WOOD- AND BARK-FEEDING COLEOPTERA OF FELLED SPRUCE IN INTERIOR BRITISH COLUMBIA

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ABSTRACT

A list of wood- and bark-feeding Coleoptera of interior British Columbia reared from **Picea glauca** (Moench) Voss and **P. engelmanni** Parry in 1928-30 and 1965-67, and the range of their emergence dates at Trinity Valley and Vernon, B.C., respectively, are presented. The species of economic importance reared in significant numbers were the wood borers **Tetropium cinnamopterum** Kirby, **Serropalpus substriatus** Hald., and **Monochamus oregonensis** LeConte, and the bark beetle **Dendroctonus obesus** (Mannerheim).

Wood- and bark-feeding beetles cause significant losses in British Columbia's forests each year. A knowledge of the species involved and their times of emergence and attack are requisite to the intelligent management of our forests.

Two sources of data on wood- and bark-feeding Coleoptera from felled spruce in interior British Columbia are considered here. The first is unpublished information gathered by J. R. L. Howell and others[2] in 1928-30, and the second by members of the Forest Insect and Disease Survey during 1965-67.

Howell reared insects from two felled Engelmann spruce trees at Trinity Valley, B.C., to ascertain the species complex of the stump, bole and limbs. One tree, 9 inches d.b.h. and 85 feet tall, was blown down early in the summer of 1927. The other tree, of unrecorded dimensions, was presumed to have blown down in the spring of 1929. In each case the material was caged early in the spring within a year of blowdown.

In 1965, the author began investigations to determine the species of wood-infesting Coleoptera of economic importance to spruce in the Interior. Engelmann and white spruce trees windblown or logged in 1964, or felled in 1965 and 1966 by Survey personnel in a number of localities were left exposed to attack for the summer. Samples from a total of 25 infested logs were taken to Vernon from Ashcroft, Lumby, Cherryville, Waitabit Creek, and other localities in the southern Interior, and from points northward into Pine Pass to Mile 485 on the Alaska Highway in northern British Columbia. Each sample consisted of three 2-foot-long bole sections 8 to 12 inches in diameter. In the fall the boles were caged outdoors at Vernon and emergents were collected during 1965-1967.

Howell reared 11 wood- and bark-feeding species of Coleoptera from the stumps, 20 from the boles and five from the limbs of the two trees (Table 1). *Monochamus notatus* (Drury), was the only wood-boring species reared in significant numbers from the bole: all adults of this species emerged the second year after the attack. *Polygraphus rufipennis* (Kirby), a bark feeder, occurred abundantly in the bole and to a much lesser degree in the limbs and stump. *Dryocoetes affaber* (Mannerheim), was the only other species of bark beetle present in significant numbers; it was confined to the bole.

The only species of Coleoptera present in large numbers and reared from a significant proportion of the samples of white and Engelmann spruce (Table 2) were: the wood borers *Tetropium cinnamopterum, Serropalpus substriatus,* and *Monochamus oregonensis;* the snout beetle, *Pissodes alascensis* Hopkins, and the bark beetle *Dendroctonus obesus.*

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[2] In files of Forest Entomology Laboratory, Vernon, B.C.

TABLE 1—Emergence of wood- and bark-feeding insects the first and second summer following caging,[1] of Engelmann spruce wind-felled in 1927 and 1929, Trinity Valley, B.C.

Species	No. emergents[2] ex. Stump	Bole	Limbs	Emergence range
CERAMBYCIDAE				
Acmaeops sp.	1			Aug. 8
Anthophilax mirificus Bland		2		May 16 - May 28
Leptura obliterata Hald.	3(1)	1		Aug. 12 - Aug. 14
Megasemum asperum (LeC.)	1			Aug. 10
Monochamus notatus (Drury)		(28)		June 22 - Aug. 6
Monochamus oregonensis (LeC.)		3(1)		June 16 - Aug. 21
Neacanthocinus obliquus (LeC.)		2	1	July 25
Phymatodes densipennis Csy.	1(1)	3(2)		May 28 - July 6
Pogonocherus propinquus Fall		(1)		Aug. 7
Rhagium lineatum (Oliv.)	5	3		May 14 - June 20
Tetropium velutinum LeC.	1(1)	5(1)	1	May 26 - Aug. 7
Xylita laevigata (Hellw.)	2	10(1)	2	May 15 - July 30
Xylotrechus undulatus (Say)		1		Aug. 1
BUPRESTIDAE				
Buprestis adjecta (LeC.)		(1)		July 18
MELANDRYIDAE				
Scotochroa basalis LeC.	(1)	1(1)		July 13 - Aug. 10
Serropalpus substriatus Hald.		2		July 14 - July 24
CURCULIONIDAE				
Pissodes alascensis Hopk.		6	3	May 26 - Sep. 11
Pissodes schwartzi Hopk.		4		June 5
SCOLYTIDAE				
Dendroctonus obesus (Mann.)	4	12(1)		May 12 - Aug. 7
Dryocoetes septentrionus (Mann.)	7(7)	2		June 3 - June 24
Polygraphus rufipennis (Kby.)	23(1)	5960(168)	95(8)	May 16 - Sep. 25
Dryocoetes affaber (Mann.)		79(59)		June 26 - Aug. 16

[1] Caged the spring following blowdown.
[2] Number of second year emergents in brackets.

Of these only the three species of wood borers and the bark beetle *D. obesus* are of economic importance. The wood borers make holes in the wood reducing the quality of the lumber, and the bark beetles may cause deterioration of the wood by introducing blue staining fungi.

The range of emergence dates noted in Table 2 serves only as a rough guide since the logs were infested in several localities at various times of the year and then were reared at Vernon.

TABLE 2—Emergence at Vernon in 1965-67 from 25 samples of Engelmann and white spruce logs from Interior British Columbia.

Species	No. samples infested	Range in no. emergents	Range of emergence dates
CERAMBYCIDAE			
Atimia dorsalis LeC.	1	1	July 26
Meriellum proteus Kby.	1	2	June 28 - July 2
Monochamus oregonensis LeC.	5	2-23	May 27 - July 16
Neoclytus muricatulus Kby.	3	1-14	June 13 - Aug. 1
Megasemum asperum (LeC.)	3	1	? - Aug. 2
Tetropium cinnamopterum LeC.	7	6-95	May 5 - June 26
Xylotrechus undulatus Say	1	1	July 13
MELANDRYIDAE			
Serropalpus substriatus Hald.	7	2-88	June 13 - Aug. 4
BUPRESTIDAE			
Melanophila drummondi Kby.	4	2- 9	May 4 - July 27
CURCULIONIDAE			
Pissodes alascensis Hopk.	4	8-43	June 19 - Aug. 10
SCOLYTIDAE			
Dendroctonus obesus (Mann.)	6	1-75	May 2 - Aug. 13
Dryocoetes septentrionis (Mann.)	2	8-39	July 4 - July 25
Polygraphus rufipennis Kby.	3	12-58	May 2 - July 24
SIRICIDAE[1]	8	1-30	July 5 - Aug. 14

[1] Horntails—recorded to indicate relative importance.

A RECORD OF *MEGACHILE ROTUNDATA* (F.) FROM ASHCROFT, BRITISH COLUMBIA

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The leaf-cutter bee, *Megachile rotundata* (F.) is a Eurasian species believed to have been introduced to North America on several occasions. It was recorded in Virginia in 1937, and since then has been recorded from Kansas, Missouri, Texas, California, Utah, Idaho, Nevada, Oregon, and Washington (Stephen, 1962).

In 1963 specimens of *Megachile rotundata* (F.) were noted in a collection of bees from Ashcroft. Identification was confirmed by W. P. Stephen, Oregon State University, Corvallis, Oregon. This is believed to be the first record of *M. rotundata* occurring naturally in Canada. Since 1963 large numbers of this species have been brought in from Oregon, to Ashcroft and Kamloops in the interior of British Columbia, for alfalfa pollination. Some bees have escaped and nested in cracks or under shingles in buildings nearby. Prepupae have survived the past three winters in these locations.

References

Stephen, W. P. 1962. Propagation of the leaf-cutter for alfalfa seed production. Oregon State Univ. Stn. Bull. 586.