

POPLAR BORER, *SAPERDA CALCARATA* SAY, IN INTERIOR BRITISH COLUMBIA

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Introduction

The poplar borer, *Saperda calcarata* Say, has caused extensive damage in open-growing stands of trembling aspen, *Populus tremuloides* Michx., in the Thompson and Nicola valleys. Although aspen is not considered a commercially important tree in this area, groves or belts of aspen provide shelter from wind and shade for cattle, and reduce soil erosion.

Complete data on the life history of the poplar borer in British Columbia are lacking. According to L. O. T. Peterson (1945), in Saskatchewan adults of the poplar borer emerge during the last part of June and most of July, usually in the fourth year of development. Egg-laying has been observed from July 2 to August 13. The collection of the Forest Entomology Laboratory at Vernon contains adults taken in interior British Columbia from June 27 to August 26.

Damage

The poplar borer is frequently found damaging trees at elevations under 3000 feet in the Thompson Valley from Kamloops to Spences Bridge, and from there to Stump Lake in the Nicola Valley. Smaller infestations in trembling aspen have been observed at Victoria, Vernon, Clinton, Lac La Hache, 158 Mile House, Williams Lake, Vanderhoof and Prince George. Larvae tentatively identified as *S. calcarata* were taken from a black cottonwood (*P. trichocarpa* Torr. and Gray) near Cache Creek. This is the only indication that *S. calcarata* may attack black cottonwood in interior British Columbia. Attacks have been recorded on several other species of poplar in eastern Canada and in the United States.

In most infestations only a few aspen trees have been killed. Even five-inch d.b.h. trees with up to 120 entrance holes on the main stem con-

TABLE 1—Average Diameter of Healthy and Infested Trees in Five Trembling Aspen Plots Attacked by Poplar Borer in the Thompson and Nicola Valleys, 1961.

Location	No. trees examined	Percentage trees infested	Av. d.b.h. healthy trees	Range d.b.h. infested trees	Av. d.b.h. infested trees
Kamloops	170	65	6.8	3-15	7.7
Knutsford	266	47	5.2	3-11	5.6
Cache Creek	51	51	8.0	3-14	8.0
Quilchena	49	41	5.6	3-10	5.8
Merritt	67	61	5.9	4-10	6.7
Average d.b.h.			6.0		6.6

tinue to live. Usually, attacked trees become disfigured and stunted; large swellings are often found on the bole around entrance holes and sometimes large branches and the tops of trees die. Of 170 trees in one grove at Kamloops, 10 per cent were dead and of

266 trees in a grove at Knutsford eight per cent were dead apparently from poplar borer attack.

It was observed that trees on the perimeter of pure stands of aspen on rangeland were the most heavily attacked, especially those in the portion of the grove with a north and east exposure. Very few attacks have been

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TABLE 2—Location and Number of Attacks by the Poplar Borer on Trembling Aspen in Sample Plots in the Thompson and Nicola Valleys, 1961.

Location	No. attacked trees examined	Av. no. attacks per tree section				Av. no. attacks per infested tree
		Clear bole		Crown		
		Lower	Upper	Lower	Upper	
Kamloops	110	1.3	4.6	17.7	8.1	32
Knutsford	124	0.4	4.5	5.9	0.7	12
Cache Creek	26	0.6	2.2	2.7	0.4	6
Quilchena	20	0.6	1.3	1.4	0.3	4
Merritt	41	0.7	2.7	0.8	0.1	4

observed on aspens growing in coniferous forests.

Five plots were established in the Thompson and Nicola valleys to record the number and size of trees attacked (Table 1), and the number and location of attacks on individual trees (Table 2).

No aspen trees under three inches d.b.h. were attacked and a preference was shown for trees in the five to eight inch d.b.h. class. A few trees as large as 15 inches d.b.h. were attacked.

In four of the five plots, the highest number of attacks occurred in the lower crown where often large

branches were attacked. The next highest number of attacks was found on the upper clear bole, except in the Kamloops plot. In general, most attacks were concentrated near or included the first three or four large branches of the lower crown.

Some poplar borer attacks have been found on apparently healthy aspen trees, but in most of the Thompson and Nicola Valley infestations the poplar borer is associated with a carpenter worm, believed to be *Prionoxystus robiniae* (Peck), and has attacked aspen trees weakened by other pests such as satin moth, *Stilpnotia salicis* (L.).

Reference

- Peterson, L. O. T. 1945. Some aspects of poplar borer, *Saperda calcarata* Say, (Cerambycidae) infestations under parkbelt conditions. Contribution No. 2528. Division of Entomology, Department of Agriculture, Ottawa.

Additional Notes on *Nymphalis californica* Bdv.

This is a sequel to my contribution regarding this species up to January 1961 (Proc. Entom. Soc. Brit. Columbia 58: 32, 1961).

On March 13, 1961, two specimens were seen on a sheltered hillside at Royal Oak on Vancouver Island. From then on it was often seen up to May 18, after which it disappeared from my notice.

No migratory tendency was observed until about May 18 when a definite drift to the northeast against a light northeast wind was clearly marked. They were flying in ones and twos at widely spaced intervals. Occasionally one would alight on a lilac flower or, on higher ground, on manzanita, soon to resume their northeastward journey.

Dates and localities include: Mt. Finlayson, May 16; Little Saanich Mountain, May

17; and the Langford district May 18. A few stragglers were reported from the general area up to May 21.

In the past this butterfly has disappeared from Vancouver Island after each visit, but showed up again in numbers from September 11, 1961. Evidently it is going to duplicate last season's record.

I have no information as to where it spent the period between May 21 and September 11, 1961, or whether it spent the larval stage on any plant other than *Ceanothus*, which is absent in this district; or whether it migrated from the mainland as usually seems to be the case.

—George A. Hardy, Provincial Museum (Rtd.), Victoria, B.C.