

NOTES ON INSECTS REARED FROM WOODBOLTS

IN THE
MARITIME PROVINCES

by

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INTRODUCTION

In 1961, the Forest Insect and Disease Survey started a program to provide information on the number of species of insects living in recently killed trees. No attempt was made to determine life histories or to associate insect species with any particular activity. The identifications in this report were made from adult specimens. Most were determined to species, but some were determined only to genus or to family. All determinations were made by officers at the Entomological Research Institute, Canada Department of Agriculture, Ottawa, whom we wish to thank.

METHODS

In the spring, bolts from 14 species of trees (Table 1), with bark intact and each about 3 feet in length were cut from trees and from logs and firewood that had been felled the previous fall or winter in selected areas where the tree species was common. During the spring and summer they were left on the ground or supported a short distance above the ground in the areas in which they were cut and were brought into the insectary in the fall. The bolts were placed in cages and retained there until emergence of adults ceased the following year. The bolts were then debarked and examined for living insect material. In addition, trees on Crown land showing evidence of bark beetle and wood borer attacks were cut and 3-foot bolts were brought into the insectary for rearing at the time of felling. Additional bolts were cut from these

trees in July and in September. Samples were taken at 32 locations in New Brunswick, 14 in Nova Scotia and 7 in Prince Edward Island.

Table 1. Tree species sampled

Common name	Botanical name	Symbol
Austrian pine	<i>Pinus nigra</i> Arnold	auP
Balsam fir	<i>Abies balsamea</i> (L.) Mill.	bF
Beech	<i>Fagus grandifolia</i> Ehrh.	Be
Jack pine	(a) <i>Pinus divaricata</i> (Ait.) Dumont	JP
Red maple	<i>Acer rubrum</i> L.	rM
Red pine	<i>Pinus resinosa</i> Ait.	rP
Red spruce	<i>Picea rubens</i> Sarg.	rS
Sugar maple	<i>Acer saccharum</i> Marsh.	sM
Tamarack	<i>Larix laricina</i> (Du Roi) K. Koch	tL
Trembling aspen	<i>Populus tremuloides</i> Michx.	tA
White elm	<i>Ulmus americana</i> L.	wE
White spruce	<i>Picea glauca</i> (Moench) Voss	wS
Willow	<i>Salix</i> sp.	W
Wire birch	<i>Betula populifolia</i> Marsh.	wiB

(a) Synonym - *Pinus banksiana* Lamb.

RESULTS

The species reared from the bolts are listed in Appendix 1. Brief notes on the biology of each species obtained from the rearings and the literature are given. Collection date (first column), number of specimens reared (second column), host tree species (third column), and location of collections (fourth column) are given for each species.

Appendix 1. Insects reared from woodbolts with brief notes on their biology, collection dates, numbers of specimens, host tree and location of collection.

COLEOPTERA

- **Anisandrus nearcticus*
- **Carphonotus testaceus*
- Chrysobothris trinervia*
- Conophthorus coniperda*
- Corticaria* sp.
- **Corticeus* sp.
- Cryptorhynchus lapathi*
- Crypturgus atomus*
- Crypturgus borealis*
- Dendroctonus rufipennis*
- Dermestes lardarius*
- Dryocoetes affaber*
- Dryocoetes autographus*
- Enoclerus nigripes rufiventris*
- Gnathotrichus materiarius*
- Ips pini*
- Melanophila fulvoguttata*
- **Monarthrum mali*
- Monochamus scutellatus*
- Orthotomicus caelatus*
- Pissodes strobi*
- Pissodes nigrae*
- Pityogenes hopkinsi*
- Pityokteines sparsus*
- **Pityophthorus angustus*
- **Pityophthorus borealis*
- Pityophthorus cariniceps*
- **Pityophthorus dentifrons*
- **Pityophthorus nitidus*
- Pityophthorus patchi*
- Pityophthorus puberulus*
- **Pityophthorus pulchellus*
- Pityophthorus* sp.
- Polygraphus rufipennis*
- Ptiliidae
- Ptinus raptor*
- Ptinus* sp.
- Rhagium inquisitor*
- Sacium* sp.
- Serropalpus* sp.
- Tetropium cinnamopterum cinnamopterum*
- Tetropium* sp.
- Trypodendron betulae*
- Trypodendron lineatum*

DIPTERA

Acalyptratae

**Asynapta* sp.

Bradysia sp.

Ceratopogonidae

**Chyliza notata*

**Lispocephala alma*

Lonchaea corticis

**Lonchaea defecta*

Lonchaea n. sp. nr. *defecta*

Lonchaea n. sp. nr. *nanella*

**Medetera* sp. 12

**Orfelia fascipennis*

Oscinella sp.

**Phaenolauthia flavotibialis*

**Xylophagus abdominalis*

HYMENOPTERA

Camponotus sp.

Cecidostiba sp.

Eurytoma sp.

Pachyceras sp.

Sympiesis sp.

PSOCOPTERA

**Blastopsocus lithinus*

**Loensia moesta*

Psocus leidy

**Trichadenotecnum maculosus*

*New records for the Forest Insect and Disease Survey in the Maritime Provinces.

8. *Crypturgus atomus* Lec. Scolytidae

This species is secondary as it lives in the bark of trees killed by some other agency. Their burrows usually originate from the tunnels of larger bark beetles.

5 Oct. 61	1	bF	Kings Co., P.E.I.
10 Oct. 61	1	wS	Kings Co., P.E.I.
19 Oct. 61	1	rS	York Co., N.B.

9. *Crypturgus borealis* Sw. Scolytidae

This species is secondary and lives in the bark of trees killed by some other agency. Their burrows usually originate from the tunnels of larger bark beetles.

10 Oct. 61	1	wS	Kings Co., P.E.I.
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10. *Dendroctonus rufipennis* Kby. Scolytidae

The eastern spruce bark beetle attacks white, red, and black spruce, in that order of preference. Infested trees usually die in 1 year, losing their foliage by the first winter after the attack. Under normal conditions the insect is secondary, breeding in windfalls, slash, and standing trees weakened from overmaturity or injury. When the beetle has increased to large numbers, it may become primary and kill healthy trees.

2 July 59	13	wS	Victoria Co., N.S.
22 June 61	6	wS	Victoria Co., N.S.

11. *Dermestes lardarius* L. Dermestidae

The larder beetle, in addition to its well known household habits, is occasionally found in the bark of trees where it eats insect remains.

14 Nov. 62	1	rP	Northumberland Co., N.B.
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12. *Dryocoetes affaber* (Mann.) Scolytidae

This bark beetle breeds in logs or decadent trees but is not known to kill trees.

30 June 65	13	rS	Kings Co., N.B.
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13. *Dryocoetes autographus* Ratz. Scolytidae

This bark beetle breeds in logs or decadent trees but is not known to kill trees.

28 Nov. 62	2	rS	York Co., N.B.
10 June 66	1	wP	Northumberland Co., N.B.

14. *Enoclerus nigripes rufiventris* Spin.

Cleridae

Some species of this genus of clerid beetles are predators of scolytids in conifers.

13 June 67 5 WP Queens Co., N.S.

15. *Gnathotrichus materiarius* (Fitch)

Scolytidae

An ambrosia beetle that bores into the wood of dying or decadent trees and of logs and pulp-wood bolts.

20 July 65 1 WS Victoria Co., N.B.
10 June 66 6 WP Northumberland Co., N.B.

16. *Ips pini* (Say)

Scolytidae

When populations of this bark beetle, the pine engraver, are high, they will successfully attack living trees particularly if they are decadent. The favorite host is white pine, but other pines and occasionally spruces are also attacked.

8 Nov. 62 1 WP Queens Co., N.B.
25 Sept. 67 7 WP Northumberland Co., N.B.

17. *Melanophila fulvoguttata* (Harris)

Buprestidae

The hemlock borer, according to the literature is known only from hemlock and spruce. This beetle may attack living trees that have been weakened by some other agency, but are generally found in dead or dying trees and logs. The larvae score the surface of the wood.

20 Nov. 62 3 tL Prince Co., P.E.I.

18. *Monarthrum mali* (Fitch)

Scolytidae

This ambrosia beetle attacks only deciduous trees, particularly fruit trees that are dying or have been recently cut. Their galleries in the wood will reduce the value of sawn lumber. This record appears doubtful, possibly a perching record.

20 July 65 1 WS Victoria Co., N.B.

19. *Monoctonus scutellatus* (Say)

Cerambycidae

The female adults of the white spotted sawyer beetles lay eggs in recently killed or cut trees. The larvae bore beneath the bark and make a deep U-shaped tunnel and cell for pupation in the wood. Damage by this beetle seriously degrades lumber.

20 Nov. 62 1 WP Kings Co., P.E.I.
28 Nov. 62 3 bF York Co., N.B.
28 Nov. 62 4 rS York Co., N.B.

20. *Orthotomicus caelatus* (Eich.) Scolytidae

This bark beetle breeds in the thick bark, generally at or near the tree base. It is a secondary species on pines and also on spruce and larch.

10 June 66	1	wP	Northumberland Co., N.B.
26 July 67	2	wP	Kent Co., N.B.

21. *Pissodes strobi* (Peck) Curculionidae

The white pine weevil attacks the leaders of white pine, but may be found on other species of pine and on spruce, killing the current leader and the two year old growth. Attacks by this insect produce forked and crooked trees of little value.

14 Sept. 67	21	auP	Queens Co., P.E.I.
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22. *Pissodes nigrae* Hopkins Curculionidae

The weevil lives in the bark of a number of coniferous species. It is a secondary insect.

21 Oct. 65	3	jP	Northumberland Co., N.B.
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23. *Pityogenes hopkinsi* Sw. Scolytidae

This bark beetle breeds in pine slash and also the decadent lower limbs of growing pines. It may attack trees weakened by other agencies, but never healthy trees.

8 Nov. 62	20	wP	Queens Co., N.B.
28 Nov. 62	1	wP	York Co., N.B.
13 June 62	1	wP	Queens Co., N.S.
7 June 65	8	wP	Kings Co., N.B.
10 June 66	1	rS	Northumberland Co., N.B.
10 June 66	7	wP	Northumberland Co., N.B.
7 July 66	1	wP	Gloucester Co., N.B.
14 July 66	9	wP	Lunenburg Co., N.S.
3 Sept. 66	2	wP	Kings Co., N.S.
6 June 67	87	wP	Kings Co., N.S.
7 June 67	126	wP	Lunenburg Co., N.S.
7 June 67	34	wP	Queens Co., N.S.
13 June 67	49	wP	Queens Co., N.S.
26 July 67	1	wP	York Co., N.B.
26 July 67	1	wP	Kent Co., N.B.
18 Aug. 67	10	wP	Kings Co., N.S.

24. *Pityokteines sparsus* (Lec.) Scolytidae

The balsam-fir bark beetle breeds in balsam fir slash and is often found in the bark of the trunks and limbs of fir trees that have died suddenly. It has been reported from tamarack.

5 Oct. 61	22	bF	Kings Co., P.E.I.
18 Oct. 61	3	bF	Queens Co., N.B.
19 Oct. 61	43	rS	York County, N.B.
8 Nov. 62	3	bF	Queens Co., N.B.
14 Nov. 62	3	bF	Northumberland Co., N.B.

25. *Pityophthorus angustus* Blkm. Scolytidae

This bark beetle has never been known to cause injury. It attacks branches that are broken, cut, or decadent.

6 June 67	3	wP	Kings Co., N.S.
16 Sept. 67	2	auP	Queens Co., P.E.I.

26. *Pityophthorus borealis* Sw. Scolytidae

Usually breeds in twigs and small limbs, but occasionally found in larger limbs of weakened trees.

24 June 66	36	rP	Restigouche Co., N.B.
7 July 66	3	wP	Gloucester Co., N.B.
26 July 67	2	wP	Kent Co., N.B.

27. *Pityophthorus cariniceps* Lec. Scolytidae

The smaller branches of white and red pine are attacked and killed by this bark beetle.

23 July 64	45	wP	Queens Co., N.B.
7 June 67	19	wP	Lunenburg Co., N.B.
26 July 67	2	wP	York Co., N.B.

28. *Pityophthorus dentifrons* Blkm. Scolytidae

Usually breeds in red spruce branches.

14 Sept. 67	24	auP	Queens Co., P.E.I.
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29. *Pityophthorus nitidus* Sw. Scolytidae

Generally found in the smaller branches of pines and often in those shaded and suppressed.

5 June 64	155	wP	York Co., N.B.
23 July 64	9	wP	Restigouche Co., N.B.
24 June 66	3	rP	Restigouche Co., N.B.

30. *Pityophthorus patchi* Blkm. Scolytidae

This bark beetle breeds in the twigs of pine, spruce, and balsam fir.
Causes some injury.

7 July 66 83 wP Gloucester Co., N.B.

31. *Pityophthorus puberulus* Lec. Scolytidae

Found in twigs of broken, cut, or decadent limbs. Occasionally attacks
and kills living twigs.

14 Sept. 67 1 auP Queens Co., P.E.I.

32. *Pityophthorus pulchellus* Eich. Scolytidae

Breeds in twigs and small to medium sized limbs of conifers such
as pines, red spruce, and balsam fir.

26 July 67 14 wP Kent Co., N.B.

33. *Pityophthorus* sp. Scolytidae

Most species breed in twigs and small branches, but a few may be
found occasionally in larger material. Most species live in the
bark, but a few bore in the wood and pith.

7 July 66 3 wP Gloucester Co., N.B.
6 June 67 5 wP Kings Co., N.S.
6 June 67 6 wiB Annapolis Co., N.S.
7 June 67 1 wP Lunenburg Co., N.S.

34. *Polygraphus rufipennis* (Kby.) Scolytidae

The four-eyed bark beetle is commonly found in spruce, but may
occasionally be found in pine, balsam fir, and tamarack. Tunnels
are constructed in dying, broken, or recently cut trees, but may
be found in living trees that are decadent or injured. It is a
secondary insect and not capable of killing healthy trees except when
the beetles are in extremely large numbers.

5 Oct. 61 1 bF Kings Co., P.E.I.
10 Oct. 61 60 wS Kings Co., P.E.I.
18 Oct. 61 1 bF Queens Co., N.B.
19 Oct. 61 50 bF York Co., N.B.
8 Nov. 62 5 rS Queens Co., N.B.
14 Nov. 62 5 rS Northumberland Co., N.B.
14 Nov. 62 2 rP Northumberland Co., N.B.
14 Nov. 62 1 bF Northumberland Co., N.B.
20 Nov. 62 5 tL Prince Co., P.E.I.
26 Nov. 62 6 rS Prince Co., P.E.I.
28 Nov. 62 3 rS York Co., N.B.

34. *Polygraphus rufipennis* (Kby.) cont'd Scolytidae
- | | | | |
|------------|----|----|--------------------------|
| 30 June 65 | 59 | rS | Kings Co., N.B. |
| 10 June 66 | 47 | wP | Northumberland Co., N.B. |
| 10 June 66 | 21 | rS | Northumberland Co., N.B. |
35. Ptiliidae
- Beetles of this family are considered to be saprophagous, feeding on decayed vegetation, bark, dead wood, dung and fungi.
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|-----------|---|----|------------------|
| 3 Aug. 65 | 6 | tA | Queens Co., N.B. |
|-----------|---|----|------------------|
36. *Ptinus raptor* Sturm. Ptinidae
- This spider beetle is considered to be a scavenger.
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|------------|---|----|--------------------------|
| 5 Sept. 63 | 1 | rM | Northumberland Co., N.B. |
|------------|---|----|--------------------------|
37. *Ptinus* sp. Ptinidae
- These spider beetles feed on dried vegetable and animal matter and some species are often abundant in warehouses, granaries and feed mills.
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|------------|---|----|-----------------------|
| 10 Aug. 65 | 1 | sM | Restigouche Co., N.B. |
| 2 Sept. 65 | 1 | tA | Gloucester Co., N.B. |
38. *Rhagium inquisitor* (Linn.) Cerambycidae
- The ribbed pine borer lives in the bark of dead or recently cut pine trees or other conifers. It never injures the wood. This species is frequently associated with injurious species.
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|-----------|---|----|-------------------|
| 3 Dec. 62 | 1 | wP | Halifax Co., N.S. |
|-----------|---|----|-------------------|
39. *Sacium* sp. Orthoperidae
- These are minute fungus beetles. Some species may be predaceous on bark beetle larvae.
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| 20 Nov. 62 | 4 | tL | Prince Co., P.E.I. |
|------------|---|----|--------------------|
40. *Serropalpus* sp. Melandryidae
- Usually associated with wood decaying fungi under the bark of logs.
- | | | | |
|------------|---|----|--------------------------|
| 14 Nov. 62 | 1 | rP | Northumberland Co., N.B. |
| 14 Nov. 64 | 3 | bF | Northumberland Co., N.B. |

41. *Tetropium cinnamopterum cinnamopterum* Kby. Cerambycidae

The eastern larch borer feeds gregariously beneath the bark of living and dying coniferous trees, especially tamarack. Not economically important.

30 June 65 4 rS Kings Co., N.B.

42. *Tetropium* sp. Cerambycidae

Bores in the bark of conifers, but not economically important.

30 June 65 1 rS Kings Co., N.B.

43. *Trypodendron betulae* Sw. Scolytidae

This ambrosia beetle damages birch logs with its galleries and fungal stain.

6 June 67 5 wiB Annapolis Co., N.S.

44. *Trypodendron lineatum* (Oliver) Scolytidae

This striped ambrosia beetle degrades lumber with its galleries and associated fungal stain.

5 Oct. 61	10	bF	Kings Co., P.E.I.
10 Oct. 61	40	wS	Kings Co., P.E.I.
30 June 65	4	rS	Kings Co., N.B.
30 July 65	1	wS	Victoria Co., N.B.
14 July 66	1	wP	Lunenburg Co., N.S.

DIPTERA

45. Acalyptratae

Many of the families in this section of diptera are considered to be saprophagous.

2 Oct. 63 1 Be Madawaska Co., N.B.

46. *Asynapta* sp. Cecidomyiidae

Species of this genus are probably inquilines or feed on decaying organic matter in bark borer tunnels.

26 July 63	1	Be	Northumberland Co., N.B.
26 July 63	1	rM	Northumberland Co., N.B.
20 July 63	1	Be	Madawaska Co., N.B.

47. *Bradysia* sp. Sciaridae

The larvae of these flies are found in moist areas wherever fungus grows.

20 Nov. 62 11 bF Prince Co., P.E.I.

48. Ceratopogonidae
 In one genus of this family the immature stages may be found under bark or on wet or damp wood.
 25 May 64 11 wS York Co., N.B.
49. *Chyliza notata* Loew Psilidae
 This species lives under the bark of trees and logs and probably feeds on decaying vegetable matter.
 26 Oct. 65 1 wE Restigouche Co., N.B.
50. *Lispocephala alma* (Meigen) Muscidae
 Probably feeds on dried or decaying vegetable matter in the tunnels of bark borers.
 16 June 65 2 auP Kings Co., P.E.I.
51. *Lonchaea corticis* Taylor Lonchaeidae
 The larvae of this species live in close association with *Pissodes strobi* in the latter's tunnels.
 16 June 65 3 auP Kings Co., P.E.I.
52. *Lonchaea defecta* McAlpine Lonchaeidae
 This species lives in association with borers.
 20 Nov. 62 1 tL Prince Co., P.E.I.
53. *Lonchaea* n. sp. nr. *defecta* McAlpine Lonchaeidae
 This species lives in association with and in the tunnels of bark borers.
 20 Nov. 62 2 bF Prince Co., P.E.I.
54. *Lonchaea* n. sp. nr. *nanella* McAlpine Lonchaeidae
 Lives in association with and in the tunnels of bark borers.
 20 Nov. 62 2 bF Prince Co., P.E.I.
55. *Medetera* sp. 12 Dolichopodidae
 The larvae of this species apparently feed on the immature stages of wood boring beetles.
 28 Nov. 62 1 rS York Co., N.B.

56. *Orfelia fascipennis* (Say) Mycetophilidae

The larvae are predatory and probably feed on immature stages of wood boring beetles.

28 Nov. 62 1 wP York Co., N.B.

57. *Oscinella* sp. Chloropidae

This species is probably saprophagous.

16 June 65 18 auP Kings Co., P.E.I.

58. *Phaenolauthia flavotibialis* (Felt) Cecidomyiidae

This species probably feeds on organic matter in the tunnels of bark beetles.

16 July 63 1 sM Kings Co., N.B.
26 July 63 1 rM Northumberland Co., N.B.

59. *Xylophagus abdominalis* Loew Xylophagidae

This species may be a scavenger or a predator.

14 Nov. 62 2 rP Northumberland Co., N.B.

HYMENOPTERA

60. *Camponotus* sp. Formicidae

These carpenter ants make tunnels and galleries in the wood.

25 Oct. 63 21 tA Kent Co., N.B.

61. *Cecidostiba* sp. Pteromalidae

Species in this genus are parasitic on bark beetles.

20 Nov. 62 1 tL Prince Co., P.E.I.

62. *Eurytoma* sp. Eurytomidae

Some species in this genus are parasitic on bark beetles.

26 Nov. 62 1 rS Prince Co., P.E.I.

63. *Pachyceras* sp. Pteromalidae

Most species in this genus are parasitic on bark beetles.

14 Nov. 62	1	rS	Northumberland Co., N.B.
20 Nov. 62	1	tL	Prince Co., P.E.I.

64. *Sympiesis* sp. Eulophidae

Species in this genus are parasitic on lepidoptera, diptera, and hymenoptera. Except for coleopterous leaf miners, they are not known to parasitize beetles.

20 Nov. 62	1	tL	Prince Co., P.E.I.
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PSOCOPTERA

65. *Blastopsocus lithinus* Chapman Psocidae

This bark louse probably feeds on fungi or dead insects.

25 Oct. 65	1	jP	Northumberland Co., N.B.
19 Nov. 65	2	Be	York Co., N.B.

66. *Loensia moesta* Hagen Psocidae

A bark louse.

27 May 66	12	bF	Gloucester Co., N.B.
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67. *Psocus leidyi* Aaron Psocidae

A bark louse.

20 Nov. 62	8	tL	Prince Co., P.E.I.
27 May 66	20	bF	Gloucester Co., N.B.

68. *Trichadenotecnum maculosus* (Banks) Psocidae

A bark louse.

21 Oct. 65	1	jP	Northumberland Co., N.B.
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