

AN OCCURENCE OF THE BULB AND POTATO APHID
Rhopalosiphoninus latysiphon (Davidson)
 (HOMOPTERA: APHIDIDAE), ON POTATO IN BRITISH COLUMBIA¹

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In mid-April 1963, we were called to examine sprouting potatoes which were very heavily infested with *Rhopalosiphoninus latysiphon* (Davidson) (Fig. 1). The tubers had been stored at a comparatively warm temperature since January in preparation for early planting. This is the first record of this aphid on potatoes in B.C., although Glendenning (1929) recorded it from cultivated violet at Agassiz.

R. latysiphon is easily recognizable by its cornicles (Fig. 2 and 3). It was described from California by Davidson (1912) who found it on *Vinca major* and *Convolvulus arvensis*. It was later recorded in California from *Chrysanthemum* sp. (Shasta daisy) and *Primula* sp. (Essig, 1917), in small numbers from potato (Swain, 1919), and from *Saxifraga* sp. (U.S. Department of Agriculture, 1960).

Hille Ris Lambers (1953) records it in Europe from the Netherlands, England, Germany, and Switzerland, giving *Bromus sterilis*, *Potentilla anserina*, *Tulipa*, and potato as host plants. He states that it lives on the subterranean parts of its hosts in the field, and on potato tubers and tulip bulbs in storage.

In England, Legowski and Gough (1953) studied infested potato fields and found that fairly heavy infesta-

tions caused loss of vigor, premature yellowing of leaves, and decreased yield. The aphids occurred only on the underground parts of the potato; up to 3,000 were counted on a single plant. Gair and Cummins (1960) estimated the yield loss on some main crop potato fields at 2-3 tons per acre. *Agropyron repens*, *Brassica sinapis*, *Solanum nigrum*, *Tussilago farfara*, and *Urtica urens*, growing near potatoes were recorded as new host plants (Legowski and Gough, 1953).

R. latysiphon has been reported as a vector of potato leaf roll virus (Kennedy, Day, and Eastop, 1962), so may be a threat by spreading disease. Disease transmission would be particularly serious in storage where the aphids crawl freely over the seed trays. In the infestation we examined the trays as well as the floor and walls of the building were literally crawling with aphids.

This aphid then is a serious potential pest of potato in B.C. Stored tubers should be watched carefully and any incipient infestations immediately eradicated. Because of the subterranean habits of the aphid, control in the field would be very difficult, but since most infestations seem to originate in storage (Hille Ris Lambers, 1953; Legowski and Gough, 1953), field infestations may not be a problem so long as clean tubers are planted.

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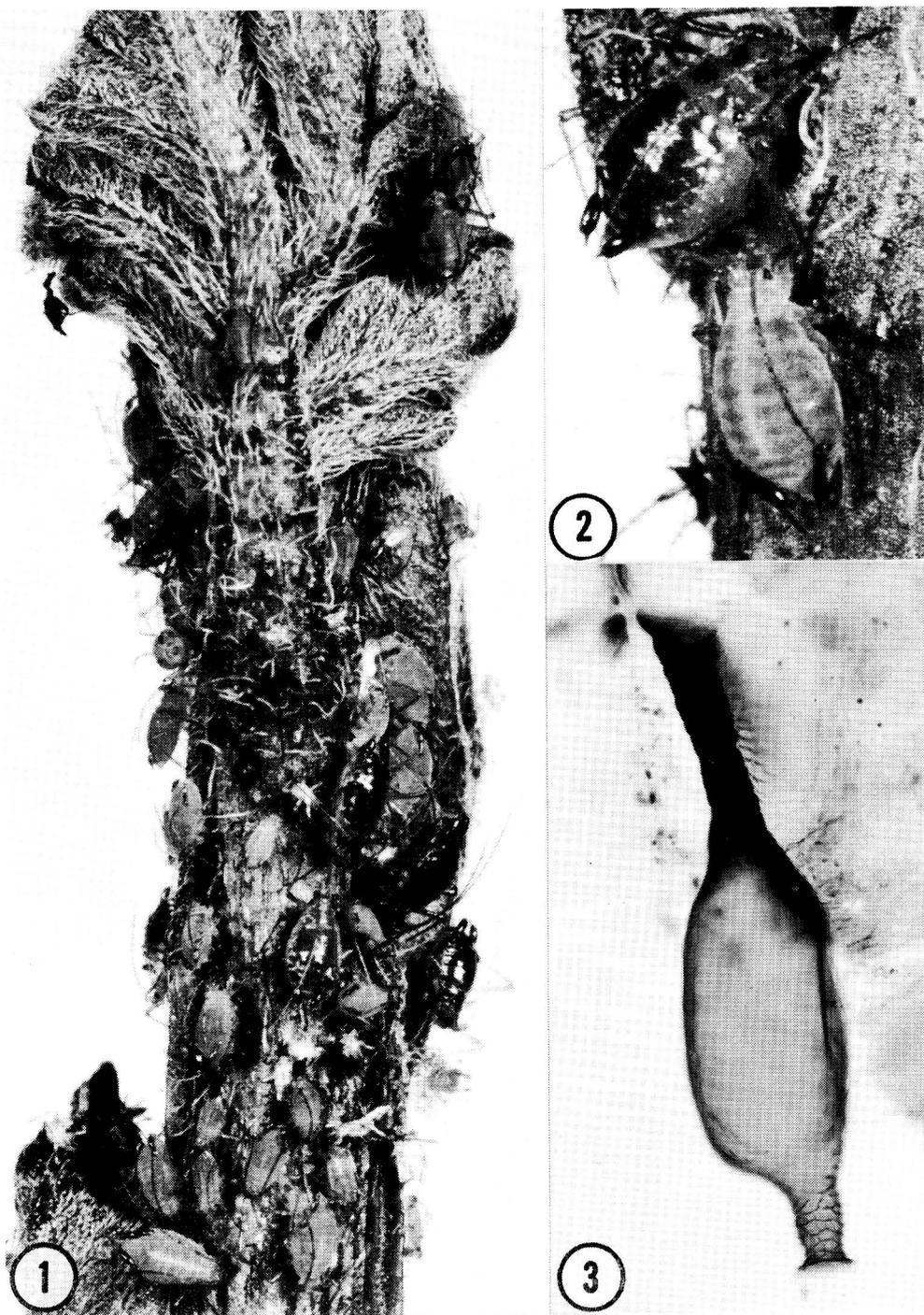


Fig. 1-3—*Rhopalosiphonius latysiphon* (Davidson). 1, Colony on sprout of potato tuber. 2, Close-up of two aphids. 3, Photomicrograph of cornicle.

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PRELIMINARY INSECTICIDE TESTS AGAINST THE DOUGLAS-FIR NEEDLE MIDGES, *Contarinia* spp., LARKIN, B.C., 1962¹

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Introduction

Periodically, Douglas-fir trees in portions of the southern interior of British Columbia are severely infested with needle midges, *Contarinia* spp. Needles attacked by larvae of these tiny gall midges become distorted and discoloured, and dehisce. Even light infestations can degrade the market value of Christmas trees or mar the appearance of shade trees. Recently the Christmas tree industry, which in 1961 grossed approximately two million dollars in British Columbia, has become concerned over midge damage; also, home owners have requested advice on use of insecticides to protect Douglas-fir shade trees.

Life histories and bionomics of the Douglas-fir needle midges of British Columbia were investigated by S. F. Condrashoff (1962a, 1962b). The adults emerge from the ground in May as the Douglas-fir buds are opening, and eggs are deposited on the new needles. Shortly after hatching, the maggots enter the new needles and feed there until October, when they drop to overwinter in the ground. The life history studies indicated that insecticides directed at emerging adults or at newly hatched larvae should be most effective for control.

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Methods and Results

The test was carried out at Larkin, B.C. Five trees from five to seven feet high were used for each treatment and another five were left unsprayed as checks. Insecticides were applied with a hand sprayer until the run-off point was reached. Thiodan and DDT emulsions and a lindane suspension were the insecticides tested. One imperial gallon of water was added to each of the following quantities of commercial concentrates to obtain the finished formulations:

- 3 fl. oz. Thiodan emulsifiable concentrate containing 2 lb. technical Thiodan per imperial gallon
- 2 fl. oz. DDT emulsifiable concentrate containing 2.5 lb. technical DDT per imperial gallon
- 3 teaspoons of 25% lindane wettable powder

The concentrations of the finished sprays were: Thiodan—0.375%; DDT—0.312%; and lindane—0.12%.

The midges were first observed in flight on May 14, and the sprays were applied during the morning of May 16. At the time of spraying, most of the buds on the majority of test trees had opened; none on one of the check trees had opened. This variation is common in a natural stand of Douglas-fir.