with crenulations (Fig. 45); sternite eight slightly produced medially and pointed apically; median lobe of aedeagus (Fig. 44): crista apicalis of bulbus narrowly elongate, tubus moderately elongate, projecting ventrad, ventral edge straight basally for a short distance and then strongly sinuate and moderately projecting ventrad in lateral view, apex



Map 6. Collection localities in Canada of *L. gatineauensis* and *L. pseudopaca*.

slightly produced ventrad and blunt; internal sac with flagellum several times longer than the length of median lobe, coiled in bulbous and bearing strongly sclerotized basal structure, lamina apicalis with parallel rows of strong denticles, lamina basalis not apparent (could be incorporated into the basal structure of flagellum). FEMALE. Tergite eight truncate apically and with shallow emargination (Fig. 47), space between antecostal suture and basal margin moderately broad; sternite eight slightly produced apically, space between antecostal suture and basal margin moderately broad; spermatheca: capsule elongate, sac-shaped, without distinct invagination and with basal constriction, and stem (chamber) short, narrow and about straight with transverse basal spur (Fig. 46).

#### Bionomics

Adults have been captured using the following methods: Lindgren traps, pitfall traps, intercept traps (e.g. Malaise traps, 4-winged intercept traps), Luminoc pitfall-light traps, sifting forest litter and processing it through Berlese funnels (e.g., moss, alder, birch, maple). The intercept traps, Lindgren traps and sifting forest litter are the most effective methods for collecting this species. *Leptusa pseudopaca* occurred in alder (*Alnus* sp.), sugar maple (*Acer saccharum* MARSH.), red spruce (*Picea rubens* SARG.), and yellow birch (*Betula alleghaniensis* BRITT.) balsam fir forests. Collecting period: June through September.

Geographic distribution (Map 6).

**CANADA:** Nova Scotia, Quebec; **UNITED STATES OF AMERICA:** New Hampshire, West Virginia.

Comments

*Leptusa pseudopaca* is externally similar to *L. opaca* and some published records affiliated to the latter species may actually represent misidentification for *L. pseudopaca* and should be verified.

**7. *Leptusa (Adoxopisalia) elegans* BLATCHLEY**  
(Map 4, Figs 9, 18, 48-52, PACE 1989: Figs 755-759)

*Leptusa (Adoxopisalia) elegans* BLATCHLEY 1910: 342 (as *L. elegans*); PACE 1989: 24 (as *Meronea* SHARP); GUSAROV 2003: 117 (as valid species of *Leptusa (Adoxopisalia)*). **Lectotype** (male): USA, Indiana, Pulasky Co., 19.VI.1908, W.S. Blatchley, Purdue Blatchley collection, *Leptusa elegans* sp. nov., 4890 (PURC). Designated by GUSAROV 2003: 117. Non-type specimens are listed in Appendix 1.

*L. fontana* (CASEY 1911: 157, as *Sipalia* REY); BERNHAUER & SCHEERPELTZ 1926: 601 (as *Sipalia* MULSANT & REY); MOORE & LEGNER 1975: 413 (as *Evanystes* GISTEL); LOHSE & SMETANA 1988: 270 (as valid species); CAMPBELL & DAVIES 1991: 107 (as valid species of *Leptusa*); GUSAROV 2003: 117 (as synonym of *L. elegans*).

*L. virginica* CASEY 1911: 202; PACE 1911: 202 (as *Pasilia* REY); GUSAROV 2003: 117 (as synonym of *L. elegans*).

Diagnosis

Body length 1.8-2.2 mm; light reddish-brown, with dark brown, sometimes nearly black head and six to seven abdominal segments, and often one apical and two to three basal antennal segments (Fig. 9); integument with fine punctation, isodiametric microsculpture present and distinct on forebody; antenna: three basal segments elongate, third little shorter than the second, four to ten transverse and seven to ten strongly so, each at least twice as broad as long (Fig. 18); pronotum transverse, about 1.2 times as wide as long, gradually converging basally and broadest above the middle of its length, punctation fine, distance between punctures greater than the diameter of a puncture (Fig. 9); elytra transverse and extremely short, at suture about 0.7 times as long as pronotum (Fig. 9); abdomen broadest in apical third, with three basal tergites deeply impressed basally and punctate (Fig. 9). **MALE.** Tergite eight shallowly emarginate apically and lacking denticles (Fig. 49); sternite eight slightly produced medially and pointed apically; median lobe of aedeagus (Fig. 48): crista apicalis of bulbus narrowly elongate, tubus moderately elongate, moderately projecting ventrad, ventral edge straight basally for half its length and sinuate subapically in lateral view, apex slightly produced ventrad; internal sac with flagellum longer than length of the median lobe, coiled in bulbus and terminated with narrow sclerotized structure, lamina

basalis not apparent (could be incorporated into the basal structure of flagellum), lamina apicalis narrow and sinuate. FEMALE. Tergite eight broadly rounded apically and with small median emargination (Fig. 52), space between antecostal suture and basal margin narrow; sternite eight slightly produced apically, space between antecostal suture and basal margin narrow; spermatheca: capsule spherically elongate, without distinct invagination and with minute apical projection, stem (chamber) short, narrow and bearing basal spur/s (Figs 50, 51).

#### Bionomics

In Canada, specimens were captured using intercept traps, pitfall traps in alvar-zone or by sifting moss and litter near a pond. Collecting period: April, May, August to November.

#### Geographic distribution (Map 4)

**CANADA: Ontario, Quebec; UNITED STATES OF AMERICA:** Arkansas, Minnesota, New Jersey, New York, Pennsylvania, Vermont, Virginia. This species is here reported for the first time from Quebec.

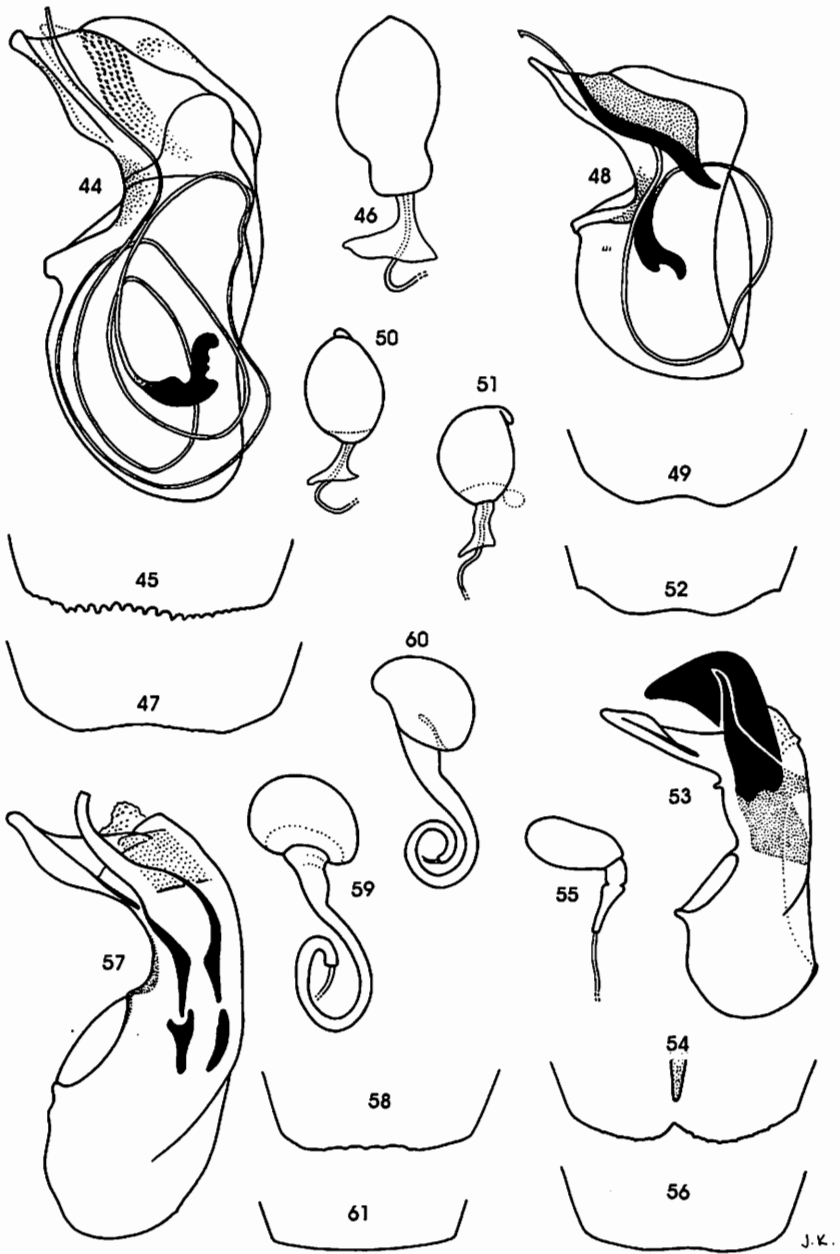
#### V. Subgenus *Dysleptusa* PACE

*Dysleptusa* PACE 1982: 580, 1989: 106. Type species: *Leptusa fuliginosa* AUBÉ, designated by PACE 1989: 130. For diagnosis, see PACE 1982: 580, 1989: 106.

**Diagnosis.** *Dysleptusa* may be recognized by the following combination of characters: moderately densely pubescent, punctation variable in size, predominantly fine, eyes variable in size; lamina apicalis of the internal sac of aedeagus usually broadly elongate and large, produced ventrally at apex, lamina basalis narrowly elongate in lateral view or not apparent, apical part of median lobe of aedeagus distinct and produced ventrally in lateral view (Fig. 53).

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Figs 44-61. Outline drawings of genital structures of *Leptusa* species: 44-47, *L. pseudopaca* sp. nov.: 44, median lobe of aedeagus in lateral view (length 0.4 mm), 45, apical margin of male tergite eight (length 0.1 mm), 46, spermatheca (length 0.1 mm); 47, apical margin of female tergite eight (length 0.1 mm); 48-52, *L. elegans* BLATCHLEY: 48, median lobe of aedeagus in lateral view (length 0.2 mm), 49, apical margin of male tergite eight (length 0.1 mm), 50, 51, spermatheca (length 0.1 mm); 52, apical margin of female tergite eight (length 0.1 mm); 53-56, *L. carolinensis* PACE: 53, median lobe of aedeagus in lateral view (length 0.2 mm), 54, apical margin of male tergite eight (length 0.1 mm), 55, spermatheca (length 0.1 mm); 56, apical margin of female tergite eight (length 0.1 mm); 57-61, *L. gatineauensis* sp. nov.: 57, median lobe of aedeagus in lateral view (length 0.2 mm), 58, apical margin of male tergite eight (length 0.1 mm), 59, 60, spermatheca (0.1 mm); 61, apical margin of female tergite eight (length 0.1 mm).



J.K.

8. *Leptusa (Dysleptusa) carolinensis* PACE  
(Map 7, Figs 10, 19, 53-56; PACE 1989: Figs 1690-1693)

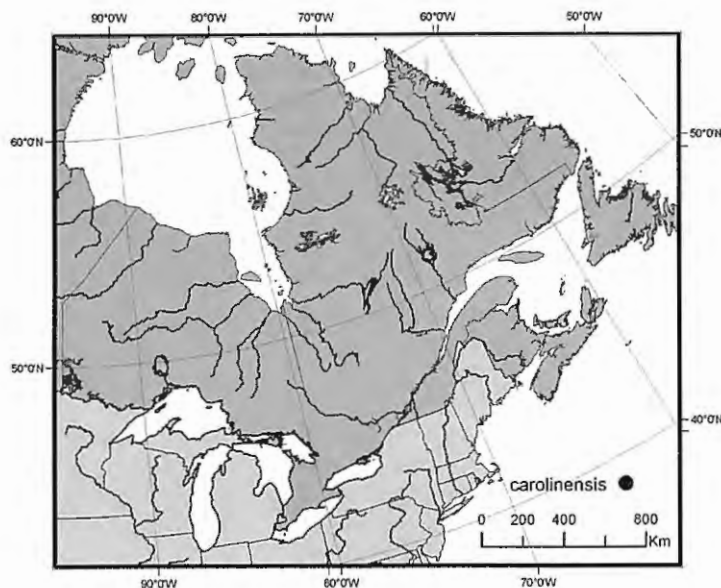
*Leptusa (Dysleptusa) carolinensis* PACE 1989: 252. **Holotype** (male): USA, North Carolina, Haywood Co., Blue Ridge PKW, Woodfin Cascade, 1400 m, 20.V.1986, A. Smetana (CNC).

Diagnosis

Body length 2.0-2.6 mm; dark brown to black, with rust-brown tarsi or entire legs, and two to three basal antennal segments, sometimes posterior or sutural portion of elytra also rust-brown, rarely entire body light reddish-brown (teneral specimens) (Fig. 10); integument with fine punctation, isodiametric microsculpture present and distinct on forebody; antenna slender: three basal segments strongly elongate, third little shorter than the second, fourth about quadrate, five to ten transverse and seven to ten more strongly so, each about twice as broad as long [antennal segments five to ten are more transverse in males than in females] (Fig. 19); pronotum transverse, about 1.4 times as wide as long, gradually converging basally and broadest above the middle of its length (Fig. 10), punctation fine, distance between punctures greater than the diameter of a puncture; elytra slightly transverse, at suture about 1.2 times as long as pronotum (Fig. 10); abdomen subparallel, with three basal tergites deeply impressed basally and punctate (Fig. 10). MALE. Tergite eight shallowly emarginate apically, bearing minute serration and subapical dorsal protuberance (Fig. 54); sternite eight slightly produced medially and pointed apically; median lobe of aedeagus (Fig. 53): crista apicalis of bulbus narrowly oval, tubus moderately elongate, strongly projecting ventrad in apical half, ventral edge straight basally for half its length then bearing a small dent and strongly projecting ventrad in lateral view, apex narrow and slightly pointed; internal sac with flagellum shorter than the median lobe, lamina basalis not apparent, lamina apicalis broad, elongate and pointed ventrad laterally. FEMALE (new description). Tergite eight broadly rounded apically, sometimes with inconspicuous median emargination (Fig. 56), space between antecostal suture and basal margin narrow; sternite eight broadly rounded apically, space between antecostal suture and basal margin narrow; spermatheca: capsule narrowly elongate and sac-shaped, stem (chamber) short and narrow, joining capsule at about 90° angle (Fig. 55).

Bionomics

Adults have been captured using Lindgren traps, pitfall traps and flight intercept traps. *Leptusa carolinensis* occurred in sugar maple (*Acer saccharum* MARSH.), red spruce (*Picea rubens* SARG.), young, mature, old growth and partially thinned, red spruce/hemlock (*Tsuga canadensis* L. CARRIÈRE), and black spruce (*Picea mariana* (MILL.) BSP) forests. Collecting period: May through September.



Map 7. Collection localities in Canada of *L. carolinensis*.

Geographic distribution (Map 7)

**CANADA: Nova Scotia and Quebec.** UNITED STATES OF AMERICA: North Carolina. The Nova Scotia and Quebec records constitute the first record of *L. carolinensis* from Canada. This species is probably reaching its northern distribution limit in Nova Scotia and south-central Quebec.

**9. *L. (subgenus ?) gatineauensis* KLIMASZEWSKI & PELLETIER, sp. nov.**  
(Map 6, Figs 11, 20, 57-61)

Holotype (male): CANADA, Quebec, Gatineau Park, 26.V.1968, ex *Polyporus betulinus*, G - 568, D.P. Pielou (CNC). Paratypes listed in Appendix 1.

Etymology.

The name of this species derives from the Gatineau Park in Quebec where the two type specimens were captured. The gender is feminine.

Diagnosis

Body length 1.5-1.9 mm, brown, head and abdomen darker than the remainder of the body, elytra and pronotum with dark reddish tinge, antennae dark yellowish-brown (Fig. 11); integument with moderate in size punctation and isodiametric microsculpture, pronotum and elytra slightly granulose;

antenna: three basal segments strongly elongate, third a little shorter and slimmer than the second, fourth about quadrate, five to ten transverse and seven to ten strongly so, each about twice as broad as long (Fig. 20); pronotum transverse, about 1.4 times as wide as long, gradually converging basally and broadest about the middle of its length, shorter than the elytra at suture (Fig. 11), punctuation moderate in size, distance between punctures greater than the diameter of a puncture; elytra slightly transverse, at suture about 1.2 times as long as pronotum (Fig. 11); abdomen subparallel, with three basal tergites deeply impressed basally and punctate. MALE, Tergite eight truncate apically and with minute serration (Fig. 58); sternite eight slightly produced medially; median lobe of aedeagus (Fig. 57): crista apicalis of bulb narrow oval, tubus moderately elongate, strongly projecting ventrad, ventral edge strongly sinuate in lateral view, apex narrow and slightly pointed; internal sac with flagellum shorter than the length of the median lobe, lamina basalis in form of two elongate structures and apicalis weakly pronounced with minute denticles. FEMALE. Tergite eight truncate apically (Fig. 61), space between antecostal suture and basal margin narrow; sternite eight broadly rounded apically, space between antecostal suture and basal margin narrow; spermatheca; mushroom-shaped, capsule discoidal, without apparent invagination, stem (chamber) narrowly elongate and bearing a small posterior loop (Figs 59, 60).

#### Bionomics

Two specimens were captured in May on *Polyporus betulinus*, one by general sweeping in deciduous forest, and one in June in red spruce/hemlock mature forest.

#### Geographic distribution (Map 6)

**CANADA: Nova Scotia, Quebec and Ontario.**

#### Comments

The female specimen from Nova Scotia is excluded from the paratype series because it has a more reddish body colour and we do not know the full variation of colour pattern in this species. External features like the morphology of mouth parts and mesosternum of *L. gatineauensis* conforms to the characteristics of the genus *Leptusa* as defined by PACE (1989), but the species has an odd shaped spermatheca, which is different from those of the other known species. The shape of the capsule of the spermatheca of *L. gatineauensis* is somewhat similar to those of the subgenus *Eopisalia* PACE but the spermathecal stem is different. We could not study the internal structures of the spermatheca because of the air bubbles caught inside and the fragile nature of the structures. At the moment, the placement of *L. gatineauensis* should be considered as a tentative arrangement.

#### Acknowledgements

We thank the following curators for lending the types and other specimens under their care: J.S. ASHE (SEM), A. DAVIES (CNC), D. FURTH (USNM), S.B. PECK (SPC), H. SCHILL-

HAMMER (NHMV), J. SWEENEY (AFC), and L. ZERCHE (DEI). We are grateful to C. HÉBERT (LFC) who provided additional specimens collected in Quebec. The first author appreciates the support of his research director, A. PLOURDE (LFC), for this project. The third author appreciates the support of his colleagues A. HEBDA (NSPM) and C. EWING (NSPM) in the research on this project. We are grateful to C. BOLTE (CFS, located at CNC), who executed two images of *L. jucunda*, and to C. TOMASSIN (Université Laval) who dissected most of the specimens in this study. We also acknowledge the assistance of P. CHEERS (LFC) in editing and D. PAQUET (LFC) in formatting the manuscript. A. HEBDA (NSPM) read and improved the first draft of this manuscript.

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**Appendix 1. Detailed list of specimens examined. Types are listed under each species in the text.**

**1. *Leptusa (Boreoleptusa) canonica***

**Material Examined.** CANADA: Nova Scotia: Halifax Co., Big St. Margarets Bay, 29.VII-13.VIII.1997, red spruce, D.J. Bishop 1668 (NSPM) 1 female; Inverness Co., Cape Breton H.N.P., Lone Shieling, PG729861, 4.VII.1983, R. Vockeroth, Malaise (CNC) 1 female; Quebec: Anticosti Island, site 5, 27.VII.1993, Lindgren (LFC) 1 female; site 5, 3.VIII.1993, Lindgren (LFC) 1 male; site 5, 17.VIII.1993, Lindgren, # 21 (LFC) 1 female; site 4, 3.VIII.1993, Lindgren (LFC) 1 male; site 4, 10.VIII.1993, Lindgren (LFC) 1 male; site 3, 30.VI.93, Lindgren (LFC) 1 female; site 5, 13.VII.1993, Lindgren (LFC) 2 females; Beauce-Sartigan Co., St-Hilaire-de-Dorset, 22-29.VI.1999, Lindgren 1, Maple forest, # 99-3-1004, G. Pelletier (LFC) 1 male; Deux-Montagnes Co., Parc d'Oka, 6-13.VII.1998, Lindgren, Maple forest, # 98-3-0439, G. Pelletier (LFC) 1 female; Montreal, 2.IX.1969, E.J. Kiteley (CNC) 2 males; Portneuf Co., Lac des Étangs, 46°58' 72°03', 22.VI-29.VI.1999, 4-winged intercept trap, yellow birch/balsam fir boreal forest, J. Klimaszewski (LFC) 2 males, 1 female; 29.VI-6.VII.1999 (LFC) 1 male; 13.VII-20.VII.1999 (LFC) 1 male, 1 female; Lac Poissonneux, 47°03' 72°08', 8.VI-15.VI.1999, 4-winged intercept trap, yellow birch/balsam fir boreal forest, J. Klimaszewski (LFC) 1 sex?; 22.VI-29.VI.1999 (LFC) 1 female; 29.VI-6.VII.1999 (LFC) 1 female; 6.VII-13.VII.1999 (LFC) 1 male; 13.VII-20.VII.1999, (LFC) 1 sex?; 11.VIII-18.VIII.1999 (LFC) 1 male.

**2. *Leptusa (Boreoleptusa) jucunda***

**Paratypes.** CANADA: New Brunswick: Albert Co., Mary's Point, 20.X.2002, scolytid burrow - *P. glauca*, C. Majka (LFC) 1 male; Sunbury Co., Acadia Research Forest, site 2, 13.VII.1999, control, pitfall trap, G. Gesner (AFC) 1 female; Nova Scotia: Guysborough Co., Seloam Lake, Red Spruce (thinned), D.J. Bishop 108 (NSPM) 1 female; Halifax, Point Pleasant Park, 12.IV.2000, *Picea rubens*, Bolts coll. (LFC) 1 female; 14.III.2002 in bark of *Pinus strobus*, C. Majka (NSPM) 1 male, 3 sex?; 27.III.2002 (NSPM) 1 female, (LFC) 1 female; 20.IV.2002 (NSPM) 1 female; 27.IV.2002 (NSPM) 1 female, (LFC) 1 female; 20.XI.2001, under bark of *Picea rubens* (NSPM) 1 male; 15.XI.2002, in bark of *Pinus banksiana* (LFC) 1 sex?; 20.XI.2001, in bark of *Pinus strobus* (NSPM) 1 female; 23.XI.2001, in bark of *Pinus strobus* (NSPM) 1 female; 25.XI.2001, in bark of *Pinus strobus* (NSPM) 1 male, 1 female; 4.XII.2001, in bark of *Pinus strobus* (NSPM) 1 male; 14.XII.2001, in bark of *Pinus rubens* (NSPM) 1 male, 1 sex?; 12.IV.2000, Bolts coll., reared from *Picea rubens* (AFC) 1 male, 1 female, 3 sex?; 4.V.2000 (LFC) 1 female; Hants Co., Halifax, Nine Mile River, 14.V-2.VI.1997, Black Spruce (45), D.J. Bishop 78 (NSPM) 1 female; Ontario: Carleton Co., Ottawa, NCC Log Farm, 18-23.IV.1982, dead maple, Masner & Goulet (CNC) 1 male; Grenville Co., L3C6, Wolford Twp., 1-7.V.1998, FIT, nature mixed forest, 98-3, J. Cook (SOC) 1 male, 1 female; Quebec: L'Amiante Co., St-Jacques-de-Leeds, 28.VI.1993, Maple forest, Lindgren 2 (LFC) 1 female; Maple forest 3.IX.1993, Lindgren 2 (LFC) 1 female; Les Collines-de-L'Outaouais Co., 4 mi. W Masham, near Mud Lake, 25.X.1967, Berlese sample ex lining of deserted beaver lodge, J.M. Campbell & A. Smetana (VNC) 1 male; Portneuf Co., Ste.-Catherine, 19.IV.1959, J.-C. Aubé (LFC) 1 male; Vaudreuil-Soulanges Co., Mont Rigaud, end Ch. de la Croix, 5.V.1998, A. & Z. Smetana (CNC) 1 male.

**3. *Leptusa (Eucryptusa) brevicollis***

**Material Examined.** CANADA: New Brunswick: Sunbury Co., Acadia Research Forest, 4.VIII.1999, site 1, uncut red spruce forest, pitfall trap, G. Gesner (LFC) 1 male, 1 sex?; 25.VI.1999, site 2 (LFC) 1 male; Nova Scotia: Cumberland Co., Five Island, 17.VII.1994, D. Kehler, # 32 (NSPM) 1 female; Guysborough Co., Archibald Mills, 13.VIII.1994, D. Kehler, # 931 (NSPM) 1 sex ?; George Lake, red spruce (young), 2-15.VI.1997, D.J. Bishop, # 612 (NSPM) 1 female; Middle Lake, 25.VIII.1994, D. Kehler, # 981 (NSPM) 1 female; Hants Co., Leminister, red spruce/hemlock, 15-30.VI.1997, D.J. Bishop 1059 (NSPM) 1; Panuke Lake,

14.V-2.VI.1997, red spruce/hemlock, D.J. Bishop 169 (NSPM) 1 female; 2-15.VI.1997, red spruce (45 years old), D.J. Bishop (NSPM) 1 female; 1-16.VII.1997, (NSPM) 1 male; Halifax Co., Big St. Margarets Bay, red spruce (old), 2-15.VI.1997, D.J. Bishop (NSPM) 1 male; 16-29.VII.1997, (NSPM) 1 female; 29.VII-13.VIII.1997, # 1711 (NSPM) 1 female; Campbell Hill, red spruce (mature); 15-30.VI.1997, # 987 (NSPM) 1 male; Grassy Lake, red spruce, 2-15.VI.1997, D.J. Bishop (NSPM) 1 sex ?; Ketch Harbour, 31.VIII.2002, under bark of *Picea glauca*, C. Majka (NSPM) 2 males, 1 female; Pogwa Lake, red spruce (thinned), 29.VII-13.VIII.1997, D.J. Bishop, # 1788 (NSPM) 1 male; Point Pleasant Park, 9.IX.2001, in *Ammanita gemmata*, C. Majka (NSPM) 1 female; Sandy Lake, red spruce (<120 years old), 2-15.VI.1997, D.J. Bishop 231 (NSPM) 1 male; red spruce (<120 years old), 1-16.VII.1997, D.J. Bishop 1530 (NSPM) 1 male; Ten Mile Lake, red spruce (partly thinned), 2-15.VI.1997, D.J. Bishop 617 (NSPM) 1 female; red spruce (partly thinned), 2-15.VI.1997, D.J. Bishop 401 (NSPM) 1 male; red spruce (partly thinned), 15-30.VI.1997, D.J. Bishop 995 (HSPM) 1 female; red spruce (partly thinned), 15-30.VI.1997, D.J. Bishop 1053 (NSPM) 1 male; Inverness Co., Cape Breton Highlands National Park, Lone Shieling, 8.VI.1984, A. Smetana (CNC) 1 female; 9.VI.1984, (CNC) 1 female; # PG729861, VII.1983, Malaise trap, R. Vockeroth (CNC) 1 female; 20.VII.1983, D.E. & J.E. Bright (CNC) 1 male; 26.IX.1983, 60 m, # PG730860, (CNC) 1 sex?; near Benjies Lake, 18.VI.1984, A. Smetana (CNC) 1 male; Fishing Cove Trail, 21.VI.19984, A. Smetana (CNC) 1 female; Grande Anse River, splash edge, 26.IX.1984, J.M. Campbell & A. Davies (CNC) 1 female; 440 m nr. Sarmys Barren, # PG764861, 24.IX.1984, sifting birch litter, J.M. Campbell & A. Davies (CNC) 1 male, 2 females; Lunenburg Co., Card Lake, red spruce/hemlock (old), 29.VII-13.VIII.1997, D.J. Bishop # 1713 (NSPM) 1 female; Victoria Co., Cape Breton Highlands National Park, Beulach Bann Falls, 13.VI.1984, A. Smetana (CNC) 1 male; Yarmouth Co., Cape Forchu, West Cape, 28.VI-4.VII.1995, FITs, coastal forest, J. & F. Cook (SPC) 1 female; Ontario: Carleton Co., Ottawa, NCC Log Farm, 18-23.IV.1982, dead maple, Masner & Goulet (CNC) 1 female; Kent Co., Rondeau Park, 1.V.1985, deciduous forest, general sweeping, L. LeSage (CNC) 1 male; Nipissing Co., Mattawa, 21.VIII.1971, E.J.K. Kelley (CNC) 1 female; Prince Edward Island: Queens Co., St. Patricks, 19.VII.2001, old field, C. Majka (CMC) 1 male; Quebec: Beauce-Sartigan Co., St-Hilaire-de-Dorset, 8-15.VI.1999, Maple forest, Lindgren 2, G. Pelletier (LFC) 1 female; Bellechasse Co., Armagh., 46°45'N 70°35'O, 23-30.VI.1999, Fir forest, Intercept trap, C. Hébert (LFC) 1 male; C-Mauricie Co., Parc de la Mauricie, 12-19.VII.1922, Stationnement Mekinac, Dying White Spruce plantation after Spruce Budworm infestation, Lindgren B, # 2002-3-3737, M.-J. Bergeron (LFC) 1 female; Charlevoix Co., Lac Pointu, 47°43'N 70°45'W, 27.VI-4.VII.2001, Projet Grands-Jardins 01, Témoin 5, Black spruce, unburned, Luminoc pit-light trap, (LFC) 1 sex ?; Gatineau Co., Aylmer, 25.X.1984, Fir forest, Moss on a tree trunk, # LL64, L. LeSage (CNC) 2 males, 1 female; Gatineau Park, 10-21.VI.1966, ex *Fomes fometarius*, W.G. Matthewman (CNC) 1 female; L'Amiante Co., Parc Frontenac, 17.VI-30.VI.1998, Maple forest, Plexi intercept trap # 2, # 98-3-0059 (LFC) 1 male; Plexi intercept trap # 5 (LFC) 1 female; Net intercept trap # 4 (LFC) 1 female; Net intercept trap # 5 (LFC) 1 male; 30.VI-15.VII.1998, Plexi intercept trap # 2 (LFC) 1 male; Net intercept trap # 2 (LFC) 1 female; Net intercept trap # 4 (LFC) 1 female; 29.VII-12.VIII.1998 (CNC) 1 female; St-Jacques-de-Leeds, 13.VIII.1993, Fir forest, Lindgren 1 (LFC) 1 male; 14.VI.1994, Fir forest, Lindgren (LFC) 1 female; Les Collines de l'Outaouais Co., 3 km W Farrellton, L. Bernard, 8.VII.1973, maple/oak litter, A. Davies (CNC) 1 male; Old Chelsea, 9.V. 1960, B.S. Hemming (CNC) 1 female; 5.V.1988, # 551, A. & Z. Smetana (CNC) 1 sex ?; Montreal Co., Dorval, 11.IX.1985, deciduous forest, ex rotten tree cankers, LeSage & Smetana (CNC) 2 females; Montreal, 2.IX.1983, E.J. Kiteley (CNC) 1 female; 6.IX.1977, dung baited pitfall trap, E.J. Kiteley (CNC) 1 male; 14.IX.1979, E.J. Kiteley (CNC) 1 male, 2 females; Portneuf Co., Lac des Étangs, 46°58' 72°03', 8.VI-15.VI.1999, yellow birch/balsam fir boreal forest, 4-winged intercept trap, J. Klimaszewski (LFC) 3 sex ?; 15.VI-22.VI.1999 (LFC) 1 sex ?; 22.VI-29.VI.1999 (LFC) 3 sex ?; 29.VI-6.VII.1999 (LFC) 1 male, 3 sex ?; 6.VII-13.VII.1999 (LFC) 2 males, 1 sex ?; 13.VII-20.VII.1999 (LFC) 1 male; 20.VII-27.VII.1999 (LFC) 2 males, 6 sex ?; 28.VII-4.VIII.1999 (LFC) 3 sex ?; 4.VIII-11.VIII.1999

(LFC) 1 sex ?; 11.VIII-18.VIII.1999 (LFC) 1 male; 18.VIII-25.VIII.1999 (LFC) 2 males, 1 sex ?; Lac Poissonneux, 47°03' 72°08', 8.VI-15.VI.1999, 4-winged intercept trap, yellow birch/balsam fir boreal forest, J. Klimaszewski (LFC) 1 male; 22.VI-29.VI.1999 (LFC) 1 sex ?; 29.VI-6.VII.1999 (LFC) 2 sex ?; 6.VII.-13.VII.1999 (LFC) 2 sex ?; 13.VII-20.VII.1999 (LFC) 3 sex ?; 28.VII-4.VIII.1999 (LFC) 3 sex ?; 4.VIII-18.VIII.1999 (LFC) 2 sex ?; Ste.-Catherine-de-la-Jacques-Cartier, 16.V.1959, J.-C. Aubé (CNC) 1 male; Vaudreuil-Soulanges Co., Mont-Rigaud, end of Ch. de la Croix, 5.V.1988, # 951, A. & Z. Smetana (CNC) 1 male; Maple forest Fir forest, Le Rocher-Percé Co., Mont-St-Alexandre, Pelegrin, 5.VII.1994; Fir forest, Lindgren, (LFC) 2 females; Maple forest, Lac de la Croix Co., La Mitis, Lac Mitis, 7.VI.1993, Maple forest, Fosse L-4, (LFC) 1; La-Vallée-du-Richelieu Co., Mont St-Hilaire, 3-10.VIII.1998, Maple forest, Lindgren trap, G. Pelletier (LFC) 1 female. UNITED STATES OF AMERICA: Massachusetts: Middlesex Co., Sherborn, 22-23.XII, sifting, C.A. Frost (CNC) 1 male; New Hampshire: Coos Co., 8 mi S Gorham Pinkham Notch, 2000 feet, 11.IX.1987, sifting *Alnus* sp. litter and sphagnum near pond, J.M. Campbell & A. Davies (CNC) 1 female. 1 sex?; 13.IX.1987 (CNC) 2 females; Merrimack Co., Virginia Mtn. Lk. Biol. Stn., 12 km E Pembroke, 11.VI.1982, 3820 feet, Bousquet & Davies (CNC) 1 female; New York: Orange Co., Lake Placid, 24.VI.1965, E.J. Kiteley (CNC) 1 female; North Carolina: Jackson Co., Whiteside Mt., near Highlands, 1350 m, 23.V.1986, A. Smetana (CNC) 1 male; Vermont: Windham Co., W Townshend, 3.VI.1983, E.J. Kiteley (CNC) 1 female.

#### 4. *Leptusa (Ulitusa) cribratula*

**Material examined.** CANADA: Ontario: Kent Co., Rondeau Park, 1-5.IX.1980, L. LeSage & A. Woodliffe (LFC) 1 male; Quebec [PACE 1989: record confirmed], Montreal, 7.V.1971, E.J. Kiteley (CNC) 1 male. UNITED STATES OF AMERICA [additional specimens examined]: Alabama: Lee Co., Auburn, 7.III.1968, E.J. Kiteley (CNC) 2 males, 1 female; 17.III.1968 (CNC) 1 male; 25.XII.1967 (CNC) 1 female; Opelika, 18.I.1974, E.J. Kiteley (CNC) 1 female; Florida: Okaloosa Co., Fort Walton Bch., 23.II.1974, E.J. Kiteley (CNC) 1 female; 28.II.1999 (CNC) 6 males, 1 female, 1 sex ?; 13.III.1973 (CNC) 1 male; 15.III.1981 (CNC) 2 males; Washington Co., Ebro, 23.II.1972, E.J. Kiteley (CNC) 1 female.

#### 5. *Leptusa (Adoxopisalia) opaca*

**Material examined.** CANADA: New Brunswick: Sunbury Co., Acadia Research Forest, 13.VII.1999, site 2, uncut red spruce forest, G. Gesner (LFC) 1 female; Nova Scotia: Colchester Co., Simpson Lake, 22.VIII.1994, D. Kehler, # 964 (NSPM) 1 sex ?; Truro, VI.1994, # 95-116 (CNC) 1 sex ?; Cumberland Co., Fox River, 4 & 17.VII.1994, D. Kehler, # 719 & 26 (NSPM) 2 sex ?; Guysborough Co., Glenelg, 6.VII.1994, D. Kehler, # 790 (NSPM) 1 sex ?; Malay Lake, 2-15.VI.1997, red spruce (mature), D.J. Bishop, # 681 (NSPM) 1 female; Ross Lake, 15.VIII.1994, D. Kehler, # 937 (NSPM) 1 female; Halifax Co., Campbell Hill, 16-29.VII.1997, red spruce (thinned), D.J. Bishop, # 1615 (NSPM) 1 sex ?; Grassy Lake, 14.V-2.VI.1997, red spruce, D.J. Bishop, # 74 (NSPM) 1 male; Ketch Harbour, 31.VIII.2002, under bark of *Picea glauca*, C. Majka (NSPM) 1 sex ?; Moser Lake, 14.V-2.VI.1997, red spruce (partially thinned), D.J. Bishop, # 46 (NSPM) 1 sex ?; 2-15.VI.1997, 698 (NSPM) 1 male; 29.VII-13.VIII.1997, # 1730 (NSPM) 1 male; Sandy Lake, 29.VII.-13.VIII.1997, red spruce (>120), D.J. Bishop, # 1791 (NSPM) 1 sex ?; Ten Mile Lake, 29.VII-13.VIII.1997, red spruce (partially thinned), D.J. Bishop, # 1817 (NSPM) 1 sex ?; Hants Co., Armstrong Lake, 29.VII-13.VIII.1997, red spruce (75 years old), D.J. Bishop, # 1733 (NSPM) 1 female; 9 Mile River, black spruce (45), D.J. Bishop, # 31 (NSPM) 1 sex ?; Inverness Co., Cape Breton Highlands National Park, Lone Shieling, 9.VI.1984, A. Smetana (CNC) 1 sex ?; # PG7729861, 4.VII.1983, Malaise trough, R. Vockeroth (CNC) 2 sex ?; Lunenburg Co., Card Lake, 29.VII-13.VIII.1997, red spruce/hemlock (old), D.J. Bishop, # 1664 (NSPM) 1 sex ?; Pictou Co., Garden of Eden, 24.VIII.1994, D. Kehler, # 989 (NSPM) 1 female; Lorne, 15-30.VI.1997, red spruce/hemlock (m), D.J. Bishop, # 890 (NSPM) 1 sex ?; Yarmouth Co., Cape Forchu, W Cape, 28.VI-4.VII.1995, coastal forest, FITs [flight intercept trap], J.&F.

Cook (SPC) 1 female, 2 sex ?; **Ontario:** Algoma Co., Lake Superior Provincial Park, Gargantua, 7.VI.1973, J.M. Campbell & R. Perry (CNC) 1 male; Grenville Co., L3C6 Wolford Twp., 8-12.VI.1998, 15-19.VI.1998, 22-26.VI.1998, 6-10.VII.1998, 13-17.VII.1998, 17-24.VIII.1998, mature mixed forest, FIT, J. Cook (SPC) 2 males, 1 female, 4 sex ?; Kent Co., Rondeau Provincial Park, 9-17.VIII.1985, Intercept traps in white pine stand or maple/beech or edge of oak forest, L. LeSage & A. Woodliffe (CNC) 3 sex ?; 1-5.IX.1985, Intercept trap in a white pine stand, L. LeSage & A. Woodliffe (CNC) 3 sex ?; 5-23.IX.1985, Intercept trap at edge of oak forest, L. LeSage & A. Woodliffe (CNC) 1 sex ?; 22-23.VII.1985, 1-9.VIII.1985, 9-17.VIII.1985, 5-23.IX.1985, Intercept trap in white pine stand, edge of oak forest, L. LeSage & A. Woodliffe (CNC) 5 males, 2 females. **Prince Edward Island:** Queens Co., St. Patricks, 19.VII.2001, old field, C. Majka (CMC) 1 female; **Quebec:** Anticosti Island, site 3, 5 and 8, 20.VII.1993, 17.VIII.1993, Lindgren, C. Hébert (LFC) 3 sex ?; Bellechasse Co., Armagh, 46°45' 70°35', 23-30.VI.1999, fir forest with white spruce, Intercept trap, C. Hébert (LFC) 8 males, 5 females, 3 sex ?; 30.VI-7.VII.1999, Intercept trap, fir forest with white spruce, C. Hébert (LFC) 1 male, 12 sex ?; Compton Co., Sawyerville, 45°20' N 71°34' O, 6.VI-10.VI.1996, Christmas Fir plantation, Malaise, C. Hébert (LFC) 1 sex ?; Maple forest Deux-Montagnes Co., Parc d'Oka, 29.VI-6.VII.1998, Lindgren trap, Maple forest, G. Pelletier (LFC) 1 sex ?; L'Amiante, Parc Frontenac, 17.VI-30.VI.1998, 30.VI-15.VII.1998, 15.VII-29.VII.1998, 29.VII-12.VIII.1998, Maple forest, Net intercept trap, Plexi intercept trap, C. Hébert (LFC) 3 males, 4 females; St-Jacques-de-Leeds, 26.VII.1993, Maple forest, Lindgren 2, C. Hébert (LFC) 1 sex ?; Ste.-Praxède, 13-20.VII.1998, Lindgren trap, Maple forest, G. Pelletier (LFC) 1 sex ?; Montmorency Co., Forêt Montmorency, 47°16' 71°10', 6.VI-10.VI.1999, 30.VI-7.VII.1999, 15.VII-19.VII.1999, 19.VII-26.VII.1999, Intercept trap, C. Hébert (LFC) 3 sex ?; Orford Co., Mont Orford, 6-13.VII.1998, 10-17.VIII.1998, 15-20.IX.1998, Lindgren trap, Maple Forest, G. Pelletier (LFC) 3 sex ?; Portneuf Co., Lac des Étangs, 46°58' 72°03', 15.VI-22.VI.1999, 6.VII-13.VII.1999, 20.VII-27.VII.1999, yellow birch/balsam fir boreal forest, 4-winged intercept trap, Luminoc trap, J. Klimaszewski (LFC) 4 sex ?; Lac Poissonneux, 47°03' 72°08', 8.VI-15.VI.1999, 22.VI-29.VI.1999, 29.VI-6.VII.1999, 6.VII-13.VII.1999, 13.VII-20.VII.1999, 20.VII-27.VII.1999, 4-winged intercept trap, Luminoc trap, yellow birch/balsam fir boreal forest, J. Klimaszewski (LFC) 10 sex ?; Saguenay Co., Rivière Magpie 2, 50°21' N 64°26' W, 27.VI-05.VII.2001, Luminoc, fir forest with white birch, C. Hébert (LFC) 1 female; Vaudreuil-Soulanges Co., Hudson Heights, 24-30.VII.1956, Lindberg (CNC) 1 sex ?. **UNITED STATES OF AMERICA:** **North Carolina:** Caldwell Co., Great Smoky Mountains National Park, Heintooga Parking area, 1630 m, 29.V.1986, A. Smetana (CNC) 1 male.

### 6. *Leptusa (Adoxopisalia) pseudopaca*

**Paratypes:** CANADA, Nova Scotia: Inverness Co., Cape Breton Highlands National Park, near Benjies Lake, 17 or 18.VI.1984, A. Smetana (CNC) 1 female, 39 sex ?, (LFC) 2 females, 6 sex ?; 410 m, MacGregor Brook, # PG784883, 26.IX.1984, sifting birch litter, J.M. Campbell & A. Davies (CNC) 2 sex ?; Pleasant Bay, 25 m, # PG682872, 14.IX.1984, sifting litter and moss, J.M. Campbell & A. Davies (CNC) 1 sex ?; 425 m, Sammys Barren (bog), # PG764857, 14.IX.1984, sifting mosses or tread sphagnum moss, J.M. Campbell & A. Davies (CNC) 5 sex ?; near Sammys Barren, 425 m, # PG764861, sifting birch litter or birch litter and moss or moss and *Alnus* litter (CNC) 2 males, 2 females, 45 sex ?, (LFC) 2 males, 1 female, 1 sex ?; Queens Co., Poonhook Lake near Greenfield, 13.VII.1993, # 93-28, forest litter sifting, J. Cook (SPC) 1 male, 1 female. **Quebec:** Lac à la Croix Co., La Mitis, Lac Mitis, 9.VI.1993, Maple forest, Luminoc 3, C. Hébert (LFC) 1 sex ?; 23.VIII.1993, Maple forest, Pitfall Trap -1, Luminoc 3, C. Hébert (LFC) 1 sex ?; L'Amiante Co., St-Jacques-de-Leeds, 2.08.1993, Maple forest, Lindgren 2, Luminoc Trap 4 & Pitfall Trap 1, C. Hébert (LFC) 1 sex ?; Park Frontenac, Maple forest, 17.VI-30.VI.1998, Maple forest, Intercept trap, 5, # 98-3-0069 (LFC) 1 sex ?; Le Haut-St-Maurice Co., La Tuque, Balsam Fir Forest, Luminoc 2, 27.VI.94 (LFC) 3 sex ?; Portneuf Co., Lac des Étangs, 46°58' 72°03', 4. 11.VIII.1999, Luminoc 6, yellow birch/balsam fir forest, J. Klimaszewski (LFC) 1 female; Lac Poissonneux,

47°03' 72°08', 6.VII-13.VII.1999, Luminoc trap, yellow birch/balsam fir forest, J. Klimaszewski (LFC) 1 sex ?; Rimouski Co., Rès. écol. Charles B. Banville, 48°13'N 68°09'W, 7.VIII-15.VIII.2001, fir forest with yellow birch, C. Hébert (LFC) 1 sex ?; Vaudreuil-Soulanges Co., Rigaud, 15.V.1979, A. Smetana & E.C. Becker (CNC) 1 sex ? UNITED STATES OF AMERICA: New Hampshire: Grafton Co., 8 mi. NW Bartlett, Nancy Cascades, 2500 feet, 9.IX.1987, in mist zone of waterfall, J.M. Campbell & A. Davies (CNC) 2 sex ?; West Virginia: Pendleton Co., 5 mi. S Witmer, 300 feet, 18.VII.1971, forest leaf litter, S. Peck (CNC) 1 sex ?

### 7. *Leptusa (Adoxopisalia) elegans*

**Material examined.** CANADA: Ontario: Lanark Co., Almonte, 6-20.X.1986, 20.X-3.XI.1988, 3-14.XI.1986, 22.IX-6.X.1986, Intercept or pitfall traps in Alvar-zone, L. LeSage (CNC) 3 males, 13 females, 3 sex ?, (LFC) 4 females; Nipissing Co., Mattawa, 21.VIII.1971, E.J. Kiteley (CNC) 1 female; Renfrew Co., 7 km west of Petawawa, 16.IV.1988, A. Smetana (CNC) 11 males, 6 females, (LFC) 3 males, 1 female; Quebec: La-Vallée-de-la-Gatineau Co., Kazabazua, 29.V.1982, sifting moss and litter near pond, A. Davies (CNC) 3 males, 2 females.

### 8. *Leptusa (Dysleptusa) carolinensis*

**Material examined.** CANADA: Nova Scotia: Guysborough Co., George Lake, 2-15.VI.1997, red spruce (young), D.J. Bishop, # 613 (LFC) 1 female; Malay Lake, 14.V-2.VI.1997, red spruce (thinned), D.J. Bishop, # 175 (NSPM) 1 female; Melopseketch Lake, 15-30.VI.1997, red spruce (young), D.J. Bishop, # 971, # 1049 (NSPM) 1 male, 1 female; Halifax Co., Abraham's Lake, 14.V-2.VI.1997, red spruce (old), D.J. Bishop, # 212 (NSPM) 1 female; Big St. Margarets Bay, 14.V-2.VI.1997, 2-15.VI.1997, 1-16.VII.1997 [1 female, uncertain identification], red spruce (old), D.J. Bishop (NSPM) 1 male, 2 females, 2 sex ?; Campbell Hill, 2-15.VI.1997, red spruce (thinned), D.J. Bishop, # 345, 544 (NSPM) 1 female, (LFC) 1 female; Pockwock Lake, 14.V-2.VI.1997, 1-16.VI.1997, red spruce (mature), D.J. Bishop (NSPM) 2 females [1 female, uncertain identification]; Sandy Lake, 2-15.VI.1997, red spruce (>120 years old), D.J. Bishop, # 1646, # 1792 (NSPM) 2 females; Ten Mile Lake, 14.V-2.VI.1997, red spruce (partly thinned), D.J. Bishop, # 138 (NSPM) 1 female; Hants Co., Leminister, 2-15.VI.1997, red spruce/hemlock, D.J. Bishop, # 577 (NSPM) 1 female; Nine Mile River, 14.V-2.VI.1997, black spruce (945), D.J. Bishop, # 78 (NSPM) 1 female; Panuke Lake, red spruce/hemlock (old), D.J. Bishop, # 188 (NSPM) 1 male; Pictou Co., Lorne, 14.V-2.VI.1997, 2-15.VI.1997, 15-30.VI.1997, red spruce/hemlock, D.J. Bishop, # 20, # 123, # 444, # 891 (NSPM) 1 male, 2 females, (LFC) 1 male; Quebec: Deux-Montagnes Co., Oka, 27.VII-3.VIII.1998, Maple forest, Lindgren trap, G. Pelletier (LFC) 1 male; Gatineau Co., Parc de la Gatineau, 3-10.VIII.1998, Maple forest, Lindgren trap, G. Pelletier (LFC) 1 male; La Jacques-Cartier Co., Station forestière Duschesnay, 8-15.VI.1998, Maple forest, Lindgren trap, G. Pelletier (LFC) 1 female; Maple forest, L'Amiante Co., St.-Praxède, 22-29.VI.1999, Maple forest, Lindgren trap, G. Pelletier (LFC) 1 female; Le Val-St-François, Valcourt, 8-15.VI.1998, Maple forest, Lindgren trap, G. Pelletier (LFC) 1 female; Vaudreuil-Soulanges Co., Mont-Rigaud, end Ch. de la Croix, 5.V.1988, 951, A. & Z. Smetana (CNC) 1 male, 1 female, (LFC) 1 male.

### 9. *Leptusa (subgenus ?) gatineauensis*

**Paratypes:** CANADA, Quebec: Gatineau Co., Gatineau Park, 26.V.1968, ex *Polyporus betulinus*, G - 568, D.P. Pielou (CNC) 1 female; Ontario: Kent Co., Rondeau Park, 1.V.1985, deciduous forest, general sweeping, L. LeSage (CNC) 1 male. **Non-paratype:** CANADA, Nova Scotia: Pictou Co., Lorne, red spruce/hemlock (mature), D.J. Bishop, # 477 (NSPM) 1 female.