

New Curculionoidea records from New Brunswick, Canada with an addition to the fauna of Nova Scotia

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Abstract

This paper presents 27 new records of Curculionoidea for the province of New Brunswick, Canada, including three species new to Canada, and 12 adventive species, as follows: *Eusphyrus walshii* LeConte, *Choragus harrisii* LeConte (newly recorded for Canada), *Choragus zimmermanni* LeConte (newly recorded for Canada) (Anthribidae); *Cimberis pallipennis* (Blatchley) (Nemonychidae); *Nanophyes m. marmoratus* (Goeze) (Brentidae); *Procas lecontei* Bedel (Brachyceridae); *Anthonomus pusillus* LeConte (newly recorded for Canada), *Anthonomus (Cnemocyllus) pictus* Blatchley, *Archarius salicivorus* (Paykull), *Dorytomus hirtus* LeConte, *Ellescus bipunctatus* (Linnaeus), *Mecinus janthinus* (Germar), *Myrmex chevrolatii* (Horn), *Madarellus undulatus* (Say), *Microplontus campestris* (Gyllenhal), *Pelenomus waltoni* (Boheman), *Rhinoncus bruchoides* (Herbst), *Rhinoncus perpendicularis* (Reich), *Cossonus impressifrons* Boheman, *Cossonus pacificus* Van Dyke, *Rhyncolus knowltoni* (Thatcher), *Eubulus bisignatus* (Say), *Polydrusus cervinus* (Linnaeus), *Magdalis piceae* Buchanan, *Procryphalus mucronatus* (LeConte), *Ips grandicollis* (Eichhoff), and *Xyleborinus attenuatus* (Blandford). Recent name changes in the genus *Rhinoncus* are applied to species known from New Brunswick. In addition, *Orchestes alni* (Linnaeus) is newly recorded from Nova Scotia.

Keywords

Anthribidae, Nemonychidae, Brentidae, Brachyceridae, Curculionidae, new records, Canada, New Brunswick, Nova Scotia

Introduction

The Curculionidae of New Brunswick were first reviewed by Majka et al. (2007), adding 77 species to the faunal list of the province. Later, Webster et al. (2012) newly recorded three species of Anthribidae, four Brentidae, three Dryophthoridae, three Brachyceridae, and 50 species of Curculionidae. Shortly after this, another four species of Anthribidae, one Brentidae and 11 species of Curculionidae were added to the faunal list of New Brunswick by Douglas et al. (2013). Cognato et al. (2015) reported the occurrence of *Dryocoetes kriviolutzkajae* Mandelshtam in New Brunswick. It is unclear whether this is an introduction from Russia or a Holarctic species (Cognato et al. 2015). Since 2013, 27 additional species of Curculionidae from the families Anthribidae, Nemonychidae, Brentidae, Brachyceridae, and Curculionidae have been documented for New Brunswick, including three species new to Canada. Twelve of these are adventive species. One species is also newly reported from Nova Scotia. The purpose of this paper is to report on these new records.

Methods and conventions

Collection methods. Specimens were collected by sweeping vegetation in various habitats and from Lindgren 12-funnel trap samples during a study to develop improved tools for the detection of invasive species of Cerambycidae. These traps are visually similar to tree trunks and are often effective for sampling species of Coleoptera that live in microhabitats associated with standing trees (Lindgren 1983). In many sites, equal numbers of traps were deployed in the canopy and 1 m high under trees. See Webster et al. (2012) and Hughes et al. (2014) for details of the methods used to deploy Lindgren traps and for sample collection.

A description of the habitat was recorded for all specimens collected during this survey. Locality and habitat data are presented as on labels for each record. Two labels were used on many specimens, one that included the locality, collection date, and collector, and one with macro- and microhabitat data and collection method. Information from the two labels is separated by a // in the data presented from each specimen.

Distribution. Every species is cited with current distribution in Canada and Alaska, using abbreviations for the state, provinces, and territories. New records for New Brunswick are indicated in **bold** under **Distribution in Canada and Alaska**. The following abbreviations are used in the text:

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

*Newfoundland and Labrador are each treated separately under the current Distribution in Canada and Alaska.

USA state abbreviations follow those of the US Postal Service. Acronyms of collections examined or where specimens reside referred to in this study are as follows:

AFC	Atlantic Forestry Centre, Fredericton, New Brunswick, Canada
CMNC	Canadian Museum of Nature, Ottawa, Ontario, Canada
NBM	New Brunswick Museum, Saint John, New Brunswick, Canada
RWC	Reginald P. Webster Collection, Charters Settlement, New Brunswick, Canada

Results

We newly report on 28 species of Curculionoidea, including three new Canadian records, in the families Anthribidae (3), Nemonychidae (1), Brentidae (1), Brachyceridae (1), and Curculionidae (22), including one species of Curculionidae new to Nova Scotia. Twenty-four of the 28 species reported in this study were captured in Lindgren 12-funnel traps; 18 were collected only in these traps. Four species were collected by sweeping foliage, and one was found under bark.

Species accounts

Species with a † are adventive to Canada. The determination that a species was a new record is based on information in the print version of Bousquet et al. (2013). The classification used below follows Bouchard et al. (2011).

Family Anthribidae Billberg, 1820

Subfamily Anthribinae Billberg, 1820

Tribe Zygaenodini Lacordaire, 1865

Eusphyrus walshii LeConte, 1876

Material examined. New Brunswick, York Co., Fredericton, Odell Park, 45.9439°N, 66.6666°W, 24.VI-9.VII.2013, 7-19.VIII.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel traps in canopy (2, RWC); same locality, forest type, and collection method but 19.VIII-5.IX.2013 (1, RWC); same locality and forest type but 45.9508°N, 66.6723°W, 14-28.VII.2015, 10-25.VIII.2015, 25.VIII-9.IX.2015, C. Alderson & V. Webster // Lindgren funnel traps in canopy (2 AFC; 5, RWC); Keswick Ridge, 45.9962°N, 66.8781°W, 3-18.VII.2014, 30.VI-16.VII.2015, 16-29.VII.2015, C. Alderson & V. Webster // Mixed forest, Lindgren (black) funnel trap in canopy (1), purple Lindgren funnel traps 1 m high (3), black Lindgren funnel trap 1 m high (1) (2, AFC; 3, RWC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. All specimens of this species were captured in Lindgren funnel traps in hardwood and mixed forests. Eleven of the 15 individuals were captured in the canopy of trees.

Subfamily Choraginae Kirby, 1819

Tribe Choragini Kirby, 1819

***Choragus harrisii* LeConte, 1878**

Material examined. **New Brunswick, Restigouche Co.,** Jacquet River Gorge P.N.A. (Protected Natural Area), 47.8257°N, 66.0764°W, 22.VII-5.VIII.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps in canopy of *P. balsamifera* (2, RWC).

Distribution in Canada and Alaska. NB (**New Canadian record**). This is the first record of *Choragus harrisii* LeConte for Canada. In the USA, it has been reported from MA west to MI and OK (Valentine 1998).

***Choragus zimmermanni* LeConte, 1878**

Material examined. **New Brunswick, Queens Co.,** C.F.B. Gagetown, 45.7516°N, 66.1866°W, 17-30.VII.2015, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel trap 1 m high under trees (1, RWC). **York Co.,** Keswick Ridge, 45.9962°N, 66.8781°W, 13-27.VIII.2015, C. Alderson & V. Webster // Mixed forest, Lindgren funnel trap 1 m high (1, CMNC).

Distribution in Canada and Alaska. NB (**New Canadian record**). This is the first record of *Choragus zimmermanni* LeConte for Canada. In the USA, it has been reported from MA west to OH and south to FL and TX (Valentine 1998).

Family Nemonychidae Bedel, 1882

Subfamily Cimberidinae Gozis, 1882

Tribe Cimberidini Gozis, 1882

***Cimberis pallipennis* (Blatchley, 1916)**

Material examined. **New Brunswick, Gloucester Co.,** Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 13-28.V.2015, 28.V-15.VI.2015, 15-25.VI.2015, C. Alderson & V. Webster // Mixed forest, green Lindgren funnel traps in canopy of white pine (8, RWC). **Kent Co.,** Kouchibouguac National Park, 46.8072°N, 64.9100°W, 21-27.V.2015, 27.V-12.VI.2015, 12-24.VI.2015, 24.VI-7.VII.2015, C. Alderson & V. Webster // Jack pine forest, Lindgren funnel traps, 1 m high (3, AFC);

2, RWC). **Queens Co.**, C.F.B. Gagetown, 45.7516°N, 66.1866°W, 9-22.V.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel trap in canopy of *Q. rubra* (1, RWC). **York Co.**, 15 km W of Tracy, off Rt. 645, 45.6848°N, 66.8821°W, 1-8.VI.2009, R. Webster & M.-A. Giguère // Red pine forest, Lindgren funnel trap (1, AFC).

Distribution in Canada and Alaska. AB, QC, NB, NS (Bousquet et al. 2013).

Comments. All specimens of *Cimberis pallipennis* (Blatchley) from NB were captured in Lindgren funnel traps. Eight individuals were caught in traps in the canopy of white pine, *Pinus strobus* L.; others were captured in traps 1 m high in jack pine (*Pinus banksiana* Lamb.) and red pine (*Pinus resinosa* Ait.) stands.

Family Brentidae Billberg, 1820

Subfamily Nanophyinae Gistel, 1848

Tribe Nanophylini Gistel, 1848

Nanophyes marmoratus marmoratus (Goeze, 1777)†

Material examined. **New Brunswick, Queens Co.**, Grand Lake Meadows P.N.A. at Rt. 105, 45.8461°N, 66.2061°W, 12.VI.2014, 22.VI.2014, R.P. Webster // Old field near flood plain forest, sweeping (4, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 3-18.VI.2015, 18-30.VI.2015, C. Alderson & V. Webster // Hardwood forest, green Lindgren funnel trap in canopy (1), black Lindgren funnel trap 1 m high (1) (2, RWC); Fredericton, Odell Park, 45.9508°N, 66.6723°W, 29.VI-14.VII.2015, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy (1, AFC).

Distribution in Canada and Alaska. MB, ON, QC, NB (Bousquet et al. 2013).

Comments. *Nanophyes m. marmoratus* (Goeze) was introduced into North America to control purple loosestrife, *Lythrum salicaria* L. (Anderson 2003).

Family Brachyceridae Billberg, 1820

Subfamily Eriirhininae Schönherr, 1825

Tribe Eriirhinini Schönherr, 1825

Procas lecontei Bedel, 1879

Material examined. **New Brunswick, Queens Co.**, Grand Lake Meadows P.N.A., 45.8227°N, 66.1209°W, 12.IV-3.VI.2011, M. Roy & V. Webster // Old silver maple forest & seasonally flooded marsh, Lindgren funnel trap (1, RWC).

Distribution in Canada and Alaska. YT, NT, MB, ON, QC, NB (Bousquet et al. 2013).

Comments. *Procas lecontei* Bedel is a rarely collected species about which nothing is known of its plant associations or natural history.

Family Curculionidae Latreille, 1802
Subfamily Curculioninae Latreille, 1802
Tribe Anthonomini C.G. Thomson, 1859

***Anthonomus (Anthonomus) pusillus* LeConte, 1876**

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 9-23.VII.2015, C. Alderson & V. Webster // Mixed forest, green Lindgren funnel trap 1 m high (1, RWC).

Distribution in Canada and Alaska. NB (New Canadian record).

Comments. *Anthonomus pusillus* LeConte has been recorded as far north as MA, NY, and NJ in the USA; it is associated with common frostweed, *Crocanthemum canadense* (L.) Britten (Cistaceae) (Blatchley and Leng 1916), which has been recorded from NS and PE but has not yet been found in NB. It is likely that this plant, which lives in dry sandy areas with thin tree cover, will be found in NB. Sandy dune-like areas occur in the vicinity of the site where *A. pusillus* was found. Other members of the Cistaceae (*Hudsonia tomentosa* Nutt., *Lechea maritima* Legget ex BSP) have been recorded near this locality (Hinds 2000).

***Anthonomus (Cnemocyllus) pictus* Blatchley, 1922**

Material examined. New Brunswick, Sunbury Co., Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 9.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (1, RWC).

Distribution in Canada and Alaska. ON, QC, NB, NS (Bousquet et al. 2013).

Comments. Specimen labels as “in gall on goldenrod” are the only indications of plant associations for this species (Clark and Burke 2005).

Tribe Curculionini Latreille, 1802
Subtribe Archariina Pelsue & O’Brien, 2011

***Archarius salicivorus* (Paykull, 1792)†**

Material examined. New Brunswick, Sunbury Co., Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 4.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (1, RWC).

Distribution in Canada and Alaska. QC, NB (Bousquet et al. 2013).

Comments. This species is associated with galls on *Salix* (Salicaceae) (Anderson 2002).

Tribe Ellescini C.G. Thomson, 1859**Subtribe Dorytomina Bedel, 1886*****Dorytomus hirtus* LeConte, 1876**

Material examined. New Brunswick, Restigouche Co., Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 15-29.V.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps in canopy of *P. balsamifera* (2, AFC; 1, NBM; 11, RWC); ca. 3 km SE of Simpsons Field, 47.5277°N, 66.5142°W, 14-28.V.2015, C. Alderson & V. Webster // Old cedar & spruce forest with *Populus balsamifera* & *P. tremuloides*, Lindgren funnel trap in canopy of *P. balsamifera* (1, AFC).

Distribution in Canada and Alaska. YT, BC, AB, NB (Bousquet et al. 2013). These are the first eastern records of *Dorytomus hirtus* LeConte. Previously, this species was known as far east as AB in Canada and IN in the USA (O'Brien 1970, Bousquet et al. 2013). This species will undoubtedly be found in the intervening areas and is likely transcontinental in Canada.

Comments. In the western areas of its range, *D. hirtus* is associated with *Populus fremonti* S. Watson (O'Brien 1970). In NB, this species was captured in Lindgren funnel traps in balsam poplar, *P. balsamifera* L., the probable host in this region. All (15) specimens of *D. hirtus* were captured in Lindgren funnel traps in the canopy of *P. balsamifera*, none in traps in the understory. Adults and larvae of this genus are associated with reproductive structures of various Salicaceae.

Subtribe Ellescina C.G. Thomson, 1859

Comments. Specimens reported by Webster et al. (2012) as *Ellescus ephippiatus* (Say) were misidentified and were *E. bipunctatus* (Linnaeus), a new provincial record. One specimen of *E. ephippiatus* was collected in NB, thus maintaining this species on the provincial list. Adults and larvae of this genus are associated with reproductive structures of various Salicaceae. Species are very poorly defined, and the genus needs revision.

***Ellescus bipunctatus* (Linnaeus, 1758)**

Material examined. New Brunswick, Carleton Co., Meduxnekeag Valley Nature Preserve, 46.1878°N, 67.6705°W, 18.VIII.2008, R.P. Webster // Hardwood forest, sweeping (1, NBM); Meduxnekeag Valley Nature Preserve, 46.1907°N, 67.6740°W, 8-23.V.2012, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of *Populus tremuloides* (2, RWC). **Queens Co.**, Cranberry Lake P.N.A., 46.1125°N, 65.6075°W, 3-13.V.2011, 13-25.V.2011, M. Roy & V. Webster // old red oak forest, Lindgren funnel traps in forest canopy (trap in big toothed aspen) (5, AFC; 2, NBM; 8, RWC); C.F.B. Gagetown, 45.7516°N, 66.1866°W, 9-22.V.2013,

20.V-4.VI.2015, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy (1, AFC; 1 RWC). **Northumberland Co.**, ca. 1.5 km NW of Sevogle, 47.0939°N, 65.8387°W, 1-14.V..2013, C. Alderson & V. Webster // *Populus tremuloides* stand with a few conifers, Lindgren funnel trap in canopy of *P. tremuloides* (1, AFC). **York Co.**, Fredericton, 12.V.1921, 19.V.1921, 10.V.1921, R.P.G. (16, AFC); Fredericton, Odell Park, 45.9539°N, 66.6666°W, 2-15.V.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy (1, AFC); Keswick Ridge, 45.9962°N, 66.8781°W, 22.V-4.VI.2014, C. Alderson & V. Webster // Hardwood forest, Lindgren funnel trap (1, AFC).

Distribution in Canada and Alaska. MB, ON, QC, **NB** (Bousquet et al. 2013).

Comments. Many (21) specimens of *E. bipunctatus* were captured in Lindgren funnel traps in hardwood and mixed forests in NB; all but one in the canopy of trees. Most specimens were collected from traps in the canopy of quaking aspen, *Populus tremuloides* Michx. and large-toothed aspen, *P. grandidentata* Michx.

Ellescus ehippiatus (Say, 1832)

Material examined. **New Brunswick, Sunbury Co.**, Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 4.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (1, RWC).

Distribution in Canada and Alaska. YT, BC, AB, SK, MB, ON, QC, **NB** (Bousquet et al. 2013).

Tribe Mecinini Gistel, 1848

Mecinus janthinus (Germar, 1821)†

Material examined. **New Brunswick, Queens Co.**, Grand Lake Meadows P.N.A., off Rt. 105, 45.8461°N, 66.2061°W, 12.VI.2014, R.P. Webster // Old field near flood-plain forest, sweeping (1, NBM). **Sunbury Co.**, Maugerville, off Rt. 105, 45.8662°N, 66.4559°W, 4.VI.2014, 9.VI.2014, R.P. Webster // Flood plain forest, sweeping roadside foliage (2, AFC; 2, NBM; 10, RWC). **York Co.**, Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 3-15.V.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel trap 1 m high under *Q. rubra* (1, RWC).

Distribution in Canada and Alaska. BC, AB QC, **NB**, NS (Bousquet et al. 2013).

Comments. This species was introduced into North America for the control of yellow and Dalmatian toadflax, *Linaria vulgaris* (L.) Mill. and *Linaria dalmatica* (L.) Mill. (Scrophulariaceae) (Jeanneret and Schroeder 1992).

Tribe Otidocephalini Lacordaire, 1863***Myrmex chevrolatii* (Horn, 1873)**

Material examined. **New Brunswick, York Co.,** Douglas, Currie Mountain, 45.9832°N, 66.7564°W, 24.VI-9.VII.2013, C. Alderson & V. Webster // Old *Pinus strobus* stand, Lindgren funnel traps in canopy of *P. strobus* (1, AFC; 1, RWC); Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 24.VI-9.VII.2013, 9-24.VII.2013, 24.VII-7.VIII.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy of *Q. rubra* (7, AFC; 1, NBM; 10, RWC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. All (20) specimens of *Myrmex chevrolatii* (Horn) were captured in Lindgren funnel traps in the canopy of trees (mostly in red oak (*Quercus rubra* L.)), none in traps in the understory. Adults in the Canadian Museum of Nature collection from TX have been associated with *Smilax* (Smilacaceae) vines.

Tribe Rhamphini Rafinesque, 1815***Orchestes alni* (Linnaeus, 1758)†**

Material examined. **Nova Scotia, Halifax Co.,** Magazine Hill, 44.4285°N, 63.3798°W, 14.V.2015, K. Van Rooyen & M. Luco // DND2 Black 2, monochamol lure, High trap – 4 funnel Lindgren (1, AFC).

Distribution in Canada and Alaska. BC, ON, QC, NS (Bousquet et al. 2013). This adventive European species, associated with *Ulmus*, was first reported from western North America by Anderson et al. (2007) and has since become widespread (Looney et al. 2012, Douglas et al. 2013). The above record is the first report of this species from the Maritime Provinces.

Subfamily Baridinae Schönherr, 1836**Tribe Madarini Jekel, 1865****Subtribe Madarina Jekel, 1865*****Madarellus undulatus* (Say, 1824)**

Material examined. **New Brunswick, Kent Co.,** Kouchibouguac National Park, 46.8072°N, 64.9100°W, 12-24.VI.2015, C. Alderson & V. Webster // Jackpine forest, Lindgren funnel trap, 1 m high (1, RWC). **York Co.,** Keswick Ridge, 45.9962°N, 66.8781°W, 19.V-3.VI.2015, 3-18.VI.2015, C. Alderson & V. Webster // Hardwood forest, black Lindgren funnel traps 1 m high (4), green Lindgren funnel trap 1 m high (1) (5, RWC).

Distribution in Canada and Alaska. ON, QC, NB, NS (Bousquet et al. 2013).

Comments. All specimens of this species were captured in Lindgren funnel traps. The species is associated with wild grape, *Vitis* and Virginia creeper, *Parthenocissus* (both Vitaceae) (Blatchley and Leng 1916).

Subfamily Ceutorhynchinae Gistel, 1848

Tribe Ceutorhynchini Gistel, 1848

Microplontus campestris (Gyllenhal, 1837)†

Material examined. New Brunswick, Westmorland Co., Rt. 15 at exit 53, 45.2079°N, 64.3085°W, 17.VI.2014, M.-A. Giguère & R.P. Webster // Roadside, sweeping (2, RWC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. This species is associated with *Chrysanthemum leucanthemum* L. (Asteraceae) (Anderson 2002).

Tribe Mononychini LeConte, 1876

Mononychus vulpeculus (Fabricius, 1801)

Comments. Bousquet et al. (2013) did not include *Mononychus vulpeculus* (Fabricius) as occurring in NB in their checklist. Majka et al. (2007) reported this species from several sites in the province, where it is often found on *Iris versicolor* L. This species should therefore be included on the faunal list of NB.

Tribe Phytobiini Gistel, 1848

Pelenomus waltoni (Boheman, 1843)†

Material examined. New Brunswick, Gloucester Co., Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 13-28.V.2015, C. Alderson & V. Webster // Mixed forest, black Lindgren funnel trap in canopy (1, RWC). York Co., Keswick Ridge, 45.9962°N, 66.8781°W, 19.V-3.VI.2015, 3-18.VI.2015, C. Alderson & V. Webster // Hardwood forest, black Lindgren funnel traps 1 m high under trees (2), green Lindgren funnel traps 1 m high under trees (3), purple Lindgren funnel trap 1 m high under trees (1), (1, CMNC; 5, RWC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. All specimens of this adventive species were captured in Lindgren funnel traps. In Europe, this species has been associated with *Polygonum hydropiper* L.

and *P. mite* Schrank (Polygonaceae) (Anderson and Korotyaev 2004); host associations in North America are likely also with *Polygonum* species.

***Rhinoncus bruchoides* (Herbst, 1784)†**

Material examined. **New Brunswick, Carleton Co.**, Wilmot, Two Mile Brook Fen, Wakefield, 46.3594°N, 67.6800°W, 2.VI.2005, R.P. Webster, coll. // On trail through cedar swamp, in flight in late afternoon (1, NBM); Meduxnekeag Valley Nature Preserve, 46.1890°N, 67.6766°W, 4.VII.2005, M.-A. Giguère & R.P. Webster, coll. // Flood plain forest, with butternut, sweeping (1, RWC); Florenceville, 46.4613°N, 67.6239°W, 16.VI.2010, M.-A. Giguère // Potato field, yellow pan trap (1, RWC). **Queens Co.**, W. of Jemseg at “Trout Creek”, 45.8237°N, 66.1225°W, 6.IX.2007, R.P. Webster, coll. // Silver maple swamp, sweeping foliage, along margin of marsh (1, RWC). **Restigouche Co.**, Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 29.V-10.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel trap in canopy of *P. balsamifera* (1, RWC). **Sunbury Co.**, Gilbert Island, 45.8770°N, 66.2954°W, 18-28.V.2012, 28.V-12.VI.2012, C. Alderson, C. Hughes, & V. Webster // hardwood forest, Lindgren funnel traps in canopy of *Juglans cinerea*, & 1 m high under *Juglans cinerea* (2, RWC). **York Co.**, Lincoln, Agriculture Canada Exp. Farm, 13.VI.2012, M.-A. Giguère // Potato field, yellow pan trap (1, RWC).

Distribution in Canada and Alaska. QC, NB, NS (Bousquet et al. 2013).

Comments. *Rhinoncus bruchoides* (Herbst) has been associated with a number of species of *Polygonum* (Polygonaceae) (Hoebeke and Whitehead 1980).

***Rhinoncus perpendicularis* (Reich, 1797)†**

Material examined. **New Brunswick, Queens Co.**, Grand Lake Meadows P.N.A. at Rt. 105, 45.8461°N, 66.2061°W, 22.VI.2014, R.P. Webster // Old field near flood plain forest, sweeping (1, CMNC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 22.V-4.VI.2014, C. Alderson & V. Webster // Field/meadow, Lindgren funnel trap (1, RWC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. In ON, this species has been associated with *Polygonum hydropiper* L. (Polygonaceae) (Anderson and Korotyaev 2004).

***Rhinoncus pericaripius* (Linnaeus 1758)† and *Rhinoncus castor* (Fabricius 1792)†**

The names for these two species of *Rhinoncus* (both recorded from NB) have recently been changed based on examination of type specimens (Huang and Colonnelli 2014). The spe-

cies formerly known as *Rhinoncus castor* (Fabricius 1792) is now known as *Rhinoncus pericarpus* (Linnaeus 1758). Following this change, the species formerly known as *Rhinoncus pericarpus* (Linnaeus 1758) is now known as *Rhinoncus leucostigma* (Marsham 1802).

Subfamily Cossoninae Schönherr, 1825

Tribe Cossonini Schönherr, 1825

***Cossonus impressifrons* Boheman, 1838**

Material examined. New Brunswick, Restigouche Co., Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 29.V-10.VI.2014, 10-25.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps 1 m high under trees (8) in canopy of *P. balsamifera* (3) (3, AFC; 8, RWC); ca. 3 km SE of Simpsons Field, 47.5277°N, 66.5142°W, 25.VI-10.VII.2015, 10-23.VII.2015, C. Alderson & V. Webster // Old cedar & spruce forest with *Populus balsamifera* & *P. tremuloides*, Lindgren funnel traps in canopy of *P. balsamifera* (1, AFC; 3, RWC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. All individuals of *Cossonus impressifrons* Boheman were captured in Lindgren funnel traps in areas with *Populus balsamifera*, either under these trees or in the canopy.

***Cossonus pacificus* Van Dyke, 1916**

Material examined. New Brunswick, Northumberland Co., ca. 1.5 km NW of Sevogle, 47.0939°N, 65.8387°W, 11-26.VI.2013, 26.VI-8.VII.2013, C. Alderson & V. Webster // *Populus tremuloides* stand with a few conifers, Lindgren funnel traps in canopy of *P. tremuloides* (2, RWC).

Distribution in Canada and Alaska. BC, AB, SK, NB (Bousquet et al. 2013). This is the first eastern record of this species. Previously, it was known as far east as SK but is probably more widespread.

Tribe Rhyncolini Gistel, 1848

Subtribe Rhyncolina Gistel, 1848

***Rhyncolus knowltoni* (Thatcher, 1940)**

Material examined. Charlotte Co., St. Andrews, 45.0741°N, 67.0383°W, 22.VII.2012, R.P. Webster // Barrier beach (gravel), under large log (1, CMNC; 1, RWC).

Distribution in Canada and Alaska. AB, SK, MB, NB (Bousquet et al. 2013). This is the first eastern record of this species. Previously, it was known from MB with

additional records added from AB and SK by Douglas et al. (2013). *Rhyncolus knowltoni* (Thatcher) is associated with *Populus tremuloides* (Douglas et al. (2013) and is undoubtedly more widespread than the records indicate.

Subfamily Cryptorhynchinae Schönherr, 1825

Tribe Cryptorhynchini Schönherr, 1825

Subtribe Cryptorhynchina Schönherr, 1825

Eubulus bisignatus (Say, 1832)

Material examined. **New Brunswick, Northumberland Co.**, ca. 1.5 km NW of Sevoгле, 47.0939°N, 65.8387°W, 11-26.VI.2013, C. Alderson & V. Webster // *Populus tremuloides* stand with a few conifers, Lindgren funnel trap in canopy of *P. tremuloides* (1, RWC). **Queens Co.**, C.F.B. Gagetown, 45.7516°N, 66.1866°W, 4-17.VI.2013, 17.VI-3.VII.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy of *Populus grandifolia* (1, AFC; 3, RWC). **Sunbury Co.**, Gilbert Island, 45.8770°N, 66.2954°W, 20.VI-5.VII.2013, C. Alderson, C. Hughes, & V. Webster // hardwood forest, Lindgren funnel traps in canopy of *Populus tremuloides* (2, RWC). **York Co.**, Keswick Ridge, 45.9962°N, 66.8781°W, 4-19.VI.2014, 19.VI-3.VII.2014, 3-18.VII.2014, C. Alderson & V. Webster // Mixed forest, Lindgren funnel traps in canopy (2, AFC; 1, NBM; 5, RWC); Fredericton, Odell Park, 45.9508°N, 66.6723°W, 1-19.V.2015, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy *Populus tremuloides* (1, AFC).

Distribution in Canada and Alaska. ON, QC, NB (Bousquet et al. 2013).

Comments. All 16 specimens of *Eubulus bisignatus* (Say) were captured in Lindgren funnel traps in the canopy of either *Populus tremuloides* or *P. grandifolia*; none in traps in the understory. The species is most often collected in light traps and has been associated with a variety of hardwood trees (Anderson 2008).

Subfamily Entiminae Schönherr, 1823

Tribe Polydrusini Schönherr, 1823

Polydrusus cervinus (Linnaeus, 1758)†

Material examined. **New Brunswick, Kent Co.**, Kouchibouguac National Park, 46.8072°N, 64.9100°W, 27.V-12.VI.2015, C. Alderson & V. Webster // Jackpine forest, Lindgren funnel trap, 1 m high (1, AFC). **Gloucester Co.**, Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 9-23.VII.2015, 5-21.VIII.2015, C. Alderson & V. Webster // Mixed forest, purple Lindgren funnel traps 1 m high (2, AFC). **Queens Co.**, Rt. 690 near Flowers Cove, 46.0367°N, 66.0376°W, 16.VI.2013, 20.VI.2013, M. Giguère & R. Webster // Roadside near stand of *Robinia pseudoacacia*, beating *Robinia*

foliage (1, AFC; 1, RWC); C.F.B. Gagetown, 45.7516°N, 66.1866°W, 4-17.VI.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy of *Q. rubra* (1, AFC). **Sunbury Co.**, 9.5 km NE jct. 101 & 645, 45.7586°N, 66.6755°W, 2.VII.2008, R.P. Webster // Old field with open sandy areas, on *Salix* sp. (2, RWC). **York Co.**, Charters Settlement, 45.8286°N, 66.7365°W, 8.VII.2005, R.P. Webster // Mixed forest, on foliage of *Salix* sp. (1, RWC); Charters Settlement, 45.8430°N, 66.7275°W, 11.VII.2005, R.P. Webster // Regenerating forest, beating foliage (1, RWC); same locality data, collector, and forest type but 12.VII.2005 // On foliage of *Salix* sp. (1, RWC); same locality data and collector but 21.VI.2008 // Regenerating forest, brushy opening, sweeping foliage (1 RWC); Fredericton, 45.9154°N, 66.6687°W, 30.V.2010, R.P. Webster // Roadside, on *Salix* sp. (2, RWC); Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 10-24.VI.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel trap in canopy of *Q. rubra* (1), 1 m high under *Q. rubra* (1, AFC; 1, RWC); same locality and collectors but 45.9832°N, 66.7564°W, 27.V-10.VI.2013, 24.VI-9.VII.2013 // Old *Pinus strobus* stand, Lindgren funnel trap in canopy of *P. strobus* (2, AFC); Fredericton, Odell Park, 45.9539°N, 66.6666°W, 10-24.VI.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel trap in canopy (2, AFC); Keswick Ridge, 45.9962°N, 66.8781°W, 19.VI-3.VII.2014, C. Alderson & V. Webster // Mixed forest, Lindgren funnel trap 1 m high under trees (1, AFC).

Distribution in Canada and Alaska. QC, NB, NS, PE (Bousquet et al. 2013).

Comments. This adventive Palearctic species is widespread in NB. A few adults were found on *Salix* foliage, but most NB specimens were captured in Lindgren funnel traps in various forest types.

Polydrusus impressifrons Gyllenhal, 1834†

Comments. *Polydrusus impressifrons* Gyllenhal was newly reported from NB by Majka et al. (2007), based on records from Charters Settlement and Moncton (in the University of Moncton Insect Collection). The specimens from Charters Settlement were misidentified and are *Polydrusus cervinus* (Linnaeus); however, the specimen from Moncton was correctly determined and is *P. impressifrons*, and the species remains on the provincial list.

Subfamily Mesoptiliinae Lacordaire, 1863

Tribe Magdalidini Pascoe, 1870

Magdalis piceae Buchanan, 1934

Material examined. **New Brunswick, Northumberland Co.**, Upper Graham Plains, 47.1001°N, 66.8154°W, 9-24.VII.2014, C. Alderson & V. Webster // Old black

spruce forest, Lindgren funnel trap (2, RWC). **Sunbury Co.**, Acadia Research Forest, 45.9866°N, 66.3841°W, 4-11.VIII.2009, R. Webster & M.-A. Giguère, coll. // Red spruce forest with red maple & balsam fir, Lindgren funnel trap (1, RWC). **York Co.**, 16 km W of Tracy off Rt. 645, 45.6854°N, 66.8839°W, 11-25.VII.2014, C. Alderson & V. Webster // Old red pine forest, Lindgren funnel trap (1, RWC); Fredericton, Odell Park, 45.9508°N, 66.6723°W, 29.VI-14.VII.2015, 25.VIII-9.IX.2015, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel traps in canopy (3), 1 m high under trees (1) (1, CMNC; 3, RWC).

Distribution in Canada and Alaska. ON, QC, NB, NS, PE (Bousquet et al. 2013).

Comments. All specimens of this species were captured in Lindgren funnel traps. This species was found in an old black spruce (*Picea mariana* (Mill.) B.S.P.) forest, a red spruce (*Picea rubens* Sarg.) forest with red maple (*Acer rubrum* L.) and balsam fir (*Abies balsamea* (L.) Mill.), an old red pine forest, and in a hardwood stand with spruce nearby.

Subfamily Scolytinae Latreille, 1804

Tribe Cryphalini Lindemann, 1877

Procryphalus mucronatus (LeConte, 1879)

Material examined. **New Brunswick, Carleton Co.**, Meduxnekeag Valley Nature Preserve, 46.1907°N, 67.6740°W, 7-21.VI.2012, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of *Populus tremuloides* (6) and 1 m high under *Populus tremuloides* (1) (7, RWC). **Kent Co.**, Kouchibouguac National Park, 46.8087°N, 64.9078°W, 27.V-12.VI.2015, C. Alderson & V. Webster // Poplar/red maple stand, Lindgren funnel trap, 1 m high (1, AFC). **Restigouche Co.**, ca. 3 km SE of Simpsons Field, 47.5277°N, 66.5142°W, 25.VI-10.VII.2015, C. Alderson & V. Webster // Old cedar & spruce forest with *Populus balsamifera* & *P. tremuloides*, Lindgren funnel trap in canopy of *P. balsamifera* (1, RWC). **Sunbury Co.**, Gilbert Island, 45.8770°N, 66.2954°W, 18-28.V.2012, 28.V-12.VI.2012, 23.V-6.VI.2013, C. Alderson, C. Hughes, & V. Webster // hardwood forest, Lindgren funnel traps in canopy of *Populus tremuloides* (3, AFC; 3, RWC).

Distribution in Canada and Alaska. AK, BC, AB, NB (Bousquet et al. 2013). These are the first records of this species from eastern Canada.

Comments. Most (13 of the 15 specimens) were captured in Lindgren funnel traps in the canopy of *Populus tremuloides* (12) and *P. balsamifera* (1); the other two individuals were captured in traps under *P. tremuloides* and in a stand with this tree species present. *Populus tremuloides* is the host of this beetle (Bright 1976). Bright suggested that the record of *Procryphalus utahensis* Hopkins from QC might be a misidentification of *P. mucronatus* (Bright, personal communication).

Tribe Ipini Bedel, 1888

Ips grandicollis (Eichhoff, 1868)

Material examined. **New Brunswick, Gloucester Co.,** Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 28.V-15.VI.2015, 15-25.VI.2015, 5-21.VIII.2015, C. Alderson & V. Webster // Mixed forest, purple Lindgren funnel traps in canopy of white pine (4, AFC). **Kent Co.,** Kouchibouguac National Park, 46.8072°N, 64.9100°W, 12-24.VI.2015, 4-20.VIII.2015, C. Alderson & V. Webster // Jackpine forest, Lindgren funnel traps, 1 m high (2, AFC). **Northumberland Co.,** ca. 2.5 km W of Sevole, 47.0876°N, 65.8613°W, 1-14.V.2014, 28.V.-11.VI.2013, 26.VI-8.VII.2013, C. Alderson & V. Webster // Old *Pinus banksiana* stand, Lindgren funnel traps (5, AFC; 2, RWC); Upper Graham Plains, 47.1001°N, 66.8154°W, 4-18.IX.2014, C. Alderson & V. Webster // Old black spruce forest, Lindgren funnel trap (1, AFC). **Queens Co.,** C.F.B. Gagetown, 45.7516°N, 66.1866°W, 20.V-4.VI.2015, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel traps in canopy (3, AFC). **Restigouche Co.,** Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 29.V-10.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel trap in canopy of *P. balsamifera* (1, NBM). **Sunbury Co.,** Acadia Research Forest, 45.9990°N, 66.2623°W, 113-26.VI.2012, C. Alderson & V. Webster // Mature balsam fir forest with scattered red spruce & red maple, Lindgren funnel trap (1, RWC). **York Co.,** Douglas, Currie Mountain, 45.9832°N, 66.7564°W, 10-24.VI.2013, 24.VI-9.VII.2013, 24.VII-7.VIII.2013, 7-19.VIII.2013, C. Alderson & V. Webster // Old *Pinus strobus* stand, Lindgren funnel traps in canopy of *P. strobus* (13, AFC; 1, NBM; 8, RWC); 16 km W of Tracy off Rt. 645, 45.6854°N, 66.8839°W, 14-26.V.2014, 26.V-9.VI.2014, 23.VI-11.VII.2014, 11-25.VII.2014, C. Alderson & V. Webster // Old red pine forest, Lindgren funnel traps in canopy of red pine (9), 1 m high under trees (1) (8, AFC; 2, NBM); Fredericton, Odell Park, 45.9484°N, 66.6802°W, 22.V-4.VI.2014, 17.VI-3.VII.2014, 17.VII-1.VIII.2014, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of conifer (2, AFC; 1, NBM).

Distribution in Canada and Alaska. MB, ON, QC, NB, NS (Bousquet et al. 2013).

Comments. Most (42 of 54) specimens of *Ips grandicollis* (Eichhoff) were captured in Lindgren funnel traps in the canopy of trees (many other individuals were not vouchered). Specimens were captured in the canopy of eastern white pine (26), balsam fir (1), and red pine (9). The other individuals were captured in stands with white pine and jack pine present. White pine was the only pine present at the Bathurst and Currie Mountain sites, indicating that white pine may be a host for *I. grandicollis* in NB.

Tribe Xyleborini LeConte, 1876***Xyleborinus attenuatus* (Blandford, 1894)†**

Material examined. **New Brunswick, Gloucester Co.,** Bathurst, Daly Point Nature Preserve, 47.6392°N, 65.6098°W, 13-28.V.2015, 28.V-15.VI.2015, 25.VI-9.VII.2015, C. Alderson & V. Webster // Mixed forest, black Lindgren funnel traps in canopy (2), 1 m high under trees (1) (3, AFC). **Queens Co.,** C.F.B. Gagetown, 45.7516°N, 66.1866°W, 22.V-4.VI.2013, C. Alderson & V. Webster // Old mixed forest with *Quercus rubra*, Lindgren funnel trap in canopy of *Q. rubra* (1, RWC). **Restigouche Co.,** Jacquet River Gorge P.N.A., 47.8257°N, 66.0764°W, 15-29.V.2014, 29.V-10.VI.2014, C. Alderson & V. Webster // Old *Populus balsamifera* stand near river, Lindgren funnel traps in canopy of *P. balsamifera* (1, AFC; 1, NBM). **York Co.,** Douglas, Currie Mountain, 45.9832°N, 66.7564°W, 3-15.V.2013, C. Alderson & V. Webster // Old *Pinus strobus* stand, Lindgren funnel traps in canopy of *P. strobus* (3, RWC); Douglas, Currie Mountain, 45.9844°N, 66.7592°W, 3-15.V.2013, 15-27.V.2013, 27.V-10.VI.2013, C. Alderson & V. Webster // Mixed forest with *Quercus rubra*, Lindgren funnel traps 1 m high under *Q. rubra* (5, RWC); Fredericton, Odell Park, 45.9539°N, 66.6666°W, 2-15.V.2013, 27.V-10.VI.2013, C. Alderson & V. Webster // Hardwood stand, Lindgren funnel traps in canopy (2, RWC); same locality but 45.9484°N, 66.6802°W, 12-22.V.2014, 22.V-4.VI.2014, C. Alderson & V. Webster // Old mixed forest, Lindgren funnel traps in canopy of conifer (3), in canopy of hardwood (2), 1 m high under trees (5) (10, AFC); 16 km W of Tracy off Rt. 645, 45.6854°N, 66.8839°W, 14-26.V.2014, 26.V-9.VI.2014, 23.VI-11.VII.2014, 11-25.VII.2014, C. Alderson & V. Webster // Old red pine forest, Lindgren funnel traps in canopy of red pine (2), 1 m high under trees (2) (2, AFC; 2, NBM); Keswick Ridge, 45.9962°N, 66.8781°W, 6-22.V.2014, C. Alderson & V. Webster // Mixed forest, Lindgren funnel trap 1 m high under trees (1, AFC); Canterbury, Eel River P.N.A., 45.8966°N, 67.6345°W, 8-21.V.2014, C. Alderson & V. Webster // Old-growth eastern white cedar swamp & fen, Lindgren funnel traps (1, AFC; 1, NBM).

Distribution in Canada and Alaska. BC, ON, QC, NB, NS, PE (Bousquet et al. 2013).

Comments. The adventive *Xyleborinus attenuatus* (Blandford) was first reported from North America by Mudge et al. (2001) from the northwestern USA, followed by reports from BC, the northeastern USA, PE, NS, and QC (Douglas et al. 2013). This species is now widespread and locally abundant in NB (numerous individuals captured in Lindgren funnel traps at Odell Park during 2014 and 2015; only a few were vouchered). All specimens from NB were captured in Lindgren funnel traps, about half in the canopy of trees.

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