Two new species and new provincial records of aleocharine rove beetles from Newfoundland and Labrador, Canada (Coleoptera, Staphylinidae, Aleocharinae)

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Abstract
Two new species, Atheta pseudovestita Klimaszewski & Langor, sp. n., Silusa prettyae Klimaszewski & Langor, sp. n., are described, and 16 new provincial records, including one new country record, of aleocharine beetles are presented for the province of Newfoundland and Labrador. Diagnostics, images of habitus and genital structures, distribution, bionomics information and new locality data are provided for the newly recorded species. A new checklist with 189 species of aleocharines recorded from the province is presented.

Keywords
Coleoptera, rove beetles, Staphylinidae, Aleocharinae, new provincial records, new species, Canada, Newfoundland and Labrador

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Introduction

In the first comprehensive survey of the Aleocharinae fauna of Newfoundland and Labrador (NL), 172 species in 47 genera and 12 tribes were reported (Klimaszewski et al. 2011). Since this treatment of aleocharine beetles, new specimens have become available for study resulting in the discovery of additional species. Klimaszewski et al. (2015a) published a study of Canadian and Alaskan Clusiota Casey and subgenus Microdota Mulsant & Rey of Atheta Thomson with new records of adventive Palaearctic Atheta (Microdota) subtilis Scriba from Labrador and New Brunswick. They removed Atheta (Microdota) pratensis (Mäklin) from the Newfoundland list of species on the basis of misidentification. The present, updated list of aleocharines from Newfoundland stands at 189 (Table 1). In this contribution, two species new to science and 16 new provincial records, including one new country record, are provided. As well, an updated checklist of all species from the province is provided (Table 1).

Materials and methods

All specimens in this study were dissected to examine the genital structures. Extracted genital structures were dehydrated in absolute alcohol, mounted in Canada balsam on celluloid micro-slides, and pinned with the specimens from which they originated. Images of the entire body and the genital structures were taken using an image processing system (Nikon SMZ 1500 stereoscopic microscope; Nikon Digital Camera DXM 1200F, and Adobe Photoshop software).

Morphological terminology mainly follows that used by Seevers (1978) and Klimaszewski et al. (2011). The ventral side of the median lobe of the aedeagus is considered to be the side of the bulbous containing the foramen mediale, the entrance of the ductus ejaculatorius, and the adjacent ventral side of the tubus of the median lobe with the internal sac and its structures (this part is referred to as the parameral side in some recent publications); the opposite side is referred to as the dorsal side. In the species descriptions, microsculpture refers to the surface of the upper forebody (head, pronotum and elytra).

Depository/institutional abbreviations

LFC Natural Resources Canada, Canadian Forest Service, Laurentian Forestry Centre, R. Martineau Insectarium, Quebec City, Quebec, Canada.
MUN Memorial University of Newfoundland, St. John’s, Newfoundland and Labrador (on long-term loan to D. Langor, Edmonton, Alberta).
Abbreviations of Canadian provinces and territories

AB – Alberta      NB – New Brunswick      ON – Ontario
BC – British Columbia  NF – Newfoundland  PE – Prince Edward Island
LB – Labrador      NS – Nova Scotia      QC – Quebec
MB – Manitoba      NT – Northwest Territories SK – Saskatchewan
NU – Nunavut      YT – Yukon Territory

USA state abbreviations follow those of the US Postal Service.

Discussion

Of the 189 species currently known from NL, 31 are adventive, 17 Holarctic, and 141 are Nearctic. The high percentage (16.4%) of adventive species is not surprising because NL was one of the first Canadian provinces with well-established trade with Europe dating back to the 17th century. Genera with the highest number of adventive species are *Aleochara* (5 spp.) and *Atheta* (5 spp.), and the tribe Athetini (15 spp., including 5 *Atheta* spp.), which contains the majority of aleocharine species. The relatively high percentage of Holarctic species (8.9%) found in NL is due to the distribution of some Holarctic species at higher latitudes in both North America and Europe (e.g., *Gnypeta*, many *Philhygra*, and some *Atheta*).

Detailed provincial faunal surveys provide a clear and comprehensive biodiversity dataset to establish baseline biodiversity composition where ecosystems are undergoing rapid change due to anthropogenic disturbances and climate change. Species from this family and subfamily are known to be exceptionally good ecological indicators and are increasingly being used to assess ecosystem resistance and resilience in the wake of development and environmental changes (Pohl et al. 2007, 2008, Langor, unpublished data). This paper contributes to improving baseline knowledge of the Aleocharinae in the province of NL.

The extensive sampling efforts for insects in the province to date have resulted in 189 known aleocharine species. Undoubtedly, more will be discovered over time with additional sampling and further taxonomic study. However, we believe that due to intensive sampling efforts in NF and LB conducted in recent years (Langor in Klimaszewski et al. 2011), the vast majority of the most common and widely distributed species are now known, so new future additions to the fauna will likely be species associated with rare or poorly sampled microhabitats. As well, the subarctic and arctic northern part of Labrador is poorly sampled but likely contains yet-unrecorded species from the province.
Table 1. Species of Aleocharinae recorded from Newfoundland and Labrador and their provincial distribution within Canada. Provinces in bold denote new records given in the present publication. *Considered adventive in North America. **Distribution status Holarctic.

| TRIBE GYMNUSINI | | |
|-----------------|-----------------|-----------------|
| *Gymnusa atrina* Casey** | NE, NB, NS, QC, ON, MB, AB, YT, NU, NT, BC. USA: AK | |
| *Gymnusa brevicollis* (Paykull)* | NF | |
| *Gymnusa campbelli* Klimaszewski | NE, NB, QC, ON, MB, SK, YT, NT. USA: AK | |
| *Gymnusa grandiceps* Casey | NE, NB, NS, QC, ON, MB. USA: New England states | |
| *Gymnusa lindrothi* Klimaszewski & Langor | NF | |
| *Gymnusa pseudovariegata* Klimaszewski | NE, NS, NT, BC. USA: AK | |
| *Gymnusa unetana* Klimaszewski** | NE, ON, MB, NT, YT. USA: AK | |

| TRIBE DEINOPSINI | | |
|-----------------|-----------------|-----------------|
| *Deinopsis canadensis* Klimaszewski | NE, ON | |
| *Deinopsis harringtoni* Casey | NE, NB, NS, QC, ON. USA: AK | |

| TRIBE ALEOCHARINI | | |
|-----------------|-----------------|-----------------|
| *Aleochara bilineata* Gyllenhal* | NE, NB, NS, PE, QC, ON, MB, SK, AB, BC. USA: New England states | |
| *Aleochara bimaculata* Gravenhorst | NE, NB, NS, QC, ON, MB, SK, AB, BC. USA: wide distribution | |
| *Aleochara caseyi* Likovský | NE, NB, QC, ON. USA: New England states | |
| *Aleochara castaneipennis* Mannerheim | NE, NB, NS, QC, ON, AB, BC. USA: AK | |
| *Aleochara curtula* (Goeze)* | NE, NB, NS, PE, QC, ON, BC. USA: New England states | |
| *Aleochara fumata* Gravenhorst* | NE, NB, NS, PE, QC, ON, MB, AB, YT, BC. USA: widespread | |
| *Aleochara gracilicornis* Bernhauer | NL, NB, NS, QC, ON, MB, SK, AB, YT. USA: AK | |

| TRIBE INEXPECTATA Klimaszewski (NPR) | | |
|-----------------|-----------------|-----------------|
| *Aleochara inexpectata* Klimaszewski | NE, NB, NS, QC, ON, USA: MI, WI | |
| *Aleochara lacertina* Sharp | NE, NB, NS, QC, ON, MB, SK, AB, BC | |
| *Aleochara lanuginosa* Gravenhorst* | NE, NB, NS, QC, ON, AB, BC. USA: AK | |
| *Aleochara litoralis* (Mäklin) | NE, NB, NS, PE, QC, BC. USA: AK | |
| *Aleochara sekanai* Klimaszewski | LB, NB, ON, MB, SK, AB, YT. USA: AK | |
| *Aleochara shelleysiae* Klimaszewski & Langor | NF | |
| *Aleochara sculpitivenus* (Casey) | NE, NB, QC, ON. USA: widely distributed in the east | |
| *Aleochara talbonensis* Casey (NPR) | NE, NB, NS, QC, ON, MB, SK, AB, YT, NT, BC | |
| *Aleochara tristis* Gravenhorst* | NE, NB, QC. USA: CA | |
| *Aleochara varna* Say | NE, LB, NB, NS, PE, QC, ON, MB, SK, AB, YT, BC. USA: AK | |
| *Tinotus morion* (Gravenhorst)* | NE, NB, NS, QC, ON, SK, AB, BC. USA: CT, NV | |

| TRIBE OXYPODINI | | |
|-----------------|-----------------|-----------------|
| *Crataeina suturalis* (Mannerheim)* | LB, NB, NS, ON, SK, BC. USA: IL, MA, MO, PA, SC, VA, VT | |
| *Devia prospera* (Erichson)** | LB, NB, ON, SK, AB, YT, NT, BC. USA: AK, CO, MI, MN, NM, OR, SD, UT, WA, WY | |
| *Gnathusa alfacaribou* Klimaszewski & Langor | LB | |
| *Ilyobates bennetti* Donisthorpe* (NPR) | NE, NB, NS, QC | |
| *Meotica pseudovinkleri* Klimaszewski & Langor | NF | |
| *Mniusa minutissima* (Klimaszewski & Langor) | NE, NB | |
| *Neothetalia canadana* Klimaszewski | NE, QC, YT, BC. USA: AK | |
| *Ocyusa canadensis* Lohse | NE, NB, ON, SK, YT. USA: AK | |
| *Oxypoda brachyptera* Stephens* | NE, NB, NS, QC, ON | |
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| Species                        | Province(s) | USA States |
|-------------------------------|-------------|------------|
| *Oxypoda canadensis* Klimaszewski | NE, QC, ON, MB, AB, NT |             |
| *Oxypoda convergens* Casey    | NE, NB, NS, QC, ON, AB | IA, MO, NY |
| *Oxypoda demissa* Casey       | NE, NS, QC, ON |             |
| *Oxypoda frigida* Bernhauer   | NE, NB, NS, QC, ON, YT, NT, BC | USA: AK      |
| *Oxypoda grandipennis* (Casey) | NE, LB, NB, NS, QC, ON, SK, AB, YT, BC | USA: AK, NH  |
| *Oxypoda hiemalis* Casey      | NE, LB, NB, NS, QC, ON, AB, NT | USA: AK      |
| *Oxypoda intinica* Casey      | NE, NB, QC, NT | USA: MA     |
| *Oxypoda lacustris* Casey     | NE, LB, NB, NS, QC, ON, MB, SK, AB, YT, NT, BC | USA: AK      |
| *Oxypoda lucidula* Casey      | NE, QC, ON, MB, AB, YT, NT, USA | AK, IA, MO, NH, NY |
| *Oxypoda opaca* (Gravenhorst)* | NE, NS, ON, BC, USA: NC, NY, SC, VT |             |
| *Oxypoda operta* Sjöberg*     | NE, NS, QC, ON, AB | USA: NH     |
| *Oxypoda orbicolis* Casey     | LB, NB, NS, QC, ON, SK, AB, YT | USA: WI     |
| *Oxypoda pseudolacustris* Klimaszewski | NE, NB, NS, QC, ON, SK, AB |             |
| *Parocyusa americana* (Casey) (NPR) | NF, ON, USA: NY |             |
| *Parocyusa fuliginosa* (Casey) | NE USA: NC     |             |
| *Phloeopora canadensis* Klimaszewski & Langor | NF |             |

#### TRIBE TACHYSINI

| Species                        | Province(s) | USA States |
|-------------------------------|-------------|------------|
| *Brachyusa helenae* (Casey)   | NE, NT, USA | AK         |
| *Gnypeta atrofuscens* Casey   | NE, LB, QC | USA: NY    |
| *Gnypeta caerulea* (C.R. Sahlberg)** | NE, LB, NB, NS, PE, QC, ON, MB, SK, AB, YT, BC | USA: AK |
| *Gnypeta carbonaria* (Mannerheim)** | NE, NB, QC, ON, MB, SK, AB, NT | USA: AK |
| *Gnypeta minuta* Klimaszewski & Webster | NE NB |             |
| *Gnypeta nigrella* (LeConte) | NE, NB, USA: MA, PA, MD, VT     |             |
| *Gnypeta selmani* Brundin**   | NE, LB, QC, MB, SK, YT, NT, USA | AK         |
| *Tachyusa americanoides* Pańsk | NE, NB, ON, MB, AB, NT, BC, USA: NH, NY, MA |             |

#### TRIBE BOREOCYPHINI

| Species                        | Province(s) | USA States |
|-------------------------------|-------------|------------|
| *Boreocypha websteri* Klimaszewski & Langor | NF, LB, NB |             |

#### TRIBE MYLLAENINI

| Species                        | Province(s) | USA States |
|-------------------------------|-------------|------------|
| *Myllaena arcana* Casey       | NE, LB, NB, NS, QC, ON, SK, AB | USA: AL, FL, IA, IL, MA, NH, NJ, Mexico. |
| *Myllaena audax* Casey        | NE, NB, QC, ON, NT, BC | USA: IL, LA, MA, NJ, NY, OR, RI, UT, WA |
| *Myllaena insomnis* Casey     | NE, LB, NB, NS, QC, ON, MB, SK, AB, YT, BC | USA: AK, ID, MA, MN, WI |
| *Myllaena procidua* Casey (NPR) | NF, NB, QC, USA: MA, MD, VA |             |

#### TRIBE AUTALIINI

| Species                        | Province(s) | USA States |
|-------------------------------|-------------|------------|
| *Autalia rivularis* (Gravenhorst)* | NE, NB, NS, QC, ON, AB, BC, USA: NH |             |

#### TRIBE HOMALOTINI

| Species                        | Province(s) | USA States |
|-------------------------------|-------------|------------|
| *Gyrophaena affinis* Mannerheim* | NE, NB, NS, QC, MB, BC | USA: DC, IA, IL, IN, KY, MA, ME, MI, MN, MO, NC, NH, NJ, NM, NY, PA, TN, WA, WI, WV |
| *Gyrophaena antemudis* Casey   | NE, NB, NS, USA: MA, NC, NY |             |
| *Gyrophaena chippewa* Seevers   | NE NB, USA: MI, NC, WI |             |
| *Gyrophaena criddlei* Casey    | LB, NB, ON, MB, SK, YT |             |
| *Gyrophaena insolens* Casey    | NE, LB, NB, ON, MB, SK, BC, USA: MI |             |
| *Gyrophaena involuta* Casey    | NE, NB, USA: MA, ME, NY, WI |             |
| *Gyrophaena keeni* Casey       | NE, NB, QC, ON, AB, YT, BC, USA: FL, MA, MT, NH, NY, TN, WA, WI |             |
| *Gyrophaena laetula* Casey     | NE, NB, USA: DC, IL, IN, KY, MA, NY, PA, TN, VA, WI |             |
| Species                                         | Distribution                                                                 |
|------------------------------------------------|-----------------------------------------------------------------------------|
| *Gyrophaena modesta* Casey                      | NE, NB, NS. USA: IL, IN, MI, MN, NH                                       |
| *Gyrophaena nana* (Paykull)**                   | NE, ON, MB, YT, BC. USA: AK, MA, ME, MI, MT, WI, WY                       |
| *Gyrophaena nanoides* Seevers                   | NE, NB, QC. USA: MI, NC, NY, PA                                             |
| *Gyrophaena neonana* Seevers                    | NE, YT. USA: NC, PA, WI                                                    |
| *Homalota plana* (Gyllenhal)*                   | NE, NB, NS, AB. USA: AK                                                    |
| *Leptusa brevicollis* Casey                     | NE, NS, QC, ON. USA: IA, MS, OH, PA, TX                                    |
| *Leptusa gatineaenensis* Klimaszewski & Pelletier| NE, NS, QC, ON, BC                                                        |
| *Leptusa apaca* Casey                           | NE, NB, NS, PE, QC, ON. USA: AR, GA, NC, NY, PA, RI, WI                   |
| *Silusa californica* Bernhauer                  | NE, NB, NS, QC, AB, BC. USA: AK, CA, MN                                    |
| *Silusa densus* Fenyes                          | NE, AB. USA: CA                                                           |
| *Silusa prettiae* Klimaszewski & Langor, sp. n. | (NCR, NPR)                                                                 |
| *Silusida marginella* (Casey)                   | NE, NB, NS, ON. USA: CA, IA, NY, PA                                       |
| **TRIBE PLACUSINI**                             |                                                                           |
| *Placusa incompleta* Sjöberg*                   | NE, NB, NS, QC, ON, AB, BC. USA: WA                                       |
| *Placusa tacomae* Casey                         | NE, NB, NS, QC, ON, AB, YT, NT, BC. USA: AZ, MA, WA, WI                   |
| **TRIBE ATHETINI**                              |                                                                           |
| *Acrotona sequestralis* Klimaszewski & Langor   | NE, USA: IA                                                               |
| *Acrotona pseudopygmaea* Klimaszewski & Langor  | NF                                                                        |
| *Alevonota gracilenta* (Erichson) (NPR)         | NE, NB, ON                                                                |
| *Aloconota sulcifrons* (Stephens)*              | NE, NB, QC, ON. USA: AL, IL, IN, KY, MO, NH, NY, TN, VA, WV               |
| *Alconota neocambrica* Klimaszewski & Langor    | NE, LB, NB                                                               |
| *Amischa analis* (Gravenhorst)*                 | NE, NB, NS, PE, ON. USA: CA, IN, PA                                       |
| *Atheta acadiensis* Klimaszewski & Majka        | NE, NB, NS, PE, QC                                                      |
| *Atheta alata* Bernhauer**                      | NE, YT, NT. USA: AK                                                      |
| *Atheta amicula* (Stephens)*                    | NE, NS. USA: WA                                                          |
| *Atheta annexa* Casey                           | NE, NB, NS, QC, ON. USA: AL, FL, GA, IA, IL, IN, KS, KY, LA, MO, MS, NC, NY, OH, TN, VA, WI, WY |
| *Atheta atralementaria* (Gyllenhal)*            | NF                                                                       |
| *Atheta avalon* Klimaszewski & Langor            | NF                                                                       |
| *Atheta borealis* Klimaszewski & Langor         | NF                                                                       |
| *Atheta burwelli* Lohse                         | NE, NB, QC                                                               |
| *Atheta campbelli* Lohse                        | NE, YT. USA: AK                                                          |
| *Atheta capsulata* Klimaszewski                 | NE, NB, QC                                                               |
| *Atheta caribou* Lohse                          | NE, YT                                                                  |
| *Atheta celata* (Erichson)**                    | NE, NB, NS, QC, SK, BC. USA: AK                                          |
| *Atheta circulicollis* Lohse                    | NE, QC                                                                  |
| *Atheta crenumiventris* Bernhauer [=bradorensis (Lohse)] | NE, NB, QC. USA: ME                                                      |
| *Atheta cryptica* Lohse                         | NE, QC, YT, BC                                                          |
| *Atheta curvipennis* Klimaszewski & Langor      | NE, LB                                                                  |
| *Atheta dadorpori* Thomson**                     | NF, LB, NB, NS, PE, ON, SK, AB, YT, BC. USA: AK, NY, PA, RI              |
| *Atheta districta* Casey                        | NE, NB, NS, BC                                                          |
| *Atheta fanatica* Casey                         | NE, NB, NS, QC, BC. USA: AK, NV                                          |
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| Species                                      | Provinces          | States                        |
|----------------------------------------------|--------------------|-------------------------------|
| Atheta frosti Bernhauer                      | NE, NB, NS, QC, ON, BC. USA: MA, NC, NH, NY, PA, RI, VT |
| Atheta giguereae Klimaszewski & Webster (NPR) | NF, NB, NS, ON     |
| Atheta graminicola (Gravenhorst)**           | NE, NB, QC, ON, MB, AB, YT, NT, BC. USA: AK                |
| Atheta hampshirensis Bernhauer               | NE, NB, NS, QC, ON, BC. USA: AK, CA, NC, NH, NY, OR, PA, RI, WA |
| Atheta klagesi Bernhauer (NPR) [redefined]   | NF, NB, for the rest of Canada needs to be revised. USA: ME, PA |
| Atheta lindrothi Klimaszewski & Langor       | NF                 |
| Atheta longicorns (Gravenhorst)*             | NE, NB, NS, QC. USA: MN                                   |
| Atheta neartica (Lohse)                      | NE YT, NT. USA: AK                                        |
| Atheta novascotiae Klimaszewski & Majka      | NF, NB, NS. Saint-Pierre et Miquelon (France)             |
| Atheta pecki Klimaszewski & Langor           | LB                 |
| Atheta pennysylvanica Bernhauer              | NE, LB, NB, NS, QC, ON. USA: IN, PA, RI, VA               |
| Atheta platanoffi Brundin**                  | NE, LB, NB, NS, ON, AB, YT, BC. USA: AK                   |
| Atheta prudhoensis (Lohse)                   | NE, NB, NS, ON, YT. USA: AK, VT                           |
| Atheta pseudocrenuliventris Klimaszewski     | NE, NB, NS         |
| Atheta pseudodistincta Klimaszewski & Langor | NF                 |
| Atheta pseudoklagesi Klimaszewski & Webster  | NF, NB, for the rest of Canada needs to be revised.       |
| (NPR) [redefined]                            |                    |
| Atheta pseudomodesta Klimaszewski            | NE, QC             |
| Atheta pseudosubtilis Klimaszewski & Langor  | NE, LB, NB, QC, AB, YT                                   |
| Atheta pseudovestita Klimaszewski & Langor,  | NF                 |
| sp. n. (NCR, NPR)                            |                    |
| Atheta regisalmonis (Lohse)                  | NE. USA: AK       |
| Atheta remula Casey                          | NE NB, NS, AB, YT, BC                                     |
| Atheta sauvardiae Klimaszewski & Majka       | NE, NB, NS, QC     |
| Atheta sculptiosa Klimaszewski & Langor      | NE QC             |
| Atheta strigogula Casey                      | NE NY, YT. USA: NY                                        |
| Atheta subtilis (Scriba)* (NPR)              | LB, NB            |
| Atheta terranovae Klimaszewski & Langor      | NE, LB, QC        |
| Atheta ventricosa Bernhauer                  | NE, NB, NS, QC, ON, AB, YT, BC. USA: AK, DC, NC, NJ, NY, PA, VT |
| Atheta vestita (Gravenhorst)*                | NE NB, NS         |
| Borophila eremita (Rey)**                    | NE NB, USA: AK    |
| Borophila islandica (Kraatz)**               | NE AB, NU, YT. USA: AK                                   |
| Borophila neartica Lohse                     | NE QC, MB, YT. USA: AK                                   |
| Borophila ovalis Klimaszewski & Langor       | NF                 |
| Borrostiba frigida (J. Sahlberg)**           | NE QC, YT, NT. USA: AK                                    |
| Borrostiba parvipes (Bernhauer)              | NE, LB, QC, AB, YT, NT. USA: AK, NH                      |
| Borrostiba websteri Klimaszewski & Langor    | LB, NB            |
| Callicerus rigidicornis (Erichson)* (NPR)    | NF, ON            |
| Clauota impressicollis (Bernhauer)           | NE NB, QC, BC     |
| Dinaraea angustula (Gyllenhal)*              | NE NB, NS, PE, QC, AB. USA: CA, NY                       |
| Dinaraea pacei Klimaszewski & Langor         | NE, LB, NB, QC, AB, YT, BC. USA: AK                       |
| Dochmonota rudiventris (Eppelsheim)* or **   | NE NB, YT, NT. USA: ID, MA                               |
| Earota dentata (Bernhauer)                   | NE NB, NS, QC, ON, MB, AB, YT. BC. USA: AK, AL, AZ, CO, IA, IL, NC, NJ, NM, OR, VA, WA |
| Geostiba circellaris (Gravenhorst)*          | NE, NB            |
| Species                                      | Distribution          |
|----------------------------------------------|-----------------------|
| *Hydrosmecta borealis* Klimaszewski & Langor | NF                    |
| *Hydrosmecta newfoundlandica* Klimaszewski &| Miquelon (France)     |
| Langor                                        |                       |
| *Liogluta aloconoides* Lohse                 | NF, LB, NS, QC, AB, YT|
| *Liogluta nigropolita* (Bernhauer)           | NF, QC, YT            |
| *Liogluta gigantea* Klimaszewski & Langor    | LB                    |
| *Liogluta intermedia* Klimaszewski & Langor  | NF                    |
| *Lypoglossa angularis obtusa* (LeConte)      | NE, NS, QC, USA: ME, NH|
| *Lypoglossa franclemonti* Hoebeke           | NE, NB, NS, QC, ON, MB, SK, AB, YT, USA: NY, VT |
| *Mocyta breviscula* (Mäklin)                | NE, NB, NS, MB, YT, NT, BC, USA: AK |
| *Mocyta fungí* (Gravenhorst)*               | NE, NB, NS, PE, QC, ON, YT, BC, USA: AK |
| *Mocyta luteola* (Erichson) (NPR)            | NF, NB, QC, ON, USA: MA, MN, NY |
| *Mocyta sphagnorum* Klimaszewski & Webster (NPR) | NF, NB, QC, ON |
| *Nehemitropia lividipennis* (Mannerheim)*    | NE, NB, NS, PE, QC, ON, USA: CA, LA, MA, MN, NE, NM, NY, PA, VT, TX |
| *Paragoniusa myrmicata* Klimaszewski         | NF, AB, BC            |
| *Philhygra botanicum* (Muona)**              | NE, LB, NB, NS, ON, SK, YT, BC |
| *Philhygra hygrotopora* (Kraatz)* (NPR)      | NF, NB                   |
| *Philhygra jarriiiae* Klimaszewski & Langor  | NE, NB, ON, SK, YT     |
| *Philhygra larsoni* Klimaszewski & Langor    | NF                    |
| *Philhygra luridipennis* (Mannerheim)*       | NE, NB, ON             |
| *Philhygra mallexoides* Lohse                | NE, QC, MB, NT, USA: AK|
| *Philhygra pohli* Klimaszewski & Langor      | NF                    |
| *Philhygra pseudopolaris* Klimaszewski & Langor | NF, QC, MB, YT, NT, USA: AK |
| *Philhygra pseudoterminalis* Klimaszewski & Langor | NF |
| *Philhygra ripicoloidea* Lohse               | NE, YT, NT            |
| *Philhygra rostrifera* Lohse                 | LB, SK, NT, YT, USA: AK|
| *Philhygra simuiennis* Klimaszewski & Langor | NE, LB, NB, SK, YT    |
| *Philhygra varula* (Casey)                   | NE, NB, QC, MB, QC    |
| *Seeversiella globicollis* (Bernhauer)       | NE, NB, NS, QC, ON, SK, AB, BC, USA: AZ, CO, ID, MN, MT, NH, SD, WI, Mexico, Guatemala |
| *Stethusa spuriella* (Casey) (NPR)           | NE, ON, USA: DE, GA, FL, IN, NY, OH, PA, MO |
| *Srigota ambigua* (Erichson)                 | NE, NS, USA: CA, CO, CT, IA, KS, MO, NC, NJ, NM, NY, TX |
| *Trichiua pseudopostica* Klimaszewski & Langor | NF |

**TRIBE LOMECHUSINI**

| Species                                      | Distribution          |
|----------------------------------------------|-----------------------|
| *Drusilla canaliculata* (Fabricius)*         | NE, NB, NS, PE, QC, ON, USA: AK, KY, NY |
| *Zytras obliquus* (Casey)                    | NE, NB, NS, QC, ON, MB, AB, BC, USA: MI, MO, NH, NY, OR |

**SPECIES REMOVED FROM NF LIST**

| Species                                      | Distribution          |
|----------------------------------------------|-----------------------|
| *Atheta pratensis* (Mäklin) [misidentification for *A. subtilis*] | USA: AK |
New taxonomic records

ALEOCHARINI Fleming

*Aleochara (Xenochara) inexpectata* Klimaszewski
Figs 1–7

**Diagnosis.** Body length 3.0–6.5 mm, piceous-to-black, with tarsi, last articles of labial and maxillary palpi and often posterior margin of elytra rust-brown (Fig. 1). This species is externally very similar to *A. lanuginosa* Gravenhorst from which it differs by the shape of the sclerites of the internal sac of the aedeagus (Fig. 2), the shape of the spermatheca (Fig. 7), and the smooth apical margin of male tergite VIII (Fig. 3). For a more detailed description, see Klimaszewski (1984).

**Distribution.**

| Origin | Nearctic |
|--------|----------|
| Distribution | Canada: NL, NB, NS, QC, ON; USA: MI, WI |

**New records**

New provincial record; NEWFOUNDLAND: Bog near Burgeo jct., 48.5612°N, 58.2638°W, 26-VI-2011, in moose dung, D. Langor & G. Pohl (MUN) 1 male; Blow Me Down, 49.050°N, 58.251°W, 26-VI-2010, in bear dung, D. Langor (MUN) 3 males; Cape Anguille, 47.899°N, 59.411°W, 22-VI-2010, sheep/horse dung, D. Langor (MUN) 1 male.

**References**

Klimaszewski 1984, Klimaszewski and Cervenka 1986, Gouix and Klimaszewski 2007, Webster et al. 2009, Brunke et al. 2012, Bousquet et al. 2013

**Bionomics.** In Newfoundland, adults were collected in moose dung near a bog, and in bear and sheep/horse dung. In New Brunswick, adults were captured from fresh moose dung in an eastern white cedar swamp and in decaying sea wrack resting on vegetation on the upper margin of a salt marsh (Webster et al. 2009). The adults were collected from May to July.

*Aleochara (Aleochara) tahoensis* Casey
Figs 8–14

**Diagnosis.** Body length 4.5–7.0 mm, robust, dark brown to black, with legs, labial and maxillary palpi and most of elytra (except for scutellar section) rust-brown (Fig. 8); maximum distance between eyes equal to 2.5 times maximum diameter of eye (Fig. 8). This species is externally very similar to *A. gracilicornis* Bernhauer from which it differs by having a wider distance between eyes (2.0 times maximum diameter of eye in *A. gracilicornis*). It may be distinguished from all species of *Aleochara* by the shape of median lobe and the sclerites of the internal sac of the aedeagus (Fig. 9), and the shape of the spermatheca (Fig. 14). For a more detailed description, see Klimaszewski (1984).
Figures 1–7. *Aleochara (Xenochara) inexpectata* Klimaszewski: 1 habitus in dorsal view 2 median lobe of aedeagus in lateral view 3 male tergite VIII 4 male sternite VIII 5 female tergite VIII 6 female sternite VIII 7 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
Figures 8–14. *Aleochara (Aleochara) tahoensis* Casey: 8 habitus in dorsal view 9 median lobe of aedeagus in lateral view 10 male tergite VIII 11 male sternite VIII 12 female tergite VIII 13 female sternite VIII 14 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
Distribution.  

| Origin | Nearctic |
|--------|----------|
| Distribution | Canada: NL, NB, NS, QC, ON, MB, SK, AB, YT, NT, BC; USA: CA, CO, MO, NH, NM, NV, OR, WA, WI |

| New records | New provincial record; NEWFOUNDLAND: Terra Nova National Park, Sandy Pond, 54.02°W, 48.49°N, beach rocks and detritus, 14.VIII.2014, D. & M. Langor (MUN) 5 males. |

| References | Klimaszewski 1984, Gouix and Klimaszewski 2007, Majka and Klimaszewski 2010, Brunke et al. 2012, Bousquet et al. 2013 |

**Bionomics.** In Newfoundland, adults were collected from among beach rocks and detritus. Elsewhere, adults were captured from flood debris, swampy areas, debris around dead elm and from a moose carcass (Klimaszewski 1984). Most specimens collected in southwestern USA were found at high altitudes up to 2438 m. The adults were collected from May to September.

*Aleochara (Aleochara) gracilicornis* Bernhauer  
Figs 15–22

**Diagnosis.** Body length 4.0–6.0 mm, robust, dark brown to black, with legs or only tarsi, labial and maxillary palpi and most of elytra (except sides and for scutellar section) rust-brown to yellowish-brown (Fig. 15); maximum distance between eyes equal to 2.0 times maximum diameter of eye (Fig. 15). This species is externally very similar to *A. tahoensis* Bernhauer from which it differs by having a narrower distance between eyes (2.5 times maximum diameter of eye in *A. tahoensis*). It may be distinguished from all species of *Aleochara* by the shape of the median lobe and the sclerites of the internal sac of the aedeagus (Fig. 16), and the shape of the spermatheca (Fig. 22). For a more detailed description, see Klimaszewski (1984).

**Distribution.**  

| Origin | Nearctic |
|--------|----------|
| Distribution | Canada: NL, NB, NS, QC, ON, MB, SK, AB, YT, NT, BC; USA: AZ, CO, FL, IL, IN, KS, LA, MA, MD, ME, MI, MN, MO, MT, NH, NJ, NM, NY, PA, RI, SD, UT |

| New records | New provincial record; NEWFOUNDLAND: Badger, N:o 256, 22-25.VI.51, Lindroth (MZH) 1 specimen; Badger, N:o 257, 22-23.VI.51, Lindroth (MZH) 1 specimen; Terra Nova, N:o 327, 26-28.VII.51, Lindroth (MZH) 2 specimens; Millertown, N:o 239, 14.VI.51, Lindroth (MZH) 1 specimen. |

| References | Klimaszewski 1984, Gouix and Klimaszewski 2007, Bousquet et al. 2013 |

**Bionomics.** In North America, adults were collected from debris among vegetation in a temporary creek, from leaves and debris at the edge of deciduous forest and from flood debris, in swampy habitats, and in an old beaver lodge and on carrion (Klimaszewski 1984). Specimens were collected from March to September at altitudes up to 2651 m.
Two new species and new provincial records of aleocharine rove beetles...

Figures 15–22. *Aleochara (Aleochara) gracilicornis* Bernhauer: 15 habitus in dorsal view 16 median lobe of aedeagus in lateral view 17 median lobe of aedeagus in dorsal view 18 male tergite VIII 19 male sternite VIII 20 female tergite VIII 21 female sternite VIII 22 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

*Aleochara gracilicornis*
OXYPODINI Thomson

Ilyobates bennetti Donistorphe
Figs 23–30

**Diagnosis.** This species is easily distinguishable from other aleocharines by its distinctive body shape, integument with coarse and dense punctuation and pubescence (Fig. 23), and the genital structures (Figs 24, 25, 30). Body colour is reddish to almost black.

**Distribution.**

| Origin          | Palaeartic, adventive in Canada |
|-----------------|---------------------------------|
| Distribution    | Canada: NL, NB, NS, QC          |
| New records     | New provincial record; NEWFOUNDLAND: Barachois Pd. Prov. Pk., 48.483°N, 58.269°W, 11-VII-2011, mixed forest, Heather Beck (MUN) 1 male; Cheeseman Provincial Park, mixedwood boreal forest, 47.633°N, 59.256°W, pitfall trap, 23.VII.2012, Lorna Lafosse (MUN) 3 males, 2 females; same data except: 5.VIII.2012 (MUN) 2 females, 1 sex undetermined. |
| References      | Assing 1999, Majka and Klimaszewski 2008, Webster et al. 2009, Brunke et al. 2012 |

**Bionomics.** In Newfoundland, specimens were captured in mixed boreal forest using pitfall traps. In New Brunswick, this adventive species was collected in litter at the base of a tree in a silver maple swamp, in flood debris along a river margin, and among decaying corncobs and cornhusks near a home in a forested residential area (Webster et al. 2009). Majka and Klimaszewski (2008) reported this species from pitfall traps in pastures and a blueberry field in Nova Scotia. In Europe, this species has been reported from similar habitats (Assing 1999). Adults were collected from June to August.

**Comments.** This adventive species is well established in eastern Canada.

Parocyusa americana (Casey)
Figs 31–34

*Chilopora americana* Casey 1906: 306. As *Tetraleucopora*: Seevers 1978: 67; Moore and Legner 1975: 493. As *Parocyusa*: Ashe 2000: 362, Brunke et al. 2012: 197.

**Diagnosis.** This species is easily recognized to genus by the shape of its habitus with subparallel body, deeply impressed and coarsely punctate first three visible abdominal tergites, elongate pronotum, very long tarsi with hind tarsi almost as long as tibia (Fig. 31), and the shape of spermatheca (Figs 34). The only other known Nearctic species, *P. fuliginosa* (Casey), is darker, with a slightly shorter and more densely punctate pronotum, and has quadrate to slightly transverse antennomeres VIII-X (see Fig. 28 in Klimaszewski et al. 2011).
Two new species and new provincial records of aleocharine rove beetles...

Figures 23–30. *Ilyobates bennetti* Donistorphe: 23 habitus in dorsal view 24 median lobe of aedeagus in lateral view 25 median lobe of aedeagus in dorsal view 26 male tergite VIII 27 male sternite VIII 28 female tergite VIII 29 female sternite VIII 30 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
Figures 31–34. *Parocyusa americana* (Casey): 31 habitus in dorsal view 32 female tergite VIII 33 female sternite VIII 34 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
Two new species and new provincial records of aleocharine rove beetles...

**Distribution.**

| Origin       | Nearctic                        |
|--------------|---------------------------------|
| Distribution | Canada: **NF, ON; USA: NY**      |
| New records  | New provincial record; **NEWFOUNDLAND**: Glide Lake, 8-IX-1993, pitfall 3.8 (MUN) 1 female. |
| References   | Casey 1906, Moore and Legner 1975, Seevers 1978, Ashe 2000, Brunke et al. 2012 |

**Bionomics.** In Newfoundland, one female was captured in a pitfall trap in September from a coniferous forest. In Ontario, females of *P. americana* were found on a stream bank and in a dry stream bed under a rock (Brunke et al. 2012).

**Comments.** This is the second record of this species from Canada, and it is much further east than the first record from Ontario by Brunke et al. (2012). We expect *P. americana* to occur broadly over northeastern North America in riparian habitats. At both Canadian localities only females were captured, and the original description is also based on a female specimen captured in Peekskill, New York (Casey 1906).

**ATHETINI Casey**

*Alevonota gracilenta* (Erichson)

Figs 35–43

*Homalota gracilenta* Erichson 1839:94. As *Alevonota*: Assing and Wunderle 2008: 172; Brunke et al. 2012: 162; Webster et al. 2016.

**Diagnosis.** This species is easily distinguishable from other aleocharines by its small (1.8–3.4 mm) and elongate body (Fig. 35), small eyes, and distinctive genitalia (Figs 36–37, 42–43). Head and abdomen, except for the posterior margins of the segments and the apex, dark brown to blackish; pronotum brown to dark brown; elytra yellowish-brown to brown; legs yellowish; antennae yellowish to yellowish-brown, or rarely the whole body may be considerably darker or paler (Fig. 35). For a more detailed description, see Assing and Wunderle (2008) and Brunke et al. (2012).

**Distribution.**

| Origin       | Palaearctic, adventive in Canada |
|--------------|----------------------------------|
| Distribution | Canada: NL, NB, ON               |
| New records  | New provincial record; **NEWFOUNDLAND**: St. John's, 47.52°N, 52.785°W, Int. Crop 2007/Plot 2, # 191, 7-VII-2007, Peggy Dixon (MUN) 1 male. |
| References   | Erichson 1839, Assing & Wunderle 2008, Brunke et al. 2012, Webster et al. 2016 |

**Bionomics.** *Alevonota gracilenta* apparently prefers a wide range of unforestected habitats in its native range, but is usually only collected in small numbers and using passive traps (Assing and Wunderle 2008). It was suggested that known specimens represent dispersing individuals and that the real habitat preferences of this species re-
main unknown, but are possibly subterranean (Assing and Wunderle 2008). In Newfoundland, one male was captured in an agricultural field in July. In New Brunswick, specimens were captured in Lindgren funnel traps in hardwood forests, a mixed forest,
and an old white pine (*Pinus strobus* L.) stand. In southern Ontario, specimens were captured in pitfall traps in soybean fields and hedgerows (Brunke et al. 2012). Adults were captured in Canada from May to July.

**Comments.** The accidental introduction of this obscure Palaearctic species into North America is surprising and may be recent as all known first discovered specimens are from 2009–2010 from two contiguous counties in southern Ontario (Brunke et al. 2012). The presence of this uncommon species in New Brunswick and Newfoundland suggests that it may have been introduced into Canada earlier than previously thought and had been missed due to a lack of adequate sampling in the Atlantic Provinces (Webster et al. 2016). A specimen from Colorado, identified as *Alevonota* by G.A. Lohse, is deposited in the CNC (A. Davies, personal communication) and study of this specimen may reveal that native *Alevonota* species occur in North America (Brunke et al. 2012).

*Atheta (Dimetrota) giguereae* Klimaszewski & Webster

Figs 44–51

**Diagnosis.** *Atheta giguereae* may be distinguished by the following combination of characters: body length 2.7 mm, narrowly elongate, dark brown with paler legs and basal antennal articles, integument strongly glossy (Fig. 44); median lobe of aedagus with bulbus narrowly oval, tubus broad, short, and rounded in dorsal view (Fig. 46), and produced ventrally and with apical part triangular in lateral view (Fig. 45); male tergite VIII truncate apically and broadly arcuate (Fig. 47); male sternite VIII almost evenly rounded apically (Fig. 48); female tergite VIII with apical margin arcuate (Fig. 49); sternite VIII broadly rounded apically (Fig. 50); spermatheca with broad pitcher-shaped capsule with large apical invagination and sinuate stem narrowly looped and twisted posteriorly (Fig. 51). For a more detailed description, see Webster et al. (2016).

**Distribution.**

| Origin | Nearctic |
|--------|----------|
| Distribution | Canada: **NL**, **NB**, **NS** |
| New records | New provincial record; NEWFOUNDLAND: Cheeseman Provincial Park, 47.633°N, 59.256°W, pitfall trap, 13.VII.2012, Lorna Lafosse (MUN) 1 female. |
| References | Webster et al. 2016 |

**Bionomics.** In Newfoundland, one female was collected in a pitfall trap in a mixed boreal forest in July. In New Brunswick, *Atheta giguereae* was found in mature and old-growth eastern white cedar swamps, a mixed forest, an old-growth northern hardwood forest, and an old white pine stand (Webster et al. 2016). Adults were sifted from moss and leaf litter near streams and brooks and from moist moss in these forests (Webster et al. 2016). A few individuals were captured in Lindgren funnel traps. Specimens from Nova Scotia were captured in flight intercept traps in red spruce and red spruce–hemlock forests (Webster et al. 2016). Adults were collected from April to August.
Figures 44–51. *Atheta (Dimetrota) giguereae* Klimaszewski & Webster: 44 habitus in dorsal view 45 median lobe of aedeagus in lateral view 46 median lobe of aedeagus in dorsal view 47 male tergite VIII 48 male sternite VIII 49 female tergite VIII 50 female sternite VIII 51 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
**Atheta (Pseudota) klagesi** Bernhauer
Figs 52–60

**Atheta (s. str.) klagesi** Bernhauer 1909: 524. As *Pseudota* Gusarov 2003a: 66; Klimaszewski et al. 2011: 118, Webster et al. 2016.

**Diagnosis.** *Atheta klagesi* is very similar to *A. pseudoklagesi*, and may be distinguished from it by the following combination of characters: body slightly smaller in size and more glossy, yellowish spots on elytra more intense, more intense yellowish colouration of legs, bases of antennae and maxillary palps and overall more contrasting body colour (Fig. 52); median lobe of aedeagus has shorter tubus and a more arcuate and slightly differently shaped apex (Figs 53, 54); spermatheca (Fig. 60) is very similarly shaped in both species and females may be difficult to identify unless collected with males.

**Distribution.**

| Origin  | Nearctic |
|---------|----------|
| Distribution | Canada: NL, NB; for the rest of Canada and the USA, specimens previously identified as this species need to be re-examined. |

**Revised records**

- Revised provincial record; NEWFOUNDLAND: Gallants Rd. 2.2 km from TCH, ARNEWS plot, 48.677°N, 58.195°W, 16-VIII-1995, pitfall trap, W. Bowers (MUN) 2 females; same data as before, except: 31-VII-1995 (MUN) 2 females, 25-VII-1995 (MUN) 3 males; Glide Lake, 15-VIII-1996, trap 1-F-3 (MUN) 1 sex unknown; same data as before, except: trap 3-F-1 (MUN) female; Butterpot Provincial Park, 47.381°N, 53.044°W, pitfall trap, 26.IX.2012, Andrea Pretty (MUN) 1 male.

**References**

- Bernhauer 1909, Gusarov 2003a, Klimaszewski et al. 2011, Webster et al. 2016

**Bionomics.** In Newfoundland, adults were collected in pitfall traps in boreal conifer forests in July and August.

**Comments.** See comments under the next species.

**Atheta (Pseudota) pseudoklagesi** Klimaszewski & Webster
Figs 61–68

**Diagnosis.** This is a sibling species of *A. klagesi* and was previously confused with the latter in collections. It may be distinguished from *A. klagesi* by its slightly larger size, less glossy body, less intense yellowish colouration of spots on elytra, legs, bases of antennae and maxillary palps, and overall less contrasting body colour (Fig. 61); median lobe of aedeagus has longer tubus and slightly different shape of apex in lateral view (Fig. 62); spermatheca (Fig. 68) is very similarly shaped in both species and females may be difficult to identify without accompanying males.
Figures 52–60. *Atheta (Pseudota) klagesi* Bernhauer: 52 habitus in dorsal view 53 median lobe of aedeagus in lateral view 54 apical part of tubus of median lobe of aedeagus in lateral view 55 median lobe of aedeagus in dorsal view 56 male tergite VIII 57 male sternite VIII 58 female tergite VIII 59 female sternite VIII 60 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
Two new species and new provincial records of aleocharine rove beetles...

Figures 61–68. *Atheta (Pseudota) pseudoklagesi* Klimaszewski & Webster: 61 habitus in dorsal view 62 median lobe of aedeagus in lateral view 63 median lobe of aedeagus in dorsal view 64 male tergite VIII 65 male sternite VIII 66 female tergite VIII 67 female sternite VIII 68 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
Distribution.

| Origin | Nearctic |
|--------|---------|
| Distribution | Canada: NL, NB, for the rest of Canada previously identified specimens must be re-examined. |

New records

New provincial record; NEWFOUNDLAND: Gallants, 25-VII-1994, ARNEWS 9-102, W. Bowers (MUN) 1 male; same data as before except: ARNEWS 7-102, 23-VIII-1994 (MUN) 1 male, ARNEWS 9-102, 23-VIII-1994 (MUN) 1 male, ARNEWS 9-102, 26-VII-1994 (MUN) 1 female; Gallants Rd. 2.2 km from TCH, ARNEWS plot, 48.677°N, 58.195°W, 10-VII-1995, pitfall trap, W. Bowers (MUN) 1 male; same data as before except: 25-VII-1995 (MUN) 1 male, 2 female, 23-VIII-1995 (MUN) 3 males, 1 sex unknown, 16-VIII-1995 (MUN) 2 females, 18-VII-1995 (MUN) 1 male; North Harbor, Grand Lake ARNEWS plot, 48.987°N, 57.628°W, 24-VII-1995, pitfall trap, W. Bowers (MUN) 1 female; same data as before, except: 16-VIII-1995 (MUN) 1 female, 23-VIII-1995 (MUN) 1 female, 28-VIII-1995 (MUN) 1 male, 48.988°N, 57.629°W, 10-VII-1995 (MUN) 1 female; Big Bonne Bay Pond ARNEWS Plot, 49.338°N, 57.537°W, 23-VIII-1995, pitfall trap, W. Bowers (MUN) 1 sex unknown.

References

Webster et al. 2016

Bionomics. In Newfoundland, adults were collected in pitfall traps in boreal forests in July and August. In New Brunswick, adults of this species were found in mature mixed forest, old-growth and old white spruce and balsam fir forests, a mature red spruce forest, and in a wet alder swamp. Specimens were collected from coral fungi on a Populus log, fleshy polypore fungi at base of a dead standing Populus, in decaying gilled mushrooms, in gilled mushrooms, and under bark of red spruce (Webster et al. 2016). Adults were collected from May to September.

Comments. In the past, the two sibling species were mixed together and identified as A. klagesi. All material across Canada and the USA needs to be re-examined for understanding the true distribution of the two species. In this paper, only Newfoundland and New Brunswick specimens were re-evaluated (Webster et al. 2016).

_Atheta (Thinobaena) pseudovestita_ Klimaszewski & Langor, sp. n.

http://zoobank.org/26039838-24D6-4BA9-A030-4533193F7EA0

Figs 69–76

Holotype (female). **Canada, Newfoundland**, St. Teresa, 48.3976°N, 58.6201°W, 2 m altitude, 26-VI-2011, under detritus upper beach, D. Langor & G. Pohl (LFC).

Paratypes. **Canada, Newfoundland**: Cape Broyle, 47.0954°N, 52.9525°W, 2 m altitude, 23-VI-2011, in vegetation and gravel on river bank, D. Langor & G. Pohl (MUN) 1 female; Cheeseman Provincial Park, 47.625°N, 59.271°W, 4 m altitude, 23-VI-2011, under beach detritus, D. Langor & G. Pohl (MUN) 1 female; Same data as before except: 47.633°N, 59.255°W, 27-VII-2011, treading marsh shore (LFC) 1 male; same data as before except: 2 m altitude, in detritus along seashore (LFC, MUN) 2 males; Searston, 47.828°N, 59.329°W, 7 m altitude, 23-VI-2011, under seaweed on sandy beach, D. Langor & G. Pohl (MUN) 1 male; Stephenville Crossing, 48.513°N, 58.454°W, 3 m, 22-VI-2011, D. Langor & G. Pohl (LFC, MUN) 2 males, 2 females.
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**Etymology.** *Pseudovestita* is a Latin adjective derived from the specific name of a very similar, adventive Palaearctic species occurring in Newfoundland – *A. vestita* (Gravenhorst) and the prefix *pseudo* meaning false.

**Figures 69–76.** *Atheta (Thinobaena) pseudovestita* Klimaszewski & Langor, sp. n.: 69 habitus in dorsal view 70 median lobe of aedeagus in lateral view 71 median lobe of aedeagus in dorsal view 72 male tergite VIII 73 male sternite VIII 74 female tergite VIII 75 female sternite VIII 76 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.
**Diagnosis.** Body length 3.5–3.9 mm; body moderately narrow (Fig. 69); head, antennal articles III-XI, pronotum, base of elytra, and abdomen dark brown, but legs and posterior part of elytra paler, yellowish to rust-brown; integument moderately glossy (more so than in *A. vestita*), sparsely punctate and pubescent, pubescence short and adh-hering to the body, with dense meshed microsculpture, denser on forebody, sculpticells hexagonal; head round, about as wide and as long as pronotum, with eyes shorter than postocular area; antennae with articles I-V elongate and VI-X subquadrate to slightly transverse (Fig. 69); pronotum margined laterally, trapezoidal in form in dorsal view, narrowest at base, widening apically to about apical third and then abruptly narrowed apically, slightly transverse, much narrower at base than elytra; elytra flattened, slightly longer than pronotum; abdomen broad, slightly swollen medially. **MALE.** Median lobe of aedeagus with narrowly oval bulbus streamlined with tubus in dorsal view (Fig. 71); in lateral view tubus arcuate ventrally and with broadly triangular apex (Fig. 70); internal sac structures not pronounced (Figs 70, 71); tergite VIII truncate apically and without teeth (Fig. 72); sternite VIII elongate, broadly rounded apically (Fig. 73). **FEMALE.** Tergite VIII broadly rounded apically (Fig. 74); sternite VIII truncate apically and slightly emarginated medially (Fig. 75); spermatheca with short capsule bearing wide and relatively deep apical invagination, stem sinuate, bent subapically and sinuate at apex (Fig. 76).

**Distribution.** Known only from Newfoundland, Canada.

**Bionomics.** This species was found in Newfoundland under detritus along seashore, under seaweed on sandy beaches, in vegetation and gravel on riverbanks, and on the edge of a marsh very close to a shoreline. Adults were collected in June.

**Comments.** This species is very similar externally to a Palaearctic adventive spe-cies found in NB, NS and NF. Both species may be mixed up in collections. *Atheta pseudovesita* may be distinguished from *A. vestita* by the following combination of characters: body distinctly more glossy, colouration darker and predominantly dark brown (light brown in *A. vestita*), pubescence on forebody sparser and punctation more distinct, tergites and sternites VIII similar in both species, median lobe of aedeagus narrowly elongate apically in *A. vestita* (Fig. 304b in Klimaszewski et al. 2011) and broadly triangular in *A. pseudovesita* (Fig. 62); spermatheca of a completely different form, with stem bent and subparallel at 2/3 of its length and with slightly twisted subapical section (Fig. 68), while spermatheca is S-shaped in *A. vestita* (Fig. 304c in Klimaszewski et al. 2011). Apparently the two species represent sibling species. For dis-tribution, description and illustrations of *A. vestita*, see Klimaszewski et al. 2007, 2011.

**Callicerus rigidicornis** (Erichson)

Figs 77–83

*Homalota rigidicornis* Erichson 1839: 82. As *Callicerus*: Assing 2001: 286; Brunke et al. 2012: 175.

**Diagnosis.** There are two adventive species of *Callicerus* reported from Canada (Brunke et al. 2012). Males of *C. rigidicornis* do not have their antennomere X conspicuously
Figures 77–83. *Callicerus rigidicornis* (Erichson): 77 habitus in dorsal view 78 median lobe of aedeagus in lateral view 79 male tergite VIII 80 male sternite VIII 81 female tergite VIII 82 female sternite VIII 83 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

*Callicerus rigidicornis* may be distinguished externally from *C. obscurus* by the more transverse pronotum (Fig. 77), larger body (length 3.5–5.0 mm), and by body colouration with...
lighter basal half of abdomen (entirely dark brown in *C. obscurus*). The habitus and genital structures of *C. rigidicornis* are illustrated in Figs 77–83. For details of European *Callicerus* species, see Assing (2001).

**Distribution.**

| Origin            | Palaearctic, adventive in Canada |
|-------------------|----------------------------------|
| Distribution      | Canada: NL, ON.                  |
| New records       | New provincial record; NEWFOUNDLAND: St. John’s, 47.52°N, 52.785°W, Int. Crop 2007/Plot 1, #187, 2007, Peggy Dixon (MUN), 1 female; Int. Crop 2007/Plot 5, #182, 2007, (MUN), 1 female. |
| References        | Erichson 1839, Assing 2001, Brunke et al. 2012 |

**Bionomics.** The Newfoundland females were captured using pitfall traps in agricultural fields in 2007. In Ontario, specimens were collected in agricultural hedgerows using pitfall traps in 2009 and 2010 (Brunke et al. 2012). Adults were collected in May and June.

**Comments.** *Callicerus rigidicornis* was recorded from North America as an adventive species for the first time based on Ontario specimens collected in agricultural hedgerows (Brunke et al. 2012). The NL record may suggest a broader distribution of this adventive species in Canada, but it is unknown whether these records represent separate introduction events. For information on natural history of this species in Europe, see Assing (2001).

*Mocyta luteola* (Erichson)

Figs 84–92

*Homalota luteola* Erichson 1839: 114. As *Mocyta*: Klimaszewski et al. 2015c: 124.

**Diagnosis.** This species may be distinguishable from other *Mocyta* species by its bicoloured body, dark brown head and posterior part of pronotum contrasting with reddish-brown or yellowish-brown pronotum, elytra, base of abdomen and appendages (Fig. 84), the strong microsculpture of the forebody, and the shape of the median lobe of the aedeagus (Fig. 85). The shape of the spermatheca (Figs 90–92) is similar to that of *Mocyta fungi* (Gravenhorst). For a more detailed description, see Klimaszewski et al. (2015c).

**Distribution.**

| Origin    | Nearctic |
|-----------|----------|
| Distribution | Canada: NL, NB, QC, ON. USA: MA, MN, NY |
| New records | New provincial record; NEWFOUNDLAND: LaManche Prov. Pk., 47.165°N, 52.899°W, 1-VIII-2011, conifer forest, pitfall trap, Doug Harrison (MUN) 1 female. |
| References | Erichson 1839, Bland 1865, Blatchley 1910, Casey 1910, Moore and Legner 1975, Klimaszewski et al. 2015c |
Figures 84–92. *Mocyta luteola* (Erichson): 84 habitus in dorsal view 85 median lobe of aedeagus in lateral view 86 male tergite VIII 87 male sternite VIII 88 female tergite VIII 89 female sternite VIII 90–92 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

**Bionomics.** In Newfoundland, one female was captured in a pitfall trap in a boreal conifer forest. Most adults from Quebec were collected in yellow birch- and balsam fir-dominated forest using pitfall traps (Klimaszewski et al. 2007). In New Brunswick,
adults were found: under decaying seaweed on a coastal beach; under driftwood on a riverbank; in grass, moss and leaf litter near water and in alder and cedar swamps and Carex marshes; in Sphagnum moss and leaf litter in a young regenerating mixedwood forest; and in other decaying material in forests. In Ontario, adults were captured in litter around raspberry near a bog, in a Typha marsh, and in a nest of Microtus pennsylvanicus (Klimaszewski et al. 2015c). Adults were active from March to October in Canada. In Minnesota, adults were captured on a lakeshore and in a Microtus nest, and in Indiana were taken by sifting dump vegetable debris from March to November (Blatchley 1910).

Comments. This species is probably more widely distributed in Newfoundland than the single record suggests.

Mocyta sphagnorum Klimaszewski & Webster
Figs 93–100

Diagnosis. This species may be distinguishable from other Mocyta species by its large and dark brown to black pronotum, elytra about as long as pronotum (Figs 93, 94), shape of apical structures of the internal sac of the aedeagus (Fig. 95), and shape of the spermatheca (Fig. 100). For a more detailed description, see Klimaszewski et al. 2015c.

Distribution. In Newfoundland, adults were collected in pitfall traps in boreal mixedwood and conifer forests and from under seashore detritus. In New Brunswick, adults were found in sphagnum moss and litter in calcareous eastern white cedar fens, in a black spruce forest, and one individual was collected from moldy conifer duff at the base of a large pine in a mixed forest (Klimaszewski et al. 2015). Adults were found in April and May in New Brunswick, and June to August elsewhere.

Comments. This species is probably more widely distributed in the boreal forest of Canada. Some specimens from Cheeseman Provincial Park are tentatively associated with this species because the antecostal suture of female sternite VIII was not straight.
like in typical forms but was strongly sinuate medially. These specimens were excluded from *M. fungi* (Gravenhorst) because of the short elytra, about as long as the pronotum, while the elytra are longer than the pronotum in *M. fungi*.
**Stethusa spuriella** (Casey)
Figs 101–108

*Atheta* (*Stethusa*) *spuriella* Casey, 1910: 8. As *Stethusa*: Gusarov 2003b: 239; Brunke et al. 2012: 181.

**Diagnosis.** This species may be distinguishable from two other Nearctic *Stethusa* species by the following combination of characters (Gusarov 2003b): *Stethusa spuriella* differs from *S. dichroa* (Gravenhorst) in a smaller body size (length 2.1–2.5 mm), the lack of sub-basal impressions of the terminal antennal article (Fig. 101), the lack of the distal spines of the internal sac (Figs 102, 103); the shape of the spermatheca (Fig. 108); and the lack of a female accessory sclerite. *Stethusa spuriella* differs from *S. klimschi* (Bernhauer) in having a smaller body size, the bent apex of the median lobe in lateral view (Fig. 102), and a shorter spermatheca (Fig. 108).

**Distribution.**

| Origin  | Nearctic       |
|---------|----------------|
| Distribution | Canada: NL, ON; USA: DE, FL, GA, IN, MO, NY, OH, PA |
| New records | New provincial record; NEWFOUNDLAND: Barachois Pd. Prov. Pk., 48.483°N, 58.269°W, 11-VII-2011, mixed forest, pitfall trap, Heather Beck, (MUN) 1 female. |
| References | Casey 1910, Gusarov 2003b, Brunke et al. 2012 |

**Bionomics.** In Newfoundland, one female was captured in a pitfall trap in mixed forest. In Ontario, *Stethusa spuriella* appears to be a common species in both forested and open habitats, some specimens were captured on fungi (Brunke et al. 2012). Adults were collected from May to August.

**Comments.** This species probably reaches its northernmost distribution limit in Newfoundland.

**Philhygra hygrotopora** (Kraatz)
Figs 109–115

*Homalota hygrotopora* Kraatz 1856: 220. As *Philhygra*: Palm 1970: 134; Webster et al. 2016.

**Diagnosis.** This species may be distinguishable from two other similar Nearctic species of *Philhygra* by the following combination of characters: body length 3.4 mm; body narrow with subparallel sides; antennae, head, pronotum, and abdomen dark brown, legs and elytra yellowish-brown (Fig. 109); integument not glossy; forebody with minute and dense punctuation and dense pubescence (Fig. 109); head rounded postero-laterally, with large eyes; antenna with articles V-X slightly elongate to subquadrate (Fig. 109); pronotum rounded anteriorly and angular postero-laterally, transverse,
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Figures 101–108. Stethusa spuriella (Casey): 101 habitus in dorsal view 102 median lobe of aedeagus in lateral view 103 median lobe of aedeagus in ventral view 104 male tergite VIII 105 male sternite VIII 106 female tergite VIII 107 female sternite VIII 108 spermatheca. Figures 102–108 after Gusarov (2003b). Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

Stethusa spuriella
Figures 109–115. *Philhygra hygrotopora* (Kraatz): 109 habitus in dorsal view 110 median lobe of aedeagus in lateral view 111 male tergite VIII 112 male sternite VIII 113 female tergite VIII 114 female sternite VIII 115 female terminal segments (pygidium). Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

Philhygra hygrotopora

slightly wider than head and slightly narrower than elytra, pubescence directed laterad on arcuate lines from midline of disc (Fig. 109); elytra slightly transverse, with pubescence directed postero-laterad and forming waves; abdomen subparallel, narrower
than elytra. Median lobe of aedeagus and terminal abdominal structures as illustrated (Figs 110–115). For more details, see Webster et al. 2016.

**Distribution.**

| Origin | Palaearctic and adventive in Canada |
|--------|-------------------------------------|
| Distribution | Canada: NL, NB |

New records

| Distribution | New provincial record; NEWFOUNDLAND: St. John's, Bowering Park, 47.525°N, 52.749°W, 30-VI-2010, in gravel/moss on riverbank, D. Langor & G.R. Pohl (LFC, MUN), 12 males, 4 females; same data as before, except: 1-VII-2010, in moss along riverbank, D. Langor (MUN) 1 male, 1 female; Searston, 47.828°N, 59.329°W, 23-VI-2010, under seaweed on sandy beach, D. Langor (MUN) 1 male; Newfoundland Drive, 47.6010°N, 52.7117°W, 20-VI-2009, 83 m, sweeping, D. Langor, (MUN) 1 female. |

**Bionomics.** In Newfoundland, specimens were found in gravel and moss on a riverbank, under seaweed on a sandy beach, and by sweeping vegetation in riparian habitat. In New Brunswick, *P. hygrotopora* were found in moss near the splash zone of a waterfall, in gravel on the margin of a shaded spring-fed brook near a waterfall, among gravel on a gravel bar along a shaded brook in a northern hardwood forest, and in gravel along a cold shaded brook. A few individuals were found under decaying seaweed on a sea beach. Adults were collected during June, July, August, and September.

**HOMALOTINII Heer**

*Silusa prettyae* Klimaszewski & Langor, sp. n.

http://zoobank.org/A558C4FA-F12B-4FEE-819B-71F69A5EEE7

Figs 116–123

**Holotype** (female). *Canada, Newfoundland*, Butterpot Provincial Park, 47.381°N, 53.044°W, pitfall trap, 26.IX.2012, Andrea Pretty (LFC).

**Paratypes. Canada, Newfoundland:** Butterpot Provincial Park, 47.381°N, 53.044°W, pitfall trap, 11.VIII.2012, Andrea Pretty (LFC, MUN) 2 males, 1 female; same data except: 4.VIII.2012 (MUN) 1 female, 6.IX.2012 (MUN) 1 female.

**Etymology.** This species is named after Andrea Pretty, an enthusiastic entomophilic park interpreter who collected the type series in Butterpot Provincial Park.

**Diagnosis.** Body length 2.7–3.0 mm; body moderately narrow, sides subparallel (Fig. 116); yellowish brown with head, antennae, posterior part of elytra and abdomen dark brown (Fig. 116); integument moderately glossy, sparsely punctate and pubescent, pubescence short and adhering to the body, forebody with dense meshed microsculpture, sculpticells hexagonal; head round, about as wide and as long as pronotum, with large eyes, as long as postocular area; antennae with articles I-III elongate and VI subquadrate, V-X transverse (Fig. 116); pronotum strongly transverse, slightly narrower at base than elytra; elytra longer than pronotum; abdomen broad, tapering apically.
Figures 116–123. *Silusa prettyae* Klimaszewski & Langor, sp. n.: 116 habitus in dorsal view 117 median lobe of aedeagus in lateral view 118 median lobe of aedeagus in dorsal view 119 male tergite VIII 120 male sternite VIII 121 female tergite VIII 122 female sternite VIII 123 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

**Silusa prettyae**

**MALE.** Median lobe of aedeagus with large oval bulbus and short, triangular tubus in dorsal view (Fig. 118); in lateral view, apical half of tubus produced ventrally at 75% angle (Fig. 117); two pairs of prominent internal sac structures (Figs 117–118);
tergite VIII slightly emarginate apically and with broad teeth (Fig. 119); sternite VIII elongate, produced apically (Fig. 120). FEMALE. Tergite VIII truncate apically (Fig. 121); sternite VIII slightly produced apically (Fig. 122); spermatheca with tubular and apically spherical capsule without distinct apical invagination, stem arcuate, narrowed posteriorly (Fig. 123).

**Distribution.** Known only from Butterpot Provincial Park in southeastern Newfoundland, Canada.

**Bionomics.** Adults were collected in August and September in pitfall traps in coniferous boreal forest.

**Comments.** This species is very similar externally to *S. californica* Bernhauer but may be separated from it by: its smaller body with shorter elytra (elytra at suture about as long as pronotum along median line); light brown colour with darker antennae, head, and posterior elytra and abdomen; and differently shaped spermatheca in lateral view (Fig. 123). The male of this species is similar to that of *S. californica* Bernhauer but the apical half of the tubus of the aedeagus is produced ventrally at about 75% angle and in *S. californica* at about 90% angle. The female spermatheca is distinct in its shape and has the best diagnostic features for this species (Fig. 123), and this is also the reason why the female was designated for a holotype. For illustrations of *S. californica*, see Klimaszewski et al. (2003). The three European species, *S. rubiginosa* (Er.), *S. rubra* (Er.), and *S. pipitzi* Epph., are ruled out as conspecific with *S. prettyae* as all three species have different proportions of forebody, and different body colour. For details see Lohse (1974).

### MYLLAENINI Ganglbauer

*Myllaena procidua* Casey

**Figs 124–131**

**Diagnosis.** This species may be distinguished by its body shape (Fig. 124), small size (about 1.6–2.3 mm long), antennal articles VII–X elongate (Fig. 124), and the shape of the median lobe of the aedeagus and the spermatheca (Figs 125, 126, 131). It is worthy to note that the median lobe of *M. procidua* is similar to that of *M. kaskaskia* Klimaszewski and *M. vulpina* Bernhauer, but the shape of the spermatheca differs significantly and has much better diagnostic features for identification of this species.

**Distribution.**

| Origin   | Nearctic  |
|----------|-----------|
| Distribution | Canada: NL, NB, QC. USA: MA, MD, VA |

| New records |  |
|-------------|--|
| New provincial record; **Canada**, NEWFOUNDLAND: Port au Port, Pen., Mainland, 48.5589°N, 59.1874°W, 9 m, 28-VII-2011, margin of stream, D. Langor & G. Pohl (MUN) 1 male; Blow Me Down, 49.049°N, 58.253°W, 400 m, banks of river, 26-VI-2010, D. Langor (MUN) 1 male. |

| References |  |
|------------|---|
| Casey 1911, Klimaszewski 1982, Webster et al. 2009 |
**Figures 124–131.** *Myllaena procidua* Casey: 124 habitus in dorsal view 125 median lobe of aedeagus in lateral view 126 median lobe of aedeagus in dorsal view 127 male tergite VIII 128 male sternite VIII 129 female tergite VIII 130 female sternite VIII 131 spermatheca. Scale bar of habitus = 1 mm; remaining scale bars = 0.2 mm.

**Bionomics.** The Newfoundland specimens were taken on the gravel banks of a stream and a river. In New Brunswick, adults occurred along river (clear water) margins among cobblestones set in sand and fine gravel at the water’s edge, or among
gravel at the edge of the water (Webster et al. 2009). Adults were located by turning over cobblestones and larger pebbles (Webster et al. 2009). In New Brunswick, adults were collected during May, June, July and August, by turning over cobblestones and pebbles (Webster et al. 2009).

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**References**

Ashe JS (2000) Aleocharinae. In: Arnett RH, Thomas MC (Eds) American Beetles – Archostemata, Myxophaga, Adephaga, Polyphaga: Staphyliniformia. CRC Press, Boca Raton, London, New York, Washington, D.C., 299–319, 358–374.

Assing V (1999) A revision of *Ilyobates* Kraatz, 1856 (Coleoptera: Staphylinidae, Aleocharinae, Oxypodini). Beiträge zur entomologie 9: 295–342.

Assing V (2001) A revision of *Callicerus* Gravenhorst 1802, *Pseudodemiris* Machula 1935, and *Sapocallus* Sharp 1888. Beiträge zur entomologie 51: 247–333.

Assing V, Wunderle P (2008) On the *Alevonota* species of the Western Palaearctic region (Coleoptera: Staphylinidae: Aleocharinae: Athetini). Beiträge zur entomologie 58: 145–189.

Bernhauer M (1909) Neue Aleocharinen aus Nordamerika. (Col.) (4. Stück.). Deutsche Entomologische Zeitschrift 1909: 515–528.

Bland JHB (1865) Compiled descriptions of North American Staphylinidae. Proceedings of the Entomological Society of Philadelphia 4: 391–425.

Blatchley WS (1910) The Coleoptera or beetles (exclusive of the Rhynchophora) known to occur in Indiana with bibliography and descriptions of new species. Indiana Department of Geology and Natural Resources 1: 1–1386.

Bousquet Y, Bouchard P, Davies AE, Sikes D (2013) Checklist of beetles (Coleoptera) of Canada and Alaska. Pensoft Publishers, Sofia-Moscow, 402 pp.

Brunke AJ, Klimaszewski J, Dorval JA, Bourdon C, Paiero SM, Marshall SA (2012) New species and distributional records of Aleocharinae (Coleoptera, Staphylinidae) from Ontario, Canada, with a checklist of recorded species. ZooKeys 186: 119–206. doi: 10.3897/zookeys.186.2947

Casey TL (1906) Observations on the staphylinid groups Aleocharinae and Xantholinini, chiefly of America. Transactions of the Academy of Sciences of St. Louis 16: 125–434.
Casey TL (1910) New species of the staphylinid tribe Myrmedoniini. Memoirs on the Coleoptera 1. New Era Printing Co., Lancaster, 184 pp.

Casey TL (1911) New American species of Aleocharinae and Myllaeninae. Memoirs on the Coleoptera 2. The New Era Printing Co., Lancaster, 245 pp.

Donisthorpe H (1914) Three myrmecological notes. The Entomologist’s Records 26: 136–138.

Erichson WF (1839) Erster Brand. Genera et species Staphylinorum insetorum coleopterorum famiiae. FH Morin, Berlin, 1–400.

Gouix N, Klimaszewski J (2007) Catalogue of aleocharine rove beetles of Canada and Alaska (Coleoptera; Staphylinidae; Aleocharinae). Pensoft Publishers, Sofia-Moscow, 165 pp.

Gusarov VI (2003a) Revision of some types of North American aleocharines (Coleoptera: Staphylinidae: Aleocharinae), with synonymic notes. Zootaxa 353: 1–134.

Gusarov VI (2003b) A revision of the Nearctic species of the genus Stethusa. Zootaxa 239: 1–43.

Klimaszewski J (1982) Studies of Myllaenini (Coleoptera: Staphylinidae, Aleocharinae). 1. Systematics, phylogeny, and zoogeography of Nearctic Myllaena Erichson. The Canadian Entomologist 114: 181–242. doi: 10.4039/Ent114181-3

Klimaszewski J (1984) A revision of the genus Aleochara Gravenhorst of America north of Mexico (Coleoptera: Staphylinidae, Aleocharinae). Memoirs of the Entomological Society of Canada 129: 1–211.

Klimaszewski J, Cervenka VJ (1986) A revision of the genus Aleochara (Coleoptera: Staphylinidae) of America north of Mexico (Supplement 3). New distribution data. Entomological News 97(3): 119–120.

Klimaszewski J, Assing V, Majka CG, Pelletier G, Webster RP, Langor D (2007) Records of adventive aleocharine beetles (Coleoptera: Staphylinidae: Aleocharinae) found in Canada. The Canadian Entomologist 139: 54–79. doi: 10.4039/n05-105

Klimaszewski J, Langor D, Pelletier G, Bourdon C, Perdereau L (2011) Aleocharine beetles (Coleoptera, Staphylinidae) of the province of Newfoundland and Labrador, Canada. Pensoft Publishers, Sofia-Moscow, 313 pp.

Klimaszewski J, Pohl G, Pelletier G (2003) New species, new records, and revision of Nearctic Silusa (Coleoptera, Staphylinidae, Aleocharinae). The Canadian Entomologist 135: 1–28. doi: 10.4039/n02-027

Klimaszewski J, Webster RP, Sikes D, Bourdon C, Labrecque M (2015a) A review of Canadian and Alaskan species of the genera Clusiota Casey and Atbeta Thomson, subgenus Microdota Mulsant & Rey (Coleoptera, Staphylinidae, Aleocharinae). ZooKeys 524: 103–136. doi: 10.3897/zookeys.524.6105

Klimaszewski J, Godin B, Langor D, Bourdon C, Lee S-I, Horwood D (2015b) New distribution records for Canadian Aleocharinae (Coleoptera, Staphylinidae), and new synonymies for Trichiula. ZooKeys 498: 51–91. doi: 10.3897/zookeys.498.9282

Klimaszewski J, Webster RP, Bourdon C, Pelletier G, Godin B, Langor DW (2015c) Review of Canadian species of the genus Mocyta Mulsant & Rey (Coleoptera, Staphylinidae, Aleocharinae), with the description of a new species and a new synonymy. ZooKeys 487: 111–139. doi: 10.3897/zookeys.487.9151
Two new species and new provincial records of aleocharine rove beetles...

Kraatz G (1856) Naturgeschichte der Insecten Deutschlands. Erste Abtheilung Coleoptera. Zweiter Band. Lieferung 1 und 2, Bogen 1-24 [pp. 1–376] Staphylinii. Nicolai, Berlin, viii + 1080 pp.

Lohse GA (1974) Tribus 10 (Silusini). In: Freude H, Harde KW, Lohse A (Eds) Die Käfer Mitteleuropas. Band 5: Staphylinidae II (Hypocyphtinae und Aleocharinae) Pselaphidae. Goecke & Evers, Krefeld, 381 pp.

Majka CG, Klimaszewski J (2008) Adventive Staphylinidae (Coleoptera) of the Maritime Provinces of Canada: further contributions. ZooKeys 2: 151–174. doi: 10.3897/zookeys.2.5

Majka CG, Klimaszewski J (2010) Contributions to the knowledge of the Aleocharinae (Coleoptera, Staphylinidae) in the Maritime Provinces of Canada. ZooKeys 46: 15–39. doi: 10.3897/zookeys.46.413

Moore I, Legner EF (1975) A catalogue of the Staphylinidae of America north of Mexico (Coleoptera). University of California, Division of Agricultural Science, Special Publication 3015: 1–514.

Muona J (1990) The Fennoscandian and Danish species of the genus Amischa Thomson (Coleoptera, Staphylinidae). Entomologisk Tidsskrift 111: 17–24.

Palm T (1970) Svensk Insektfauna. 9. Skalbaggar. Coleoptera. Hafte 7. Stockholm, 296 pp.

Pohl GR, Langor D, Spence JR (2007) Rove beetles and ground beetles (Coleoptera: Staphylinidae, Carabidae) as indicators of harvest and regeneration practices in western Canadian foothills forests. Biological Conservation 137: 294–307. doi: 10.1016/j.biocon.2007.02.011

Pohl GR, Langor DW, Klimaszewski J, Work TT, Paquin P (2008) Rove beetles (Coleoptera: Staphylinidae) in northern Nearctic forests. The Canadian Entomologist 140: 415–436. doi: 10.4039/n07-LS03

Seevers CH (1978) A generic and tribal revision of the North American Aleocharinae (Coleoptera: Staphylinidae). Fieldiana Zoology 71: 1–289.

Webster RP, Klimaszewski J, Pelletier G, Savard K (2009) New Staphylinidae (Coleoptera) records with new collection data from New Brunswick, Canada. I. Aleocharinae. ZooKeys 22: 171–248. doi: 10.3897/zookeys.22.152

Webster RP, Klimaszewski J, Bourdon C, Sweeney JD, Hughes CC, Labrecque M (2016) Further contributions to the Aleocharinae (Coleoptera, Staphylinidae) fauna of New Brunswick and Canada including descriptions of 27 new species. ZooKeys 573: 85–216. doi: 10.3897/zookeys.573.7016