

**BETLES OF THE BOREAL FOREST: A FAUNISTIC SURVEY CARRIED OUT
IN WESTERN QUÉBEC**

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C.P. 6128, Succ. 'Centre-Ville', Montréal, QC, Canada, H3C 3J7; email: paquinp@mblink.net**Abstract***Proc. ent. Soc. Ont.* 132: 57–98

The beetle fauna of two important regions of the eastern boreal forest of Canada were surveyed in western Quebec: 1) the mixed boreal zone (south boreal) and 2) the black spruce succession (north boreal). Seven forest habitats were studied, three in the south boreal zone (deciduous, mixed, and coniferous) and four in the northern one (burned, regenerating, mature, and old growth). A total of 9,505 samples yielded 94,555 specimens, representing 69 families. All specimens were identified for a total of 757 species (excluding 20,000 unidentified Aleocharinae). Species are listed in alphabetical order and abundance is given for the seven forest habitats studied. The list contains 5 new records for North America, 4 for Canada, 21 for Quebec, 2 confirmations of doubtful records, numerous important range extensions and some ecological observations. The total number of species and number of specimens are compared between all families and between subfamilies of Staphylinidae. The high number of species and specimens collected highlights the importance of Staphylinidae. Predators dominate with 39% of the species while mycophages account for 29%. Phytophages (12%), xylophages (dead wood) (11%), and saprophages (6%) follow, while the remaining guilds occupy each 1%, or less. Beetle diversity in boreal forest is more related to decaying processes than to living plants.

Résumé*Proc. ent. Soc. Ont.* 132: 57–98

La faune des coléoptères de deux importantes zones de la forêt boréale canadienne a été inventoriée dans l'ouest du Québec : 1) la forêt boréale mixte (boréal sud) et 2) la succession écologique des forêts d'épinettes noires (boréal nord). Sept types d'habitats forestiers ont été échantillonnés, trois dans la région sud (forêts décidues, mixtes et conifériennes) et quatre dans la région nord (forêts brûlées, en régénération, matures et anciennes). Un total de 9505 échantillons contenant 94 555 spécimens et 69 familles a été prélevé. Tous les spécimens (sauf 20 000 Aleocharinae) ont été identifiés, et 757 espèces ont été reconnues. Les espèces sont énumérées par ordre alphabétique et l'abondance dans chacun des 7 habitats forestiers est donnée. La liste contient 5 nouvelles mentions pour l'Amérique du Nord, 4 pour le Canada, 21 pour le Québec, la confirmation de deux espèces, plusieurs importantes extensions d'aires de distribution et quelques observations écologiques. La richesse et l'abondance des espèces sont comparées entre les familles, mais aussi entre les sous-familles de Staphylinidae. L'importance des Staphylinidae dans les forêts boréales est démontrée par leur grande richesse et abondance. Les prédateurs dominent avec 39% des espèces récoltées, tandis que les mycophages occupent 29%. Les phytophages (12%), les xylophages (associés au bois mort) (11%), et les saprophages (6%) suivent;

les autres guildes n'occupent que 1%, ou moins, des effectifs. La diversité des coléoptères des forêts boréales est davantage liée à la décomposition qu'aux plantes vivantes.

Introduction

The boreal forest is the largest continuous vegetation zone in North America and it forms a vast transcontinental belt (Scudder 1979). Disturbance regimes have a strong influence on the landscape dynamic, particularly forest fires which are the most important natural factor. Their devastating effects determine a natural starting point for the ecological succession and maturation processes (Rowe and Scotter 1973; Bonan and Shugart 1989). Independence of fires and their semi-random recurrence create a diverse forest habitat made of serial stages, forming the characteristic boreal heterogeneous landscape (Danks and Footitt 1989). Despite the geographical and economical importance of the ecosystem, few extensive inventories have been conducted on its invertebrate fauna, especially in eastern boreal forests. Most of our knowledge on beetles is deduced from ecological studies limited to a few families, namely on Carabidae, carried out in Alberta and Manitoba (Richardson and Holliday 1982; Holliday 1984, 1991a, b; Niemelä et al. 1992, 1993; Spence et al. 1996).

The present paper provides a species list of beetles and faunistic information gathered in an extensive ecological study of boreal forest in western Quebec. This region is of interest because of the variety of forest habitats found within this small area. The study covers two ecological successions: 1) the mixed-boreal succession (southern) in which the deciduous, mixed and coniferous phases were sampled and 2) the black spruce zone (northern succession) in which a) burned, b) regenerating, c) mature, and d) old growth phases were studied. In eastern Canada, the strong climatic influence of Hudson and James Bays creates northern conditions at a much lower latitude than anywhere else in the country (Danks 1979; Paquin and Dupérré 2001) as shown by the black spruce distribution across Canada (Rowe 1972). Therefore, the proximity of these two forest systems in western Quebec allows a comprehensive sampling of the boreal forest system. The objectives of our study are 1) to provide an accurate list of beetles collected within the eastern boreal forest, 2) to add information on interesting records and species distributions and 3) to discuss the beetle fauna, family occurrence and dominance.

Methods

Study area

All study sites were located in the Northern Clay Belt of Quebec (Fig. 1) that resulted from the maximum extension of pro-glacial Lakes Barlow and Ojibway (Veillette 1994). Surface deposits, drainage, and time elapsed since the last forest fire determine the forest dynamics and composition (Leduc et al. 1995).

The mixed-boreal succession (also called southern succession) was studied in the Lake Duparquet area in Abitibi-ouest (48°30'N, 79°13'W). The forest dynamic is characterized by a tree succession in which pioneer deciduous species are gradually replaced by conifers. The young stages (less than 100 years old) are composed of aspen (*Populus tremuloides* Michx.) forming a purely deciduous forest; the intermediary stages (100 to 200 years old) are composed of balsam fir (*Abies balsamea* (L.) Mill.), white spruce (*Picea glauca* (Moench) Voss), paper birch (*Betula papyrifera* Marsh.) and a few *P. tremuloides* Michx. constituting a mixed forest; and the older stages (200 years and older), dominated by white cedar (*Thuja occidentalis* L.) and balsam fir (*Abies balsamea* (L.) Mill.), form a coniferous forest (Bergeron and Dubuc 1989; Bergeron and Dansereau 1993; Bergeron 2000). De Granpré et al. (1993) described the understory vegetation of

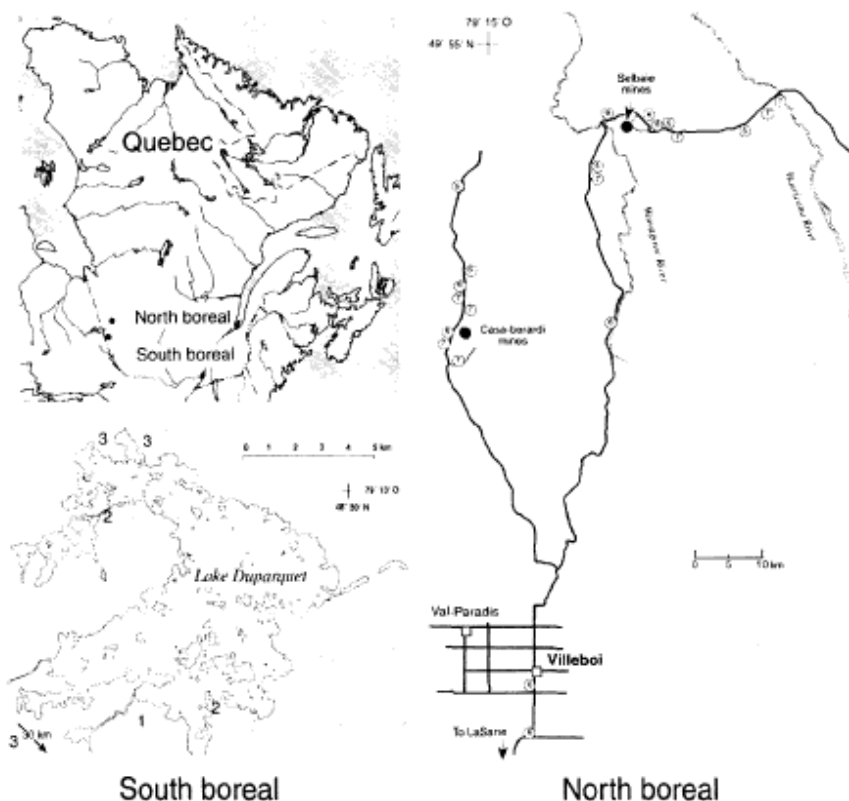


FIGURE 1. Study area. Locations of the two study regions: The mixed-boreal area (south boreal) and the north boreal area in the black spruce ecological succession. Detail of the south boreal area of Lake Duparquet showing locations of forest type 1 (deciduous), 2 (mixed), and 3 (coniferous). Detail of the north boreal area showing locations of forest type 4 (burned), 5 (regenerating), 6 (mature) and 7 (old-growth).

the chronosequence. Four stages were selected to represent the major steps of the chronosequence: deciduous, mixed, coniferous (two ages) respectively of 51, 148, 235 and 407 years of age at time of sampling. The oldest maturation phase is located in the Lake Labyrinthe in Témiscamingue (30 km S-E of Lake Duparquet).

On clayish soils, the northern succession is largely dominated by black spruce (*Picea mariana* Mill. B.S.P.) in all succession stages (Grandtner 1966; Rowe 1972; Bergeron et al. 2001). The study sites were located in the Jamésie (Baie James, Territoire-du-Nouveau-Québec), approximately 90 km north of La Sarre. The 21 sites are classified into four groups according to their respective age, i.e. time after forest fires: the burned phase in which traces of fire are still found (0–2 years old), the regeneration phase where black spruce has not yet established a closed canopy (21–58 years old); the mature phase with a complete canopy structure (70–170 years old), and old growth phase where the older cohort of trees is declining creating an opening of the crown (177–340 years old). All northern sites were located within a 60 km circle from the middle point — 49°33'N, 78°59'W — of the black spruce succession study area.

Sampling

The sampling season extended mainly from the end of May to late October in 1994, 1996 and 1997. Several trapping methods were used, including pitfall traps, canopy-funnels (see Martin 1966), flight-interception traps, Malaise/flight-interception traps and emergence cages. The Malaise/flight-interception trap combined a traditional Malaise trap and water pans added at the bottom of each panel. The specimens accumulated within the collecting head were noted 'top' on labels while those from the water pans were noted 'pan'. Emergence cages (1 m × 1 m) were placed on forest floors and specimens were either collected with the collecting head (noted 'top') or with a small water pan placed inside the cage, therefore noted 'pan'. All devices were serviced once a week. In addition, soil samples and microhabitat samples (10 liters of diverse organic matter, such as decaying logs, fungi, etc.) were collected and extracted with a Berlese funnel five times during the season, for a total 4,500 liters extracted.

Results

A total of 9,505 samples yielded 94,555 specimens, representing 69 families following the classification used in Arnett and Thomas (2000, in press). A total of 20,000 Aleocharinae (Staphylinidae) were sorted and mounted, but are not yet identified. This subfamily will be considered in detail in a later publication. However, Aleocharinae usually represent 40% of the total number of Staphylinidae species found (J. Klimaszewski, pers. comm.) which suggests a richness of 68 species. Consequently, the proportions given in Figures 2, 3, and 4 include Aleocharinae (based on 20,000 specimens and 68 species) to provide a better global picture of the beetle fauna associated with the boreal forest.

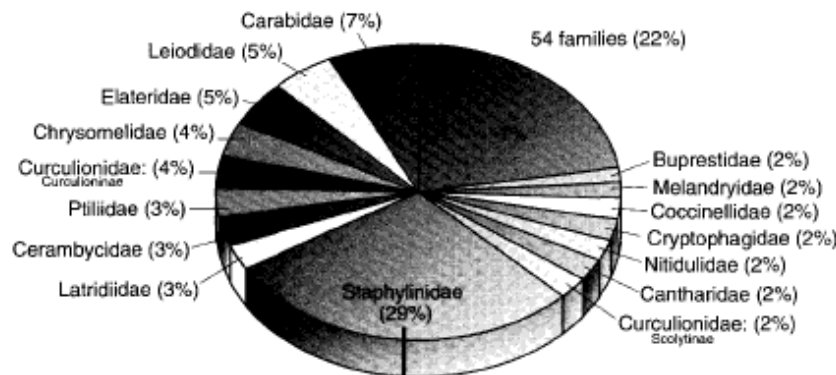
A total of 757 species were identified and are presented alphabetically by family and species name in Table 1. For each species, the abundance recorded in each of the seven forest types is given. Numbers refers to the appendix in which additional information on distribution, new records and ecological observations are found. All available data are given for new records and rare species, but only relevant information is given for range extensions. The list contains 5 new records for North America, 4 for Canada, 21 for Quebec, 2 confirmations of doubtful records and numerous important range extensions. Laplante et al. (1991) and Bousquet's (1991a) lists were used as references for new records, unless specified otherwise.

Staphylinidae represent the highest proportion of the species richness, with 29% (238 species) of all the beetles species collected (Fig. 2). The proportion decreases to 7% (59 species) with the Carabidae, then to 6% (49 species) for the Curculionidae (now including Scolytinae) and to 5% for the Leiodidae and Elateridae (42 and 41 species). Twelve other families represent between 4 and 2% of the fauna (31–13 species). The other 54 families account for a total of 22% of the species but individually represent less than 1% of the richness.

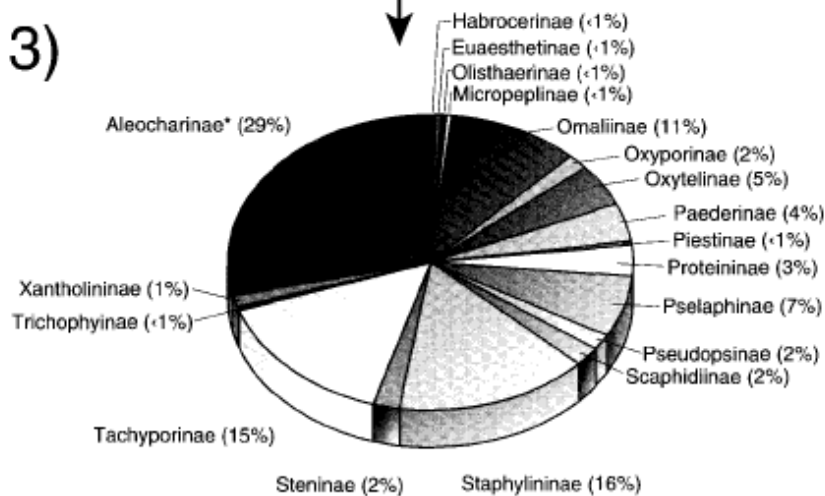
The subfamily level is the most widely used taxonomical unit in the Staphylinidae, especially with the recent changes in the family limits that now consider Pselaphinae and Scaphidiinae as subfamilies (Newton et al. 2000). The contribution of the 19 Staphylinidae subfamilies is given in Figure 3, where Aleocharinae dominate with 29% of the species. The Staphylininae (16%), Tachyporinae (15%), Omaliinae (11%), Pselaphinae (7%), and Oxytelinae (5%) follow and the remaining 13 subfamilies each represent less than 4%.

The number of specimens is largely dominated by the Staphylinidae with 53% (49,781 specimens including Aleocharinae) of the total number of specimens collected (Fig. 4). Ptiliidae rank second with 16% (15,311 specimens) then Latridiidae (4%), Carabidae (4%), Leiodidae (3%) and Nitidulidae (3%) which each harbour a high number of abundant species. However, Hydrophilidae (2%) and Brentidae (2%) are in the most abundant families because of the high number of two

2)



3)

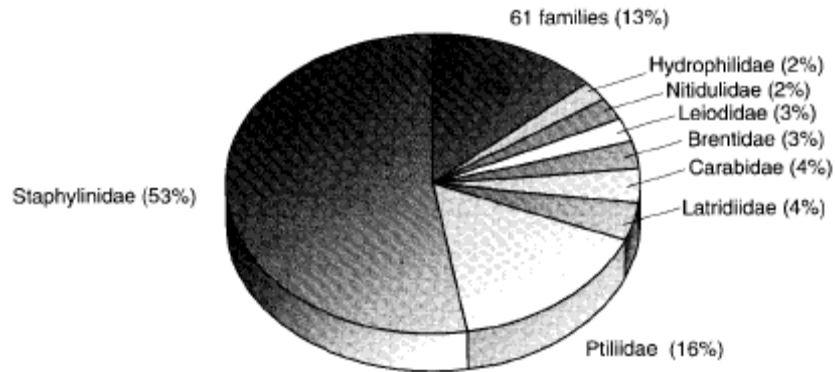


FIGURES 2-3. (2) Distribution of species in the 69 families collected. (3) Distribution of species in the 19 subfamilies of Staphylinidae collected. * Aleocharinae proportions are based on a 40% ratio of Staphylinidae.

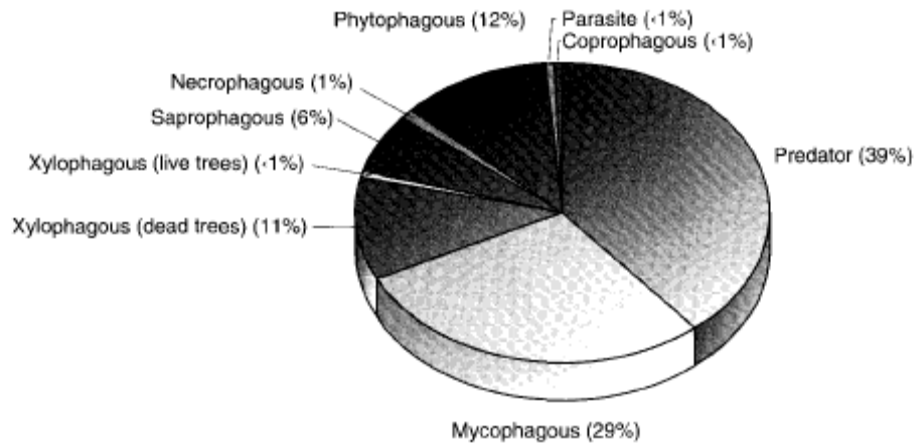
species: *Cercyon assecla* Smetana and *Betulapion simile* (Kirby) respectively. The remaining 61 families represent 13% only of the specimens collected in which each family count for 1% or less.

The proportions given in Figure 5 illustrate the trophic structure of the boreal beetle fauna. Predators dominate with 39% while mycophages account for 29%. Phytophages (12%), xylophages (dead trees) (11%) and saprophages (6%) follow, while the remaining groups occupy 1%, or less, each.

4)



5)



FIGURES 4-5. (4) Distribution of number of specimens in the 69 families collected. Staphylinidae includes Aleocharinae. (5) Trophic guild proportions of the boreal beetle community (Aleocharinae excluded).

TABLE 1. List of species organized alphabetically by family and species name. Abundance in each of the 7 forest types is given. Forest types 1, 2 and 3 are located in the mixed boreal area (south boreal) and respectively forms the deciduous, mixed and coniferous stands. Forest types 4, 5, 6 and 7 are located in the black spruce boreal area (north boreal) and respectively form the burned, regenerating, mature and old growth stands. The number found besides some species names refers to comments in the appendix. The total number of specimens does not include Aleocharinae.

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
Aderidae							
1) <i>Vanonus calvescens</i> Casey	-	-	2	-	-	-	-
1) <i>Vanonus wickhami</i> Casey	-	6	1	8	5	2	2
Anobiidae							
<i>Caenocara scymnoides</i> LeConte	23	7	4	1	-	2	2
<i>Doreatoma pallicornis</i> LeConte	12	9	7	-	-	-	-
<i>Ernobius schedli</i> W.J. Brown	-	-	-	-	1	-	3
<i>Hemicoelus umbrosus</i> (Fall)	-	-	1	-	1	1	2
<i>Microbregma e. emarginatum</i> (Duftschmid)	3	5	8	1	-	-	1
<i>Ptilinus pruinus</i> Casey	1	-	-	-	-	-	-
<i>Ptilinus ruficornis</i> Say	1	-	-	-	1	-	-
<i>Ptinus raptor</i> Sturm	5	2	4	-	-	-	1
<i>Ptinus villiger</i> (Reitter)	-	-	1	-	-	-	-
<i>Stagetus profundus</i> (LeConte)	-	-	-	-	5	-	-
Anthicidae							
<i>Anthicus cervinus</i> LaFerté-Sénéctère	-	-	-	-	1	1	-
2) <i>Ischalia costata</i> (LeConte)	2	4	72	-	2	20	29
<i>Omonadus floralis</i> (Linné)	-	-	2	-	-	-	-
Artematopidae							
<i>Macropogon piceus</i> LeConte	1	-	-	-	-	-	-
Atellabidae							
<i>Auletobius cassandrae</i> (LeConte)	-	-	1	-	-	1	-
<i>Tmenocerus cyanellus</i> (LeConte)	-	-	1	-	-	-	-
Boridae							
3) <i>Boros unicolor</i> Say	-	-	-	3	-	-	-
Brachypteridae							
<i>Heterhelus pennatus</i> (Murray)	-	-	2	-	-	-	-
Brentidae							
4) <i>Betulapion simile</i> (Kirby)	4	15	2788	-	-	1	-
Buprestidae							
<i>Agrilus anxius</i> Gory	-	-	1	-	-	-	-
<i>Anthaxia inornata</i> (Randall)	-	-	-	14	2	4	14
<i>Chrysobothris blanchardi</i> Horn	-	-	-	1	1	2	-
<i>Chrysobothris harrisi</i> (Hentz)	-	-	-	-	1	-	1
5) <i>Chrysobothris neopusilla</i> Fisher	-	-	-	1	-	1	1
<i>Chrysobothris scabripennis</i> Gory & L. de C.	-	-	-	7	1	-	-
<i>Chrysobothris trinervia</i> (Kirby)	-	-	-	7	-	1	-
<i>Dicerca tenebrica</i> (Kirby)	1	-	-	-	1	-	-
<i>Dicerca tenebrosa</i> (Kirby)	-	-	-	2	-	1	-
<i>Melanophila acuminata</i> (DeGeer)	-	-	-	89	-	-	-
6) <i>Phaenops abies</i> Champlain & Knull	-	-	-	-	1	-	2
<i>Phaenops d. drummondi</i> (Kirby)	-	-	-	8	2	-	2
<i>Poecilnota cyanipes</i> (Say)	-	-	1	-	-	-	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
Byrrhidae							
<i>Byrrhus geminatus</i> LeConte	-	-	-	20	-	4	-
<i>Cytilus alternatus</i> Erichson	-	-	-	16	1	-	-
<i>Simplocaria semistriata</i> (Fabricius)	1	-	-	-	-	-	-
Cantharidae							
<i>Cantharis curtisi</i> (Kirby)	-	1	1	-	-	-	-
<i>Cantharis impressa</i> (LeConte)	-	-	1	-	-	-	-
<i>Cantharis rufa</i> Linné	2	1	1	-	2	-	-
<i>Malthodes fragilis</i> (LeConte)	23	164	63	-	-	-	-
<i>Malthodes f. fuliginosus</i> LeConte	3	-	4	-	79	2	2
<i>Malthodes niger</i> (LeConte)	12	1	20	-	-	-	-
7) <i>Malthodes parvulus</i> (LeConte)	56	29	34	2	30	15	7
<i>Podabrus cf. puncticollis</i>	-	-	-	-	4	16	5
<i>Podabrus heteronychus</i> Fall	1	1	-	-	1	1	-
<i>Podabrus intrusus</i> Green	4	-	2	-	-	-	-
<i>Podabrus laevicollis</i> (Kirby)	20	20	60	2	1	1	3
<i>Podabrus limbellus</i> LeConte	-	-	4	-	-	-	-
<i>Podabrus modestus</i> (Say)	1	-	1	-	-	-	-
<i>Podabrus puberulus</i> LeConte	1	-	2	-	1	2	-
<i>Podabrus puncticollis</i> (Kirby)	-	2	-	1	3	2	1
<i>Podabrus</i> sp.	-	-	-	-	1	-	-
<i>Rhagonycha fraxini</i> (Say)	-	-	-	-	-	1	1
<i>Rhagonycha mandibularis</i> (Kirby)	-	1	-	4	22	13	21
<i>Rhagonycha recta</i> (Melsheimer)	1	-	3	1	5	3	-
<i>Rhagonycha</i> sp.	38	80	96	-	-	-	-
Carabidae							
<i>Agonum affine</i> Kirby	-	-	2	-	-	-	-
<i>Agonum gratiosum</i> (Mannerheim)	-	1	9	-	8	3	3
<i>Agonum lutulentum</i> (LeConte)	-	1	-	-	-	-	-
<i>Agonum melanarium</i> Dejean	-	1	1	-	-	1	-
<i>Agonum metallescens</i> (LeConte)	-	-	-	1	-	-	-
8) <i>Agonum quinquepunctatum</i> Motschulsky	-	-	-	2	-	-	-
<i>Agonum retractum</i> LeConte	63	7	389	-	1	2	-
<i>Agonum sordens</i> Kirby	1	-	18	1	-	-	-
<i>Amara erratica</i> (Duftschmid)	-	-	3	1	-	1	-
<i>Amara impuncticollis</i> (Say)	-	-	2	-	-	-	-
<i>Amara lunicollis</i> Schiodte	-	-	5	-	-	-	-
<i>Badister obtusus</i> LeConte	-	-	-	-	-	-	1
<i>Bembidion carinula</i> Chaudoir	-	-	1	-	-	-	-
<i>Bembidion concretum</i> Casey	1	-	-	-	-	-	-
<i>Bembidion forttestriatum</i> (Motschulsky)	-	1	3	-	-	-	-
<i>Bembidion grapii</i> Gyllenhal	-	-	1	30	3	-	-
9) <i>Bembidion obtusum</i> Audinet-Serville	1	-	-	-	-	-	-
<i>Bembidion wingatei</i> Bland	7	5	-	-	-	-	-
<i>Bradycellus lugubris</i> (LeConte)	1	1	5	-	-	2	-
<i>Bradycellus neglectus</i> (LeConte)	1	-	-	-	1	-	-
<i>Bradycellus nigrinus</i> (Dejean)	-	-	5	-	-	-	-
<i>Bradycellus semipubesces</i> Lindroth	-	-	2	1	1	1	-
<i>Calathus ingratus</i> Dejean	4	13	51	-	12	5	1
<i>Calosoma frigidum</i> Kirby	34	-	1	-	-	-	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Carabus m. maeander</i> Fischer de Waldheim	-	-	-	-	-	1	-
<i>Clivina fossor</i> (Linné)	1	5	3	-	1	1	-
<i>Cymindis cribricollis</i> Dejean	-	-	-	1	1	1	4
<i>Dromius piceus</i> Dejean	-	1	5	1	1	1	12
<i>Dyschirius integer</i> LeConte	-	-	1	-	-	-	-
<i>Elaphrus clairvillei</i> Kirby	-	-	-	-	1	-	-
<i>Harpalus egregius</i> Casey	-	-	-	2	-	-	-
<i>Harpalus nigriraris</i> C.R. Sahlberg	-	-	1	1	-	-	-
<i>Harpalus solitarius</i> Dejean	1	-	-	1	-	-	-
<i>Lebia fuscata</i> Dejean	-	-	1	-	-	-	-
<i>Lebia moesta</i> LeConte	-	-	-	-	18	-	-
<i>Loricera p. pilicornis</i> (Fabricius)	-	-	1	-	-	-	-
10) <i>Nomius pygmaeus</i> Dejean	1	-	1	-	-	-	-
<i>Notiophilus aeneus</i> (Herbst)	1	-	-	-	-	-	-
<i>Patrobis foveocollis</i> (Eschscholtz)	-	-	1	-	-	-	-
<i>Platynus decentis</i> (Say)	156	125	260	-	-	15	7
<i>Platynus mannerheimii</i> (Dejean)	-	-	1	-	-	8	22
<i>Pterostichus adstrictus</i> Eschscholtz	88	110	323	90	6	39	17
<i>Pterostichus coracinus</i> (Newman)	3	23	29	-	-	4	6
<i>Pterostichus luctuosus</i> (Dejean)	-	1	-	-	-	-	-
<i>Pterostichus melanarius</i> (Illiger)	-	-	1	-	1	10	-
<i>Pterostichus pennsylvanicus</i> LeConte	136	1	20	1	1	-	-
<i>Pterostichus punctatissimus</i> (Randall)	-	-	87	26	10	90	71
11) <i>Scaphinotus bilobus</i> (Say)	5	4	12	2	38	141	64
<i>Sericoda obsoleta</i> (Say)	1	2	2	25	3	3	4
<i>Sericoda quadripunctata</i> (DeGeer)	-	-	-	85	-	5	1
<i>Sphaeroderus nitidicollis brevoorti</i> LeConte	9	3	128	1	2	15	9
<i>Sphaeroderus stenostomus lecontei</i> Dejean	8	7	56	-	-	11	-
12) <i>Stereocerus haematopus</i> (Dejean)	-	-	-	-	-	20	2
<i>Syntomus americanus</i> (Dejean)	-	3	-	-	4	-	1
<i>Synuchus impunctatus</i> (Say)	7	5	31	-	3	-	-
<i>Tachyta angulata</i> Casey	1	-	-	16	5	2	8
<i>Trechus apicalis</i> Motschulsky	29	10	64	-	3	3	4
<i>Trechus crassiscapus</i> Lindroth	-	-	1	-	-	3	-
13) <i>Trechus quadristriatus</i> (Schränk)	-	-	1	-	-	-	-
Cerambycidae							
<i>Acmaeops p. proteus</i> (Kirby)	1	-	-	26	-	4	2
14) <i>Acmaeopsoides rufulus</i> (Haldeman)	-	-	-	-	1	-	-
<i>Arhopalus foveicollis</i> (Halseman)	-	-	-	1	-	-	-
<i>Callidium frigidum</i> Casey	-	-	1	-	-	-	-
<i>Clytus ruricola</i> (Olivier)	11	3	2	-	-	-	-
<i>Evodinus m. monticola</i> (Randall)	-	2	2	-	-	3	1
<i>Gnathacmaeops pratensis</i> (Laicharting)	-	-	-	3	-	-	-
<i>Grammoptera subargentata</i> (Kirby)	1	-	-	-	-	-	-
<i>Judolia m. montivogans</i> (Couper)	-	-	-	-	-	1	1
<i>Judolia quadrata</i> (LeConte)	-	-	-	-	-	-	1
<i>Meriellum proteus</i> (Kirby)	-	-	-	-	-	1	1
<i>Monochamus s. scutellatus</i> (Say)	1	5	4	27	6	22	25
<i>Neoclytus l. leucozonus</i> Gory & Lap. de Cas.	-	-	-	-	1	1	1
<i>Pidonia ruficollis</i> (Say)	4	-	-	-	-	-	-

TABLE 1 continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Pogonocherus mixtus</i> Haldeman	-	-	-	1	-	-	-
<i>Pogonocherus penicillatus</i> (LeConte)	-	-	-	-	-	2	9
<i>Promocera c. collaris</i> (Kirby)	-	-	1	-	-	-	-
<i>Pygoleptura n. nigrella</i> (Say)	-	-	1	2	-	2	1
<i>Rhagium inquisitor</i> (Linné)	-	-	-	3	2	4	4
<i>Stictoleptura c. canadensis</i> (Olivier)	-	-	4	-	1	-	1
<i>Tetropium cinnamopterum</i> Kirby	-	-	1	-	-	1	-
<i>Trachysida aspera brevifrons</i> (H. Howden)	-	-	-	-	-	-	1
<i>Trachysida mutabilis</i> (Newman)	-	1	-	-	-	-	-
15) <i>Tragosoma deparium</i> (Linné)	-	-	-	2	3	-	-
<i>Xestoleptura tibialis</i> (LeConte)	-	4	-	1	6	12	6
<i>Xylotrechus undulatus</i> (Say)	-	-	-	-	-	1	1
Cerylonidae							
<i>Cerylon castaneus</i> Say	4	1	3	-	-	2	-
<i>Cerylon unicolor</i> (Ziegler)	-	1	3	-	-	-	-
Chrysomelidae							
<i>Altica sylvia</i> Malloch	-	-	-	-	69	-	-
<i>Altica corni</i> Woods	2	-	6	2	3	-	-
<i>Altica</i> sp.	-	-	-	-	1	-	-
<i>Bromius obscurus</i> (Linné)	-	-	-	1	-	-	-
<i>Calligrapha alni</i> Schaeffer	-	2	1	-	-	-	-
<i>Capraita subvittata</i> (Horn)	-	-	-	-	-	-	1
<i>Chaetocnema minuta</i> Melsheimer	-	-	-	1	1	-	1
<i>Crepidorera digna</i> Parry	-	-	-	3	2	-	-
<i>Crepidorera populivora</i> Parry	168	5	4	2	24	-	1
<i>Diachus auratus</i> (Fabricius)	-	-	1	-	-	-	-
<i>Diachus cataris</i> (Saffriant)	3	-	-	-	-	-	-
<i>Distigmoptera borealis</i> Blake	-	-	2	1	-	1	1
<i>Longitarsus erro</i> Horn	1	-	-	-	-	-	-
<i>Longitarsus melanurus</i> (Melsheimer)	-	-	-	-	-	1	-
<i>Longitarsus cf. erro</i>	1	-	-	-	-	-	-
<i>Longitarsus</i> sp. 1	-	-	-	1	-	-	-
<i>Longitarsus</i> sp. 2	1	-	-	-	-	-	-
<i>Longitarsus</i> sp. 3	-	-	1	-	-	-	-
<i>Longitarsus</i> sp. <i>luridus</i> group	1	-	4	2	1	12	4
16) <i>Neocrepidodera robusta</i> (LeConte)	-	-	-	-	1	2	-
<i>Pachybrachis nigricornis difficilis</i> Fall	-	-	-	-	17	2	8
<i>Phaedon a. armoraciae</i> (Linné)	-	1	-	-	-	-	-
<i>Phaedon viridis</i> Melsheimer	-	-	2	-	-	-	-
<i>Plateumaris germari</i> (Mannerheim)	-	-	-	1	-	-	-
<i>Plateumaris nitida</i> (Germar)	-	-	-	1	-	-	1
<i>Psylliodes punctulata</i> Melsheimer	-	-	1	-	-	-	-
<i>Syneta extorris borealis</i> W.J. Brown	-	9	13	-	-	6	-
<i>Systema frontalis</i> (Fabricius)	1	-	-	-	-	-	-
<i>Tricholochmaea decora</i> (Say)	-	-	2	-	4	6	3
<i>Tricholochmaea kalmia</i> (Fall)	-	-	-	-	1	-	-
<i>Tricholochmaea vaccinii</i> (Fall)	-	-	2	-	-	-	1
Ciidae							
<i>Ceracis thoracicornis</i> (Ziegler)	1	-	-	-	-	-	-
<i>Cis americanus</i> Mannerheim	-	1	-	-	-	-	-

TABLE 1 - continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Cis fuscipes</i> Mellie	3	4	1	-	1	-	-
<i>Cis levettei</i> (Casey)	21	192	421	-	-	1	4
<i>Cis pictorius</i> Casey	-	1	1	-	-	-	-
<i>Cis striolatus</i> Casey	-	-	-	-	-	-	2
<i>Dolichocis manitoba</i> Dury	-	7	3	-	-	-	12
<i>Orthocis punctatus</i> (Mellie)	-	-	1	-	-	-	-
<i>Plesiocis cribrum</i> Casey	-	-	-	-	1	-	-
Clambidae							
<i>Clambus a. armadillo</i> (DeGeer)	3	-	5	2	-	1	3
<i>Clambus gibbulus</i> (LeConte)	1	1	1	28	1	8	1
<i>Clambus howdeni</i> Endrödy-Younga	3	98	9	1	2	5	-
Cleridae							
<i>Enoclerus n. nigripes</i> (Say)	-	-	-	26	-	-	-
<i>Phlogistosternus dislocatus</i> (Say)	-	-	-	-	-	1	1
<i>Thanasimus undulatus</i> (Say)	-	-	-	-	-	-	2
<i>Zenodosus sanguineus</i> (Say)	-	-	1	-	-	-	-
Coccinellidae							
<i>Anatis mali</i> (Say)	-	-	1	-	-	-	-
<i>Calvia quatuordecimguttata</i> (Linné)	10	2	10	-	-	-	-
<i>Chilocorus stigma</i> (Say)	-	1	-	-	-	-	-
<i>Coccidophilus marginatus</i> (LeConte)	-	-	1	1	7	18	4
<i>Coccinella hieroglyphica kirbyi</i> Crotch	-	-	-	-	-	-	1
<i>Coccinella trifasciata perplexa</i> Mulsant	-	-	-	-	1	-	-
<i>Didion nanum</i> (LeConte)	12	2	1	-	5	-	-
17) <i>Dionus cf. arizonicus</i>	1	-	-	-	-	-	-
<i>Hyperaspis binotata</i> (Say)	1	-	-	-	-	-	-
<i>Hyperaspis consimilis</i> LeConte	-	-	-	1	2	-	-
18) <i>Hyperaspis inflexa</i> Casey	-	-	-	-	-	1	-
19) <i>Hyperaspis moerens</i> (LeConte)	-	-	1	4	2	1	-
<i>Hyperaspis octavia</i> Casey	-	-	-	-	-	2	-
<i>Microveisea misella</i> (LeConte)	-	-	1	-	10	7	7
<i>Mulsantina hudsonica</i> (Casey)	-	3	9	-	2	5	10
<i>Nephus flavifrons</i> (Melsheimer)	-	-	-	-	1	4	3
20) <i>Nephus georgei</i> (Weise)	-	-	1	2	37	18	53
<i>Pyllobora vigintimaculata</i> (Say)	1	-	2	-	-	-	-
<i>Scymnus marginicollis</i> Mannerheim	2	-	-	1	-	-	-
Colydiidae							
<i>Lasconotus borealis</i> Horn	-	1	1	-	-	-	-
Corylophidae							
21) <i>Clypastraca cf. obesa</i>	1	1	2	43	2	4	2
<i>Clypastraca fasciata</i> (Say)	1	2	4	-	-	-	-
22) <i>Orthoperus saturalis</i> LeConte	4	8	42	-	-	2	2
<i>Sericoderus lateralis</i> (Gyllenhal)	1	1	-	-	-	-	-
Cryptophagidae							
23) <i>Antherophagus ochraceus</i> Melsheimer	-	-	1	-	-	-	-
<i>Atomaria ephippiata</i> Zimmermann	2	-	1	-	-	-	-
<i>Atomaria ochracea</i> Zimmermann	8	8	15	15	2	54	13
<i>Atomaria</i> sp. 2	7	2	11	21	3	26	24
<i>Atomaria</i> sp. 3	5	3	22	10	5	15	11

TABLE 1 – continued

	South boreal (mixed boreal)			North boreal (black spruce)				
	Forest types	1	2	3	4	5	6	7
<i>Atomaria</i> sp. 4	-	-	3	1	1	2	3	
<i>Atomaria</i> sp. 5	1	2	3	-	-	-	-	
<i>Caenoscelis antennalis</i> (Casey)	2	-	1	-	-	-	-	
<i>Caenoscelis basalis</i> Casey	-	1	2	1	-	-	-	
24) <i>Caenoscelis ferruginea</i> (C.R. Sahlberg)	13	2	7	4	1	1	2	
25) <i>Caenoscelis subdeplanata</i> Brisout	-	-	-	1	1	-	-	
<i>Cryptophagus confertus</i> Casey	1	2	5	2	-	10	8	
<i>Cryptophagus difficilis</i> Casey	-	27	2	1	21	19	2	
<i>Cryptophagus</i> sp. 1	1	1	3	-	9	3	4	
<i>Cryptophagus</i> sp. 2	-	3	4	-	-	-	-	
<i>Cryptophagus</i> sp. 3	-	1	1	-	1	-	-	
<i>Cryptophagus</i> sp. 4	1	-	-	-	-	-	-	
<i>Henoticus serratus</i> (Gyllenhal)	12	7	9	9	6	84	25	
<i>Henotiderus obesulus</i> (Casey)	1	3	4	-	-	2	-	
26) <i>Myrmedophila americana</i> (LeConte)	-	-	-	-	-	-	1	
<i>Pteryngium crenatum</i> (Gyllenhal)	-	-	31	-	-	-	-	
Cucujidae								
<i>Pediaeus fuscus</i> Erichson	-	-	-	44	1	2	1	
Curculionidae: Curculioninae								
<i>Acalyptus carpini</i> (Herbst)	-	-	-	-	1	-	1	
<i>Anthonomus corvulus</i> LeConte	-	1	-	-	-	-	-	
<i>Anthonomus signatus</i> Say	-	2	-	-	-	-	-	
<i>Anthonomus subfasciatus</i> LeConte	-	-	-	-	2	-	-	
<i>Baris interstitialis</i> (Say)	-	-	1	-	-	-	-	
<i>Carphonotus testaceus</i> Casey	-	3	-	-	-	-	-	
<i>Ceutorhynchus punctiger</i> Gyllenhal	-	-	1	-	-	-	-	
<i>Dorytomus frostii</i> Blatchley	2	-	-	-	1	-	-	
<i>Dorytomus imbecillus</i> Faust	1	-	-	-	-	-	-	
<i>Dorytomus laticollis</i> Casey	1	-	1	-	-	-	-	
<i>Dorytomus mannerheimi</i> (Gemminger)	1	-	-	-	-	-	-	
<i>Dorytomus marmoreus</i> Casey	12	1	-	-	-	-	-	
<i>Grypus equiseti</i> (Fabricius)	-	-	1	-	-	-	-	
27) <i>Hylobius congener</i> Dalla Tore et al.	4	10	19	364	2	10	14	
<i>Hylobius pinicola</i> (Couper)	-	1	3	-	2	6	1	
<i>Isochnus populicola</i> (Silfverberg)	4	3	12	-	4	7	5	
<i>Magdalis allutacea</i> LeConte	-	-	-	-	-	1	-	
<i>Magdalis piceae</i> Buchanan	-	1	-	1	-	-	-	
<i>Oriorhynchus ovatus</i> (Linné)	1	1	-	-	-	-	-	
<i>Piazorhinus scutellaris</i> (Say)	1	2	54	-	-	-	-	
<i>Pissodes fiskei</i> Hopkins	-	-	3	-	-	8	5	
<i>Pseudanthonomus validus</i> Dietz	-	-	14	-	-	-	-	
<i>Rhynchaenus pallicornis</i> (Say)	1	-	4	-	-	-	-	
<i>Rhyncolus brunneus</i> Mannerheim	-	5	2	-	2	4	1	
<i>Scaphitellus asperatus</i> Bonsdorff	1	-	1	-	-	-	-	
<i>Sitona flavescens</i> (Marsham)	1	-	1	-	-	-	-	
<i>Sitona lineellus</i> (Bonsdorff)	-	-	1	-	-	-	-	
<i>Tachyerges ephippiatus</i> (Say)	5	2	-	-	1	-	-	
<i>Tanysphyrus lemnae</i> (Fabricius)	-	-	1	-	-	-	-	
Curculionidae: Scolytinae								
<i>Cryphalus r. ruficollis</i> Hopkins	-	-	-	-	-	1	-	

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Crypturgus borealis</i> Swaine	-	-	1	8	3	26	30
<i>Dryocoetes affaber</i> (Mannerheim)	-	2	1	1	-	1	-
<i>Dryocoetes autographus</i> (Ratzeburg)	-	12	6	38	-	6	21
<i>Dryocoetes betulae</i> Hopkins	-	1	-	-	-	-	-
<i>Ips borealis</i> Swaine	-	1	-	-	-	-	-
<i>Ips latidens</i> (LeConte)	-	-	-	-	-	1	3
<i>Lymantor decepiens</i> (LeConte)	-	-	1	-	-	-	-
<i>Orthomicus caelatus</i> (Eichhoff)	-	-	-	1	-	-	-
<i>Phloeosinus canadensis</i> Swaine	-	-	11	-	-	-	-
28) <i>Phloeotribus piceae</i> Swaine	-	-	2	-	1	1	-
<i>Pityokteines sparsus</i> (LeConte)	-	-	1	-	-	1	-
29) <i>Pityophthorus m. murrayanae</i> Blackman	-	1	-	-	-	3	3
30) <i>Pityophthorus opaculus</i> LeConte	-	2	6	3	2	38	61
<i>Pityophthorus p. pulchellus</i> Eischhoff	-	-	-	-	-	1	-
31) <i>Pityophthorus ramiperda</i> Swaine	-	-	-	-	-	-	1
<i>Pityophthorus</i> sp.	1	-	-	1	-	-	-
<i>Polygraphus rufipennis</i> (Kirby)	-	2	5	1	-	3	1
<i>Scolytus piceae</i> (Swaine)	-	-	-	-	-	1	1
<i>Trypodendron lineatum</i> (Olivier)	-	1	31	-	-	1	1
Dytiscidae							
<i>Agabus opacus</i> Aubé	-	-	1	-	-	-	-
<i>Agabus thomsoni</i> (J. Sahlberg)	-	-	-	1	4	9	10
<i>Hydrocolus stagnalis</i> Gemminger & Harrold	-	-	4	-	-	-	-
<i>Ilybius biguttulus</i> (Germar)	-	-	-	-	-	-	1
<i>Laccornis conoideus</i> (LeConte)	-	-	-	1	-	-	-
<i>Liodessus affinis</i> (Say)	-	-	1	-	-	-	-
<i>Neoscutoperus angustus</i> (LeConte)	-	-	-	1	3	1	3
<i>Rhantus binotatus</i> (Harris)	-	-	-	-	1	-	-
Elateridae							
<i>Agriotes fucosus</i> (LeConte)	10	-	-	-	-	-	-
<i>Agriotes limosus</i> (LeConte)	-	-	1	4	1	1	-
<i>Ampedus apicatus</i> (Say)	-	-	1	-	-	-	-
<i>Ampedus deletus</i> (LeConte)	2	13	9	-	2	5	-
<i>Ampedus fuscus</i> (LeConte)	1	1	5	-	-	2	-
<i>Ampedus laurentinus</i> W.J. Brown	-	-	1	-	-	-	1
<i>Ampedus luctuosus</i> (LeConte)	1	5	10	2	2	22	19
<i>Ampedus nigrinus</i> (Herbst)	3	7	6	1	1	27	20
<i>Ampedus pullus</i> Germar	-	-	-	6	3	1	1
<i>Ampedus quebecensis</i> W.J. Brown	-	-	-	3	2	-	2
<i>Athous rufifrons</i> (Randall)	-	1	2	-	-	-	-
<i>Ctenicera apressa</i> (Randall)	3	-	16	-	-	-	-
<i>Ctenicera falsifica</i> (LeConte)	1	26	4	-	-	-	-
<i>Ctenicera hieroglyphica</i> (Say)	4	-	-	-	-	-	-
<i>Ctenicera insidiosa</i> (LeConte)	-	4	5	-	-	-	-
32) <i>Ctenicera mendax</i> (LeConte)	-	-	1	-	-	-	-
<i>Ctenicera nigrivolis</i> (Bland)	-	1	-	-	-	-	-
<i>Ctenicera nitidula</i> (LeConte)	2	19	12	-	-	-	-
<i>Ctenicera ochreipennis</i> (LeConte)	-	-	-	-	-	1	-
<i>Ctenicera p. propola</i> (LeConte)	7	9	7	-	-	-	-
<i>Ctenicera replendens aeraria</i> (Randall)	3	-	4	-	-	-	-

TABLE 1 – continued

	South boreal (mixed boreal)			North boreal (black spruce)				
	Forest types	1	2	3	4	5	6	7
<i>Ctenicera spinosa</i> (Randall)		3	15	28	-	1	17	-
<i>Ctenicera triundulata</i> (Randall)		2	19	40	1	4	37	35
32) <i>Ctenicera watsoni</i> (W.J. Brown)		-	-	-	-	-	2	-
<i>Dalopius cognatus</i> W.J. Brown		27	3	36	-	-	1	-
<i>Dalopius fuscipes</i> W.J. Brown		-	-	1	-	-	-	-
<i>Dalopius vagus</i> W.J. Brown		-	-	2	-	-	-	-
<i>Danosoma brevicorne</i> (LeConte)		-	-	-	1	-	-	-
<i>Denticollis denticornis</i> (Kirby)		1	-	14	-	-	1	1
<i>Eanus decoratus</i> (Mannerheim)		-	2	-	-	-	1	-
<i>Eanus estriatus</i> (LeConte)		-	-	1	2	4	37	33
<i>Eanus maculipennis</i> LeConte		-	-	1	-	-	-	-
<i>Hypnoidus abbreviatus</i> (Say)		-	-	1	1	-	-	-
<i>Hypnoidus impressicollis</i> (Mannerheim)		-	-	-	-	-	1	1
<i>Idiotarmon debilis</i> LeConte		-	2	3	-	-	8	5
<i>Limonium aeger</i> LeConte		-	3	9	-	-	-	-
<i>Limonium pectoralis</i> LeConte		-	-	-	1	-	-	-
<i>Melanotus castanipes</i> (Paykull)		5	2	5	-	-	-	-
<i>Neohypdonus tumescens</i> (LeConte)		1	2	4	1	2	1	1
<i>Sericus honestus</i> (Randall)		-	-	-	4	-	-	-
<i>Sericus incongruus</i> (LeConte)		-	1	1	7	6	10	20
Endomychidae								
<i>Lycoperdina ferruginea</i> LeConte		-	5	11	-	4	-	-
<i>Mycetina perpulchra</i> (Newman)		1	6	5	-	1	14	11
<i>Phymaphora pulchella</i> Newman		-	-	3	-	-	-	-
Erotylidae								
<i>Triplax thoracica</i> Say		1	-	1	-	-	-	-
<i>Tritoma pulchra</i> Say		-	1	-	-	-	-	-
Eucinetidae								
<i>Eucinetus haemorrhoidalis</i> (Germar)		1	-	1	-	1	2	2
<i>Eucinetus morio</i> LeConte		-	2	6	-	-	-	2
33) <i>Eucinetus oviformis</i> LeConte		-	-	-	-	-	2	2
<i>Eucinetus punctulatus</i> LeConte		-	-	1	-	-	1	-
<i>Eucinetus testaceus</i> LeConte		-	5	4	-	2	4	7
Eucnemidae								
<i>Epiphanius cornutus</i> Eschsholtz		3	2	-	-	-	5	7
<i>Isorhipis obliqua</i> (Say)		2	-	-	-	-	-	-
<i>Microrhagus subsinuatus</i> (LeConte)		6	6	1	-	-	-	-
Histeridae								
<i>Gnathoncus barbatus</i> Bousquet & Laplante		-	-	1	-	1	5	2
<i>Hister furtivus</i> J.E. LeConte		6	7	16	-	3	14	6
<i>Margarinotus egregius</i> (Casey)		2	-	-	-	-	-	-
<i>Margarinotus faedatus</i> J.E. LeConte		4	-	-	-	-	-	-
<i>Paromalus teres</i> LeConte		-	-	-	1	-	-	-
<i>Platysoma lecontei</i> Marseul		-	-	-	1	-	-	-
Hydraenidae								
<i>Hydraena angulicollis</i> Notman		-	-	14	-	-	-	2
<i>Hydraena pensylvanica</i> Kiesenwetter		-	1	5	-	-	-	-
Hydrophilidae								
<i>Cercyon analis</i> (Paykull)		1	-	-	-	-	-	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Cercyon assecla</i> Smetana	849	331	726	1	-	38	9
<i>Cercyon minusculus</i> Melsheimer	1	1	1	-	2	9	4
<i>Cercyon pygmaeus</i> (Illiger)	1	-	-	-	-	-	-
<i>Cretinis digesta</i> (LeConte)	-	-	15	-	-	-	-
<i>Cryptopleurum minutum</i> (Fabricius)	12	2	1	-	-	-	-
<i>Cryptopleurum subtile</i> Sharp	-	-	2	-	-	1	-
<i>Cymbiodyta vindicata</i> Fall	-	-	3	-	1	-	-
<i>Helophorus sempervarians</i> Angus	-	-	1	6	1	7	-
<i>Hydrobius fuscipes</i> (Linné)	-	-	-	-	-	-	1
<i>Paracymus subcupreus</i> (Say)	-	-	-	-	-	-	1
<i>Sphaeridium lunatum</i> Fabricius	-	-	1	-	-	-	-
Laemphloeidae							
<i>Laemphloeus biguttatus</i> (Say)	-	-	-	-	-	2	-
Lampyridae							
<i>Ellychnia corrusca</i> (Linné)	129	82	353	3	9	22	23
<i>Photinus obscurus</i> LeConte	-	-	1	-	-	-	-
<i>Pyraclomena borealis</i> (Randall)	4	2	3	-	-	-	-
Latridiidae							
<i>Cartodere constricta</i> (Gyllenhal)	55	28	170	48	8	36	6
<i>Corticaria</i> sp. 3	5	13	32	759	40	515	264
<i>Corticaria</i> sp. 4	3	2	17	472	7	53	27
<i>Corticaria</i> sp. 5	-	1	-	-	-	-	1
<i>Corticaria</i> sp. 6	-	-	-	-	-	1	-
<i>Corticaria</i> sp. 7	-	-	2	-	-	-	1
<i>Corticaria</i> sp. 9	-	1	4	3	1	40	15
<i>Corticaria</i> sp. 12	-	1	3	1	1	4	1
<i>Corticaria</i> sp. 16	-	-	3	-	2	4	1
<i>Corticarina</i> sp. 11	8	1	4	2	3	2	1
<i>Corticarina</i> sp. 14	-	1	2	-	-	1	-
<i>Cortilena picta</i> (LeConte)	-	-	1	-	-	-	-
<i>Corticicara</i> sp. 2	192	25	293	12	3	24	21
<i>Enicmus fictus</i> Fall	-	1	7	-	-	-	-
<i>Enicmus tenuicornis</i> LeConte	2	7	10	1	5	49	37
<i>Latridius</i> sp. 1	9	4	25	1	2	46	14
<i>Latridius</i> sp. 2	2	-	-	-	-	-	-
<i>Melanophthalma</i> sp. 1	52	19	93	7	10	37	17
<i>Melanophthalma</i> sp. 8	5	4	21	5	2	7	6
<i>Melanophthalma</i> sp. 10	7	3	11	-	-	32	14
<i>Melanophthalma</i> sp. 15	-	-	-	-	-	1	-
<i>Stephostethus breviclavus</i> (Fall)	1	1	2	-	-	-	1
<i>Stephostethus liratus</i> (LeConte)	11	1	7	-	-	-	-
Leiodidae							
<i>Agathidium</i> cf. <i>aristerium</i>	1	2	10	-	-	2	1
<i>Agathidium</i> cf. <i>difformis</i>	3	3	14	-	3	7	13
<i>Agathidium</i> cf. <i>exiguum</i>	6	1	5	2	14	5	11
<i>Agathidium</i> cf. <i>parvulum</i>	1	3	6	-	2	2	1
<i>Agathidium</i> cf. <i>politum</i>	-	-	30	-	-	1	-
<i>Agathidium</i> cf. <i>repentium</i>	3	-	2	-	2	1	2
<i>Agathidium</i> cf. <i>temporale</i>	-	5	22	-	1	28	10
34) Agathidium pulchrum LeConte	-	-	4	-	-	1	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Agathidium</i> sp. 1	-	-	1	-	1	-	-
<i>Agathidium</i> sp. 2	2	-	1	-	-	-	-
<i>Anisotoma amica</i> W. J. Brown	-	2	-	-	-	4	1
<i>Anisotoma basalis</i> (LeConte)	4	10	6	-	-	-	3
<i>Anisotoma errans</i> W.J. Brown	3	28	18	1	1	2	4
<i>Anisotoma geminata</i> (Horn)	12	20	43	-	18	62	61
<i>Anisotoma globososa</i> Hatch	-	2	-	14	1	21	32
<i>Anisotoma horni</i> Wheeler	3	27	28	-	2	11	9
<i>Anisotoma inops</i> W.J. Brown	-	11	20	-	1	5	5
<i>Anogdus potens</i> W.J. Brown	-	-	-	1	1	1	-
<i>Catops americanus</i> Hatch	-	4	270	-	1	18	18
<i>Catops basilaris</i> Say	24	44	103	4	19	198	86
<i>Catops gratiosus</i> (Blanchard)	-	9	5	-	-	6	5
<i>Catops luridipennis</i> Mannerheim	-	-	-	-	6	9	15
<i>Catops simplex</i> Say	1	10	6	-	5	27	10
<i>Colenis impunctata</i> LeConte	12	9	3	-	-	1	-
<i>Colon asperatum</i> Horn	-	1	1	-	-	-	-
<i>Colon boreale</i> Peck & Stephan	-	-	30	2	-	2	-
<i>Colon dentatum</i> LeConte	1	-	-	-	-	-	-
<i>Colon forceps</i> Hatch	1	4	12	1	1	-	2
<i>Colon horni</i> Szymczawski	-	-	13	-	-	-	-
<i>Colon magnicolle</i> Mannerheim	-	1	15	1	2	8	3
<i>Colon rectum</i> Hatch	-	-	2	-	-	-	-
35) <i>Colon similare</i> Peck & Stephan	-	-	21	-	2	3	-
<i>Hydnobius substriatus</i> LeConte	5	2	78	-	2	-	-
<i>Leiodes assimilis</i> (LeConte)	7	21	33	1	23	4	7
<i>Leiodes collaris</i> (LeConte)	-	1	-	-	-	-	-
<i>Leiodes impersonata</i> Brown	-	-	2	-	-	1	2
<i>Leiodes puncticollis</i> (Thompson)	2	7	184	2	8	11	20
<i>Leiodes punctostriata</i> Kirby	3	1	130	-	1	2	2
<i>Leiodes subtilicornis</i> Baranowski	-	-	-	-	-	1	-
<i>Leiodes valida</i> (Horn)	-	-	-	2	-	-	-
<i>Sciodrepoides fumatus terminans</i> (LeConte)	1	1	4	-	1	2	1
<i>Sciodrepoides watsoni hornianus</i> (Blanchard)	2	9	18	-	3	12	10
Lycidae							
<i>Dictyoptera aurora</i> (Herbst)	1	3	18	4	8	21	5
<i>Leptocleptes basalis</i> (LeConte)	2	25	22	-	29	48	102
<i>Plateros licitor</i> (Newman)	-	-	-	25	89	77	229
Lymexylidae							
36) <i>Elateroides lugubris</i> (Say)	7	1	35	-	-	-	-
Megalopodidae							
<i>Zeugophora varians</i> Crotch	-	2	-	-	-	-	-
Melandryidae							
<i>Dircaea liturata</i> (LeConte)	-	3	2	-	-	1	-
<i>Emmesa connectens</i> Newman	1	14	4	-	-	-	-
<i>Enchodes sericea</i> (Haldeman)	1	-	-	-	-	-	-
<i>Orchesia castanea</i> (Melsheimer)	-	-	2	-	1	-	-
<i>Orchesia cultriformis</i> Laliberté	-	1	1	-	1	1	2
<i>Orchesia ovata</i> Laliberté	1	-	10	-	1	-	-
<i>Prothalsia undata</i> LeConte	-	-	1	-	-	-	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Scotochroa buprestoides</i> (Kirby)	-	6	2	1	6	12	6
<i>Serropalpus coxalis</i> Mank	1	1	-	-	-	-	-
<i>Serropalpus substriatus</i> Haldeman	-	1	-	-	-	-	-
<i>Xylita laevigata</i> (Hellenius)	-	-	-	-	-	3	-
<i>Zilora hispida</i> LeConte	-	1	-	-	-	-	-
Melyridae							
<i>Attalus nigrellus</i> (LeConte)	-	-	-	-	1	6	4
37) <i>Attalus terminalis</i> Erichson	-	1	-	-	-	-	-
<i>Hoppingiana hudsonica</i> (LeConte)	-	-	-	1	1	3	4
<i>Malachius flavilobrus</i> (Say)	-	-	1	-	-	-	-
Monotomidae							
<i>Monotoma longicollis</i> (Gyllenhal)	1	-	3	2	-	1	-
38) <i>Rhizophagus b. brunneus</i> Horn	-	-	2	3	-	-	2
<i>Rhizophagus dimidiatus</i> Mannerheim	5	4	57	-	-	-	1
<i>Rhizophagus minutus rotundicollis</i> Bousquet	-	1	-	-	-	-	-
39) <i>Rhizophagus pseudobrunneus</i> Bousquet	-	1	1	-	-	3	1
<i>Rhizophagus remotus</i> LeConte	2	5	3	-	2	3	4
Mordellidae							
<i>Mordellaria borealis</i> (LeConte)	-	3	-	241	150	67	377
40) <i>Mordellistena andreae ancilla</i> LeConte	1	-	-	-	-	-	-
<i>Mordellistena errans</i> Fall	-	1	-	-	-	-	-
<i>Mordellistena nigricans</i> Melsheimer	-	-	1	-	-	1	-
<i>Mordellistena scapularis</i> (Say)	-	-	2	-	-	-	-
Mycetophagidae							
<i>Mycetophagus flexuosus</i> Say	-	-	-	-	-	1	-
<i>Mycetophagus pluripunctatus</i> LeConte	-	1	-	-	-	-	-
41) <i>Thrimolus minutus</i> Casey	-	-	1	-	-	-	-
<i>Typhaea decipiens</i> Lohse	-	-	-	1	-	-	-
Nemonychidae							
<i>Cimberis pallipennis</i> (Blatchley)	-	10	2	-	-	-	-
Nitidulidae							
<i>Carpophilus marginellus</i> Motschulsky	-	-	-	-	-	1	-
<i>Colopterus truncatus</i> (Randall)	1	2	-	-	2	-	1
<i>Epurea eastiva</i> (Linné)	4	-	10	-	2	-	-
<i>Epurea flavomaculata</i> Mäklin	1	-	-	-	-	-	-
<i>Epurea labilis</i> Erichson	17	3	6	4	-	2	2
<i>Epurea linearis</i> Mäklin	2	1	5	-	-	-	1
<i>Epurea parsoni</i> Connell	45	20	3	1	1	14	10
<i>Epurea peltoides</i> Horn	-	-	-	2	2	-	1
<i>Epurea planulata</i> Erichson	14	13	38	20	1	42	16
<i>Epurea</i> sp.	23	4	8	-	-	6	2
<i>Epurea terminalis</i> Mannerheim	384	132	318	41	22	145	88
<i>Epurea truncatella</i> Mannerheim	5	8	39	6	6	55	59
<i>Glischrochilus confluentus</i> Mannerheim	4	3	33	2	1	10	1
<i>Glischrochilus quadrisignatus</i> (Say)	32	12	53	73	39	172	52
<i>Glischrochilus s. sanguinolenus</i> (Olivier)	29	15	96	-	-	4	5
<i>Meligethes simplipes</i> Easton	-	-	2	1	-	2	-
<i>Omosita discoidea</i> (Fabricius)	1	-	2	-	2	6	1
<i>Thalycra concolor</i> (LeConte)	-	-	1	-	-	-	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
Orsodacnidae							
<i>Orsodacne atra</i> (Ahrens)	21	14	5	-	-	-	-
Phalacridae							
<i>Acylomus pugetianus</i> Casey	-	-	1	-	-	-	-
<i>Litochropus scalptus</i> Casey	-	-	1	-	-	-	-
Psephenidae							
<i>Ectopria nervosa</i> (Melsheimer)	-	1	-	-	-	1	-
Ptiliidae (42)							
43) <i>Acrotrichis castanea</i> Matthews	1	1	22	19	125	792	433
<i>Acrotrichis</i> cf. <i>haldemani</i>	846	76	82	-	-	9	1
44) <i>Acrotrichis cognata</i> (Matthews)	1445	253	388	-	21	182	77
45) <i>Acrotrichis longipennis</i> Casey	109	136	541	-	2	76	3
46) <i>Acrotrichis silvatica</i> Rosskothén	119	50	64	3	128	761	573
47) <i>Acrotrichis volans</i> (Motschulsky)	1150	139	219	-	1	18	12
48) <i>Cylindroselloides dybasi</i> Hall	-	5	954	-	-	3	1
49) <i>Micridium</i> sp. 3	2	3	20	-	3	8	9
<i>Nephanes</i> sp. 1	151	32	71	-	2	95	27
50) <i>Ptenidium nitidum</i> (Heer)	-	-	2	-	-	-	-
<i>Ptenidium pusillum</i> (Gyllenhal)	-	-	0	-	-	1	-
51) <i>Ptenidium speculifer</i> Matthews	6	-	26	-	-	3	7
52) <i>Pteryx</i> n.sp. cf. sp. 2	1	-	2	-	4	6	15
<i>Pteryx</i> sp. 2	14	20	137	1	50	32	36
<i>Pteryx</i> sp. 3	-	-	17	1	6	14	14
<i>Pteryx</i> sp. 10	15	9	194	-	1	28	20
53) <i>Ptiliola kunzei</i> (Heer)	1	-	2	1	9	9	4
<i>Ptiliola</i> sp. 1	-	-	1	-	-	-	-
54) <i>Ptiliolium fuscum</i> (Erichson)	342	76	85	1	52	440	271
<i>Ptiliolium</i> sp. 2	473	669	819	6	119	377	246
<i>Ptiliolium</i> sp. 8	2	-	117	-	-	1	2
<i>Ptiliopycna moerens</i> (Matthews)	-	-	1	-	-	-	-
55) <i>Ptinella aptera</i> (Guérin-Méneville)	51	28	38	-	2	39	55
<i>Ptinella</i> cf. <i>errabunda</i>	-	-	-	-	1	-	1
<i>Ptinella</i> cf. <i>limbata</i>	-	3	1	-	-	2	-
56) <i>Ptinella johnsoni</i> Rutanen	-	-	3	-	4	4	8
Ptilodactylidae							
<i>Ptilodactyla serricollis</i> (Say)	5	2	1	-	1	2	2
Pyrochroidae							
<i>Dendroides canadensis</i> Latreille	1	-	3	-	-	-	-
<i>Dendroides concolor</i> (Newman)	2	2	18	-	-	-	-
<i>Dendroides testaceus</i> LeConte	15	1	1	-	-	-	-
<i>Schizotus cervicalis</i> Newman	1	8	3	-	-	-	-
Pythidae							
<i>Priognathus monilicornis</i> (Randall)	-	-	-	-	2	-	-
<i>Pytho niger</i> Kirby	-	-	-	-	-	1	-
Salpingidae							
<i>Rhinosimus viridiaeneus</i> Randall	-	1	2	-	-	-	-
57) <i>Sphaeriestes virescens</i> (LeConte)	-	-	-	117	-	3	-
Scarabaeidae							
<i>Aphodius fimetarius</i> (Linné)	2	-	4	-	-	1	-

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Aphodius leopardus</i> Horn	-	1	3	-	-	5	-
<i>Aphodius rubripennis</i> Horn	-	1	-	-	-	-	-
<i>Aphodius ruricola</i> Melsheimer	1	4	2	-	-	2	1
<i>Dialytes striatulus</i> (Say)	4	3	5	-	-	-	-
<i>Geotrupes balyi</i> JeKel	2	-	-	-	-	-	-
<i>Phyllophaga anxia</i> (LeConte)	-	-	-	-	-	-	1
<i>Trichiotinus assimilis</i> (Kirby)	-	-	1	-	-	-	-
Scirtidae							
<i>Cyphon modestus</i> (LeConte)	23	3	355	19	26	26	3
<i>Cyphon nebulosus</i> (LeConte)	2	-	12	3	4	8	-
<i>Cyphon obscurus</i> Guérin-Ménéville	14	2	2	-	-	3	1
<i>Cyphon ochreatus</i> Klausnitser	-	-	-	12	21	57	14
58) <i>Cyphon pusillus</i> (LeConte)	-	-	6	-	1	-	-
<i>Cyphon</i> sp.	11	2	297	30	20	21	15
<i>Cyphon variabilis</i> (Thunberg)	37	1	54	12	15	18	4
<i>Prionocyphon discoideus</i> (Say)	1	-	4	-	-	-	-
Scraptiidae							
<i>Anaspis nigrina</i> Csiki	-	-	-	-	9	5	-
<i>Anaspis rufa</i> Say	43	24	82	1	1	35	12
<i>Canifa pallipes</i> (Melsheimer)	6	7	25	-	1	5	3
Scydmaenidae							
<i>Euconus</i> sp. 1	1	1	2	2	10	-	6
<i>Euconus</i> sp. 2	-	-	-	-	1	-	1
<i>Euconus</i> sp. 3	-	-	1	-	-	-	-
<i>Euconus</i> sp. 4	-	-	-	-	1	1	-
<i>Microscydmus misellus</i> (LeConte)	3	6	28	-	15	2	20
<i>Stenichnus corpusculus</i> (Casey)	15	14	89	9	27	97	77
<i>Stenichnus</i> sp. 1	1	13	22	-	4	16	10
<i>Stenichnus</i> sp. 2	-	-	2	-	-	4	1
<i>Stenichnus subpunctatus</i> (LeConte)	-	1	1	-	-	-	1
<i>Veraphis</i> sp. 1	1	-	4	1	1	1	3
<i>Veraphis</i> sp. 2	-	-	1	-	-	-	-
Silphidae							
<i>Necrodes surinamensis</i> (Fabricius)	1	-	-	-	-	-	1
<i>Nicrophorus defodiens</i> Mannerheim	223	172	689	1	5	153	38
<i>Nicrophorus investigator</i> Zetterstedt	-	-	-	-	-	1	-
<i>Nicrophorus sayi</i> Laporte de Castelnau	4	14	9	-	-	4	1
<i>Nicrophorus tomentosus</i> Weber	-	1	-	-	-	-	-
<i>Nicrophorus vespilloides</i> Herbst	-	-	2	6	12	56	15
<i>Oiceoptoma noveboracense</i> (Forster)	1	1	-	-	-	-	-
Silvanidae							
<i>Dendrophagus cygnaei</i> Mannerheim	1	-	-	-	-	-	-
<i>Silvanus bidentatus</i> (Fabricius)	4	4	20	11	9	22	17
Sphindidae							
<i>Eurysphindus hirtus</i> LeConte	5	1	3	-	-	-	-
Staphylinidae: Euaesthetinae							
<i>Euaesthetus americanus</i> Erichson	-	1	-	-	1	-	-
Staphylinidae: Habrocerinae							
<i>Habrocerus schwarzi</i> Horn	232	9	11	-	-	28	1

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
Staphylinidae: Micropeplinae							
<i>Micropeplus laticollis</i> Mäklin	-	-	9	-	-	-	-
Staphylinidae: Olisthaerinae							
<i>Olisthaerus substriatus</i> (Gyllenhal)	-	-	-	-	-	-	1
Staphylinidae: Omaliinae							
<i>Acidota crenata</i> (Fabricius)	3	3	13	6	11	21	22
<i>Acidota quadrata</i> (Zetterstedt)	9	7	7	-	1	1	3
<i>Acidota subcarinata</i> Erichson	5	-	58	32	149	50	62
<i>Acrolocha diffusa</i> (Fauvel)	109	4	44	-	-	2	-
<i>Arpedium cribatum</i> Fauvel	-	-	-	-	1	-	-
<i>Boreaphilus henningianus</i> C.R. Salberg	-	-	2	-	1	-	-
59) <i>Bratinus varicornis</i> LeConte	7	2	73	-	-	-	-
<i>Eucnecosum brunnescens</i> (J. Sahlberg)	-	-	-	-	-	1	6
<i>Eucnecosum tenue</i> (LeConte)	-	-	-	-	-	1	-
<i>Eusphalerum convexum</i> (Fauvel)	2	-	1	-	1	-	2
<i>Eusphalerum pothos</i> (Mannerheim)	6609	157	7774	-	36	46	16
<i>Hapalaraea humerosa</i> (Fauvel)	-	-	22	-	-	20	14
<i>Hapalaraea longula</i> (Mäklin)	-	-	-	-	-	1	1
<i>Hapalaraea</i> nr. <i>humerosa</i>	3	1	3	-	-	-	1
<i>Lesteva pallipes</i> LeConte	2	-	1	-	-	-	-
<i>Olophrum consimile</i> (Gyllenhal)	2	2	12	3	4	2	6
<i>Olophrum rotundicolle</i> (C.R. Sahlberg)	-	-	-	-	1	10	15
<i>Omalium foraminosum</i> Mäklin	7	9	19	-	2	1	1
<i>Omalium</i> nr. <i>foraminosum</i>	2	2	2	-	-	-	-
60) <i>Omalium</i> sp. d	-	1	1	-	-	2	-
61) <i>Omalonomus</i> (?) n.sp.	-	-	1	-	1	-	-
<i>Phloeonomus laesicollis</i> Mäklin	3	6	35	-	1	7	3
<i>Phloeonomus lapponicus</i> (Zetterstedt)	5	4	5	12	10	26	28
<i>Pycnoglypta aptera</i> Campbell	-	7	-	-	1	1	-
<i>Trigonodemus striatus</i> LeConte	-	7	5	-	-	7	2
Staphylinidae: Oxyporinae							
<i>Oxyporus lateralis</i> Gravenhorst	1	2	-	-	-	-	-
<i>Oxyporus quinque maculatus</i> LeConte	-	9	10	-	-	-	-
<i>Oxyporus rufipennis</i> LeConte	-	-	1	-	-	-	-
62) <i>Oxyporus vittatus vittatus</i> Gravenhorst	1	3	-	-	-	-	-
Staphylinidae: Oxytelinae							
63) <i>Anotylus</i> nr. <i>sobrinus</i>	1	-	-	1	1	-	-
<i>Anotylus rugosus</i> (Fabricius)	-	-	-	1	-	-	1
<i>Apocellus sphaericollis</i> (Say)	-	-	-	-	-	1	2
<i>Bledius annularis</i> LeConte	-	-	-	-	-	1	-
64) <i>Bledius gravidus</i> Casey	1	-	-	-	-	-	-
65) <i>Bledius turgidus</i> Casey	-	-	-	-	-	-	1
<i>Deleaster dichrous</i> (Gravenhorst)	-	-	1	-	-	-	-
<i>Oxytelus fuscipennis</i> Mannerheim	5	3	4	-	6	34	20
<i>Oxytelus montanus</i> Casey	-	-	-	-	1	-	-
<i>Oxytelus nimius</i> Casey	11	2	18	-	-	-	-
<i>Syntomium grahami</i> Hatch	-	-	3	-	-	-	-
Staphylinidae: Paederinae							
<i>Lathrobium fauveli</i> Duvivier	16	5	97	3	32	60	73

TABLE 1—continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
66) <i>Lathrobium fulvipenne</i> (Gravenhorst)	-	1	2	-	-	-	1
<i>Lathrobium scolopaceum</i> (Casey)	1	1	-	-	1	-	-
<i>Lathrobium simile</i> LeConte	11	2	10	-	-	-	-
<i>Lathrobium washingtoni</i> Casey	17	31	80	-	-	2	1
<i>Lithocharis ochracea</i> (Gravenhorst)	-	-	-	-	-	1	-
<i>Ochtheophilum fracticorne</i> (Paykull)	2	2	1	-	3	1	1
<i>Orus dentiger</i> (LeConte)	-	-	-	1	-	-	-
<i>Paederus littorarius</i> Gravenhorst	-	-	-	-	2	-	2
<i>Sunius confluentus</i> (Say)	1	-	1	-	-	-	-
Staphylinidae: Piestinae							
67) <i>Stagonium stacesmithi</i> Hatch	-	-	-	-	-	1	-
Staphylinidae: Proteininae							
<i>Megarthus angulicollis</i> Mäklin	11	1	26	-	15	41	16
<i>Megarthus excisus</i> LeConte	89	115	85	-	13	104	65
<i>Megarthus pecki</i> Cuccodoro & Löbl	86	3	3	-	-	-	-
<i>Proteinus atomarius</i> Erichson	4	28	132	-	-	-	1
68) <i>Proteinus</i> sp. 5	1	-	1	5	1	1	1
<i>Proteinus</i> sp. 6	-	2	1	4	35	94	109
<i>Proteinus</i> sp. 7	10	8	31	-	-	-	3
<i>Proteinus</i> sp. 8	4	6	7	-	-	-	-
Staphylinidae: Pselaphinae							
69) <i>Actium</i> n.sp.	-	-	10	-	-	-	1
70) <i>Actizona trifoveatum</i> Park	2	4	1	-	3	1	2
<i>Batrissodes lineaticollis</i> (Aubé)	19	11	17	-	7	17	10
<i>Biblopectus integer</i> (LeConte)	2	1	8	2	21	15	18
71) <i>Bibloporus bicanal</i> Casey	1	-	-	-	1	1	5
<i>Euplectus confluentus</i> LeConte	-	-	-	-	-	-	1
<i>Euplectus duryi</i> Casey	3	7	19	2	46	37	53
72) <i>Euplectus elongatus</i> Brendel	-	-	1	2	1	2	1
73) <i>Euplectus sylvicola</i> Chandler	-	-	-	-	1	2	1
<i>Lucifotychus hirsutus</i> Chandler	1	2	11	5	11	36	25
<i>Pselaphus bellax</i> Casey	-	1	26	1	59	30	37
<i>Reichenbachia propinqua</i> (LeConte)	3	-	13	-	-	-	-
<i>Reichenbachia spatulifer</i> Casey	2	5	18	14	56	201	227
<i>Rybaxis mystica</i> Casey	-	-	-	-	-	4	-
<i>Rybaxis transversa</i> Fall	-	-	1	-	1	-	-
<i>Tyrus semiruber</i> Casey	-	-	1	-	2	1	4
Staphylinidae: Pseudopsinae							
<i>Pseudopsis sagitta</i> Herman	1	1	1	-	2	36	3
<i>Pseudopsis subulata</i> Herman	151	18	59	-	-	11	1
<i>Pseudopsis</i> n.sp. 1	1	-	-	-	-	-	-
<i>Pseudopsis</i> n.sp. 2	184	26	120	-	1	12	2
Staphylinidae: Scaphidiinae							
<i>Baeocera congener</i> Casey	-	-	1	-	-	-	-
<i>Baeocera deflexa</i> Casey	-	1	14	-	-	-	-
74) <i>Baeocera humeralis</i> Fall	5	1	2	-	1	1	2
<i>Scaphisoma convexum</i> Say	-	-	-	6	10	2	14
<i>Scaphisoma rubens</i> Casey	3	1	16	-	-	-	-
Staphylinidae: Staphylininae							
75) <i>Bisnius blandus</i> (Gravenhorst)	6	7	9	-	-	-	1

TABLE 1 – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
<i>Bisnius cephalicus</i> (Casey)	-	-	-	-	1	-	-
76) <i>Bisnius pugetensis</i> (Hatch)	-	1	-	-	-	-	-
<i>Bisnius stegwaldii</i> (Mannerheim)	4	7	15	-	1	3	2
77) <i>Dinothenarus capitatus</i> Bland	42	31	17	-	-	3	-
<i>Erichsonius patella</i> (Horn)	-	1	2	1	-	-	-
<i>Gabrius brevipennis</i> (Horn)	37	92	209	1	-	1	-
78) <i>Gabrius lyssipius</i> Smetana	2	1	15	-	-	-	-
<i>Gabrius microphthalmus</i> (Horn)	94	107	194	41	45	343	101
<i>Gabrius picipennis</i> Maklin	7	3	17	1	-	1	1
<i>Heterothops fuscus</i> LeConte	-	-	-	4	-	-	1
79) <i>Heterothops minor</i> Smetana	-	-	-	21	3	1	-
80) <i>Neobisnius villosulus</i> (Stephens)	-	-	1	-	-	-	-
<i>Ontholestes cingulatus</i> (Gravenhorst)	185	28	118	1	6	56	26
<i>Philonthus caeruleipennis</i> Mannerheim	61	60	42	-	2	103	15
<i>Philonthus concinnus</i> (Gravenhorst)	-	-	1	-	-	-	-
<i>Philonthus flavibasis</i> Casey	-	-	-	2	2	1	2
<i>Philonthus flumineus</i> Casey	2	2	16	-	-	-	-
<i>Philonthus jurgans</i> Tottenham	-	-	-	-	-	2	1
<i>Philonthus lindrothi</i> Smetana	-	1	-	-	-	-	-
<i>Philonthus lomatus</i> Erichson	-	-	-	1	-	-	-
<i>Philonthus opacipennis</i> Notman	-	-	1	-	-	-	-
<i>Philonthus politus</i> (Linné)	-	-	1	-	-	-	-
81) <i>Philonthus spiniformis</i> Hatch	-	-	-	3	19	8	19
82) <i>Philonthus validus</i> Casey	-	-	1	-	-	1	3
<i>Philonthus varians</i> (Paykull)	1	1	-	1	1	3	1
<i>Quedius brunnipennis</i> Mannerheim	-	-	-	-	1	14	1
<i>Quedius canadensis</i> (Casey)	15	9	24	-	1	1	1
<i>Quedius capucinus</i> (Gravenhorst)	24	18	16	1	1	57	14
83) <i>Quedius c. caseyi</i> Scheerpeltz	7	274	35	-	-	-	-
84) <i>Quedius frigidus</i> Smetana	-	1	-	10	8	43	32
<i>Quedius fulvicollis</i> (Stephens)	-	1	5	-	-	-	-
<i>Quedius l. labradorensis</i> Smetana	9	2	58	-	11	6	7
<i>Quedius peregrinus</i> (Gravenhorst)	13	-	-	-	-	-	-
<i>Quedius plogiatus</i> Mannerheim	3	7	5	1	-	36	5
<i>Quedius rusticus</i> Smetana	14	16	291	7	8	88	40
85) <i>Tympanophorus puncticollis</i> (Erichson)	-	2	7	-	1	-	-
Staphylinidae: Steninae							
<i>Stenus austini</i> Casey	8	5	26	2	4	22	16
<i>Stenus carinicollis</i> Casey	-	2	34	-	-	-	-
<i>Stenus graciosus</i> Casey	-	3	-	-	1	5	7
<i>Stenus mammops</i> Casey	1	1	40	4	6	9	14
<i>Stenus sibiricus</i> J. Sahlberg	-	7	-	-	-	-	-
Staphylinidae: Tachyporinae							
<i>Bolitobius</i> sp. 1	3	3	11	-	2	2	3
<i>Bryophacis smetanae</i> Campbell	12	3	11	-	1	2	2
<i>Bryoporos rufescens</i> LeConte	5	-	1	-	-	1	-
<i>Carphacis nipigonensis</i> (Bernhauer)	2	2	1	-	-	2	1
<i>Ischnosoma fimbriatum</i> Campbell	1	3	5	3	10	12	27
<i>Ischnosoma pictum</i> (Horn)	26	4	130	-	8	3	8
<i>Ischnosoma splendidum</i> (Gravenhorst)	-	-	29	-	4	2	7

TABLE I – continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
86) <i>Ischnosoma virginienne</i> (Bernhauer)	-	-	-	1	-	-	-
87) <i>Lordithon appalachianus</i> Campbell	3	7	28	-	-	-	2
88) <i>Lordithon facilis</i> (Casey)	3	11	3	-	-	-	-
<i>Lordithon fungicola</i> Campbell	131	209	99	3	23	291	258
89) <i>Lordithon longiceps</i> (LeConte)	-	-	-	-	-	-	1
90) <i>Lordithon quaesitor</i> (Horn)	-	5	11	-	-	-	-
<i>Lordithon scutellaris</i> Campbell	3	-	74	-	-	1	-
<i>Lordithon t. thoracicus</i> (Fabricius)	3	2	5	3	4	3	6
<i>Mycetoporus americanus</i> Erichson	-	-	72	1	3	4	4
<i>Mycetoporus consors</i> LeConte	13	20	13	-	1	-	-
<i>Mycetoporus horni</i> Bernhauer & Schubert	-	-	14	-	1	1	-
<i>Sepedophilus littoreus</i> (Linné)	5	2	28	2	14	22	15
91) <i>Sepedophilus occultus</i> (Casey)	-	1	4	-	-	-	-
<i>Tachinus addendus</i> Horn	165	40	312	-	-	17	5
<i>Tachinus basalis</i> Erichson	57	58	25	-	9	74	56
<i>Tachinus elongatus</i> Gyllenhal	-	-	13	-	-	-	-
<i>Tachinus frigidus</i> Erichson	-	-	2	-	1	60	18
<i>Tachinus fumipennis</i> (Say)	769	709	749	-	-	163	8
<i>Tachinus horni</i> Campbell	-	2	1	-	-	-	-
<i>Tachinus luridus</i> Erichson	209	173	223	-	3	44	23
<i>Tachinus memnonius</i> Gravenhorst	-	2	1	-	-	-	-
<i>Tachinus picipes</i> Erichson	8	2	28	-	-	1	-
<i>Tachinus quebecensis</i> Robert	3	17	38	-	-	3	2
92) <i>Tachinus schwarzi</i> Horn	-	-	1	-	-	-	-
<i>Tachinus tachyporoides</i> Horn	-	1	1	-	-	-	-
93) <i>Tachinus vergatus</i> Campbell	-	3	5	-	-	-	-
<i>Tachyporus borealis</i> Campbell	3	-	38	-	3	2	-
94) <i>Tachyporus dispar</i> (Paykull)	7	-	2	-	2	-	2
<i>Tachyporus nitidulus</i> (Fabricius)	123	23	3	-	5	4	2
Staphylinidae: Trichophyinae							
<i>Trichophya pilicornis</i> (Gyllenhal)	1	2	2	47	14	89	24
Staphylinidae: Xantholininae							
<i>Atrecus americanus</i> (Casey)	2	2	3	-	-	-	-
<i>Atrecus macrocephalus</i> (Nordmann)	-	1	10	-	6	28	17
<i>Nudobius cephalus</i> (Say)	2	-	4	2	-	1	4
Stenotrachelidae							
<i>Cephaloon unguare</i> LeConte	-	-	1	-	-	-	-
Tenebrionidae							
<i>Bolitotherus cornutus</i> (Panzer)	4	4	9	-	-	-	-
<i>Eleates depressus</i> (Randall)	-	-	2	-	-	-	-
<i>Hymenorus pilosus</i> (Melsheimer)	-	-	1	-	-	-	-
<i>Isomira quadristriata</i> (Couper)	20	9	23	-	2	-	-
<i>Paratenetus fuscus</i> LeConte	-	1	10	-	-	-	-
<i>Scaphidema aeneolum</i> (LeConte)	-	1	-	-	-	-	-
<i>Upis ceramboides</i> (Linné)	1	4	2	-	-	-	-
Tetratomidae							
<i>Hallomenus punctulatus</i> LeConte	-	-	-	-	-	-	1
<i>Hallomenus serricornis</i> LeConte	-	-	-	-	1	-	-
<i>Penthe obliquata</i> (Fabricius)	-	1	-	-	-	-	-
<i>Penthe pimelia</i> (Fabricius)	-	-	2	-	-	-	-

TABLE 1 - continued

Forest types	South boreal (mixed boreal)			North boreal (black spruce)			
	1	2	3	4	5	6	7
95) <i>Tetratoma concolor</i> LeConte	-	-	-	-	-	-	1
Throscidae							
<i>Trixagus carinicornis</i> (Schaeffer)	14	6	12	2	7	2	1
Trogossitidae							
<i>Thymalus marginicornis</i> Chevrolat	4	-	-	-	-	-	1
Zopheridae							
<i>Phelopsis obcordata</i> (Kirby)	-	-	6	-	-	-	-
Total	18233	6743	27433	3534	2738	9383	6491
Grand total	74555						

Discussion and conclusions

The present data provides a list of beetles associated with seven forest habitats that are characteristic of the eastern boreal forest of Canada. A good proportion of the records represent either extension ranges, new records (provincial, Canadian and North American) or simply show interesting ecological information despite that comments were kept to a minimum. This suggests that our previous knowledge of this portion of the boreal forest was inadequate.

The results also show that Staphylinidae are the major group in terms of species richness and abundance. Although some other families, such as Carabidae and Leiodidae, have been the focus of ecological studies, the importance of Staphylinidae support their potential use as bioindicators. This question is, however, fully addressed in Paquin and Dupérré (unpublished data) which compare the potential of all families as bio-indicators of forest types.

While phytophagy is thought to explain a large part of the evolutionary success of beetles (Farrell 1998), these trophic habits only represent 13% (including phytophages and xylophages on living trees) of the species collected in this study. This small proportion in regard to the other trophic guilds suggests that forest beetle diversity is more related to decaying processes (saprophages, xylophages) than on living plant material. Dead wood has been pointed out as a key factor for many forest organisms (Harmon et al. 1986). The high proportion of mycophagous beetles for which dead wood is an obligatory substrate for many fungus also supports this.

Finally, it is striking to see that many species are still undescribed or unidentifiable at present and therefore relying on morphospecies number to be included in diversity studies. While some families are well known taxonomically, Latridiidae, Cryptophagidae, Scydmaenidae and Ptiliidae are inadequately known, despite their richness and potential as bioindicators.

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APPENDIX. Comments on new records, distribution and ecological observations. Numbers refer to Table 1.

1) *Vanonus calvescens*, *Vanonus wickhami*. Based on Werner (1990), these two records are the northernmost for the species. Most specimens were collected with flight-interception and Malaise traps.

Vanonus calvescens: **Abitibi-ouest: Lake Duparquet**: (48°49'30"N; 79°19'30"W) in white cedar/balsam fir forest beating vegetation (1) 22.vii.1997

Vanonus wickhami: **Jamésie (Baie James)**: (49°49'03"N; 79°00'06"W) in mature black spruce forest Malaise/FIT pan (1) 27.vii-03.viii.1997

2) *Ischalia costata*. The records from the black spruce succession extend the distribution of the species by about 100 km to the north (Young 1975). The northernmost record is given here.

Jamésie (Baie James): (49°49'03"N; 79°00'06"W) in mature black spruce forest pitfall (1) 15-22.vi.1997

3) *Boros unicolor*. Hand collecting in burned forests yielded several specimens, both adults and larvae, found under bark of burned black spruce (*Picea mariana* Mill. B.S.P.) and jackpine (*Pinus banksiana* Lamb.). Young et al. (1996) report similar observations for *Lecontia discicollis*, the only other species of the family Boridae in North America.

4) *Betulapion simile*. This species feeds on birch flowers (Bright 1993), but we collected it in high numbers in emergence cages. This suggests a possible pupation in the soil.

5) *Chrysobothris neopusilla* is a rare species according to Bright (1987). Three specimens were collected in black spruce forests.

Jamésie (Baie James): (49°44'35"N; 79°02'10"W) in burned growth black spruce forest flight-interception trap (1) 22-29.vi.1997 • (49°48'16"N; 78°51'20"W) in old growth black spruce forest flight-interception trap (1) 13-20.vii.1997 • (49°33'26"N; 79°18'56"W) in mature black spruce forest flight-interception trap (1) 21-29.ix.1997

6) *Phaenops abies* is a rare species according to Bright (1987). Three specimens were collected in black spruce forests.

Jamésie (Baie James): (49°51'13"N; 78°38'59"W) in old growth black spruce forest flight-interception trap (1) 29.vi-06.vii.1997 • (1) 06-13.vii.1997 • (49°48'23"N; 78°52'47"W) in regenerating black spruce forest flight-interception trap (1) 06-13.vii.1997

7) *Malthodes parvulus*. A total of 173 specimens were collected almost exclusively in emergence cages. All are female. This is surprising because a methodological bias for females is hardly possible with emergence cages. This suggests a parthenogenetic reproduction, but it still remains to be formally established.

8) *Agonum quinquepunctatum* was known in Quebec from two northern localities: Fort Georges and Poste-de-la-Baleine (Larochelle 1975). The present collections extend the distribution of the species to the south by about 500 km. Interestingly, both specimens were collected in burned forests.

Jamésie (Baie James): (49°44'35"N; 79°02'10"W) in burned growth black spruce forest pitfall (1) 24-31.viii.1997 • (49°48'56"N; 78°55'06"W) in burned black spruce forest pitfall (1) 05-12.x.1997

9) *Bembidion obtusum* is an introduced species in North America (Bousquet and Larochelle 1993). The species was known from southern Quebec (Hoebeke et al. 1991) and the present record is a northern extension by about 600 km. Yves Bousquet identified the specimen.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) in deciduous forest Malaise/FIT pan (1) 11-18.ix.1994

10) *Nomius pygmaeus* is rarely collected and these records confirm its presence at the edge of its northern limit. Yves Bousquet confirmed the identification.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) in deciduous forest Berlese sample of mosses of dead log (1) 03.viii.1997 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Berlese sample of bark of dead balsam fir (1) 24.vii.1990

11) *Scaphinotus bilobus*. According to Lindroth (1961), it is a rare species but a total of 256 specimens were collected in mature and old growth black spruce forests.

12) *Stereocerus haematopus* is a tundra species according to Lindroth (1966). Larochelle (1975) records it from high latitudes in the province and from the top of Mount Albert in the Gaspé Park, which harbours similar climatic conditions (see LeSage and Paquin 2001). The records reported here from black spruce forest do not fit the known ecological scheme of the species. The present collections suggest wider habitat selection flexibility than previously suspected. A cryptic species is also a possibility (H. Goulet, pers. comm.), but there is no evidence yet that this is the case.

Jamésie (Baie James): (49°36'23"N; 79°18'03"W) pitfall in mature black spruce forest (3) 06-15.vi.1997 • (1) 15.vi.1997 • (3) 15-22.vi.1997 • (4) 22-29.vi.1997 • (2) 29.vi-06.vii.1997 • (1) 06-13.vii.1997 • (2) 20-27.vii.1997 • (1) 27.vii-03.viii.1997 • (1) 03-10.viii.1997 • (1) 24-31.viii.1997 • (49°37'54"N; 79°17'58"W) flight-interception trap in mature black spruce forest (1) 15-22.vi.1997 • (49°50'01"N; 78°41'12"W) flight-interception trap in old growth black spruce forest (2) 13-20.vii.1997

13) *Trechus quadristriatus* was first reported in North America by Bousquet et al. (1984). The species was known from the Great Lakes region in Ontario. It was later reported from Quebec by Bousquet (1991b) and Bousquet and Larochelle (1993), but no indication about the localities was given. The present record is believed to extend its known distribution by about 600 km to the north. Yves Bousquet identified the specimen.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 18-25.viii.1996

14) *Acmaeopsoides rufula* is a rare species according to Yanega (1996). It occurs in the Great Lakes area and in the St. Lawrence River drainage. The specimen collected in the black spruce forest increases its distribution range and broadens its known habitat.

Jamésie (Baie James): (49°43'35"N; 79°17'59"W) flight-interception trap in regenerating black spruce forest (1) 06-15.vi.1997

15) *Tragosoma depsarium*. In Scandinavia, the species is considered as a typical primeval species by Biström and Väisänen (1988). The collections reported here, however, suggests its association with younger regeneration stages, especially in recently burned areas, where dead wood is also abundant.

16) *Neocrepidodera robusta* is a widespread species (LeSage 1991) but rarely collected. It is found mainly in northern latitudes and the host plant is still unknown (L. LeSage, pers. comm.).

Jamésie (Baie James): (49°48'54"N; 78°43'23"W) flight-interception trap in regenerating black spruce forest (1) 15-22.vi.1997 • (49°05'26"N; 79°08'54"W) in mature black spruce forest flight-interception trap (1) 15-22.vi.1997 • pitfall (1) 15-22.vi.1997

17) *Diomus* cf. *arizonicus*. This undescribed species is superficially similar to *Scymnus kansanus* Casey, which is known from a single record from Montreal (Larochelle 1979b). The discovery of such species is questioning the accuracy of the *S. kansanus* record in the province. N. Vandenberg kindly provided her opinion the specimens' identity.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) Malaise/FIT top in deciduous forest (1) 12-19.vi.1994

18) *Hyperaspis inflexa*. This specimen shows a color pattern which is closer to *Hyperaspis dissoluta dissoluta* Crotch — restricted in Canada to the west coast (McNamara 1991a) — than the elytral pattern shown for *H. inflexa* in Gordon (1985). According to N. Vandenberg (pers. comm. 2001), another *H. inflexa* showing the same pattern is known from Nominigou, but such a variation was not reported in Gordon (1985). N. Vandenberg identified the specimen and kindly provided valuable information.

Jamésie (Baie James): (49°05'26"N; 79°08'54"W) flight-interception trap in mature black spruce forest (1) 15-22.vi.1997

19) *Hyperaspis moerens* was first reported in Quebec by Chantal (1990) from two localities in Saguenay. The present records confirm the presence of this rare species in Quebec.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) emergence cage top in white cedar/balsam fir forest (1) 12-19.vi.1994 • **Jamésie (Baie James):** (49°48'56"N; 78°55'06"W) flight-interception trap in burned black spruce forest (1) 06-15.vi.1997 • (49°48'56"N; 78°55'06"W) flight-interception trap in burned black spruce forest (1) 15-22.vi.1997 • (49°43'35"N; 79°17'59"W) flight-interception trap in regenerating black spruce forest (1) 22-29.vi.1997 • (49°44'35"N; 79°02'10"W) pitfall in burned growth black spruce

forest (1) 22-29.vi.1997 • (49°48'23"N; 78°52'47"W) flight-interception trap in regenerating black spruce forest
 (1) 20-27.vii.1997 • (49°44'35"N; 79°02'10"W) flight-interception trap in burned growth black spruce forest
 (1) 03-10.viii.1997 • (49°49'03"N; 79°00'06"W) Berlese sample of mosses of dead black spruce in mature
 black spruce forest (1) 04.vii.1997

20) *Nephus georgei*. See Paquin and Dupérré (2000a) for details about these records.

21) *Clypastraea* cf. *obesa* fits Casey's original description but the distribution of the species in the western part of the continent raises a doubt about its presence in northeastern North America. We prefer to wait until a formal revision of the genus before certifying its identity.

22) *Orthoperus suturalis*, **new provincial record**. The 58 specimens were mainly collected by Berlese extractions of dead conifer bark and polypores. Despite the known association of adults of this species with polypore fungi, many specimens were either collected in soil samples or emergence cages, thus suggesting that pupation occurs in the soil.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Berlese sample of bark of dead balsam fir (2) 13.vi.1997 • Berlese sample of polypores on dead birch (1) 13.vi.1997 • Berlese sample of bark of dead balsam fir and striped polypores (2) 22.ix.1997 • Berlese sample of polypores on conifers (2) 26.vii.1996 • Berlese sample of birch bark (1) 19.ix.1996 • Berlese sample of polypore on balsam fir (1) 19.ix.1996 • Berlese sample of polypore on birch (4) 19.ix.1996 • Berlese sample of polypore on balsam fir bark (1) 16.x.1996 • emergence cage pan (1) 05-12.vi.1994 • Malaise/FIT pan (1) 05-12.vi.1994 • (1) 12-19.vi.1994 • pitfall (1) 30.vi-07.vii.1994 • (1) 14-21.vii.1994 • soil sample (2) 05.vi.1994 • (48°29'32"N; 79°14'28"W) in mixed forest Berlese sample of polypores on dead birch (1) 13.vi.1997 • Berlese sample of dead birch bark (1) 13.vi.1997 • Berlese sample of polypores on dead birch (3) 22.vii.1997 • emergence cage pan (1) 29.v-05.vi.1994 • Malaise/FIT pan (1) 29.v-05.vi.1994 • soil sample (1) 26.vi-03.vii.1994 • (48°29'50"N; 79°16'25"W) in deciduous forest Berlese sample of polypores on dead birch (2) 13.vi.1997 • Berlese sample of polypores on dead aspen (1) 13.vi.1997 • emergence cage top (1) 29.v-05.vi.1994 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Berlese sample of polypores on birch (2) 09-18.ix.1996 • Berlese sample of polypores on dead birch (18) 24.vii.1996 • Berlese sample of polypores on dead birch (1) 18.ix.1996 • sifting litter (1) 15.vi.1996 • **Jamésie (Baie James):** (49°51'13"N; 78°38'59"W) flight-interception trap in old growth black spruce forest (1) 13-20.vii.1997 • (49°32'41"N; 79°19'00"W) Malaise/FIT pan in old growth black spruce forest (1) 13-20.vii.1997 • (49°49'03"N; 79°00'06"W) in mature black spruce forest Malaise/FIT pan (1) 06-15.vi.1997 • (1) 20-27.vii.1997

23) *Antherophagus ochraceus*. According to Leschen (1996), the species is associated with *Bombus* nests.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 14-21.vii.1994

24) *Caenoscelis ferruginea*, **new provincial record**. According to Bousquet (1991c), this species was known only from Alaska and British Columbia. The present records are the first ones from the east coast of the continent. Colin Johnson kindly identified our specimens.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) in deciduous forest • Emerging cage pan (1) 03-10.vii.1994 • (1) 17-24.vii.1994 • (1) 07-14.viii.1994 • Malaise/FIT pan (1) 17-24.vii.1994 • (3) 24-31.vii.1994 • (2) 31.vii-07.viii.1994 • (2) 07-14.viii.1994 • (1) 11-18.ix.1994 • (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (1) 28-03.ix.1994 • Berlese extraction of rotten log (1) 22.viii.1997 • (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest • Emerging cage pan (1) 10-17.vii.1994 • (1) 28-03.ix.1994 • pitfall (1) 21-29.vii.1996 • (1) 29.vii-04.viii.1996 • (1) 25.viii-01.ix.1996 • (1) 25.viii-01.ix.1996 • Canopy funnel (1) 18-25.viii.1996 • **Jamésie (Baie James):** (49°50'01"N; 78°41'12"W) in old growth black spruce forest flight-interception trap (1) 10-17.viii.1997 • (49°05'26"N; 79°08'54"W) in regenerating black spruce forest flight-interception trap (1) 27.vii-03.viii.1997 • (49°44'35"N; 79°10'06"W) in burned black spruce forest pitfall (1) 17-24.viii.1997 • (49°48'56"N; 78°55'06"W) in burned black spruce forest pitfall (1) 20-27.vii.1997 • (1) 24-31.viii.1997 • flight-interception trap (1) 27.vii-03.viii.1997 • (49°48'23"N; 78°52'47"W) in regenerating black spruce forest pitfall (1) 03-10.viii.1997 • (49°32'41"N; 79°19'00"W) in old growth black spruce pitfall (1) 20-27.vii.1997 • Malaise/FIT pan (1) 10-17.viii.1997.

25) *Caenoscelis subdeplanata*, **new Canadian record**. The species was known from North America (Johnson 1993), but only from unpublished records in Canada (C. Johnson, *in litt.*). Colin Johnson kindly identified our specimens and provided useful information about its distribution.

Jamésie (Baie James): (49°44'35"N; 70°00'06"W) in burned black spruce forest flight-interception trap (1) 27.vii-03.viii.1997 • (49°49'03"N; 78°41'12"W) sifting forest litter in mature black spruce forest (1) 04.vii.1997.

26) *Myrmedophila americana*. According to Bousquet (1989), the species is associated with *Formica* nests. Yves Bousquet kindly confirmed the identification.

Jamésie (Baie James): (49°35'06"N; 79°17'51"W) flight-interception trap in old growth black spruce forest (1) 27.vii-03.viii.1997

27) *Hyllobius congener* was found in high number in recently burned black spruce stands. Interestingly, congeneric species were also reported from burned forests in Poland by Szujewski (1987) which suggests affinities of some members of the genus for this peculiar habitat.

28) *Phloeotribus piceae*. The records of this rarely collected species confirm its northern distribution (Bright 1976). All specimens were collected with Malaise and flight interception traps.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 23.v-02.vi.1994 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 09-16.vi.1996 • **Jamésie (Baie James):** (49°48'23"N; 78°52'47"W) flight-interception trap in regenerating black spruce forest (1) 06-15.vi.1997 • (49°01'50"N; 79°08'47"W) flight-interception trap in mature black spruce forest (1) 31.viii-07.ix.1997

29) *Pithyophthorus murrayanae murrayanae*, **new provincial record**. According to Bright (1981) and McNamara (1991b), the species was previously known from Ontario and Nova Scotia only. Don Bright identified our specimens.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) Malaise/FIT pan in mixed forest (1) 12-19.vi.1994 • **Jamésie (Baie James):** (49°29'36"N; 79°17'53"W) flight-interception trap in old growth black spruce forest (1) 06-15.vi.1997 • (49°51'13"N; 78°38'59"W) flight-interception trap in old growth black spruce forest (1) 22-29.vi.1997 • (49°01'50"N; 79°08'47"W) flight-interception trap in mature black spruce forest (1) 29.vi-06.viii.1997 • (49°44'35"N; 79°02'10"W) pitfall in burned growth black spruce forest (1) 06-13.vii.1997 • (49°32'41"N; 79°19'00"W) flight-interception trap in old growth black spruce forest (1) 20-27.vii.1997 • (49°49'03"N; 79°00'06"W) flight-interception trap in mature black spruce forest (1) 21-28.ix.1997

30) *Pithyophthorus opaculus*. These records extend the distribution range of the species in Quebec by nearly 600 km to the north west (Bright 1981).

Jamésie (Baie James): (49°49'03"N; 79°00'06"W) Malaise/FIT pan in mature black spruce forest (1) 31.viii-07.ix.1997

31) *Pithyophthorus ramiperda*. These records extend the distribution range of the species in Quebec by nearly 600 km to the north west (Bright 1981).

Jamésie (Baie James): (49°35'06"N; 79°17'51"W) flight-interception trap in old growth black spruce forest (1) 06-15.vi.1997

32) *Ctenicera mendax* and *Ctenicera watsoni* are rarely collected species. These records confirm their occurrence in Quebec and their affinities with the boreal forest. Serge Laplante identified the specimens.

Ctenicera mendax: Témiscamingue: Lake Labyrinthe (48°13'35"N; 79°27'47"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 09-16.vi.1996

Ctenicera watsoni: Jamésie (Baie James): (49°37'54"N; 79°17'58"W) flight-interception trap in mature black spruce forest (1) 06-15.vi.1997 • (49°49'03"N; 79°00'06"W) flight-interception trap in mature black spruce forest (1) 22-29.vi.1997

33) *Eucinetus oviformis*. Lévesque and Lévesque (1993) first reported the occurrence of the species in Quebec from Johnville near Sherbrooke. The records from the boreal forest extend its known distribution of about 680 km to the north.

Jamésie (Baie James): (49°32'41"N; 79°19'00"W) flight-interception trap in old growth black spruce forest (1) 21-28.ix.1997 • (49°36'23"N; 79°18'03"W) flight-interception trap in mature black spruce forest (1) 29.vi-06.vii.1997 • (49°33'26"N; 79°18'56"W) flight-interception trap in mature black spruce forest (1)

06-13.vii.1997 • (49°50'01"N; 78°41'12"W) flight-interception trap in old growth black spruce forest (1) 13-20.vii.1997

34) *Agathidium pulchrum*, **confirmation**. The species was included in the Quebec species list of Larochelle (1979a) but was excluded from Laplante et al. (1991) because the identity of most species belonging to the genus *Agathidium* could not be certified. The genus is still in need of revision and species in the list are therefore designated with 'cf.' except for *A. pulchrum* which was certified by Q. Wheeler.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) emergence cage pan in white cedar/balsam fir forest (1) 09-19.vi.1994 • (48°29'50"N; 79°16'25"W) Berlese sample of rotten log in deciduous forest (1) 22.vii.1994 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Malaise/FIT pan (1) 07-14.vii.1996 • (1) 14-21.vii.1996 • **Jamésie (Baie James):** (49°33'31"N; 78°59'02"W) flight-interception trap in mature black spruce forest (1) 06-15.vi.1997

35) *Colon similare*, **new provincial record**. Based on distribution given in Peck and Stephan (1996), the present records are the first reported in Quebec. A few specimens were collected with Malaise traps but some were found in emergence cages, supporting the hypothesis that immature stages of the genus *Colon* feed on hypogean fungi or at least pupate in the soil.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) canopy funnel in white cedar/balsam fir forest (1) 21-29.vii.1996 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest emergence cage top (1) 29.vii-04.viii.1996 • emergence cage top (2) 04-11.viii.1996 • (1) 25.viii-01.ix.1996 • emergence cage pan (2) 08-15.ix.1996 • Malaise/FIT pan (2) 04-11.viii.1996 • (5) 25.viii-01.ix.1996 • (2) 01-08.ix.1996 • (2) 08-15.ix.1996 • (1) 22-29.ix.1996 • **Jamésie (Baie James):** (49°49'03"N; 79°00'06"W) Malaise/FIT pan in mature black spruce forest (1) 03-10.viii.1997 • (49°33'26"N; 79°18'56"W) flight-interception trap in mature black spruce forest (1) 06-13.vii.1997 • (49°33'26"N; 79°18'56"W) flight-interception trap in mature black spruce forest (1) 27.vii-03.viii.1997 • (49°48'23"N; 78°52'47"W) flight-interception trap in regenerating black spruce forest (1) 17-24.viii.1997 • (49°49'03"N; 79°00'06"W) Berlese sample of dead black spruce log in mature black spruce forest (1) 04.vii.1997

36) *Elateroidea lugubris* is a peculiar beetle that is rarely seen. We have collected 43 specimens in the southern succession with Malaise traps. This species shows striking color variations, a phenomena also reported by Wheeler (1986) for *E. dermestoides*, a Eurasian species.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Malaise/FIT pan (3) 29.v-05.vi.1994 • (1) 05-12.vi.1994 • (14) 12-19.vi.1994 • (2) 02-09.vi.1996 • (48°29'32"N; 79°14'28"W) Malaise/FIT pan in mixed forest (1) 12-19.vi.1994 • (48°29'50"N; 79°16'25"W) in deciduous forest Malaise/FIT pan (3) 05-12.vi.1994 • (4) 12-19.vi.1994 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Malaise/FIT top (1) 23.v-02.vi.1996 • (1) 02-09.vi.1996 • (2) 09-16.vi.1996 • Malaise/FIT pan (3) 23.v-02.vi.1996 • (3) 02-09.vi.1996 • (5) 09-16.vi.1996

37) *Attalus terminalis*, **confirmation**. The species was known from Canada but these records were overlooked by Bright (1991) in the Canadian checklist and by Laplante et al. (1991) in the Quebec list. The present record confirms the presence of the species in Quebec.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT top (1) 31.vii-07.viii.1994

38) *Rhizophagus*. Interestingly, many specimens of *Rhizophagus* were collected with the canopy-funnel technique, suggesting that adults may be associated with the upper canopy of the forest.

39) *Rhizophagus pseudobrunneus*, **new provincial record**. According to Bousquet (1990), this species occurs mainly on the West Coast, except from an isolated record in Manitoba. The present record from Quebec extends its known distribution by about 1600 km to the east. Yves Bousquet kindly confirmed the identification.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) Malaise/FIT pan in mixed forest (1) 19-26.vi.1994 • (48°19'30"N; 79°19'30"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 10-17.vii.1994 • **Jamésie (Baie James):** (49°49'03"N; 79°00'06"W) Malaise/FIT pan in mature black spruce forest (1) 13-20.vii.1997 • (49°49'03"N; 79°00'06"W) Malaise/FIT pan in mature black spruce forest (1) 20-27.vii.1997 • (49°49'03"N; 79°00'06"W) flight-interception trap in mature black spruce forest (1) 03-10.viii.1997 • (49°35'06"N; 79°17'51"W) flight-interception trap in old growth black spruce forest (1) 24-31.viii.1997

40) *Mordellistena andreae ancilla*, **new provincial record**. According to Liljeblad (1945), the black ventral coloration is characteristic of that subspecies.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) Malaise/FIT top in mixed forest (1) 21-28.viii.1994

41) *Thrimolus minutus*. The specimen collected on an immature *Fomitopsis pinicola* (Fr.) Karst (Polyporaceae), is the second record for Canada. The species was previously known only from a single damaged specimen. The present record extends its known distribution by about 630 km to the north. This rare species reaches as far south as Texas and Florida and nothing is known about its biology (Young, *in press*).

Témiscamingue: Lake Labyrinthe: (48°13'35"N; 79°27'47"W) Berlese extraction of small immature *Fomitopsis pinicola* (Polyporaceae) in white cedar/balsam fir forest (1) 24.vii.1996

42) In North America, Ptiliidae are most probably the beetle family which is taxonomically least known. Consequently, many species from Canada are still undescribed despite their abundance and peculiar life habits. The morphotype numbers indicated in the list refer to the code numbers used by M. Sörensson, a world authority of the family, who kindly identified representative specimens from our samples. Hopefully, future revisions will associate these code numbers with species name and our ecological information will not be lost. New records are based on Laplante et al. (1991) and Campbell (1991b). Recently, Sörensson (*in press*) made an important contribution to the knowledge of North American Ptiliidae, reporting many new records and distribution data.

43) *Acrotrichis castanea*, **new provincial record**. A total of 374 samples contained this species which are too numerous to list. The following record is the northernmost from our samples. Sörensson (*in press*) provides additional distribution data for the species.

Jamésie (Baie James): (49°49'03"N; 79°00'06"W) flight-interception trap in mature black spruce forest (8) 06-15.vi.1997

44) *Acrotrichis cognata*, **new provincial record**. A total of 205 samples contained this species which are too numerous to list. The following record is the northernmost of our samples. Sörensson (*in press*) provides additional distribution data on this introduced species.

Jamésie (Baie James): (49°51'13"N; 78°38'59"W) flight-interception trap in mature black spruce forest (1) 03-10.viii.1997

45) *Acrotrichis longipennis*, **new Canadian record**. A total of 206 samples contained this species. These are too numerous to list. Almost all specimens were collected in the southern part of the boreal forest, but the following record, which is the northernmost for the species from our samples, comes from the black spruce area. Sörensson (*in press*) provides additional distribution data.

Jamésie (Baie James): (49°49'03"N; 79°00'06"W) Malaise/FIT pan in mature black spruce forest (1) 13-20.vii.1997

46) *Acrotrichis silvatica*, **new North American record**. A total of 347 samples contained this species which are too numerous to list. The following record is the northernmost from our samples. Sörensson (*in press*) provides additional distribution data for the species.

Jamésie (Baie James): (49°51'13"N; 78°38'59"W) flight-interception trap in mature black spruce forest (1) 07-14.ix.1997

47) *Acrotrichis volans*, **new provincial record**. A total of 134 samples contained this species which are too numerous to list. The following record is the northernmost from our samples. Sörensson (*in press*) provides additional distribution data for the species.

Jamésie (Baie James): (49°51'13"N; 78°38'59"W) flight-interception trap in mature black spruce forest (1) 03-10.viii.1997

48) *Cylindroseloides dybasi*. See Paquin and Dupérré (2000b) for details about these records.

49) *Micridium*. According to Campbell (1991b), this is the first record of the genus in Canada.

50) *Ptenidium nitidum*, **new provincial record**. Sörensson (*in press*) provides additional distribution data for the species.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) Berlese sample of mosses in white cedar/balsam fir forest (1) 19.ix.1996 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 30.vi-07.vii.1996

51) *Ptenidium speculifer*, new Canadian record. Sörensson (*in press*) provides additional distribution data for the species.

Abitibi-ouest: Lake Duparquet (48°29'50"N; 79°16'25"W) in deciduous forest emergence cage pan (1) 28.viii-03.ix.1994 Malaise/FIT pan (1) 18-25.ix.1994 • (1) 14-21.viii.1996 • (1) 03-10.vii.1996 • (1) 10-17.vii.1996 • (1) 17-24.vii.1996 • (48°29'32"N; 79°14'28"W) in mixed forest emergence cage pan (1) 03-10.vii.1996 • Malaise/FIT pan (1) 17-24.vii.1996 • (2) 10-17.vii.1996 • (3) 03-10.vii.1996 • (1) 19-26.vi.1996 • (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Berlese sample fungi on of dead aspen bark (1) 21.viii.1996 • emergence cage pan (1) 29.vii-04.viii.1996 • Malaise/FIT pan (1) 21-29.vii.1996 • (1) 14-21.viii.1996 • (4) 24-31.vii.1996 • (4) 17-24.vii.1996 • (9) 10-17.vii.1996 • (4) 03-10.vii.1996 • **Jamésie (Baie James):** (49°33'31"N; 78°59'02"W) mature black spruce forest flight-interception trap (1) 14-21.xi.1997 • (1) 13-20.vii.1997 • (49°29'36"N; 79°17'53"W) old growth black spruce forest flight-interception trap (1) 13-20.vii.1997 • (49°32'41"N; 79°19'00"W) old growth black spruce forest (2) 13-20.vii.1997 • Malaise/FIT pan (4) 20-27.vii.1997 • (49°49'03"N; 79°00'06"W) mature black spruce forest (1) 27.vii-03.viii.1997

52) *Pteryx*. According to Campbell (1991b), these are the first records of the genus in Canada.

53) *Ptiliola kunzei*, new North American record. Sörensson (*in press*) provides additional distribution data for the species.

Abitibi-ouest: Lake Duparquet (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Berlese sample of mosses on dead log (1) 12-19.vi.1994 • Malaise/FIT pan (1) 31.vii-07.viii.1996 • (48°29'50"N; 79°16'25"W) in deciduous forest Malaise/FIT pan (1) 29.v-05.vi.1994 • **Jamésie (Baie James):** (49°43'35"N; 79°17'59"W) flight-interception trap regenerating black spruce forest (1) 31.viii-07.ix.1997 • (49°37'54"N; 79°17'58"W) mature black spruce forest (1) 27.vii-03.viii.1997 • (49°36'23"N; 79°18'03"W) mature black spruce forest (1) 17-24.viii.1997 • (49°35'37"N; 79°17'46"W) old growth black spruce forest (1) 17-24.viii.1997 • (1) 20-27.vii.1997 • (49°32'41"N; 79°19'00"W) old growth black spruce forest Malaise/FIT pan (1) 24-31.viii.1997 • (1) 29.ix-05.x.1997 • (49°05'26"N; 79°08'54"W) flight-interception trap mature black spruce forest (1) 10-17.viii.1997 • (49°01'50"N; 79°08'47"W) mature black spruce forest (1) 24-31.viii.1997 • (49°48'23"N; 78°52'47"W) regenerating black spruce forest (1) 03-10.viii.1997 • (1) 27.vii-03.viii.1997 • (2) 20-27.vii.1997 • Malaise/FIT pan (2) 20-27.vii.1997 • (2) 06-15.vi.1997 • (49°48'56"N; 78°55'06"W) flight-interception trap burned black spruce forest (1) 03-10.viii.1997 • (49°49'03"N; 79°00'06"W) mature black spruce forest (1) 24-31.viii.1997 • (2) 20-27.vii.1997 • (49°49'03"N; 79°00'06"W) Malaise/FIT pan mature black spruce forest (1) 06-15.vi.1997 • (1) 20-27.vii.1997

54) *Ptiliolum fuscum*, new North American record. A total of 280 samples contained this species which are too numerous to list. The following record is the northernmost from our samples. Sörensson (*in press*) provides additional distribution data for the species.

Jamésie (Baie James): (49°51'13"N; 78°38'59"W) flight-interception trap old growth black spruce forest, (1), 07-14.ix.1997

55) *Ptinella aptera*, new North American record. A total of 128 samples contained this species which are too numerous to list. The following record is the northernmost from our samples. Sörensson (*in press*) provides additional distribution data for the species.

Jamésie (Baie James): (49°51'13"N; 78°38'59"W) flight-interception trap old growth black spruce forest, (1), 07-14.ix.1997

56) *Ptinella johnsoni*, new North American record. Sörensson (*in press*) provides additional distribution data for the species.

Abitibi-ouest: Lake Duparquet (48°19'30"N; 79°19'30"W) white cedar/balsam fir forest cage emergence pan in (1) 14-21.vii.1996 • Malaise/FIT pan (1) 14-21.viii.1994 • (1) 10-17.vii.1994 • **Témiscamingue: Lake Labyrinth** (48°13'35"N; 79°27'47"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 14-21.vii.1996 • **Jamésie (Baie James):** (49°51'13"N; 78°38'59"W) old growth black spruce forest flight-interception trap (1) 24-31.viii.1997 • (49°43'35"N; 79°17'59"W) regenerating black spruce forest flight-interception trap (1) 20-27.vii.1997 • (1) 13-20.vii.1997 • (49°35'06"N; 79°17'51"W) old growth black spruce forest flight-interception trap (1) 06-13.vii.1997 • (49°33'26"N; 79°18'56"W) mature black spruce forest flight-interception trap (2) 20-27.vii.1997 • (49°35'06"N; 79°17'51"W) old growth black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°32'41"N; 79°19'00"W) old growth black spruce forest flight-interception trap (1) 20-27.vii.1997 • (1) 13-20.vii.1997 • (1) 06-13.vii.1997 •

Malaise/FIT pan (1) 20-27.vii.1997 • (49°05'26"N; 79°08'54"W) mature black spruce forest flight-interception trap (1) 13-20.vii.1997 • (49°50'01"N; 78°41'12"W) old growth black spruce forest flight-interception trap (1) 13-20.vii.1997 • (49°48'54"N; 78°43'23"W) regenerating black spruce forest flight-interception trap (1) 13-20.vii.1997 • (49°48'23"N; 78°52'47"W) regenerating black spruce forest flight-interception trap (1) 06-13.vii.1997 • (49°49'03"N; 79°00'06"W) mature black spruce forest flight-interception trap (1) 13-20.vii.1997

57) *Sphaeristes virescens*. This species was found in high numbers in recently burned black spruce stands. Interestingly, congeneric species were reported from burned forests in Europe by Muona and Rutanen (1994), which suggests affinities of some members of the genus for this peculiar habitat.

58) *Cyphon pusillus*, **new provincial record**. All specimens were collected with Malaise and flight-interception traps.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) Malaise/FIT top in white cedar/balsam fir forest (1) 08-15.ix.1996 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Malaise/FIT top (1) 18-25.viii.1996 • (1) 25.viii-01.ix.1996 • (3) 08-15.ix.1996 • **Jamésie (Baie James):** (49°43'35"N; 79°17'59"W) flight-interception trap in regenerating black spruce forest (1) 31.viii-07.ix.1997

59) *Brathinus brevicornis*. The records from the Lake Duparquet area extend the species distribution to its northwest limits of Quebec (Peck 1975). The habitat of the species has been described as cool riparian or swampy-boggy situations, among roots of grass growing near water (Peck 1975; White 1983). The present data, 82 specimens mainly collected with pitfalls in coniferous forest, suggest that the species occurs frequently in the litter, as pointed out by Newton et al. (2000).

60) *Omalium* sp. d. This morphotype indicated in the list refers to the code numbers used for undescribed specimens in the C.N.C. by M. Thayer. Hopefully, future revisions will indicate these code numbers, so that the ecological information will not be lost.

61) *Omalonomus* (?) n.sp. This morphotype represent a species that may be closely related to this monotypic genus (Campbell and Peck 1990; M. Thayer, pers. comm.). The two specimens collected in Quebec differ from *Omalonomus relictus* by being fully pigmented and having functional eyes.

62) *Oxyporus vittatus vittatus*. The records from Lake Duparquet are the northernmost for the species, slightly extending its known distribution in Quebec given in Campbell (1969).

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) Malaise/FIT pan in mixed forest (2) 21-28.viii.1994 • (1) 03-11.ix.1994 • (48°29'50"N; 79°16'25"W) Malaise/FIT pan in deciduous forest (1) 03-11.ix.1994

63) *Anotylus* nr. *sobrinus*. According to Anthony Davies, this undescribed species is close but distinct from *Anotylus sobrinus*.

Jamésie (Baie James): (49°48'23"N; 78°52'47"W) Malaise/FIT pan in regenerating black spruce forest (1) 06-15.vi.1997 • (49°48'56"N; 78°55'06"W) flight-interception trap in burned black spruce forest (1) 06-15.vi.1997

64) *Bledius gravidus*, **new provincial record**. The species was known from the Ottawa area (Herman 1972). The record from Lake Duparquet is the northernmost for the species and extends its known distribution by nearly 600 km in eastern North America. Anthony Davies kindly confirmed this identification.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) Berlese sample of rotten log in deciduous forest (1) 13.vi.1994

65) *Bledius turgidus*. According to the distribution given in Herman (1972), this record is the northernmost in eastern North America.

Jamésie (Baie James): (49°32'41"N; 79°19'00"W) Malaise/FIT pan in old growth black spruce forest (1) 06-15.vi.1997

66) *Lathrobium fulvipenne*, **new provincial record**. This species, introduced from Europe, was previously known from British Columbia and Alberta on the West Coast and Newfoundland on the East Coast (Campbell and Davies 1991). Anthony Davies kindly confirmed our identification.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) Berlese sample of bark of dead birch in mixed forest (1) 13.vi.1997 • (48°19'30"N; 79°19'30"W) Berlese sample of mosses in white cedar/balsam fir forest (1) 13.vi.1997 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) Berlese sample of dead log in white cedar/balsam fir forest (1) 12.vi.1996 • **Jamésie (Baie James):** (49°32'41"N; 79°19'00"W) soil sample in old growth black spruce forest (1) 01.x.1997

67) *Stagotum stacesmithi* was reported from British Columbia and Alberta by Moore (1975) and from Labrador and Quebec by Campbell and Davies (1991). The present record from mature black spruce forest suggests a wide boreal distribution for the species.

Jamésie (Baie James): (49°37'54"N; 79°17'58"W) flight-interception trap in mature black spruce forest (1) 06-15.vi.1997

68) *Proteinus*. The morphotype numbers used here refer to those of dissected specimens found in the Canadian National Collection. Hopefully, these reference numbers will be indicated in the revision of the genus so the present ecological data won't be lost.

69) *Actium* n.sp. This undescribed species, specialized in old growth boreal forest, is the first record of the genus *Actium* in eastern Canada. Another species is known from eastern North America in United States while all other 34 species are restricted to the West Coast (Grigarick and Schuster 1971; Chandler 1997). Donald Chandler kindly offered his expertise for this species.

70) *Actizona trifoveatum* is a rare species. The provincial records for Quebec given in Chandler (1997) are based on the specimens collected in this study.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) in deciduous forest emergence cage top (1) 17-24.vii.1994 • emergence cage pan (1) 17-24.vii.1994 • (48°29'32"N; 79°14'28"W) Berlese sample of rotten log in mixed forest (2) 22.vii.1997 • Berlese sample of birch bark (1) 22.ix.1997 • Malaise/FIT pan (1) 12-19.vi.1994 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) Berlese sample of rotten log in white cedar/balsam fir forest (1) 18.viii.1996 • **Jamésie (Baie James):** (49°49'03"N; 79°00'06"W) Malaise/FIT pan in mature black spruce forest (1) 15-22.vi.1997 • (49°32'41"N; 79°19'00"W) pitfall in old growth black spruce forest (1) 06-13.vii.1997 • (49°48'54"N; 78°43'23"W) flight-interception trap in regenerating black spruce forest (1) 06-15.vi.1997 • (49°43'35"N; 79°17'59"W) flight-interception trap in regenerating black spruce forest (1) 06-15.vi.1997 • (49°36'23"N; 79°18'03"W) flight-interception trap in mature black spruce forest (1) 22-29.vi.1997 • (49°29'36"N; 79°17'53"W) flight-interception trap in old growth black spruce forest (1) 13-20.vii.1997

71) *Bibloporus bicanalis* is a rare species (Newton et al. 2000). Chandler (1987) reported its first collection since the original description by Casey in 1893. The present records are most probably the northernmost for the species.

Abitibi-ouest: Lake Duparquet: (48°29'50"N; 79°16'25"W) Berlese sample of rotten coniferous log in deciduous forest (1) 22.vii.1997 • **Jamésie (Baie James):** (49°05'26"N; 79°08'54"W) Soil sample in mature black spruce forest (1) 14.ix.1997 • (49°43'32"N; 79°02'37"W) pitfall in mature black spruce forest (1) 03-10.viii.1997 • (49°29'36"N; 79°17'53"W) flight-interception trap in old growth black spruce forest (1) 20-27.vii.1997 • (49°48'13"N; 78°54'33"W) pitfall in mature black spruce forest (1) 06-13.viii.1997 • (49°43'35"N; 79°17'59"W) flight-interception trap in regenerating black spruce forest (1) 29.vi-06.vii.1997 • (49°48'16"N; 78°51'20"W) flight-interception trap in old growth spruce forest (1) 29.vi-06.vii.1997 • (49°35'06"N; 79°17'51"W) flight-interception trap in regenerating black spruce forest (1) 15-22.vi.1997

72) *Euplectus elongatus*, **new provincial record**. In Canada, the species was previously known from Ontario only (Chandler 1997). Donald Chandler identified this species.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Berlese sample of dead balsam fir bark (1) 22.viii.1997 • **Jamésie (Baie James):** (49°49'03"N; 79°00'06"W) Berlese sample of rotting black spruce log in mature black spruce forest (1) 04.vii.1997 • (49°48'13"N; 78°54'33"W) flight-interception trap in mature black spruce forest (1) 22-29.vi.1997 • (49°48'56"N; 78°55'06"W) flight-interception trap in burned black spruce forest (1) 22-29.vi.1997 • (49°29'36"N; 79°17'53"W) flight-interception trap in old growth black spruce forest (1) 27-03.viii.1997 • (49°44'35"N; 79°02'10"W) pitfall trap in burned black spruce forest (1) 03-10.viii.1997 • (49°49'03"N; 79°00'06"W) flight-interception trap in mature black spruce forest (1) 31.viii-07.ix.1997

73) *Euplectus sylvicola*, **new provincial record**. According to Chandler (1997), the species was only known from Nova Scotia and mainly occurs in old growth forests according to Chandler (1987). Donald Chandler kindly identified these specimens.

Jamésie (Baie James): (49°49'03"N; 79°00'06"W) Berlese sample of rotting black spruce log in mature black spruce forest (1) 04.vii.1997 • (49°33'26"N; 79°18'56"W) flight-interception trap in mature black spruce forest (1) 24-31.viii.1997 • (49°37'54"N; 79°17'58"W) flight-interception trap in mature black spruce forest (1) 27.vii-03.viii.1997 • (49°32'41"N; 79°19'00"W) pitfall trap in old growth black spruce forest (1) 06-15.vi.1997

74) *Baeocara humeralis*, **new provincial record**. These records extend the known distribution from New Hampshire and Manitoba to Quebec (Löbl and Stephan 1993).

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest canopy funnel (1) 01-08.ix.1994 • (48°29'32"N; 79°14'28"W) Berlese sample of mosses on log in mixed forest (1) 24-31.vii.1994 • (48°29'50"N; 79°16'25"W) in deciduous forest emergence cage pan (1) 03-11.ix.1994 • Malaise/FIT pan in deciduous forest (1) 12-19.vi.1994 • (1) 07-14.viii.1994 • (1) 14-21.viii.1994 • (1) 03-11.ix.1994 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Malaise/FIT pan (1) 07-14.vi.1996 • **Jamésie (Baie James):** (49°36'23"N; 79°18'03"W) flight-interception trap in mature black spruce forest (1) 17-24.viii.1997 • (49°35'06"N; 79°17'51"W) flight-interception trap in old growth black spruce forest (1) 07-14.ix.1997 • (49°32'41"N; 79°19'00"W) Malaise/FIT pan in old growth black spruce forest (1) 17-24.viii.1997 • (49°48'23"N; 78°52'47"W) flight-interception trap in regenerating black spruce forest (1) 22-29.vi.1997

75) *Bisnius blandus*, **new provincial record**. The species was previously associated with deciduous forests (Smetana 1995), but the present data suggest that it is also found in coniferous forests. A. Smetana kindly confirmed our identification.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Malaise/FIT pan (1) 17-24.vii.1994 • (2) 02-09.vi.1996 • (1) 14-21.vii.1996 • (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (3) 29.v-05.vi.1994 • (1) 12-19.vi.1994 • (2) 10-17.vii.1994 • (1) 17-24.vii.1994 • (48°29'50"N; 79°16'25"W) in deciduous forest Malaise/FIT pan (1) 12-19.vi.1994 • (4) 03-10.vii.1994 • (1) 10-17.vii.1994 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest emergence cage pan (1) 09-16.vi.1996 • Malaise/FIT pan (1) 02-09.vi.1996 • (2) 09-16.vi.1996 • pitfall (1) 09-16.vi.1996 • **Jamésie (Baie James):** (49°32'41"N; 79°19'00"W) in old growth black spruce forest Malaise/FIT pan (1) 06-15.vi.1997

76) *Bisnius pugetensis* is associated with gopher nests (Smetana 1995). The present record is an extension of the species range to the western part of Quebec.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (1) 12-19.vi.1994

77) *Dinothararus capitatus* is a rarely collected species (A. Smetana, pers. comm.). The present records confirm its occurrence in the boreal forest.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Malaise/FIT pan (1) 05-12.vi.1994 • (1) 28.viii-03.ix.1994 • (1) 03-11.ix.1994 • (1) 11-18.ix.1994 • (2) 18-25.ix.1994 • (1) 18-25.viii.1996 • (2) 25.viii-01.ix.1996 • (1) 08-15.ix.1996 • (1) 16.iv-15.v.1994 • (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (2) 21-28.viii.1994 • (1) 03-11.ix.1994 • (3) 11-18.ix.1994 • (5) 18-25.ix.1994 • (1) 25.ix-02.x.1994 • (2) 02-09.x.1994 • pitfall (17) 16.iv-15.v.1994 • (48°29'50"N; 79°16'25"W) in deciduous forest Malaise/FIT pan (2) 07-14.viii.1994 • (1) 14-21.viii.1994 • (3) 21-28.viii.1994 • (4) 03-11.ix.1994 • (13) 11-18.ix.1994 • (7) 18-25.ix.1994 • pitfall (1) 21-28.viii.1994 • (11) 16.iv-15.v.1994 • **Jamésie (Baie James):** (49°37'54"N; 79°17'58"W) in mature black spruce forest flight-interception trap (1) 24-31.viii.1997 • (49°36'23"N; 79°18'03"W) in mature black spruce forest flight-interception trap (1) 24-31.viii.1997 • (1) 31.viii-07.ix.1997 • **Témiscamingue: Lake Labyrinthe:** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest canopy-funnel (1) 08-15.ix.1996 • Malaise/FIT pan (1) 23.v-02.vi.1996 • (1) 02-09.vi.1996 • pitfall (1) 09-16.vi.1996 • (1) 18-25.viii.1996 • (1) 25.viii-01.ix.1996

78) The occurrence of *Gabrius lysyptus* in the forest surrounding Lake Duparquet extends its known range from the Gatineau Park by about 600 km to the north (Smetana 1995).

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (1) 19-26.vi.1994

79) *Heterotops minor* was found mainly in the first stages of the black spruce ecological succession; this is the northernmost record for the species in Quebec (Smetana 1971).

Jamésie (Baie James): (49°48'56"N; 78°55'06"W) in burned black spruce forest flight-interception trap (1) 22-29.vi.1997

80) *Neobisnius villosulus* occurrence in the coniferous forest of Lake Duparquet is the northernmost record for this introduced species (Frank 1981; Campbell and Davies 1991).

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) Malaise/FIT pan in white cedar/balsam fir forest (1) 12-19.vi.1994

81) *Philonthus spiniformis*, **new provincial record**. According to distribution data given in Smetana (1995), the present records confirm the occurrence of the species in boreal forest of Quebec. A. Smetana kindly confirmed our identifications.

Jamésie (Baie James): (49°48'23"N; 78°52'47"W) in regenerating black spruce forest Malaise/FIT pan (7) 06-15.vi.1997 • (4) 20-27.vii.1997 • (49°49'03"N; 79°00'06"W) in mature black spruce forest (1) 06-13.vii.1997 • (49°51'13"N; 78°38'59"W) in old growth black spruce forest) flight-interception trap (1) 06-15.vi.1997 • (2) 20-27.vii.1997 • (1) 03-10.viii.1997 • (49°50'01"N; 78°41'12"W) in old growth black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°48'23"N; 78°52'47"W) in regenerating black spruce forest flight-interception trap (1) 14-21.ix.1997 • (49°48'13"N; 78°54'33"W) in mature black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°48'56"N; 78°55'06"W) in burned black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°49'03"N; 79°00'06"W) in mature black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°33'31"N; 78°59'02"W) in mature black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°29'36"N; 79°17'53"W) in old growth black spruce forest flight-interception trap (1) 20-27.vii.1997 • (49°43'35"N; 79°17'59"W) in regenerating black spruce forest flight-interception trap (3) 06-15.vi.1997 • (1) 29.vi-06.vii.1997 • (1) 17-24.viii.1997 • (1) 24-31.viii.1997 • (1) 07-14.ix.1997 • (49°37'54"N; 79°17'58"W) in mature black spruce forest flight-interception trap (1) 13-20.vii.1997 • (49°35'37"N; 79°17'46"W) in old growth black spruce forest flight-interception trap (2) 06-15.vi.1997 • (1) 13-20.vii.1997 • (2) 20-27.vii.1997 • (1) 27.vii-03.viii.1997 • (1) 03-10.viii.1997 • (49°35'06"N; 79°17'51"W) in old growth black spruce forest flight-interception trap (1) 06-13.vii.1997 • (1) 17-24.viii.1997 • (49°33'26"N; 79°18'56"W) in mature black spruce forest flight-interception trap (1) 06-15.vi.1997 • (49°32'41"N; 79°19'00"W) in old growth black spruce forest flight-interception trap (1) 20-27.vii.1997 • (1) 03-10.viii.1997 • (1) 17-24.viii.1997 • (1) 31.viii-07.ix.1997 • (49°05'26"N; 79°08'54"W) in mature black spruce forest flight-interception trap (1) 24-31.viii.1997 • (49°01'50"N; 79°08'47"W) in mature black spruce forest flight-interception trap (1) 31.viii-07.ix.1997 • (49°44'35"N; 79°02'10"W) in burned growth black spruce forest pitfall (1) 13-20.vii.1997 • (1) 20-27.vii.1997

82) *Philonthus validus* is associated with beaver and muskrat nests (Smetana 1995). The present records are the northernmost for the species in Quebec.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest Malaise/FIT pan (1) 12-12-19.vi.1994 • **Jamésie (Baie James):** (49°32'41"N; 79°19'00"W) in old growth black spruce forest Malaise/FIT pan (1) 27.vii-03.viii.1997 • (1) 31.viii-07.ix.1997 • (49°51'13"N; 78°38'59"W) in old growth black spruce forest flight-interception trap (1) 24-31.viii.1997 • (49°49'03"N; 79°00'06"W) in mature black spruce forest Malaise/FIT pan (1) 07-14.ix.1997

83) *Quedius caseyi caseyi*, **new provincial record**. A. Smetana confirmed our identifications.

Abitibi-ouest: Lake Duparquet: (48°19'30"N; 79°19'30"W) in white cedar/balsam fir forest • beating (1) 16.x.1996 • emergence cage pan (1) 02-09.x.1994 • (1) 09-16.x.1994 • Malaise/FIT pan (1) 01-08.ix.1996 • (1) 16-23.x.1994 • (1) 18-25.ix.1994 • (1) 18-25.viii.1996 • pitfall (1) 13.x-09.xi.1996 • (1) 25.ix-02.x.1994 • (1) 30.iii-13.iv.1994 • (2) 23.iv-25.v.1994 • (3) 01.ix-08.xii.1993 • (3) 02-09.x.1994 • (3) 09-16.x.1994 • (3) 30.x-10.xii.1994 • (48°29'32"N; 79°14'28"W) in mixed forest Berlese sample of mosses (2) 22.ix.1997 • emergence cage pan (1) 02-09.x.1994 • (73) 02-09.x.1994 • (2) 16-23.x.1994 • (72) 16-23.x.1994 • Malaise/FIT pan (1) 09-16.x.1994 • pitfall (7) 01.ix-08.xii.1993 • (1) 13.iv-23.iv.1994 • (1) 28.viii-03.ix.1994 • (2) 11-18.ix.1994 • (5) 18-25.ix.1994 • (25) 25.ix-02.x.1994 • (32) 09-16.x.1994 • (6) 16-23.x.1994 • (32) 23-30.x.1994 • (1) 13-20.xi.1994 • (14) 30.x-10.xii.1994 • (48°29'50"N; 79°16'25"W) in deciduous forest emergence cage pan (1) 09-16.x.1994 • Malaise/FIT pan (1) 18-25.ix.1994 • pitfall (4) 09-16.x.1994 • (1) 23-30.x.1994 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest emergence cage top (1) 13.x-09.xi.1996 • pitfall (4) 13.x-09.xi.1996

84) *Quedius frigidus*, **new provincial record**. These records represent an important range extension of about 700 km to the north in the eastern part of the continent (see Smetana 1971, 1973, 1976, 1978, 1981, 1990 for details about distribution of the species). A. Smetana confirmed our identifications.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) in mixed forest Berlese sample of mosses (1) 22.ix.1994 • **Jamésie (Baie James):** (49°51'13"N; 78°38'59"W) in old growth black spruce forest pitfall (2) 13-20.vii.1997 • soil sample (1) 01.x.1997 • (1) 14.ix.1997 • (49°50'01"N; 78°41'12"W) in old growth black spruce forest pitfall (1) 06-13.vii.1997 • (1) 20-27.vii.1997 • (2) 22-29.vi.1997 • (1) 01.x.1997 • (49°48'54"N; 78°43'23"W) in regenerating black spruce forest pitfall (1) 13-20.vii.1997 • soil sample (1) 14.ix.1997 • (49°48'16"N; 78°51'20"W) in old growth black spruce forest pitfall (1) 20-27.vii.1997 • (1) 22-29.vi.1997 • soil sample (1) 14.ix.1997 • (49°48'23"N; 78°52'47"W) in regenerating black spruce forest flight-interception trap (1) 06-15.vi.1997 • pitfall (1) 20-27.vii.1997 • (1) 27.vii-03.viii.1997 • (3) 20-27.vii.1997 • (49°48'13"N; 78°54'33"W) in mature black spruce forest pitfall (1) 03-10.viii.1997 • (1) 06-13.vii.1997 • (1) 22-29.vi.1997 • (2) 20-27.vii.1997 • (6) 01.x.1997 • (49°48'56"N; 78°55'06"W) in burned black spruce forest flight-interception trap (1) 06-13.vii.1997 • pitfall (1) 06-15.vi.1997 • (1) 13-20.vii.1997 • (1) 29.vi-06.vii.1997 • (49°49'03"N; 79°00'06"W) in mature black spruce forest Berlese sample of mosses (1) 04.vii.1997 • (1) 04.viii.1997 • (1) 09.ix.1997 • (1) 10.x.1997 • flight-interception trap (2) 24-31.viii.1997 • Malaise/FIT pan (1) 17-24.viii.1997 • (2) 07-14.ix.1997 • pitfall(1) 22-29.vi.1997 • soil sample (1) 14.ix.1997 • (49°43'32"N; 79°02'37"W) in old growth spruce forest pitfall (1) 29.vi-06.vii.1997 • soil sample (1) 14.ix.1997 • (3) 01.x.1997 • (49°33'31"N; 78°59'02"W) in mature black spruce forest flight-interception trap (1) 24-31.viii.1997 • (49°43'35"N; 79°17'59"W) in regenerating black spruce forest flight-interception trap (1) 06-15.vi.1997 • soil sample (1) 17.viii.1997 • (49°37'54"N; 79°17'58"W) in mature black spruce forest pitfall (1) 03-10.viii.1997 • (1) 06-15.vi.1997 • (1) 20-27.vii.1997 • (1) 22-29.vi.1997 • (2) 24-31.viii.1997 • soil sample (1) 15.vi.1996 • (49°36'23"N; 79°18'03"W) in mature black spruce forest pitfall (1) 06-13.vii.1997 • (1) 20-27.vii.1997 • soil sample (1) 17.viii.1997 • (49°35'37"N; 79°17'46"W) in old growth black spruce forest pitfall (1) 03-10.viii.1997 • (1) 06-15.vi.1997 • soil sample (1) 14.ix.1997 • (49°35'06"N; 79°17'51"W) in old growth black spruce forest flight-interception trap (1) 03-10.viii.1997 • pitfall (2) 20-27.vii.1997 • soil sample (1) 14.ix.1997 • (49°33'26"N; 79°18'56"W) in mature black spruce forest pitfall (1) 20-27.vii.1997 • (1) 29.vi-06.vii.1997 • (2) 20-27.vii.1997 • soil sample (1) 01.x.1997 • (49°32'41"N; 79°19'00"W) in old growth black spruce forest Berlese sample of mosses (1) 04.vii.1997 • (1) 09.ix.1997 • (2) 10.x.1997 • flight-interception trap (1) 10-17.viii.1997 • Malaise/FIT pan (1) 06-15.vi.1997 • (1) 15-22.vi.1997 • pitfall (1) 17-24.viii.1997 • (49°05'26"N; 79°08'54"W) in mature black spruce forest pitfall (1) 20-27.vii.1997 • (49°01'50"N; 79°08'47"W) in mature black spruce forest flight-interception trap (1) 07-14.ix.1997 • pitfall (1) 20-27.vii.1997 • (49°44'35"N; 79°02'10"W) in burned growth black spruce forest pitfall (1) 10-17.viii.1997 • (1) 20-27.vii.1997 • (1) 29.vi-06.vii.1997 • (1) 31.viii-07.ix.1997 • (2) 28.ix-05.x.1997

85) *Tympanophorus puncticollis* is a rare species (A. Smetana, pers. comm.). Interestingly, a few specimens were collected in the canopy-funnel trap, which suggests a possible relation with the forest canopy.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (1) 19-26.vi.1994 • (1) 03-10.vii.1994 • (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest canopy funnel (1) 30.vi-07.vii.1996 • **Témiscamingue: Lake Labyrinthe** (48°13'35"N; 79°27'47"W) in white cedar/balsam fir forest Berlese sample of mosses of dead balsam fir with mosses (1) 18.ix.1996 • canopy funnel (1) 30.vi-07.vii.1996 • (1) 07-14.vii.1996 • Malaise/FIT pan (1) 16-23.vi.1996 • (1) 30.vi-07.vii.1996 • pitfall (1) 07-14.vii.1996 • **Jamésie (Baie James):** (49°49'03"N; 79°00'06"W) in mature black spruce forest Malaise/FIT pan (1) 20-27.vii.1997

86) *Ischosoma virginianense*. According to the distribution given in Campbell (1991a), the present collection is an interesting range extension to the northwest of the province.

Jamésie (Baie James): (49°44'35"N; 79°02'10"W) in burned black spruce forest pitfall (1) 20-27.vii.1997

87) *Lordithon appalachianus*. According to the distribution given by Campbell (1982), this record is the northernmost for the species in Quebec.

Jamésie (Baie James): (49°32'41"N; 79°19'00"W) in old growth black spruce forest Malaise/FIT pan (1) 27.vii-03.viii.1997

88) *Lordithon facilis*. According to the distribution given by Campbell (1982), this record is the northernmost for the species in Quebec.

Abitibi-ouest: Lake Duparquet: (48°29'32"N; 79°14'28"W) in mixed forest Malaise/FIT pan (1) 26.vi-03.vii.1994

89) *Lordithon longiceps*. According to the distribution given by Campbell (1982), this record is the northernmost for the species in Quebec.