

## A BRIEF HISTORY OF THE POPLAR AND WILLOW BORER, *Sternochetus lapathi* (L.), IN BRITISH COLUMBIA<sup>1</sup>

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The poplar and willow borer, *Sternochetus lapathi* (L.), introduced from Europe, was first observed in North America in 1882, when a single specimen was collected in New York (Herrick, 1935). During the next 20 years the weevil was observed in many localities in the northeastern United States (Matheson, 1917). In 1906, the first Canadian records were taken at three localities in Ontario (Cosens, 1912), and in 1908, Carolina poplars were attacked at Dundurn, Saskatchewan (Fletcher and Gibson, 1908). Between 1909 and 1916, occurrences were reported from many widely separated points in Ontario, and at Montreal, Quebec (Caesar, 1916).

The first known record of the poplar and willow borer in the Pacific Northwest was at Vernon, where in 1923, the late Col. A. E. Parlow collected a specimen. In 1924, poplar and willow trees in the Tourist Park at Kelowna were found to be infested, followed by reports of infestations at Penticton in 1932 and Summerland in 1934. The weevil's widespread distribution in the Okanagan Valley suggests that it was probably well established before these dates.

Other early records in the west were: Priest River, Idaho (P. C. Johnston, in litt.) and Tacoma, Washington, 1931 (M. H. Hatch, in litt.) and near Portland, Oregon in 1933 (Furniss, 1939).

A report of the borer's occurrence at Riske Creek in the Chilcotin area appears in the 1931 edition of the Canadian Insect Pest Review. For several reasons this record seems questionable: no specimen was taken; the host, trembling aspen (E. R. Buckell, in litt.), is unusual; and no weevil activity has been recorded in this area before or since.

On the Lower Mainland of British Columbia the first damage report came from a Vancouver garden in 1930, although it was stated in the Annual Report of the Forest Insect Laboratory at Vernon (W. G. Mathers, 1930), that the insect's presence had been known in this area for at least three years. In 1933 willows were attacked in Stanley Park, in 1934 at Green Timbers, and on Sumas Prairie in 1936.

Few infestations were recorded from 1936 to 1946, but in the period 1947 to 1949, with the expansion of the Forest Insect Survey staff, many new locality records were established: Chilliwack, Yale and Pitt Lake, 1947; Seymour Creek and Hope, 1948; Surrey, Allouette Lake, and Chehalis River, 1949. This indicates that the weevil was distributed throughout the Fraser Valley prior to 1947. On Vancouver Island, four records were obtained in 1948: Nanaimo, Coleman Creek, Port Alberni and Cowichan Lake.

Dr. M. Hatch of the University of Washington apparently has the first Kootenay record — a specimen collected at Creston in 1941; otherwise very little is known about the weevil's activities there before 1949. That year, numerous specimens were collected around the west arm of Kootenay Lake in the following localities: Queens Bay, Balfour, Kokanee, Nelson and Harrop. In 1951 several collections were made between Castlegar and Trail, and on the east side of Kootenay Lake at Crawford Bay. In 1952, damage was noted around the north end of Kootenay Lake and at Grand Forks in the Kettle Valley. In 1953, attacks were observed at Nakusp and Arrowhead, and at Kimberley and Bull River in the East Kootenay. Weevil attacks have continued in most of the above-mentioned infestations and in each successive year new locality records were obtained: Slocan

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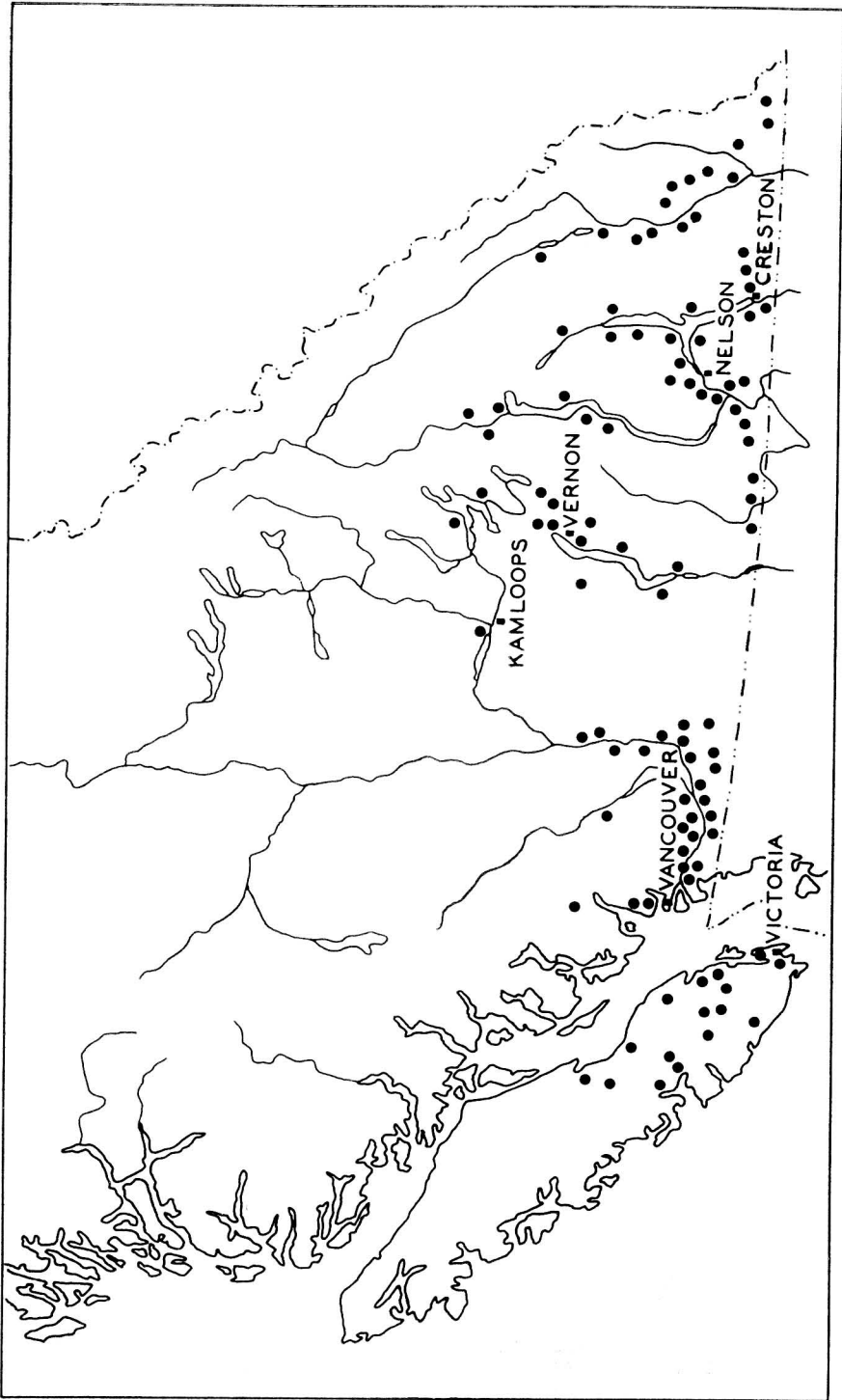


Fig 1.—Distribution of *Sternochetus lepathi* in British Columbia.

City and Natal, 1955; Revelstoke and Edgewood, 1956; Canal Flats, 1957; and Invermere, 1958.

At least four major infestations have occurred in British Columbia. At Sumas Prairie in 1936, approximately 12 years after Sumas Lake was drained, R. Glendenning reports, "this insect was so abundant on the several willow species that it effected some measure of control." By 1937, thousands of young willows had been killed. A stem sample, two and one half inches in diameter and two feet long contained 175 adults (H. G. Fulton, in litt.).

At Tranquille in 1958, an estimated 250 acres of mature willows, *Salix* sp., were killed.

On Creston Flats at the south end of Kootenay Lake, many willows, *Salix* spp., and black cottonwood, *Populus trichocarpa*, have been damaged.

All willows in a square mile area two miles northeast of Hope were heavily damaged and many trees were killed in 1958. Tree mortality also occurred at other points in the Fraser River Valley.

Although poplars and willows were attacked at Kelowna in 1924, native willow was the only known host in the Lower Mainland until 1939. In 1939, a black cottonwood was attacked at Vancouver, while ornamental willows were attacked in a nursery at Sumas. In the interior of British Columbia, Sitka alder, *Alnus sinuata*, has been infested at Celista, Sicomous and Brilliant, and mountain alder, *Alnus tenuifolia*, at Taghum. Occasionally weeping willow, *Salix babylonica* and Lombardy poplar, *Populus nigra*, have been infested but to date attacks on trembling aspen, *Populus tremuloides*, are rare.

Although the weevil is most numerous at low elevations in valleys or along waterways, where its favoured hosts are usually found, several collections have been made at high altitudes. In 1953, S. Hicks collected a specimen from willow in Garibaldi Park at the 3100 foot level (G. J. Spencer, in litt.). Near McCulloch, Sitka alders were attacked at 4100 feet elevation in 1958. In 1946, G. Stace-Smith collected a specimen from under a stone on the summit of a mountain near Creston, at an elevation of 7147 feet.

During the 36 years since the poplar and willow borer was first detected in British Columbia, this introduced species has become well established across the southern portion of the Province. (Fig. 1). Native willows and black cottonwood are its favoured hosts but it is also known to attack mountain and Sitka alders and several cultivated varieties of poplars and willows.

There is not sufficient evidence to draw any definite conclusion about the source of the original borer population in British Columbia. The borer's appearance in several localities in the Okanagan Valley in the 1920's, and in Vancouver in the 1930's, within a period of four years indicates that there may have been two separate introductions. The absence of Alberta and Montana records and the borer's early detection in British Columbia as compared with Idaho and Washington, may indicate that its entrance into this province was not the result of a natural spread from surrounding territory.

Unless otherwise stated, all data in this paper are from the files of the Forest Biology Laboratories at Vernon and Victoria.

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