

The Elateridae (Coleoptera) of the Maritime Provinces of Canada: faunal composition, new records, and taxonomic changes

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Table of Contents

| | |
|--|----|
| Abstract | 1 |
| Introduction | 2 |
| Historical Review | 2 |
| Methods and Conventions | 4 |
| Results | 5 |
| Elaterinae | 9 |
| Cardiophorinae | 15 |
| Agrypninae | 16 |
| Prosterninae | 16 |
| <i>Actenicerus</i> Kiesenwetter, 1858 | 20 |
| <i>Beckerus</i> Johnson, New Genus | 20 |
| <i>Corymbitodes</i> Buysson, 1904 | 21 |
| <i>Nitidolimonius</i> Johnson, New Genus | 23 |
| <i>Paractenicera</i> Johnson, New Genus | 24 |
| <i>Sylvanelater</i> Johnson, New Genus | 25 |
| Negastrinae | 26 |
| Discussion | 26 |
| Acknowledgments | 30 |
| Literature Cited | 30 |

Abstract

The Elateridae in the Maritime Provinces of Canada is surveyed. One hundred and twenty-five species have been recorded, 110 in Nova Scotia, 98 in New Brunswick, and 48 on Prince Edward Island. Of these, 117 are Nearctic, four are Holarctic, and four are introduced Palaeartic species. Twenty-four species are newly recorded in Nova Scotia, 13 in New Brunswick, and 27 on Prince Edward Island, for a total of 64 new provincial records. Fourteen species including *Dalopius gentilis* Brown, *Dalopius pennsylvanicus* Brown, *Ampedus areolatus* (Say), *Ampedus laesus* (LeConte), *Ampedus nigricollis* (Herbst), two undescribed species of *Ampedus*, *Aeolus mellillus* (Say), *Athous posticus* (Melsheimer), *Athous productus* (Randall), *Athous scapularis* (Say), *Hypoganus sulcicollis* (Say), *Sylvanelater mendax* (LeConte), and *Negastrius exiguus* (Randall) are newly recorded in the Maritime Provinces as a whole, and one species, *Dalopius pennsylvanicus*, is newly recorded in Canada. Two species are removed from the faunal list of New Brunswick and two from the faunal list of Nova Scotia.

Taxonomic changes proposed are: *Anostirus vernalis* (Hentz), **new combination**; *Anostirus bipunctatus* (Brown), **new combination**; *Anostirus exclamationis* (Fall), **new combination**; *Beckerus* **new genus**; *Beckerus appressus* (Randall), **new combination**; *Beckerus barri* (Lane), **new combination**; *Corymbitodes dorothyae* (Knull), **new combina-**

tion; *Corymbitodes elongaticollis* (Hamilton), **new combination**; *Corymbitodes moerens* (LeConte), **new combination**; *Corymbitodes pygmaeus* (Van Dyke), **new combination**; *Corymbitodes tarsalis* (Melsheimer), **new combination**; *Corymbitodes xanthomus* (Horn), **new combination**; *Metanomus blaisdelli* (Van Dyke), **new combination**; *Metanomus insidiosus* (LeConte), **new combination**; *Metanomus shastensis* (Van Dyke), **new combination**; *Nitidolimonius* **new genus**; *Nitidolimonius appalachius* (Van Dyke), **new combination**; *Nitidolimonius breweri* (Horn), **new combination**; *Nitidolimonius resplendens* (Eschscholtz), **new combination**; *Nitidolimonius weidtii* (Angell), **new combination**; *Paractenicera* **new genus**; *Paractenicera exilis* (Notman), **new combination**; *Paractenicera fulvipes* (Bland), **new combination**; *Pseudanostirus hamatus* (Say), **new combination**; *Sylvanelater*, **new genus**; *Sylvanelater cylindriciformis* (Herbst), **new combination**; *Sylvanelater furtivus* (LeConte), **new combination**; *Sylvanelater limoniiiformis* (Horn), **new combination**; *Sylvanelater mendax* (LeConte), **new combination**; and *Elater viridis* Say is regarded as a *nomen dubium*.

Key words: Coleoptera, Elateridae, *Actenicerus*, *Anostirus*, *Beckerus*, *Corymbitoides*, *Metanomus*, *Nitidolimonius*, *Paractenicera*, *Pseudanostirus*, *Sylvanelater*, new genus, New Brunswick, Nova Scotia, Prince Edward Island, Maritime Provinces, Canada, biodiversity, biogeography, saproxylic insects, rare species, forest management impacts, taxonomic revision.

Introduction

The Elateridae (click beetles) constitute a diverse and species-rich family of beetles. According to Johnson (2002) it is the ninth most taxonomically diverse beetle family globally with about 965 valid species in North America, a number that Marske & Ivie (2003) used to rank it as the seventh-most species rich family in North America. The larvae of some elaterids are important in agriculture as rhizophagous species that feed on underground parts of a variety of plants, and in silvicultural contexts as saproxylic species that feed on wood decaying organisms or as predators in woodland environments. Despite this much remains to be learned about the Elateridae. Diverse genera such as *Ampedus*, *Limonium*, *Cardiophorus*, and *Dalopius* are still in need of revisionary study, and phylogenetic study for most taxa is lacking (Johnson 2002). The bionomics of many species are little, if at all known, with fewer than 20% of the known North American species having descriptions of associated larvae. The fauna of the Maritime Provinces of Canada (New Brunswick, Nova Scotia, and Prince Edward Island) has received some past attention, however, its composition is still imperfectly known. In the present study we examine recent collections of Elateridae as well as historical specimens in collections in the region with the intent of improving our understanding of this family in the Maritime Provinces.

Historical Review

In the first account of beetles in the Maritime Provinces, Kirby (1837) described two species, *Pedetes brightwelli* (= *Athous*) and *Pedetes ruficornis* (= *Hemicrepidius memnonius* (Herbst)) from Nova Scotia based on specimens collected by Captain Basil Hall (circa 1827). Subsequently Jones (1869) recorded *Ampedus nigricollis* (Herbst), *Melanotus castanipes* (Paykull), *Pseudanostirus hieroglyphicus* (Say), *Hemicrepidius memnonius*, *Selatosomus appropinquans* (Randall), and "four or five other species (of Elateridae) of small size, undetermined," from Nova Scotia. Evans (1899) recorded *Conoderus auritus* (Herbst), *Agriotes mancus* (Say), *Agriotes limosus* (LeConte), *Agriotella bigeminata* (Randall), *Melanotus similis* (Kirby), *Liotrichus spinosus* (LeConte), *Sylvanelater cylindriciformis* (Herbst), and a species of *Dalopius* (reported as *D. lateralis* Eschscholtz prior to Brown's (1934) revision of the genus, and thus doubtless another species in this genus) from Halifax, Nova Scotia.

In the twentieth Century Gorham (1924), Brown (1933a, 1933b, 1934, 1935a, 1935b, 1936a, 1936b, 1936c, 1940), Eidt (1953, 1954), Becker (1956, 1971, 1974), Stibick (1990), Wells (1996), and Douglas

(2003) all included records of species from the region. Bousquet's (1991) checklist included a total of 109 species from the Maritime Provinces, 81 recorded from New Brunswick, 87 from Nova Scotia, and 21 from Prince Edward Island.

In Nova Scotia collectors such as D.C. Eidt, C.J.S. Fox, H.B. Specht, H.T. Stultz, V.R. Vickery, and others at the Agriculture Canada research station in Kentville (presently the Atlantic Food and Horticulture Research Centre) began collecting elaterids as early as 1909 and continued into the mid 1970s. Eidt (1953, 1954) conducted research on introduced elaterids, their impact on food crops, and how to differentiate their larval stages. During the 1930s, 1940s, and 1950s W.J. Brown with the Entomology Research Institute in Ottawa, Ontario (presently the Canadian National Collection of Insects, Arachnids, and Nematodes) made periodic visits, collecting material and contributing to collections in the region. At the Nova Scotia Agricultural College in Bible Hill, D.C. Eidt, R.E. Moorehouse, P.N. Grainger, and others began collecting elaterids in 1947 continuing until the early 1980s. At the Nova Scotia Museum, D.C. Ferguson, assisted by other contributors, began collecting insects including elaterids in 1942, a program that was continued by B. Wright from 1965 to 1993 and continues to the present spearheaded by the first author. In the mid-1980s the Nova Scotia Department of Natural Resources began collecting large quantities of beetles including Elateridae, first under E. Georgeson, later under J. Ogden, and with the assistance of many field technicians. In the mid-1980s collecting began at Cape Breton University in Sydney by D.B. McCorquodale and the many students that have worked with him, and at St Francis Xavier University R.F. Lauff began collecting in the mid-1990s. Students such as C. Corkum and D. Kehler at Acadia University in Wolfville working under S. Bondrup-Nielsen; P. Dollin at Dalhousie University working under P. Duinker; and D. Bishop at Carleton University in Ottawa, Ontario working under S. Peck, have all made important contributions to the knowledge of the elaterid fauna of the province, as have private collectors such as J. Cook, G. Selig, and D.H. Webster.

In New Brunswick W. McIntosh, P.R. McIntosh, A.G. Leavitt, and G. Morrissey at the New Brunswick Natural History Society in Saint John carried out extensive collecting of insects between 1898 and 1907 that included specimens of 41 species of elaterids. In 1927 J.N. Knull, a prolific author and collector of beetles at Ohio State University, visited Bathurst and collected beetles, including elaterids. From 1926–1930 C.A. Frost of the Cambridge Entomological Club in Massachusetts collected insects in Penobscuis including specimens of elaterids. From 1926–1943 W.J. Brown (above) visited various areas in northern and eastern New Brunswick collecting a broad spectrum of beetles in his travels. In the 1920s, 1930s, and 1940s R.P. Gorham of the Dominion Entomological Laboratories collected insects (including elaterids) in both New Brunswick and Nova Scotia. In 1965 C.G. Majka began collecting insects in Albert County, an area where he has continued to work to the present day, and where 14 species of elaterids have been recorded.

In the late 1970s and early 1980s researchers in Ottawa at the Biosystematics Research Centre (presently the Centre for Biodiversity-Invertebrate Taxonomy of Agriculture and Agri-food Canada) collected Coleoptera including elaterids as part of a study of the invertebrate fauna of Kouchibouguac National Park. Commencing in the mid-1970s and continuing to the present, students at the Université de Moncton have collected beetles, including specimens of 15 species of elaterids, primarily in the eastern portions of the province. In the early 1990s D.F. McAlpine at the New Brunswick Museum (the successor institution of the Natural History Society) began collecting beetles including elaterids, primarily at Grand Bay. R.P. Webster began research on insects in the province in the mid-1990s and in recent years, has collected a large spectrum of beetles, particularly in western portions of the province. In a major study conducted between 1992 and 1995 in potato fields in Fredericton, Boiteau *et al.* (2000) collected 46 species of elaterids. This study contributed four new species to the New Brunswick faunal list. Finally, in 2003 A.-S. Bertrand collected elaterids incidentally in the course of research on Carabidae in northwestern areas of the province.

On Prince Edward Island D.C. Read and F.M. Cannon at the Agriculture Canada research station in Charlottetown (presently the Crops and Livestock Research Centre) collected elaterids in the 1950s; in the 1980s J.G. Stewart and L.S. Thompson continued these collections, followed by M.E. Smith and C. Noronha from

the 1990's to the present day. In the 1940s researchers such as G.S. Walley and J.M. McDunnough at the Entomology Research Institute visited the island and conducted sporadic collecting for beetles including elaterids. At the University of Prince Edward Island between the early 1970s and the early 1980s variety of students collected insects, including 22 species of elaterids, as part of biodiversity research on the island. Commencing in 2001, C.G. Majka began to collect Coleoptera on Prince Edward Island and to date has found 29 species of Elateridae there.

Methods and Conventions

Specimens and published records of Elateridae originating in New Brunswick (1,239 specimens), Nova Scotia (5,881 specimens) and Prince Edward Island (245 specimens) were examined (total = 7,365). Codens of collections (following Evenhuis 2007) referred to in the text are:

| | |
|-------------|--|
| ACNS | Agriculture and Agri-food Canada, Kentville, Nova Scotia, Canada |
| ACPE | Agriculture and Agri-food Canada, Charlottetown, Prince Edward Island, Canada |
| CBU | Cape Breton University, Sydney, Nova Scotia, Canada |
| CGMC | Christopher G. Majka collection, Halifax, Nova Scotia, Canada |
| CNC | Canadian National Collection of Insects, Arachnids, and Nematodes, Agriculture and Agri-food Canada, Ottawa, Ontario, Canada |
| DHWC | David H. Webster collection, Kentville, Nova Scotia, Canada |
| NBM | New Brunswick Museum, Saint John, New Brunswick, Canada |
| NSAC | Nova Scotia Agricultural College, Bible Hill, Nova Scotia, Canada |
| NSMC | Nova Scotia Museum collection, Halifax, Nova Scotia, Canada |
| NSNR | Nova Scotia Department of Natural Resources, Shubenacadie, Nova Scotia, Canada |
| QMOR | Collection Entomologique Ouellet-Robert, Université de Montréal, Montréal, Québec, Canada |
| RWC | Reginald P. Webster collection, Charters Settlement, New Brunswick, Canada |
| UMNB | Université de Moncton, Moncton, New Brunswick, Canada |
| UPEI | University of Prince Edward Island, Charlottetown, Prince Edward Island, Canada |

The number of specimens examined for species listed below is indicated in parentheses. If not specified it is assumed to be one. For species where there were fewer than 20 specimens, all records are reported. For species where there were more than 20 specimens, a summary of specimens examined is given.

The general classification used here follows Johnson (2002). Genera and species are in alphabetical sequence within each subfamily. In this regard it is worth drawing attention to the genus *Ctenicera* Latreille 1829 (*sensu lato*). In North America the many species formerly placed in this genus are in the process of taxonomic review and generic re-assignment. Some species have been, or are here, reassigned to *Actenicerus* Kiesenwetter 1858, *Anostirus* Thompson 1859, *Beckerus* n. gen., *Corymbitodes* Buysson 1904, *Hypoganus* Kiesenwetter 1858, *Liotrichus* Kiesenwetter 1858, *Metanomus* Buysson 1857, *Paractenicera* n. gen., *Prosteron* Latreille 1834, *Pseudanostirus* Dolin 1964, *Selatosomus* Stephens 1830, *Setasomus* Gurjeva 1985, and *Sylvanelater* n. gen. In North America only *Ctenicera kendalli* (Kirby) is properly attributable to this genus as defined by Binaghi (1940), Leseigneur (1972), Gurjeva (1989), and Platia).

Another genus in need of taxonomic revision and containing a number of undescribed species is *Ampedus* Dejean 1833. Such a review is currently in progress by F. Ramberg (pers. comm.) based on his previously unpublished doctoral thesis (Ramberg 1979). Pending the publication of this revision we treat the species within *Ampedus* according to present taxonomy and systematics while making note of two undescribed species that will be described in Ramberg's anticipated revision.

Results

As a result of the present investigations 125 species of Elateridae have been recorded in the Maritime Provinces of Canada; 110 in Nova Scotia (NS), 98 in New Brunswick (NB), and 48 on Prince Edward Island (PEI) (Table 1). Zoogeographically, 117 species are Nearctic, four are Holarctic, and four are introduced Palearctic species. Twenty-four species are newly recorded in Nova Scotia, 13 in New Brunswick, and 27 on Prince Edward Island for a total of 64 new provincial records. Fourteen species including *Dalopius gentilis* Brown, *Dalopius pennsylvanicus* Brown, *Ampedus areolatus* (Say), *Ampedus laesus* (LeConte), *Ampedus nigricollis* (Herbst), two undescribed species of *Ampedus*, *Aeolus mellillus* (Say), *Athous posticus* (Melsheimer), *Athous productus* (Randall), *Athous scapularis* (Say), *Hypoganus sulcicollis* (Say), *Sylvanelater mendax* (LeConte), and *Negastris exiguus* (Randall) are newly recorded in the Maritime Provinces as a whole, and one species, *Dalopius pennsylvanicus*, is newly recorded in Canada.

Two species, *Agriotes pubescens* Melsheimer, and *Athous campyloides* Newman are removed from the faunal list of New Brunswick, and two species, *Selatosomus splendens* (Ziegler) and *Danosoma obtectum* (Say), are removed from the faunal list of Nova Scotia. Additionally previous records of *Cardiophorus cardisce* (Say) (in NB and NS) and *Paradonus obliquatus* (Melsheimer) (in NS) are now attributable to *Cardiophorus propinquus* Lanchester and *Paradonus oliverae* Stibick respectively.

Specific details of new records, new combinations, and generic reassignments follow. Species listed in Table 1 but not discussed below are ones for which there are previous records from their respective jurisdictions.

TABLE 1. Maritime Provinces Elateridae.

| | Nova Scotia | | | | NS | NB | PEI | Regional Distribution | | |
|--|-----------------|------------|----------------------|-------------|----|----|-----|--------------------------------|------------------------|--|
| | Northern County | Cape Shore | Eastern Breton Shore | South Shore | | | | | Bay of Fundy | |
| <i>Elaterinae</i> | | | | | | | | | | |
| <i>Elaterini</i> | | | | | | | | | | |
| <i>Elater abruptus</i> Say | | 1 | | | | 1 | | CT, MA, ME, NH, NY, ON, QC, RI | | |
| <i>Sericus honestus</i> (Randall) | | 2 | 2 | 2 | 1 | 1 | 8 | 3 | ME, NH, NY, ON, QC, VT | |
| <i>Sericus incongruus</i> (LeConte) | | 3 | 1 | 2 | 2 | 4 | 12 | 2 | 1 | LB, ME, NF, NH, NY, ON, QC |
| <i>Sericus viridanus</i> (Say) | | | | 2 | 1 | 2 | 5 | | | LB, ME, NF, NY, ON, QC, RI |
| <i>Megapenthini</i> | | | | | | | | | | |
| <i>Megapenthes rogersi</i> Horn | | | | | | | | | 1 | NY, ON, QC |
| <i>Megapenthes stigmosus</i> (LeConte) | | | | | 1 | 1 | 5 | | | ME, NY, ON, QC |
| <i>Agriotini</i> | | | | | | | | | | |
| <i>Agriotina</i> | | | | | | | | | | |
| <i>Agriotes collaris</i> (LeConte) | | 4 | 4 | 2 | 3 | 4 | 17 | 6 | 2 | CT, MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Agriotes fucosus</i> (LeConte) | | | 2 | 1 | | 1 | 4 | 3 | | ME, NF, NH, ON, QC, RI, VT |
| <i>Agriotes limosus</i> (LeConte) | | 4 | 3 | 2 | 3 | 4 | 16 | 9 | 2 | LB, MA, ME, NF, NH, NY, ON, QC, VT |
| <i>Agriotes lineatus</i> (Linnaeus) † | | 1 | 1 | | 2 | 1 | 5 | | | NF |
| <i>Agriotes mancus</i> (Say) | | 3 | | 1 | 4 | 4 | 12 | 5 | 2 | CT, LB, MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Agriotes obscurus</i> (Linnaeus) † | | 1 | 2 | 1 | 2 | 3 | 9 | | | ME, NF |
| <i>Agriotes quebecensis</i> Brown | | 1 | 1 | | | 2 | 4 | | 1 | MA, ME, NH, NY, ON, QC |
| <i>Agriotes sputator</i> (Linnaeus) † | | 2 | 2 | 1 | 2 | 4 | 11 | 4 | 1 | |

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TABLE 1 (continued)

| | Nova Scotia | | | | | NS | NB | PEI | Regional Distribution |
|--|-------------|-------|---------|-------|--------|----|----|-----|--------------------------------|
| | Northern | Cape | Eastern | South | Bay of | | | | |
| | County | Shore | Breton | Shore | Shore | | | | |
| <i>Agriotes stabilis</i> (LeConte) | 2 | 1 | 2 | 3 | 2 | 10 | 4 | 1 | CT, MA, ME, NH, NY, ON, QC, VT |
| <i>Dalopius agnellus</i> Brown | | | | | | | | 3 | ME, QC |
| <i>Dalopius cognatus</i> Brown | 3 | 1 | 2 | 3 | 3 | 12 | 1 | | ME, NH, NY, ON, QC |
| <i>Dalopius fuscipes</i> Brown | 4 | 2 | 2 | 3 | 2 | 13 | 2 | | ME, NY, QC |
| <i>Dalopius gentilis</i> Brown | 2 | 1 | 1 | 2 | 2 | 8 | 1 | 1 | NY, ON, QC, RI |
| <i>Dalopius pallidus</i> Brown | | | 1 | | 1 | 2 | 1 | 3 | NF, NH, NY, ON, QC |
| <i>Dalopius pennsylvanicus</i> Brown | | | 1 | | | 1 | | | |
| <i>Dalopius vagus</i> Brown | 4 | 4 | 2 | 4 | 4 | 18 | 8 | 3 | ME, NH, NY, ON, QC, RI |
| Pomachiliina | | | | | | | | | |
| <i>Agriotella bigeminata</i> (Randall) | 1 | | 1 | | 1 | 3 | 3 | | MA, ME, NH, NY, ON, QC, RI |
| <i>Agriotella debilis</i> (LeConte) | 3 | | 2 | 3 | 2 | 10 | 1 | | LB, MA, ME, NF, NH, NY, ON, QC |
| <u>Ampedini</u> | | | | | | | | | |
| Ampedina | | | | | | | | | |
| <i>Ampedus apicatus</i> (Say) | 2 | 1 | 1 | 1 | 1 | 6 | 5 | 1 | ME, NF, NH, ON, QC |
| <i>Ampedus areolatus</i> (Say) | | | | | | 1 | 1 | | MA, ME, NH, NY, ON, QC, RI |
| <i>Ampedus collaris</i> (Say) | 1 | | | | | | 1 | 1 | CT, MA, ME, NY, QC, RI |
| <i>Ampedus deletus</i> (LeConte) | 3 | | 2 | 1 | 2 | 8 | 1 | | LB, NF, ON, QC |
| <i>Ampedus evansi</i> Brown | 2 | | 2 | 3 | 2 | 9 | 2 | | ME, ON, QC |
| <i>Ampedus fuscus</i> (LeConte) | 3 | | 2 | | | 1 | 6 | 1 | LB, ME, NF, NH, ON, QC |
| <i>Ampedus laesus</i> (LeConte) | | | 1 | | | | 1 | | MA, ME, NH, NY, ON |
| <i>Ampedus laurentinus</i> Brown | 2 | 1 | 1 | 1 | | 5 | 3 | 1 | ME, NY, ON, QC |
| <i>Ampedus</i> species 1 | | | 1 | 1 | | 2 | | | ON, QC |
| <i>Ampedus luctuosus</i> (LeConte) | 1 | 1 | 2 | 1 | 2 | 7 | 1 | 2 | LB, ME, NF, NH, NY, ON, QC, RI |
| <i>Ampedus</i> species 2 | | | 1 | 2 | 1 | 4 | | 1 | ON, QC |
| <i>Ampedus melsheimeri</i> (Leng) | 1 | | | 1 | 1 | 3 | | | ME, NH, NY, ON, QC, RI |
| <i>Ampedus miniipennis</i> (LeConte) | | | | | | | | 1 | LB, ME, NF, ON, QC |
| <i>Ampedus mixtus</i> (Herbst) | 3 | 2 | 2 | 2 | 1 | 10 | 3 | 2 | MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Ampedus molestus</i> (LeConte) | | 1 | | | | | 1 | 2 | ON, QC |
| <i>Ampedus nigricans</i> (Germar) | 2 | | 1 | 1 | 1 | 5 | 1 | | CT, MA, ME, NH, NY, ON, QC, RI |
| <i>Ampedus nigricollis</i> (Herbst) | | | 1 | 1 | 2 | 4 | | | MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Ampedus nigrinus</i> (Herbst) * | | | | | | | | 1 | ME, NF |
| <i>Ampedus protervus</i> (LeConte) | | | 2 | 2 | | 4 | | | MA, ME, NH, NY, ON, QC, RI |
| <i>Ampedus pullus</i> Germar | 4 | 2 | 2 | 1 | 3 | 12 | 1 | 1 | ME, NF, NH, NY, ON, QC |
| <i>Ampedus rubricus</i> (Say) | 3 | 1 | 2 | 2 | 3 | 11 | 2 | 1 | MA, ME, NH, NY, ON, QC |
| <i>Ampedus sanguinipennis</i> (Say) | 3 | 1 | | | | 2 | 6 | 3 | 1 MA, ME, NH, NY, ON, QC, RI |
| <i>Ampedus sayi</i> (LeConte) | | | | | 1 | 1 | 1 | | NY, ON |
| <i>Ampedus semicinctus</i> (Randall) | 2 | 2 | 1 | 2 | 3 | 10 | 1 | 2 | MA, ME, NY, ON, QC, RI |
| <i>Ampedus "subtilis"</i> (LeConte) | | | 2 | 1 | 3 | 6 | 2 | | ME, NH, NY, ON, QC |
| <i>Ampedus vitiosus</i> (LeConte) | | | | | | | | 1 | MA, ME, NH, NY, ON, QC, RI |

..... continued

TABLE 1 (continued)

| | Nova Scotia | | | | | NS | NB | PEI | Regional Distribution | |
|--|-------------|-------|---------|-------|--------|----|----|-----|------------------------------------|--|
| | Northern | Cape | Eastern | South | Bay of | | | | | |
| | County | Shore | Breton | Shore | Shore | | | | | Fundy |
| Melanotina | | | | | | | | | | |
| <i>Melanotus castanipes</i> (Paykull) * | 4 | 4 | 2 | 3 | 4 | 17 | 11 | 1 | MA, ME, NF, NH, NY, ON, QC, RI, VT | |
| <i>Melanotus decumanus</i> (Erichson) | 3 | 3 | 1 | 2 | 3 | 12 | 1 | 1 | CT, MA, NH, NY, ON, QC, RI | |
| <i>Melanotus similis</i> (Kirby) | 4 | 1 | 2 | 3 | 4 | 14 | 1 | 2 | CT, MA, ME, NH, NY, ON, QC, RI, VT | |
| Cardiophorinae | | | | | | | | | | |
| <i>Cardiophorus convexulus</i> LeConte | 1 | 1 | | | | 1 | 3 | 1 | 2 | MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Cardiophorus gagates</i> Erichson | 2 | | 1 | 2 | 4 | 9 | 2 | 1 | 1 | CT, MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Cardiophorus propinquus</i> Lanchester | 2 | 2 | | | | 4 | 1 | | | NH, NY, ON, QC |
| Lissominae | | | | | | | | | | |
| <u>Oestodini</u> | | | | | | | | | | |
| <i>Oestodes tenuicollis</i> (Randall) | 3 | 2 | 2 | | 1 | 8 | 5 | 1 | | MA, ME, NH, ON, QC, RI, VT |
| Agrypninae | | | | | | | | | | |
| <u>Agrypnini</u> | | | | | | | | | | |
| <i>Danosoma brevicornis</i> (LeConte) | 4 | | 2 | 4 | 2 | 12 | 2 | 1 | | MA, ME, NH, NY, ON, QC |
| <i>Lacon auroratus</i> (Say) | | | | | | | | 1 | | MA, ME, NH, NY, QC, RI |
| <u>Oophorini</u> | | | | | | | | | | |
| <i>Aeolus mellillus</i> (Say) | | | 1 | | 1 | 2 | | | | LB, NF, NH, ON, QC, RI |
| <i>Conoderus auritus</i> (Herbst) | | | 1 | | | 1 | | | | CT, NH, NY, ON, QC, RI |
| Prosterninae | | | | | | | | | | |
| <u>Athoini</u> | | | | | | | | | | |
| <i>Athous acanthus</i> (Say) | 2 | | 2 | 3 | | 7 | | | | ME, NH, ON, QC, RI |
| <i>Athous brightwelli</i> (Kirby) | | | 1 | 1 | 2 | 4 | 1 | | | MA, ME, NH, NY, ON, QC, RI |
| <i>Athous campyloides</i> Newman † | | | | | 3 | 3 | | 1 | | MA, QC |
| <i>Athous cucullatus</i> (Say) | | | 1 | | | 1 | | 1 | | ME, NH, ON, QC, RI |
| <i>Athous fossularis</i> (LeConte) | | | | | | | | 1 | | CT, MA, ME, NH, ON, QC |
| <i>Athous orvus</i> Becker | 2 | | 1 | 2 | 4 | 9 | 2 | 1 | | LB, MA, ME, NF, NH, NY, ON, QC |
| <i>Athous posticus</i> (Melsheimer) | 1 | | | | | 1 | | | | NY, ON, QC, RI |
| <i>Athous productus</i> (Randall) | 2 | | 1 | | | 3 | 1 | | | NF, NY, ON, QC |
| <i>Athous ruffifrons</i> (Randall) | 3 | 3 | 2 | 2 | 3 | 13 | 1 | 1 | | CT, MA, ME, NF, NH, NY, ON, QC, RI, VT |
| <i>Athous scapularis</i> (Say) | | 1 | | | 1 | 2 | | | | MA, ME, NH, ON, QC, VT |
| <i>Denticollis denticornis</i> (Kirby) | 4 | 2 | 2 | 1 | 4 | 13 | 2 | 1 | | ME, NF, NH, NY, ON, QC |
| <i>Elathous discalceatus</i> (Say) | | | 1 | | 1 | 2 | | | | NH, NY, ON, QC |
| <i>Hemicrepidius brevicollis</i> (Candèze) | 1 | 1 | 2 | 1 | 3 | 8 | 3 | 2 | | ME, ON, QC |
| <i>Hemicrepidius hemipodus</i> (Say) | | | 1 | | | 1 | 1 | | | ME, NY, ON, QC |
| <i>Hemicrepidius memnonius</i> (Herbst) | 3 | | 2 | 3 | 4 | 12 | | 1 | | MA, ME, NH, NY, ON, QC, RI, VT |
| <i>Limonius aeger</i> LeConte | 4 | 2 | 2 | 3 | 3 | 14 | 6 | 2 | | LB, ME, NF, NH, NY, ON, QC, RI |
| <i>Limonius anceps</i> LeConte | | | | | | | | 2 | | ME, NY, ON, QC |

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TABLE 1 (continued)

| | Nova Scotia | | | | | NS | NB | PEI | Regional Distribution |
|--|--------------------|---------------|-------------------|----------------|-----------------|----|----|----------------------------|--|
| | Northern County | Cape Shore | Eastern Breton | South Shore | Bay of Fundy | | | | |
| <i>Limonius confusus</i> LeConte | 3 | 2 | 1 | 3 | 4 | 13 | 2 | MA, ME, NH, NY, ON, QC, RI | |
| <i>Limonius pectoralis</i> LeConte | | | | | | | 1 | LB, ME, NF, NH, NY, ON, QC | |
| <u>Pityobiini</u> | | | | | | | | | |
| <i>Pityobius anguinus</i> LeConte | 4 | 2 | 1 | 2 | 2 | 11 | 4 | 1 | ME, NH, NY, ON, QC |
| <u>Prosternini</u> | | | | | | | | | |
| <i>Actenicerus cuprascens</i> (LeConte) * | | | | | | | 2 | | MA, NH, NY, ON, QC, VT, RI |
| <i>Anostirus vernalis</i> (Hentz) | 1 | | 1 | | 1 | 3 | 2 | | ME, NH, NY, ON, QC |
| <i>Beckerus appressus</i> (Randall) | | | 1 | 1 | | 2 | 3 | | ME, NF, NH, NY, ON, QC |
| <i>Corymbitodes elongaticollis</i> (Hamilton) | | | 2 | 2 | | 4 | 2 | | MA, ME, NH, NY, QC |
| <i>Corymbitodes pygmaeus</i> (Van Dyke) | | | 4 | | 1 | 5 | 6 | | ME, NF, NH, NY, ON, QC |
| <i>Corymbitodes tarsalis</i> (Melsheimer) | 4 | 4 | 1 | 3 | 4 | 16 | 5 | 1 | ME, NH, NY, ON, QC, RI |
| <i>Ctenicera kendalli</i> (Kirby) | | | | | | | 1 | | ME, NF, NY, ON, QC |
| <i>Eanus estriatus</i> (LeConte) | 1 | | 1 | | | 2 | 1 | | LB, ME, NF, NY, ON, QC |
| <i>Eanus maculipennis</i> LeConte | | | 1 | 2 | | 3 | 3 | | LB, ME, NF, NH, NY, ON, QC |
| <i>Hypoganus sulcicollis</i> (Say) | | | 1 | 1 | | 2 | | | CT, ME, NH, NY, ON, QC, RI |
| <i>Liotrichus falsificus</i> (LeConte) | 2 | 1 | 2 | 1 | 2 | 8 | 1 | | ME, NF, NH, NY, ON, QC |
| <i>Liotrichus spinosus</i> (LeConte) | 3 | 4 | 2 | 2 | 4 | 15 | 6 | 1 | ME, NF, NH, NY, ON, QC |
| <i>Liotrichus vulneratus</i> (LeConte) | 3 | 1 | 1 | 2 | 1 | 8 | 6 | | ME, NY, QC |
| <i>Metanomus insidiosus</i> (LeConte) | 3 | 2 | 2 | 1 | 2 | 10 | 2 | | ME, NH, NY, ON, QC |
| <i>Nitidolimonius resplendens</i> (Eschscholtz) | 2 | 1 | 2 | | 1 | 6 | 3 | 1 | LB, ME, NF, NH, NY, ON, QC, RI |
| <i>Oxygonus montanus</i> Schaeffer | 3 | 2 | 2 | 1 | | 8 | 2 | | ME, NH, NY, QC |
| <i>Paractenicera fulvipes</i> (Bland) | 2 | 1 | 2 | 1 | | 6 | 1 | | ME, NH, NY, ON, QC |
| <i>Prosternon fallax</i> (Say) | | | 1 | | 1 | 2 | | | NH, NY, ON, QC |
| <i>Prosternon medianum</i> (Germar) | 3 | | 1 | 2 | 1 | 7 | 3 | | MA, ME, NH, NY, ON, QC, RI |
| <i>Pseudanostirus hamatus</i> (Say) | | | 2 | 1 | | 3 | 1 | | MA, ME, NH, NY, ON, QC, RI |
| <i>Pseudanostirus hieroglyphicus</i> (Say) | 2 | | 2 | 2 | 2 | 8 | 3 | 2 | MA, ME, NH, NY, ON, QC, RI |
| <i>Pseudanostirus p. propolus</i> (LeConte) | 2 | 1 | 1 | 2 | 2 | 8 | 3 | 1 | MA, ME, NH, NY, ON, QC, RI |
| <i>Pseudanostirus triundulatus</i> (Randall) | 4 | 4 | 2 | 3 | 4 | 17 | 5 | 2 | LB, ME, NF, NH, NY, ON, QC, RI |
| <i>Selatosomus appropinquans</i> (Randall) | 3 | 1 | 1 | 2 | 2 | 9 | 10 | 2 | MA, ME, NF, NH, NY, ON, QC |
| <i>Selatosomus pulcher</i> (LeConte) | 4 | 4 | 2 | 1 | 3 | 14 | 9 | 2 | ME, NH, NY, ON, QC |
| <i>Selatosomus splendens</i> (Ziegler) | | | | | | | 2 | | ME, NH, NY, ON, QC, RI |
| <i>Setasomus aratus</i> (LeConte) | 3 | 1 | 2 | 3 | | 9 | 5 | | ME, NF, NY, ON, QC |
| <i>Setasomus nitidulus</i> (LeConte) | 3 | 4 | 2 | 3 | 2 | 14 | 2 | 1 | LB, ME, NF, NH, NY, ON, QC |
| <i>Setasomus rufopleuralis</i> (Fall) | 1 | | 1 | 2 | 2 | 6 | 1 | 1 | ME, NH, NY, ON, QC |
| <i>Sylvanelater cylindriciformis</i> (Herbst) | 3 | 2 | 2 | | 2 | 9 | 5 | 3 | CT, MA, ME, NF, NH, ON, QC, RI |
| <i>Sylvanelater mendax</i> (LeConte) | 1 | 1 | 1 | | | 3 | | | NF, NY, ON, QC |
| <u>Hypnoidini</u> | | | | | | | | | |
| <i>Hypnoidus abbreviatus</i> (Say) | 2 | 1 | | 1 | 2 | 6 | 4 | 2 | CT, MA, ME, NF, NH, NY, ON, QC, RI, VT |
| <i>Hypnoidus bicolor</i> (Eschscholtz) * | | | 1 | 1 | | 1 | 3 | 2 | LB, ME, NF, NH, NY, ON, QC |

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TABLE 1 (continued)

| | Nova Scotia | | | | | NS | NB | PEI | Regional Distribution |
|---|-------------|-------|---------|-------|--------|-----|-----|-----|--------------------------|
| | Northern | Cape | Eastern | South | Bay of | | | | |
| | County | Shore | Breton | Shore | Shore | | | | |
| <i>Ligmargus lecontei</i> (Leng) | | 1 | 1 | | | 2 | 4 | | NH, NY, ON, QC |
| <i>Margaiostus grandicollis</i> (LeConte) | | 1 | 1 | | | | 2 | 2 | ON, QC |
| <i>Negastrinae</i> | | | | | | | | | |
| <i>Microhyphnus striatulus</i> (LeConte) | | 2 | | | | | 2 | 1 | NY, ON, QC |
| <i>Negastrius arnetti</i> Stibick | | | | | | | | 3 | MA, ME, NH, NY, ON |
| <i>Negastrius delumbis</i> (Horn) | | 1 | 1 | 1 | | 1 | 4 | 1 | 2 MA, NH, NY |
| <i>Negastrius exiguus</i> (Randall) | | | | | | | | 1 | MA, ME, NH, NY, ON |
| <i>Neohypdonus tumescens</i> (LeConte) | | 2 | 1 | 1 | 2 | 1 | 7 | 4 | ME, NH, ON, QC |
| <i>Oedostethus femoralis</i> LeConte | | | | | | | | 4 | ME, NY, ON, QC |
| <i>Paradonus oliverae</i> Stibick | | 1 | | 1 | | | 2 | 1 | NY, QC, VT |
| <i>Paradonus pectoralis</i> (Say) | | | | | 1 | | 1 | | ME, NH, NY, ON, QC |
| <i>Zorochros melsheimeri</i> (Horn) | | 1 | | | | | 1 | 2 | NY, QC |
| Total | 189 | 114 | 131 | 134 | 175 | 743 | 267 | 70 | |
| Number of Species | 78 | 64 | 86 | 67 | 79 | 110 | 98 | 48 | |

Notes: Figures indicate the number of county records. †, Introduced Palaearctic species; *, Holarctic species.

Numbers indicate the number of county records in each province or region. For the purposes of this treatment, northeastern North America is taken to consist of the following jurisdictions: Connecticut (CT), Labrador (LB), Massachusetts (MA), Maine (ME), New Brunswick (NB), Newfoundland (NF), New Hampshire (NH), Nova Scotia (NS), New York (NY), Ontario (ON), Prince Edward Island (PE), Québec (QC), Rhode Island (RI), Saint-Pierre et Miquelon (PM), and Vermont (VT).

Districts in Nova Scotia consist of the following 18 counties: **Northern Shore:** Antigonish, Cumberland, Colchester, Pictou; **Cape Breton:** Cape Breton, Inverness, Richmond, Victoria; **Eastern Shore:** Guysborough, Halifax; **South Shore:** Lunenburg, Queens, Shelburne, Yarmouth; **Bay of Fundy:** Annapolis, Digby, Hants, Kings. There are 3 counties on Prince Edward Island and 15 counties in New Brunswick.

Regional distributional information is derived from Bousquet (1991), Downie & Arnett (1996), Chandler (2001), Sikes (2004), and the present study. Only jurisdictions in northeastern North America in addition to the Maritime Provinces are listed.

Elaterinae

Sericus honestus (Randall, 1838)

NOVA SCOTIA: 65 specimens examined from Colchester, Cumberland, Halifax, Hants, Inverness, and Richmond counties. The earliest record is from 1995 (**Colchester Co.:** Kemptown, 14.vi.1995, C. Corkum, deciduous forest, flight-intercept trap, NSMC; Nuttby Mt., 14.vi.1995, C. Corkum, deciduous forest, flight-intercept trap, NSMC).

Newly recorded in Nova Scotia. Collected in both coniferous and deciduous forests of all ages.

Sericus incongruus (LeConte, 1853)

PRINCE EDWARD ISLAND: Queens Co.: Pinette, 24.vi.2003, C.G. Majka, coastal forest, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia collected in red spruce (*Picea rubens* Sarg.) and eastern hemlock (*Tsuga canadensis* (L.) Carr.) forests of all ages. Reported from forested areas in western Canada by Brooks (1960). In some studies (i.e., Boiteau *et al.* 2000) the Palaearctic species, *Sericus brunneus* (Linnaeus, 1758), has also been reported in the region. There is continuing uncertainty as to whether *S. incon-*

gruus and *S. brunneus* represent distinct species or a single Holarctic species. Pending further investigation we treat all the specimens from the region as the Nearctic *S. incongruus*.

Megapenthes stigmosus (LeConte, 1853)

NOVA SCOTIA: Hants Co.: Mount Uniake, 27.viii.2004, D. MacDonald, NSNR.

Newly recorded in Nova Scotia. A boreal forest species (Becker 1971); predominantly found in poplar forests and parklands; usually collected on dense undergrowth (Brooks 1960).

Agriotes pubescens Melsheimer, 1845

This species was reported from New Brunswick by Bousquet (1991), however, no voucher specimens were located in any collection, nor are there published records from the province. Becker (1956, pp. 69) writes that, "in many collections *pubescens* is confused with *quebecensis*" and his accompanying range map shows it occurring east only to southern Québec and western Maine. Accordingly, the species is removed from the faunal list of Nova Scotia.

Agriotes quebecensis Brown, 1933

PRINCE EDWARD ISLAND: Queens Co.: Wheatly River, 2.vi.1971, J. MacLeod, on alder, UPEI.

Newly recorded from Prince Edward Island. No additional information on bionomics is available.

Agriotes sputator (Linnaeus, 1758)

NOVA SCOTIA: Digby Co.: Marshalltown, 16.vi.1952, 9.ix.1952, C.J.S. Fox, (4), NSAC. **PRINCE EDWARD ISLAND: Queens Co.:** Pownal, 19.vi.1997, J.G. Stewart, ACPE; Pownal, 18.vi.2001, M.E. Smith, (8), ACPE.

This introduced and invasive Palaearctic species is newly recorded from Prince Edward Island. It was first recorded in North America in New Brunswick in 1939 (Brown 1940). The earliest records from Nova Scotia are from 1952 (see above). Adults are frequently found in pastures and grasslands where the larvae (wireworms) feed on the roots of various species of grasses (Brian 1947). In Nova Scotia the species has attained very high population densities (3 million/acre) in wheat fields; the larvae prefer slightly drier and lighter soils than *A. mancus* (Say) (Becker 1956).

Agriotes stabilis (LeConte, 1853)

NOVA SCOTIA: 60 specimens examined from Cape Breton, Colchester, Cumberland, Digby, Guysborough, Halifax, Hants, Lunenburg, Queens, Richmond, and Shelburne counties. The earliest record is from 1945 (**Lunenburg Co.:** Bridgewater, 30.vi.1945, collector not recorded, NSMC). **PRINCE EDWARD ISLAND: Queens Co.:** Cavendish, 14.vii.2002, C.G. Majka, coastal lagoon, (4), CGMC; St. Patricks, 17.viii.2002, C.G. Majka, old field, CGMC; Wood Islands, 30.vi.2003, C.G. Majka, coastal forest, CGMC.

Newly recorded from Nova Scotia and Prince Edward Island. Usually collected on hazel, dogwood, and willow near small ponds within larger deciduous forests (Brooks 1960). In Nova Scotia found in deciduous, coniferous, mixed forests, and adjacent clearings. Common on undergrowth (especially on wood fern) in birch-poplar stands; the larvae prefer sandy soils where they are predators in the humus layer (Becker 1956).

Dalopius fuscipes Brown, 1934

NEW BRUNSWICK: Kings Co.: Grand Bay, 28.vi.1990, D.F. McAlpine, NBM; **Saint John Co.:** Saint John, 7.vi.1990, Jarvis and Bedell, NBM.

Newly recorded in New Brunswick. In Nova Scotia found predominantly in deciduous forests of various ages; occasionally in coniferous forests.

Dalopius gentilis Brown, 1934

NOVA SCOTIA: 45 specimens examined from Colchester, Guysborough, Halifax, Hants, Kings, Lunenburg, Pictou, Queens, and Richmond counties. The earliest record is from 1989 (**Richmond Co.:** St. Peters, 3.vi.1989, E. Georgeson, NSNR). **PRINCE EDWARD ISLAND: Queens Co.:** Millvale, 25.vi.2003, C.G. Majka, deciduous forest, (5), CGMC.

Newly recorded from Nova Scotia, Prince Edward Island, and the Maritime Provinces as a whole. In New Brunswick Boiteau *et al.* (2000) reported 4 specimens of *Dalopius* prob. *gentilis*. In Nova Scotia found in red spruce (*Picea rubens*), hemlock (*Tsuga canadensis*), and white pine (*Pinus strobus* L.) stands, frequently in mature or old-growth forests.

Dalopius pennsylvanicus Brown, 1934

NOVA SCOTIA: Guysborough Co.: Malay Lake, 15–30.vi.1997, D.J. Bishop, red spruce forest, flight-intercept trap, NSMC.

Newly recorded in Nova Scotia and in Canada. Found most commonly in ecotones or in open areas of mixed deciduous and coniferous forest (unpublished data).

Dalopius vagus Brown, 1934

PRINCE EDWARD ISLAND: 43 specimens examined from Kings, Prince, and Queens counties. The earliest record is from 1971 (**Queens Co.:** Wheatley River, 2.vi.1971, J. MacLeod, on alder, UPEI).

Newly recorded from Prince Edward Island. In Nova Scotia found in coniferous and deciduous forests of every age as well as in adjacent open areas. In the Prairie Provinces found in grassy pastures (Brooks 1960).

Ampedus areolatus (Say, 1823)

NOVA SCOTIA: Kings Co.: Kentville, 7.vi.1996, D.H. Webster, DHWC.

Newly recorded from Nova Scotia and in the Maritime Provinces as a whole. In the United States found associated with many deciduous and coniferous trees.

Ampedus collaris (Say, 1825)

NEW BRUNSWICK: Kings Co.: Penobsquis, 26.vii.1926, C.A. Frost, CNC.

Newly recorded from New Brunswick. Recorded from hickory (*Carya* sp.), red spruce (*Picea glauca* (Moench) Voss), and white pine (*Pinus strobus* L.) (Ramberg 1979). In Nova Scotia reared from white spruce (unpublished data).

Ampedus fuscus (LeConte, 1853)

NOVA SCOTIA: 23 specimens examined from Antigonish, Colchester, Cumberland, Guysborough, Halifax, and Hants counties. The earliest record is from 1990 (**Colchester Co.:** Masstown, 15.vi.1990, T.D. Smith, NSNR).

Newly recorded from Nova Scotia. In Nova Scotia found in red (*Picea rubens*) and black spruce (*Picea mariana* (Mill.) BSP.) forests. Beaten from spruce (Ramberg 1979).

Ampedus laesus (LeConte, 1853)

NOVA SCOTIA: Halifax Co.: Pockwock Lake, 1–16.vii.1997, D.J. Bishop, red-spruce forest, flight-intercept trap, NSMC.

Newly recorded from Nova Scotia and in the Maritime Provinces as a whole. Collected from rotting wood of white pine (*Pinus strobus*) (Ramberg 1979).

Ampedus laurentinus Brown, 1933

PRINCE EDWARD ISLAND: Queens Co.: Wood Islands, 29.viii.2003, C.G. Majka, seashore, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia found in coniferous forests. In boreal forests on aspen and poplar (*Populus* sp.) (Brooks 1960).

Ampedus luctuosus (LeConte, 1853)

PRINCE EDWARD ISLAND: Kings Co.: Greenwich, 11.vi.1971, A. Joshi, rotten wood, (2), UPEI; **Queens Co.:** Brackley Beach, 13.vii.1971, A. Joshi, on sand, UPEI.

Newly recorded from Prince Edward Island. In Nova Scotia found in red spruce (*Picea rubens*), black spruce (*Picea mariana*), and hemlock (*Tsuga canadensis*) forests of various ages; occasionally in deciduous forests. Beaten from fir (*Abies* sp.) (Ramberg 1979).

Ampedus nigricollis (Herbst, 1806)

NOVA SCOTIA: Halifax Co.: Lawrencetown, 13.ix.1964, C.J.S. Fox, ACNS; **Hants Co.:** Quarry Lake, 14.vi.2005, C. Sheffield and S. Westby, malaise trap, ACNS; **Kings Co.:** Aldershot, 6.vi.1952, H.T. Stultz, on apple, ACNS; Cambridge Station, 26.v.1960, D.H. Webster, on rotting polar stump, DHWC; Hall's Harbour, 16.xii.1956, C.J.S. Fox, in rotten spruce stump, ACNS; Kentville, 16.x.1965 & 2.vi.1966, C.J.S. Fox, ACNS; Kentville, 25.v.1966, C.J.S. Fox, reared from rotten apple wood, tenereal, ACNS; Sheffield Mills, 2.xii.1966, C.J.S. Fox, ACNS.

Newly recorded from Nova Scotia and the Maritime Provinces as a whole. Found under loose bark or other cover (Dietrich 1945). Collected from rotting wood of sweet birch (*Betula lenta* L.), chestnut (*Carya* sp.), maple (*Acer* sp.), tupelo (*Nyssa* sp.), trembling aspen (*Populus tremuloides* Michx.), pine (*Pinus* sp.), oak (*Quercus* sp.), willow (*Salix* sp.), hemlock (*Tsuga* sp.), elm (*Ulmus americana* L.), and on flowers of purple angelica (*Angelica atropurpurea* L.) and from fungus (Ramberg 1979).

Ampedus pullus Germar, 1844

PRINCE EDWARD ISLAND: no locality noted, 1973–1984, UPEI; **Queens Co.:** Churchill, 2.vi.1982, R. Wenn, meadow, UPEI; Pownal or Belle River, 10.vi.1993, M.E. Smith, on blueberry, ACPE; St. Patricks, 22.vii.2001, C.G. Majka, old field, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia found in coniferous forests on red spruce (*Picea rubens*), black spruce (*Picea mariana*), and jack pine (*Pinus banksiana*). On pine and spruce (Brooks 1960). Recorded from jack pine (*Pinus banksiana*), ponderosa pine (*Pinus ponderosa* P. & C. Lawson), white pine (*Pinus strobus*), and douglas-fir (*Pseudotsuga menziesii* (Mirbel) Franco) (Ramberg 1979).

Ampedus rubricus (Say, 1825)

NEW BRUNSWICK: Saint John Co.: Saint John, 6.viii.1902, W. McIntosh, NBM; **York Co.:** Charters Settlement, 45.84°N, 66.72°W, 29.iv.2000, R.P. Webster, RWC. **PRINCE EDWARD ISLAND: Queens Co.:** Strathgartney, 9.vi.1982, V. Bryanthon, woods' edge, UPEI.

Newly recorded from New Brunswick and Prince Edward Island. In Nova Scotia found in deciduous forests; in rotten red oak (*Quercus rubra* L.) and apple (*Pyrus malus* L.) wood. Downie & Arnett (1996) say that adults are locally common on *Crataegus* sp. and *Prunus* sp. blossoms.

Ampedus sanguinipennis (Say, 1823)

PRINCE EDWARD ISLAND: Queens Co.: Cavendish, 19.vii.2001, C.G. Majka, coastal vegetation, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia adults found on apple (*Pyrus malus*) and yellow birch (*Betula alleghaniensis* Britt.) (unpublished data). Recorded from cypress (*Cupressus* sp.), pine (*Pinus* sp.), oak (*Quercus* sp.), and willow (*Salix* sp.) (Ramberg 1979).

Ampedus sayi (LeConte, 1853)

NOVA SCOTIA: Kings Co.: Hall's Harbour, 16.xii.1956, C.J.S. Fox, in birch, ACNS; Kentville, 6.v.1949, R.E. Morehouse, NSAC.

Newly recorded from Nova Scotia, where one specimen was found in a decomposing birch.

Ampedus semicinctus (Randall, 1838)

NEW BRUNSWICK: Saint John Co.: Saint John, 23.vii.1902, W. McIntosh, NBM; **York Co.:** Fredericton, 1992–1995, (2), Boiteau *et al.* (2000). **PRINCE EDWARD ISLAND: Kings Co.:** Woodville Mills, 20.viii.2007, C.G. Majka, along small brook, CGMC; **Queens Co.:** St. Patricks, 25.vi.2003, C.G. Majka, mixed forest, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia found in mixed red spruce (*Picea rubens*), white pine (*Pinus strobus*), hemlock (*Tsuga canadensis*), and balsam fir (*Abies balsamea* (L.) Mill.) forests. Found under loose pine (*Pinus* sp.) bark and beating chestnut oak (*Quercus prinus* L.) (Ramberg 1979).

Ampedus "subtilis" (LeConte, 1884)

NEW BRUNSWICK: Kings Co.: Canaan, 11.v.1978, Y. Bossé, UMNB; **Saint John Co.:** Saint John, 21.v.1898, W. McIntosh, NBM. **NOVA SCOTIA: Annapolis Co.:** Falkland Ridge, 29.iv.1961, D.H. Webster, under bark, pine stump, DHWC; Paradise, 3.v.2004, K. Webster, flight-intercept trap, NSNR; **Guysborough Co.:** Melopseketch Lake, 15.vi.1995, C. Corkum, young deciduous forest, flight-intercept trap, NSMC; **Hali-fax Co.:** 9.viii.2003, P. Dollin, red spruce forest, funnel trap, NSMC; Herring Cove, 28.vii.2002, coastal barren, C.G. Majka, CGMC; Point Pleasant Park, 9.vi.2002, 15.vii.2001, C.G. Majka, coniferous forest, (2), CGMC; **Hants Co.:** Mount Uniake, 5.vii.2004, D. MacDonald, flight-intercept trap, NSNR; Smiley's Park, 16.vii.2004, D. MacDonald, flight-intercept trap, NSNR; **Queens Co.:** Butler Rd., 28.vi.2006, J. Brown,

flight-intercept trap, NSNR; Eight Mile Lake, 10.vi.2003, P. Dollin, hemlock-red spruce forest, (2), NSMC; Sixth Lake, 20.vi.2003, P. Dollin, old-growth hemlock forest, NSMC; **Lunenburg Co.:** Bridgewater, 19.vii.1971, B. Wright, NSMC; **Victoria Co.:** Big Barren, 14.vi.1983, B. Wright, NSMC.

Newly recorded from New Brunswick. In Nova Scotia found in red spruce (*Picea rubens*) and hemlock (*Tsuga canadensis*) stands, under pine (*Pinus* sp.) bark, and also in coastal barrens, marshes, and around buildings (unpublished data).

Ampedus "subtilis" was recorded from Sable Island, NS by Wright (1989). Additional records are given above. *Ampedus subtilis* is, however, in the process of revision by F. Ramberg (pers. comm.) and it appears that the species known under this name in the Maritime Provinces is actually an undescribed one. We provisionally refer to it as *Ampedus "subtilis"* in the expectation that forthcoming revisionary work will clarify and alter its status.

Ampedus 1 undescribed [Ramberg, manuscript species]

NOVA SCOTIA: Guysborough Co.: Dayspring Lake, 1–16.vii.1997, D.J. Bishop, red spruce forest, flight-intercept trap, NSMC; **Lunenburg Co.:** Card Lake, 2–15.vi.1997, D.J. Bishop, old-growth red spruce/hemlock forest, flight-intercept trap, NSMC.

Newly recorded in Nova Scotia and in the Maritime Provinces as a whole. This species has been confused with *A. luctuosus* (LeConte) in collections.

Ampedus 2 undescribed [Ramberg, manuscript species]

NOVA SCOTIA: Annapolis Co.: Paradise, 30.vi.2004, K. Webster, flight-intercept trap, NSNR; **Halifax Co.:** Soldier Lake, 5.vii.2004, D. MacDonald, flight-intercept trap, NSNR; **Lunenburg Co.:** Bridgewater, 30.vi.1965, B. Wright, (5), NSMC; **Queens Co.:** no locality specified, 11.vii.1965, C.J.S. Fox, (2), ACNS; no locality specified, 17.vii.1967, C.J.S. Fox, ACNS. **PRINCE EDWARD ISLAND:** no locality specified, 1974–1983, (2), UPEI.

Newly recorded from Nova Scotia, Prince Edward Island, and the Maritime Provinces as a whole. Collected from rotting wood of chestnut (*Castanea* sp.) and jack pine (*Pinus banksiana* Lamb.) (Ramberg 1979). This species has often been determined as *A. melsheimeri* (Leng) in collections.

Melanotus decumanus (Erichson, 1841)

NEW BRUNSWICK: York Co.: Fredericton, 1992–1995, potato field, Boiteau *et al.* (2000). **PRINCE EDWARD ISLAND: Queens Co.:** Pinette, 24.vi.2003, C.G. Majka, coastal forest, CGMC.

Newly recorded from Prince Edward Island. Worthy of attention is Boiteau *et al.*'s (2000) record of this species from New Brunswick. Although not indicated as such in the paper, this was a new record for this species in New Brunswick. Larvae are subcortical in decaying snags, logs, and stumps, especially at ground-level or in underground portions, where they are predators on other invertebrates. Collected throughout its range in mixed coniferous and deciduous forests of late second growth or older ages (unpublished data).

Melanotus similis (Kirby, 1837)

PRINCE EDWARD ISLAND: Kings Co.: Launching, 23.vii.2001, C.G. Majka, coniferous forest, CGMC; **Queens Co.:** St. Patricks, 27.vi.2003, C.G. Majka, coniferous forest, funnel trap, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia generally found in open habitats. In Québec collected in raspberry plantations and pine woods (Levesque & Levesque 1993). This is the so-called "corn

wireworm” of southern regions. The larva is a soil predator in meadow, field, and ecotonal areas, and facultatively feeds on sprouting corn and other seeds in agricultural situations (P. Johnson, unpublished data).

Cardiophorinae

Cardiophorus cardisce (Say, 1834)

This species was reported from New Brunswick and Nova Scotia by Bousquet (1991), however, since that time Douglas (2003) has re-evaluated the *C. cardisce* and *Cardiophorus propinquus* Lanchester (previously regarded as a western North American species) in eastern North America. In his examination of specimens he found that *C. cardisce* occurred in Canada from Alberta east to Québec and *C. propinquus* from Alberta east to Nova Scotia. Amongst the specimens included as part of the present study (17 from New Brunswick and 14 from Nova Scotia), all were *C. propinquus*. Accordingly *C. cardisce* is removed from the faunal lists of New Brunswick and Nova Scotia. This species tends to toward riparian habitats and larvae are predators in moist sandy soils (Douglas 2003).

Cardiophorus convexulus LeConte, 1853

PRINCE EDWARD ISLAND: Prince Co.: Tignish, 2.vi.1996, M.E. Smith, on blueberry, ACPE; **Queens Co.:** Cavendish Sandspit, 27.vi.2003, C.G. Majka, seashore, (3), CGMC.

Newly recorded from Prince Edward Island. Found on sand dunes and barrens; adults have been found on polleniferous branches of Scotch pine (*Pinus sylvestris* L.), eastern white cedar (*Thuja occidentalis* L.), common buckthorn (*Rhamnus cathartica* L.), and red osier dogwood (*Cornus sericea* L.) (Douglas 2003).

Cardiophorus gagates Erichson, 1840

PRINCE EDWARD ISLAND: Kings Co.: Lakeside Beach, 3.viii.1997, D.B. McCorquodale, CBU; Souris, 25.vi.1993, M.E. Smith, ACPE; Souris, 6.vii.1993, M.E. Smith, ACPE.

Newly recorded from Prince Edward Island. Found in sandy habitats such as beach dunes, scrub, barrens, sandy old fields, and sand-spits; adults are found on the foliage and flowers of a variety of coniferous and deciduous trees, shrubs, heaths, and herbaceous plants (Douglas 2003); larvae are predators in moist sandy soils.

Cardiophorus propinquus Lanchester, 1971

NEW BRUNSWICK: Kent Co.: Kouchibouguac National Park, 19.v.1981, 9.vi.191, 30.vii.1981, 23.vi.1982, 5.vii.1982, 10.vii.1982, 12.vii.1982, 20.vii.1982, G.A. Calderwood, H. Goulet, D.B. Lyons, S.J. Miller, and J.H. Redner, (16), CNC; **York Co.:** Scotchtown, 17.vii.1997, R.P. Webster, RWC. **NOVA SCOTIA: Antigonish Co.:** Pomquet, 9.v.1996, I. Bryson, NSNR; **Cumberland Co.:** Wasson Bluff, 27.vii.2006, J. Ogden & K. Goodwin, on cliff face, NSNR; **Inverness Co.:** 1 km S of Pillar Rock, Cape Breton Highlands National Park, 10.vii.1987, Y. Bousquet, (2), CNC; Margaree, 18.vi.1987, P.P. Harper, QMOR; Pleasant Bay, 10.vi.1987, Y. Bousquet, (2), CNC; **Victoria Co.:** Clyburn Brook, Cape Breton Highlands National Park, 21.vi.1987, 1.vii.1987, Y. Bousquet, (4), CNC; Ingonish: North Bay Beach, 28.v.1996, L.A. Hudson & P.A. Rankin, beach area, (3), CBU.

Recorded from New Brunswick and Nova Scotia by Douglas (2003) (see account under *C. cardise* above). Found under *Taraxacum* sp. (Asteraceae), on *Populus balsamifera* L. (Salicaceae), and in a sand pit Douglas (2003).

Agrypninae

Danosoma brevicornis (LeConte, 1853)

NOVA SCOTIA: 25 specimens examined from Annapolis, Antigonish, Colchester, Cumberland, Guysborough, Halifax, Hants, Kings, Lunenburg, Pictou, Queens, and Yarmouth counties. The earliest record is from 1958 (**Queens Co.:** Lake Kejimkujik, 12.vi.1958, D.C. Ferguson, NSMC). **PRINCE EDWARD ISLAND: Kings Co.:** Greenwich, 14.vi.1971, J. Furrvolo, on sand, UPEI.

Newly recorded from Nova Scotia and Prince Edward Island. In Nova Scotia found in coniferous, deciduous, and mixed forests where larvae are subcortical predators.

Danosoma obtectum (Say, 1839)

This species was reported from Nova Scotia by Bousquet (1991), however, there are no voucher specimens in any collection examined, nor are there published records from the province. Accordingly, the species is removed from the faunal list of Nova Scotia.

Aeolus mellillus (Say, 1834)

NOVA SCOTIA: Halifax Co.: York Redoubt, 27.ix.2005, B. Mrezar, rocky area, CGMC; **Kings Co.:** Kentville, 19.xi.1960, D.H. Webster, under board near edge of meadow, DHWC.

Newly recorded in Nova Scotia. In the prairie provinces found in grasslands and other sandy areas, usually under stones, sticks, or dry manure (Brooks 1960). Larvae are predators in sandy to loamy soils on immature insects.

Prosterninae

Athous campyloides Newman, 1833

This adventive, Palaearctic species was reported from New Brunswick by Bousquet (1991), however, there are no voucher specimens in any collection examined, nor does Becker (1974) list it from the province. Accordingly, the species is removed from the faunal list of New Brunswick.

Athous cucullatus (Say, 1825)

PRINCE EDWARD ISLAND: Prince Co.: Conway Narrows, 12.viii.1970, U. Grigg, NSMC.

Newly recorded from Prince Edward Island. Larvae of species of *Athous* are found in forest litter or decaying logs (Becker 1974) where they are predators.

Athous fossularis (LeConte, 1853)

NEW BRUNSWICK: York Co.: Fredericton, 1992–1995, potato field, Boiteau *et al.* (2000).

Worthy of attention is Boiteau *et al.*'s (2000) record of this species from New Brunswick. Although not indicated as such in the paper, this was a new record for this species not only in New Brunswick but in the Maritime Provinces as a whole.

Athous posticus (Melsheimer, 1846)

NOVA SCOTIA: Cumberland Co.: Little River, 22.vii.2004, D. McDonald, flight intercept trap, (3), NSNR.

Newly recorded in Nova Scotia and the Maritime Provinces as a whole. Larvae of species of *Athous* are found in forest litter or decaying logs (Becker 1974) where they are predators.

Athous productus (Randall, 1838)

NEW BRUNSWICK: York Co.: Fredericton, 1992–1995, potato field, Boiteau *et al.* (2000). **NOVA SCOTIA: Colchester Co.:** Debert, 20.vi.1991, E. Georgeson, NSNR; **Cumberland Co.:** Diligent River, 23.vi.1988, E. Georgeson, ultra-violet light trap, NSNR; **Halifax Co.:** Boulderwood, 24.vi.1959, D.C. Ferguson, NSMC.

Newly recorded in Nova Scotia. Worthy of attention is Boiteau *et al.*'s (2000) record of this species from New Brunswick. Although not indicated as such in the paper, this was a new record for this species in New Brunswick. Larvae of species of *Athous* are found in forest litter or decaying logs (Becker 1974) where they are predators.

Athous rufifrons (Randall, 1838)

PRINCE EDWARD ISLAND: Queens Co.: St. Patricks, 14.vii.2002, C.G. Majka, in vegetation along small stream, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia commonly found in red spruce (*Picea rubens*) forests; occasionally in hemlock (*Tsuga canadensis*) stands. Larvae of species of *Athous* are found in forest litter or decaying logs (Becker 1974) where they are predators.

Athous scapularis (Say, 1839)

NOVA SCOTIA: Hants Co.: Leminister, 16–29.vii.1997, D.J. Bishop, red spruce-hemlock forest, flight-intercept trap, NSMC; **Richmond Co.:** Irish Cove, 30.vii.2004, C. D'Orsay, on striped maple (*Acer pensylvanicum* L.), CBU.

Newly recorded in Nova Scotia and the Maritime Provinces as a whole. Larvae of species of *Athous* are found in forest litter or decaying logs (Becker 1974) where they are predators.

Denticollis denticornis (Kirby, 1837)

PRINCE EDWARD ISLAND: Queens Co.: Bethyl, 22.vi.1981, L.S. Thompson, ACPE; North Rustico, 23.vi.2003, C.G. Majka, seashore, CGMC; West Royalty, 5.vii.1983, L.S. Thompson, ACPE.

Newly recorded from Prince Edward Island. In Nova Scotia frequently collected in coniferous forests, particularly red (*Picea rubens*) and black (*Picea mariana*) spruce; occasionally in young deciduous forests

and once on a decaying poplar (*Populus* sp.) log. Found in boreal forests (Brooks 1960). Larvae are predators found in forest litter and decaying wood (unpublished data).

Hemicrepidius brevicollis (Candèze, 1863)

PRINCE EDWARD ISLAND: Kings Co.: Launching, 23.vii.2001, C.G. Majka, coniferous coastal forest, CGMC; **Queens Co.:** St. Patricks, 17.viii.2002, C.G. Majka, coniferous coastal forest, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia found in both coniferous and deciduous forests. In the prairie provinces found in parklands (Brooks 1960).

Hemicrepidius hemipodus (Say, 1825)

NEW BRUNSWICK: Carleton Co.: Meduxnekeeg Valley Preserve, 46.20°N, 67.83°W, 13.vii.2004, K. Bredin, J. Edsall, and R.P. Webster, foliage on river margin, RWC. **NOVA SCOTIA: Halifax Co.:** Halifax, 18.vi.1979, F.W. Scott, NSMC; Halifax, 15.vi.1992, no collector indicated, CGMC; south-end Halifax, 19.vi.2001, 29.vi.2001, 30.vi.2001, 2.vii.2001, 27.vi.2002, and 19.vii.2002, C.G. Majka, garden, (7), CGMC; south-end Halifax, 21.vi.2002, C.G. Majka, railway ravine, CGMC.

Newly recorded from New Brunswick, Nova Scotia and the Maritime Provinces as a whole. Collected in a raspberry plantation in Québec (Levesque & Levesque 1993).

Limoniuss confusus LeConte, 1853

NEW BRUNSWICK: Saint John Co.: Saint John, 7.vi.1902, W. McIntosh, (2), NBM; **York Co.:** Canterbury, 45.8841°N, 67.8428°W, 8.vi.2004, D. Sabine and R.P. Webster, deciduous forest, RWC.

Newly recorded from New Brunswick. In Nova Scotia found in red spruce (*Picea rubens*), hemlock (*Tsuga canadensis*), white pine (*Pinus strobus*), and balsam fir (*Abies balsamea*) of all ages; also in mixed forests and on lakeshore. Found in meadows (Dietrich 1945). Commonly swept from grasses and weeds (Downie & Arnett 1996).

Pityobius anguinus LeConte, 1853

PRINCE EDWARD ISLAND: Queens Co.: Flat River, 6.viii.1966, A. MacKenzie, UPEI.

Newly recorded from Prince Edward Island. Usually collected under spruce (*Picea* sp.) and pine (*Pinus* sp.) bark (Brooks 1960). Larvae are in underground portions of decaying logs, stumps and snags, and are voracious predators on immature Buprestidae, Cerambycidae, Tenebrionidae, Scarabaeidae, and probably other insects (unpublished data).

Melanactes puncticollis (LeConte, 1852)

NOVA SCOTIA: Kings Co.: Kentville, 26.vii.1972, D.H. Webster, near greenhouse, DHWC.

This specimen was collected outdoors near a greenhouse on the grounds of the Atlantic Food and Horticulture Research Centre in Kentville, Nova Scotia. This species is not found naturally in Canada and occurs no closer to the region than New York (Dietrich 1945). It doubtless represents an imported specimen that somehow escaped. There is no evidence that the species has established itself in Nova Scotia.

***Actenicerus* Kiesenwetter, 1858**

The North American species of *Actenicerus* Kiesenwetter are in need of taxonomic revision. They were last treated as separate species by LeConte (1853), but he was unable to place *Elater viridis* Say, 1825, the Say specimen of which was apparently lost earlier. Later, LeConte (1883) interpreted *E. viridis* to be the female of *Corymbites appressifrons* Say, a synonym of *Ctenicera cylindriformis* (Herbst) (see *Sylvanelater* below). Say's *E. viridis* seems to have been largely overlooked after LeConte (1853) until its listing as a synonym of *Ludius sjaelandicus* by Schwarz (1906). Leng (1920) listed Say's species as a variety of *Ludius resplendens* Eschscholtz, but this is a confusion with *Corymbites viridis* Germar (Candèze 1863), that was continued by Gurjeva (1989). Schenkling (1927) listed *E. viridis* in *Actenicerus* as a synonym of *A. sjaelandicus*, along with *Co. micans* and *Co. cuprascens*. Van Dyke (1932) treated *E. viridis* and *Co. cuprascens* as synonyms of *L. sjaelandicus*, but did not mention *Co. micans*. Subsequent taxonomists largely ignored *E. viridis* and *Co. micans* and presented inconsistent treatments. For example, Dietrich (1945) used only *Ct. sjaelandica*, Brooks (1960) used *Ct. cuprascens*, Gurjeva (1989) listed *Co. micans* as a synonym of *A. sjaelandicus* without mention of the other species, Tarnawski (1996) listed *Co. micans* and *Co. cuprascens* as synonyms of *A. "sjaelandicus"*, Downie and Arnett (1996) used the combination *Ct. cuprascens*, and Johnson (2002) noted only *A. viridis* and *A. cuprascens*. Catt (2007) followed the traditional usage of treating all these names as synonyms of *A. sjaelandicus*.

The female type of *Co. cuprascens* was studied and specimens of both sexes were compared with the type. A male specimen was compared with the type of *Co. micans* by M.C. Lane and his comments on the type (unpubl. notebook at USNM), specimens representing *A. sjaelandicus* from various European localities, and numerous specimens attributable to *A. viridis* and *A. cuprascens* from various North American localities were re-examined for this study. These examinations reveal that *Co. micans* and *Co. cuprascens* are very similar externally, and quite similar to several Eurasian species on sculptural and pubescence pattern characteristics, but the males of each nominal species possess distinctive aedeagal morphology. The aedeagus of *Co. micans* has the median lobe very narrow throughout its length and possesses a deflexed apex, and the apex of the lateral lobe is broadly obtuse and laterally hooked. In contrast, the aedeagus of *Co. cuprascens* has the median lobe planar throughout its length, and the lateral lobes are sagittate, with extended apices. Unfortunately, Say's (1925) description of *E. viridis* cannot be unequivocally applied to any recognized species.

Our conclusion is that pending further revisionary efforts *Elater viridis* Say is not satisfactorily referable to *Actenicerus*, nor to *Ct. cylindriformis*, and is best treated as a *nomen dubium* (ICZN 1999). As such *A. cuprascens* and *A. micans* remain for now the only names available for native North American species.

***Actenicerus cuprascens* (LeConte, 1853)**

Corymbites cuprascens LeConte, 1853: 444

Ludius sjaelandicus; Schwarz, 1906, in part, Van Dyke, 1932, in part

Actenicerus sjaelandicus (O.F. Müller); Schenkling, 1927, in part

Ctenicera sjaelandica; Dietrich, 1945, in part

Based on primary type comparison information and aedeagal morphology, the New Brunswick specimens included in this study are considered to be *A. cuprascens*.

***Anostirus vernalis* (Hentz, 1827) New Combination**

Elater vernalis Hentz, 1827

Corymbites vernalis; Germar, 1843; LeConte, 1853

Ludius vernalis; Van Dyke, 1932

Ctenicera vernalis; Dietrich, 1945

Anostirus vernalis (Hentz) is a readily recognized species in the northeastern quarter of the United States and southeastern Canada. The weakly convex body, shiny black body with elytra yellow to orange-yellow with black macula, strongly serrate antennae, and ecarinate pronotal hind angles, are diagnostic within the North American elaterid fauna and help place this species generically. Reviews and catalogs of *Anostirus* Binaghi by Gurjeva (1989) and Tarnawski (1996) overlooked this species. We take this opportunity to clarify the taxonomy of this species. Two other species attributable to *Anostirus* are known from North America, *A. bipunctatus* (Brown, 1936), **new combination**, and *A. exclamationis* (Fall, 1910), **new combination**, both from California; all other species are Palearctic. *Anostirus* species are often found on flowers of various early spring Rosaceae and Umbelliferae.

NEW BRUNSWICK: Saint John Co.: Saint John, 26.v.1901, W. McIntosh, (2), NBM; Saint John, 26.v.1901, W. McIntosh, (2), NBM; **York Co.:** Charters Settlement, 45.84°N, 66.72°W, 29.iv.2000, R.P. Webster, RWC.

Newly recorded from New Brunswick. In Nova Scotia collected in apple (*Pyrus malus* L.) orchards and deciduous forests (unpublished data).

***Beckerus* Johnson, New Genus**

Type species. *Elater appressus* Randall, 1838; here designated

Description: Body short, broadly arcuate laterally, weakly convex, broadened posteriorly. Integument shining, sparsely punctured; pubescence sparse, pallid, short and recumbent. Head with frons depressed to slightly concave; supra-antennal ridge transverse, widely separated on frons. Antenna serrate to subpectinate, exceeding pronotal hind angles by 2–4 segments; segment 3 serrate, coarsely and sparsely punctured. Thorax with pronotum length 0.74X width; disc slightly convex, broadly deplanate laterally; hind angle with evanescent dorsal carina, apex rounded; basal incisures short. Prosternum with anterior lobe short, 0.25 X width, strongly deflexed; intercoxal process strongly arched; pronotopleural sutures closed anteriorly. Hypomerion with medial margin simple; posterior margin broadly emarginate. Scutellum quadrate to subpentagonal. Mesepimeron broadly adjacent to coxal cavity. Metaventricle with anterior intercoxal process narrowly rounded. Elytral striae weakly striatopunctate; intervals flat with large punctures; costal margin broadly explanate, reflexed. Aedeagus with median lobe deflexed apically; lateral lobe hooked apically, apex desclerotized mesally and setose at tip. Gonocoxites moderately scleroized; ovipositor rods longer than ventrites 1–5; bursa copulatrix expanded, colleterial glands and lateral swellings with small moderately sclerotized plate dorsally; spermatheca tubular, distal; spermathecal reservoir similar and near to spermatheca.

Name derivation. This genus is named in honor of the late Edward C. Becker (1923–2008), longtime elaterid specialist, friend, and mentor.

Species included. *Beckerus appressus* (Randall, 1838), **new combination**; *Beckerus barri* (Lane, 1965), **new combination**.

Beckerus appressus (Randall, 1838)

NOVA SCOTIA: Halifax Co.: Grassy Lake, 1–16.vii.1997, D.J. Bishop, red spruce forest, flight-intercept trap, NSMC; **Victoria Co.:** Sunday Lake, Cape Breton Highlands National Park, 14.vi.1996, R.F. Lauff, regenerating coniferous forest, NSMC.

Newly recorded in Nova Scotia. In New Brunswick collected in old-growth spruce (*Picea* sp.)-balsam fir (*Abies balsamea*) forest. In New York found at higher elevations on ferns growing in *Sphagnum* moss; larvae are found in the *Sphagnum* (Dietrich 1945).

***Corymbitodes* Buysson, 1904**

Corymbitodes is a widely recognized genus with species widespread across northern Eurasia, including Japan. A review of the Russian *Corymbitodes* Buysson by Gurjeva (1989) included the North American *C. pygmaeus* (Van Dyke) and *C. caricinus* (Germar) [misspelled by Gurjeva as “*coricinus*”]. Tarnawski (1996) also included *C. pygmaeus* and gave “*Ludius coracinus* Germar” (1843: 47) as a second species. The latter may be a misspelling as Germar’s *Ludius coracinus* is a long-standing synonym of *Elater abruptus* Say. An additional point of confusion is that *Corymbites caricinus* (Germar 1843: 63) is a synonym of *Elater lobatus* Eschscholtz, the latter regarded as a subspecies of *C. pygmaea* by Tarnawski (1996).

Both Gurjeva and Tarnawski overlooked *Ctenicera tarsalis* (Melsheimer), *Ctenicera elongaticollis* (Hamilton), *Ctenicera moerens* (LeConte), *Ctenicera xanthoma* (Horn), and *Ctenicera dorotheae* Knull, all of which are more closely related to *C. pygmaeus* and *C. caricinus* than to any species of *Ctenicera*. As such, we take this opportunity to transfer these latter five species to *Corymbitodes* to await generic review: *Corymbitodes dorotheae* (Knull, 1959), **new combination**; *Corymbitodes elongaticollis* (Hamilton, 1893), **new combination**; *Corymbitodes moerens* (LeConte, 1866), **new combination**; *Corymbitodes pygmaeus* (Van Dyke, 1932), **new combination**; *Corymbitodes tarsalis* (Melsheimer, 1846), **new combination**; and *Corymbitodes xanthomus* (Horn, 1871), **new combination**. These changes are made with the recognition that not all these species may be subsequently regarded as congeneric, but that their retention in *Ctenicera* is clearly untenable. Further, morphological data across the broad geographic span of both *C. tarsalis*, *C. pygmaeus*, and *C. dorotheae* indicate that the distinctiveness between these species is questionable, and that Van Dyke’s (1932) original observation that *C. pygmaeus* was only a “depauperized form” of *C. tarsalis* (as *C. lobatus*) could be correct. At this time we do not wish to address the question of relationship of the eastern *C. tarsalis* and the western *C. lobatus* as that is a more significant problem best treated in a generic review.

Corymbitodes tarsalis (Melsheimer, 1846)

Athous tarsalis Melsheimer, 1846

Corymbites tarsalis; Germar, 1843; LeConte, 1853

Ludius lobatus tarsalis; Van Dyke, 1932

Ctenicera tarsalis; Dietrich, 1945

PRINCE EDWARD ISLAND: locality not recorded, 1983, collector not recorded, (3), UPEI; **Queens Co.:** Aldberry Plains, 17.vi.1971, J. MacLeod, UPEI; Wood Islands, 29.viii.2003, C.G. Majka, seashore, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia collected on apple (*Pyrus malus*), pear (*Pyrus communis* L.), beaked willow (*Salix bebbiana* Sarg.), pussy willow (*Salix discolor* Muhl.), and speckled alder (*Alnus incana* (L.) Moench).

Corymbitodes tarsalis is a common spring to early summer species in eastern North America. Larvae are predators, and possibly facultative rhizophages, in moist peaty soils adjacent to wetlands and drainages. Adult males fly readily and are commonly found perched on graminoids and other plants, where they await pheromone scents of the more edaphic females. Mass flights of hundreds of males in a small area seeking a female can be encountered (unpublished data).

Corymbitodes pygmaeus (Van Dyke, 1932)

Ludius lobatus pygmaeus Van Dyke, 1932

Ctenicera lobatus pygmaeus; Dietrich, 1945

Ctenicera pygmaea; Lane, 1952; Brookes, 1960

NEW BRUNSWICK: Twenty specimens were examined from Gloucester, Kent, Northumberland, Saint

John, Westmoreland, and York counties. The earliest record is from 1898 (Saint John Co.: Saint John, 20.vi.1898, W. McIntosh, NBM). **NOVA SCOTIA:** Twenty-seven specimens examined from Cape Breton, Inverness, Queens, Richmond, and Victoria counties. The earliest record is from 1968 (Queens County: Lake Kejimkujik, Kejimkujik National Park, 11.vi.1968, D.C. Ferguson, (2), NSMC).

This species was reported from New Brunswick and Nova Scotia by (Bousquet 1991). Except for the two specimens collected at Lake Kejimkujik (noted above) on the Nova Scotia mainland, all the other records of this species are from Cape Breton Island. Very abundant in long grass in low, moist places around poplar-willow groves and nearly dry ponds (Brooks 1960). In Nova Scotia found in flood plains, along lakes, and associated with vegetation in low, moist areas (unpublished data).

Eanus maculipennis LeConte, 1866

NOVA SCOTIA: Guysborough Co.: Borneo, 1995, C. Corkum, young deciduous forest, flight-intercept trap, NSMC; Malay Lake, 15–30.vi.1997, D.J. Bishop, red spruce forest, flight-intercept trap, (2), NSMC; **Halifax Co.:** Pockwock Lake, 15–30.vi.1997, D.J. Bishop, red spruce forest, flight-intercept trap, NSMC; Pockwock Lake, 1–15.vii.1997, D.J. Bishop, red spruce forest, flight-intercept trap, NSMC; Prospect, 11.vi.1979, B. Wright and D. LeBarr, NSMC; **Victoria Co.:** Sunday Lake, Cape Breton Highlands National Park, 14.vi.1996, R.F. Lauff, regenerating coniferous forest, (2), NSMC.

Newly recorded in Nova Scotia. In New Brunswick collected in a mature spruce (*Picea* sp.)-balsam fir (*Abies balsamea*) forest. Adults are often found on the spring growth of conifers and adjacent shrubbery.

Hypoganus sulcicollis (Say, 1834)

NOVA SCOTIA: Halifax Co.: Sandy Lake, 29.vii–13.viii.1997, D.J. Bishop, old-growth red spruce forest, flight-intercept trap; **Queens Co.:** Tobeatic Lake, 15.v.2003, P. Dollin, on red spruce snag in red spruce forest, NSMC.

Newly recorded in Nova Scotia and in the Maritime Provinces as a whole. A subcortical species in deciduous forests where the larvae are predators (unpublished data).

Liotrichus spinosus (LeConte, 1853)

PRINCE EDWARD ISLAND: Queens Co.: North Rustico, 26.vi.2003, seashore, C.G. Majka, CGMC.

Newly recorded from Prince Edward Island. In Nova Scotia collected from a wide variety of deciduous and coniferous forest stands of various ages including in red (*Picea rubens*) and black spruce (*Picea mariana*), white pine (*Pinus strobus*), hemlock (*Tsuga canadensis*), and balsam fir (*Abies balsamea*).

Liotrichus vulneratus (LeConte, 1853)

NEW BRUNSWICK: Gloucester Co.: Bathurst, 15.vii.1998, Daley, McLean, Devereaux, and Comeau, NBM; Bathurst, 10–27.vi.1994, R.P. Webster, NBM; **Kings Co.:** Grand Bay, 19.vi.1989, 6.x.1992, and 13.vi.2001, D.F. McAlpine, NBM; **Madawaska Co.:** Saint Leonard, 28.vi.2003, A.-S. Bertrand, old-growth spruce-fir forest, RWC; **Queens Co.:** 3.5 km SW of Scotchtown, 8.iii.1997, R.P. Webster, NBM; **Saint John Co.:** Saint John, 19.v.190?, 7.vi.1902, W. McIntosh, (2), NBM; **York Co.:** Charters Settlement, 45.84°N, 66.72°W, 2.v.2000, R.P. Webster, bare soil in garden, RWC.

Newly recorded from New Brunswick. In Nova Scotia collected from both deciduous and coniferous (red spruce (*Picea rubens*) and hemlock (*Tsuga canadensis*) forest stands of various ages.

