

Host trees and emergence dates of horntails were obtained from wood-borer studies conducted by personnel of the Forest Entomology Laboratory at Vernon between 1924 and 1930 and from 1964 to 1966. In the latter study, trees of 11 species of conifers were felled in the spring at a number of localities in interior British Columbia. In the autumn of the year of felling, three 2-foot-long sections ranging from 8 to 16 inches in diameter were cut from the trees and placed in cages outdoors. Log sections were also taken from logging slash when the date of logging was known. Records were kept of the numbers of horntails and their emergence dates. Seven species were reared from log sections of nine species of conifers from interior British Columbia (Table 1). The greatest number emerged between mid-July and early August. The earliest was *Uro-*

cerus californicus emerging June 19 from western larch infested the previous summer at Heckman Creek, 40 miles east of Vernon; the latest was *Xeris spectrum* emerging September 7 from Douglas-fir infested the previous summer at Trinity Valley.

Locality records for seven species and one sub-species of horntails were obtained from Forest Insect and Disease Survey data from coastal and interior British Columbia, and from the special rearing projects (Figs. 1 and 2). More extensive sampling will be required to obtain the true range of most of these horntails.

Acknowledgements

The author is indebted to D. A. Ross for permission to use the data on siricids obtained from his wood-borer investigations during 1964 to 1966. The siricids were identified by H. E. Milliron, Entomology Research Institute, Ottawa and B. A. Sugden, Forest Entomology Laboratory, Vernon, B.C.

NOTE ON A SPRUCE BARK WEEVIL, *PISSODES ALASCENSIS* HOPKINS (COLEOPTERA: CURCULIONIDAE), IN BRITISH COLUMBIA

D. F. DOIDGE¹

ABSTRACT

Pissodes alascensis Hopkins ranges throughout interior British Columbia and into Yukon Territory. Spruces are preferred hosts. Weevils reared at 1,300 ft. elevation had a 1-year life cycle, but most of those reared at 4,000 ft. elevation had a 2-year life cycle. The latter passed the first winter in the larval stage in the inner bark and the second as callosities in pupal chambers in the wood. Emergence ranged from the end of May into September.

Pissodes alascensis was described by Hopkins (1911) from a type specimen collected near Koyukuk River, Alaska. He surmised that this species attacked spruce and ranged through Yukon Territory and interior British Columbia. This report gives information on hosts, emergence periods, life cycle and distribution in British Columbia. Sources of data include unpublished rearing records from experiments at Trinity Valley and

Lorna, B.C., in 1925-30, at Vernon, B.C., in 1965-66, and pinned specimens in the reference collection at the Forest Entomology Laboratory at Vernon.

In the period 1925-30, data on spruce bark weevils were obtained from experiments in which wood and bark-boring Coleoptera were reared in caged logs of Engelmann spruce, *Picea engelmanni* Parry. Emergence of *Pissodes alascensis* ranged from the end of May until September 21. Total emergence at Trinity Valley

¹ Forest Entomology Laboratory, Department of Forestry and Rural Development, Vernon, B.C.

(2,200 ft elevation) occurred the year after infestation; at Lorna (4,000 ft elevation) the major emergence occurred the second summer after infestation (Table 1). Most of the weevils reared at 4,000 ft passed the first winter in the larval stage and

the second as callow adults in pupal chambers.

During the summer of 1965 three 2-ft-long sections of various species of conifers were collected in interior British Columbia for wood-borer studies. The trees were felled early in

TABLE 1—*Pissodes alascensis* reared from three Engelmann spruce logs at Trinity Valley (2,200 ft elevation) and Lorna (4,000 ft elevation) 1925-30.

Locality	Date tree felled	Date caged	Adult emergence		
			No.	Year	Range
Lorna	1924	Jun 10, 1925	16	1925	Jun 16- Sep 13
		Jul 16, 1926	98	1926	Jul 17- Aug 28
Trinity Valley	Jun 1927	May 24, 1928	6	1928	May 26- Aug 13
	1929	May 23, 1930	32	1930	Jun 24- Sep 21



Fig. 1. Pupal chambers of *Pissodes alascensis* in black spruce.

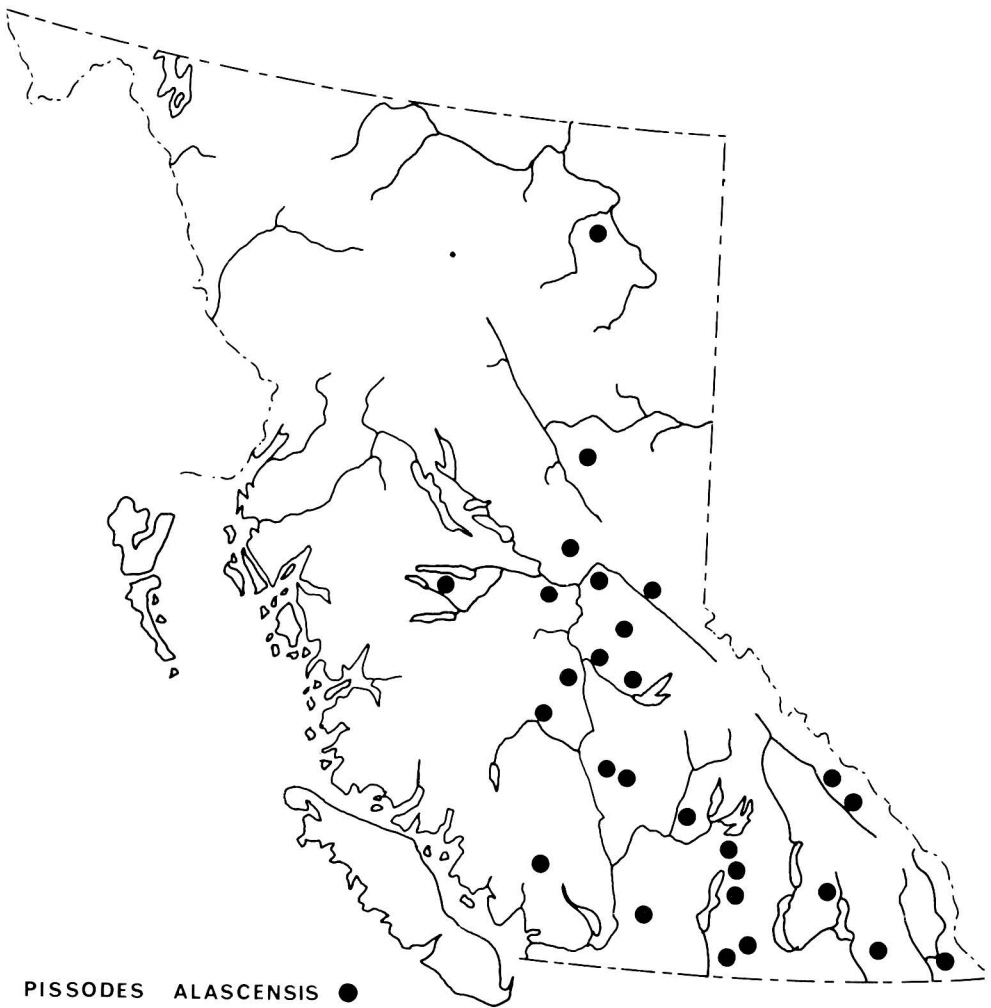


Fig. 2. Localities where *Pissodes alascensis* Hopk. has been collected in British Columbia and Yukon Territory

TABLE 2—*Pissodes alascensis* reared at Vernon, B.C. (1,300 ft elevation) 1965-66

Locality	Host (spruce)	Date felled (1965)	Date caged (1965)	Adult emergence	
				No.	Range (1966)
Pine Pass	white	Jun 22	Aug 23	8	Jun 19- Jul 17
Bednesti L.	black	Jun 25	Aug 24	50	Jun 17- Jul 28
Donald	Engelmann	Jun 23	Aug 27	32	Jun 19- Jul 13

the summer and caged at Vernon (1,300 ft. elevation) in August, 1965. *Pissodes alascensis* adults were reared only from Engelmann, white, *Picea glauca* (Moench) Voss, and black spruce, *P. mariana* (Mill.) BSP.

Emergence ranged from June 17 to July 28 (Table 2) and was completed 1 year after infestation. The logs were peeled to expose the larval galleries and pupal chambers. The larvae had fed on the inner bark but had not scored the wood except during construction of pupal chambers. In black spruce, the chambers were excavated to a depth of 2.5 mm (Fig. 1). There were 57 pupal cells in 1 ft² of a black spruce bole 127 mm in dia-

meter with bark 4.0 mm thick. No similar information was available for Engelmann or white spruce.

Forest Insect and Disease Survey records show that *Pissodes alascensis* ranges throughout interior British Columbia and north at least as far as Mile 60 on the Mayo Road, Yukon Territory. The weevil was also collected at Alta Lake, B.C., (Fig. 2).

Acknowledgements

The author is indebted to D. A. Ross for permission to use the data on *Pissodes* obtained from his wood-borer investigations during 1965-1966. The *Pissodes* were identified by S. G. Smith, Entomology Research Institute, Sault Ste. Marie, and B. A. Sudegen, Forest Entomology Laboratory, Vernon, B.C.

Reference

- Hopkins, A. D. 1911. 1. Contributions toward a monograph of the bark-weevils of the genus *Pissodes*. U.S. Dep. Agric. Tech. Ser., 20 (1) p. 61.

BOOK REVIEW

Insect Pests. H. S. Zim and G. S. Fichter. New York, Golden Press, 1966. p. 160. \$1.35 in Canada.

Here, at last, is the answer for impoverished students and perennial inquirers who need a book on insect pests that is reliable, readable, and cheap. A generalized book is no substitute for local, explicit recommendations, and this one gives no more than generalized advice for dealing with 350 pests over so varied an area as middle North America. It does contain an immense amount of factual and biological information and gives broad principles of control. It provides the maximum of economic entomology for the minimum money.

The all-important breakdown and organization are well-thought-out. The sections with the number of pages are as follows: Introduction, numbers, relatives and development of insects (6); controlling insects by natural, biological, mechanical, chemical and new methods (14); household pests (14); insects that bite or sting (10); pests of: pets, poultry and livestock (13); vegetable crops (25); flowers and shrubs (12); field and forage crops (22); fruits and fruit trees (19); forest and shade trees (7); stored products (8); an index of scientific names (3); and common names (4).

Compared with the earlier 'Insects', this book presents only one-