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FOREST INSECT SURVEY
REPORT
Victoria Laboratory - 1949

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FOREST INSECT SURVEY

Ranger's Annual Report

of

British Columbia Coastal Region

1949

Forest Insect Investigations

Victoria, B. C.

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1949.

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I. INTRODUCTION

The M. V. J. M. Swaine again functioned as a means of transportation and field laboratory for the B. C. Coastal Survey, allowing, in 1949 as in previous years, an easier access to areas beyond the reach of established land and water transportation.

The 1949 season was carried out over an area reaching from Bella Coola on the north to a line travelling from Barkley Sound (Vancouver Island) to Vancouver on the south and from Indian River on the east to the west coast of Vancouver Island on the west. This afforded a study of nearly every type of timber stand found on the B. C. coastal strip and should give much necessary information in view of the fact that for most of the areas this was a second visit. Added to the insect knowledge accumulated, a more thorough knowledge of survey difficulties and methods encountered in this area will give future surveys data which should enable them both to speed up and increase the survey scope.

The area was broken up into three separate parts, each covered at a different phase of the season. The first or upper area, from Bella Coola (Dean Channel) to the islands as far south as the Redondas, was surveyed during the latter part of May and June. This included inlets on the mainland. The second part, the west coast of

Vancouver Island was dictated by weather conditions and was carried out during the month of July. The latter part stretching along the coast from Burrard Inlet to Toba Inlet, including Powell Lake and area was done during August and part of September. More detailed description of these operations follow in this report.

The survey was carried out by Forest Insect Rangers D. W. Taylor and S. J. Allen with the aid of W. Sharpe and B. Dickens, on strength as summer help from U. B. C. These two men functioned as laboratory technicians primarily but gave a great deal of assistance to the rangers in collections as well.

Bella Coola District (Dean Channel, Rivers Inlet) -

Medium high timbered mountains prevail ranging from about 2,000' - 3,000' on the average. There are some rocky steep sided mountains as high as 7,000' in the Bella Coola valley and Owikena Lake district. Fertile valleys contain hemlock, cedar, spruce and balsam. Douglas fir is relatively scarce except in drier conditions. Spruce logging was carried out on a large scale behind Rivers Inlet north of Owikena Lake and regeneration is very slow. Further logging includes Kimsquit Head, Dean River and several hand-logging operations which have taken the choice timber off the mountainsides.

Ground cover in logged off and windfall areas consists of salmonberry and devil's club, so logging roads, trails and virgin timber have been favoured for sampling travel.

Duney's Inlet - Seymour Inlet

Low lying hills amidst a network of waterways prevail here. The timber is good, so the area has been logged somewhat by hand-loggers and bigger shows such as Dumaresq Logging Company at T. L. 10, 709 at Belize Inlet. Hemlock, balsam, spruce and cedar predominate in timber with second growth spruce and hemlock being the main regeneration.

This season this area was entered for the first time, and it is hoped that a more extensive survey may be carried out when marine charts of these inlets are published (Smith, Naysash, Seymour and Belize also Wyclees Lagoon). Tide conditions at the entrance to Seymour Inlet (Schooner Passage) are very hazardous and six minutes slack tide is all that is left for entrance timing. Information from local tug-boats and logging operators was very useful.

Tribune Channel

Mountains range around 2,000' - 5,000' with timber good in flatter areas. However, much rocky outcrop was encountered with scrubby Douglas fir and Jack pine. In valleys, such as Fraser Creek, logging was carried out on medium scale. Hemlock, balsam and spruce with alder in cutovers was found mostly, with some Douglas fir in drier fertile regions.

West Coast - Vancouver Island

Starting at the north end of the island and travelling south to Quatsino Sound, the country is of a low rolling nature, heavily wooded, with hemlock, balsam and Douglas fir predominant.

Continuing south from Rupert Inlet and Port McNeil, the average elevation of the mountains increases to around 3,000 - 4,500 feet with the terrain becoming more steep-sided and rocky. From there to Alberni Inlet much the same topography prevails along which hemlock, Douglas fir, cedar, balsam and spruce predominate though rarely all together. Though hemlock is fairly constant since climate and growing conditions are ideal, stands of Douglas fir and balsam are encountered. Cedar and spruce stands are more rare but where a spruce stand occurs, it is for the most part in excellent health and of good volume. Cedar is constant but not of any great volume. Alder predominates along existing or dry river beds and for a distance of approximately two chains in from the bed, but this is governed by ground rise since any increase in elevation seems to stop growth and conifers take over. Ground cover in the above areas consists of Sword fern, Salal, Salmonberry, Huckleberry and Devil's club and though density varies slightly according to "water content" of the area, parts of this coast contain some of the densest "jungle" on the coastal strip.

Specifically, logging is being carried out at the head of

Helberg Inlet and at Jeune Landing on Neroutsos Arm. A large gap is left, then Chamiss Bay is the next point followed by Zeballes and two points on the Tasis Canal. South along the coast the next point with operations is the Ucluth peninsula and Kennedy Lake. As is seen this leaves extensive areas untouched or lightly touched by selective logging at some past date. This might be attributed to two things, a long boom-tow or desirable means of log outlet or it may be that the valleys are so steep and short as to give access to a relatively small volume for the expenditure. In any case the areas still contain a good mature covering of hemlock, spruce, Douglas fir, and cedar, with water transport as the only means of accessibility.

Burrard - Knight Inlet area

Timber types, topography, approach - Howe Sound (Squamish River Valley included). This area is bounded on the east by a range of 3,000' - 6,000' mountains running from Horseshoe Bay to Squamish on the east and from Gibson's Landing (Mt. Elphinstone) to Wood Fibre on the west. At its north end it opens into the Squamish - Cheakamus River Valleys which in itself is sufficiently wide to contain smaller mountains. This valley runs up through Garibaldi Park into the Lillooet River area and is steep sloped and wild.

The east side of Howe Sound is under jurisdiction of the mainland ranger while the west side is covered by the J. M. Swains

party. Though the Squamish - Cheakamus Valleys have not as yet received a close survey it is to be hoped that road transportation will be able to reach there via the new road in future.

The west side which has, from north to south, Mill Creek and Cedar Creek, McNab Creek, Rainy River and McNair Creek. Each of these is a comparatively narrow mountain pass ending in permanent snow fields and is a good average growing site for hemlock, cedar and Douglas fir with alder growing over old logging sites.

Proceeding westward along the coast the terrain becomes a three-five mile long gentle slope up to approximately 4,000 feet. This area contains Roberts Creek, Sechelt Inlet and Halfmoon Bay; all logging or logged areas which produce hemlock and fir. Behind Sechelt Inlet, the slopes become very mountainous and Narrows and Salmon Arm are both situated between these ridges. West of Sechelt Inlet is a relatively low lying area running from Halfmoon Bay to Jarvis Inlet. This is excellent logging country and yields a good average in hemlock, Douglas fir, cedar, with spruce and balsam fir mixed in according to site changes which vary considerably and in many cases rather abruptly. This condition carries on across Jarvis Inlet through a large area from Gordon Pass Lakes up as far as Malispina Inlet where again the terrain becomes rugged and mountainous. The area has been logged off in the past, considerably more than has the southern region previously mentioned. Proceeding north into Toba Inlet

7

area precipitous mountain slopes are encountered with the only access being through the valleys leading back from the inlet. The inlet head is a wide flat valley for approximately 10 miles, then it too becomes broken and reaches up to approximately 6,000 feet peaks.

Continuing north the country changes but little in its rugged aspect, Bute and Knight Inlets are almost identical in topography but the terrain flattens out, as progress is made north, into lower almost rolling country with occasional 2,000 - 2,500 feet mountains. The Rivers, Smith, Belize, Seymour Inlet area is along this pattern and was covered in the first part of the survey.

a. BELLA GOOLA DISTRICT

1. Bella Goola Valley (S25 - S59) June 4 - 6

Lower valley (Bella Goola - Hagensburg area)

30 samples taken - hemlock (w) 23, spruce 6, willow 1.

Timber stands: hemlock most abundant with spruce, cedar and Douglas fir secondary on lowlands.

Ground cover: Thick moss and salal on rocky terrain, sword-fern and devil's club in fertile valleys, also salmonberry, thimbleberry, huckleberry and maidenhair fern.

Insects: Lambdina fusc. lugubrosa Relatively scarce. -

two samples were fairly numerous

12 larvae - 4 miles east along Hagensburg Road

6 larvae - 4 miles east along Hagensburg Road.

Upper Valley

June 4

8

5 samples taken - Jack pine, Douglas fir, cedar, birch, willow.

Timber stands: Jack pine on the mountainsides, some Douglas fir scrub. Cedar, birch and willow in valleys and on flats.

Ground cover: grass and moss on rock (interior climate).

Insects: Dendroctonus monticolae Plentiful in Jack pine bark of 3/4 rusted trees and moving westward for the last few years. (ref. Mr. W. Wright, Assistant Forest Ranger, Bella Coola).

Contacts: Mr. W. Wright (Assistant Forest Ranger)

Access: Road up valley 50 miles

Branch off trails from this road.

West trail from wharf along flume.

11. Dean Channel (60 - 999)

June 7 - 9

Kimsquit Arm (head) Kimsquit River delta.

8 samples taken - hemlock (w) 2, spruce 3, cedar, alder, willow.

Timber stands: Overstory of alder and some spruce. Understory of spruce, hemlock, cedar and willow.

Ground cover: Thick underbrush of salmonberry, devil's club, thimbleberry and skunk cabbage. Many beaver felled trees on flat.

Insects: Malacosoma disstria - 22 larvae off alder

Microlepidoptera (tortricidae) - 43 larvae off spruce.

Contacts: none

Access: Old logging trail from wharf inward. Limit about three miles at most.

9

Dean River delta

10 samples taken - hemlock (w) 5, Douglas fir 2, spruce, cedar, alder.

Timber stands: Scattered second growth hemlock, Douglas fir and cedar, in thick patches. Some alder and birch.

Ground cover: Bracken, devil's club, salmonberry, maidenhair fern and huckleberry.

Insects: None of importance or numbers.

Contacts: None.

Access: Trail from wharf up river about two miles.

Nascall Bay and Lake.

12 samples taken - hemlock (w) 5, mountain hemlock, balsam 2, Jack pine, cedar, spruce, alder.

Timber stands: Hemlock and balsam in lower shaded valley second growth. Jack pine and mountain hemlock on rocky outcrop above lake.

Ground cover: Huckleberry, devil's club, maidenhair fern, bracken.

Contacts: none.

Access: trail from river mouth to lake (approx. 1 1/2 miles).

b. Rivers and Seymour Inlets District (S100 - S210) June 10 - 12.

1. Draney's Inlet - West Arm

27 samples taken on hemlock (w) 14, balsam 4, spruce 4, cedar 3, alder 2.

Timber stands: Scrubby regeneration on old cutover. Spruce, hemlock, balsam and alder 3" - 6" D. B. H. very poor stand.

Ground cover: Very dense deep salmonberry, devil's club, thimbleberry and salal.

Insects: Neodiprion tsugae - 35 larvae off hemlock

Neodiprion tsugae - 75 larvae off hemlock

Draney's Inlet (head or east arm)

Timber stands: Dense shoreline of hemlock, spruce and cedar thinning to larger second growth and mature timber in wooded area. Timber better up river two miles, with good soil.

Ground cover: Salal, huckleberry, salmonberry and blueberry on hillsides under good timber stand.

Insects: Neodiprion tsugae 16 larvae off hemlock (w)

Neodiprion tsugae 30 larvae off hemlock (w)

Neodiprion tsugae 30 larvae off hemlock (w)

All in vicinity of river mouth.

Contacts: none - no trails.

Access: East arm Draney's Inlet accessible by dinghy at high-tide to three miles upstream.

Ocean Falls (Link lake) (S90 - S 94)

June 9

5 samples taken - hemlock (w), spruce, cedar, Jack pine, alder.

Timber stands: Scrubby cedar and Jack pine in swamp areas; hemlock and spruce on hillsides up above Ocean Falls town.

Ground cover: Skunk cabbage and salal fairly dense.

Insects: Neodiprion sp. 28 larvae off Jack pine.

Contacts: none

Access: Trail from ball park at top of town around Nascall Lake (board walk).

ii. Moses Inlet (S129 - S 136) June 12.

North Arm 8 samples taken - hemlock (w) 3, spruce 2, cedar, alder, willow.

Timber stands: second growth of hemlock, spruce, cedar and alder; Douglas fir on rocky outcrop above river delta.

Ground cover: Salal and salmonberry, some huckleberry.

Insects: None outstanding, or numerous.

Contacts: none.

Access: no trails.

West Arm (Hardy Inlet) (S 137 - S 143)

7 samples taken - hemlock (w) 2, balsam 2, spruce, cedar, Jack pine.

Timber stands: Mixed patches of mature and second growth hemlock, spruce, balsam and cedar.

Ground cover: Thimbleberry, salal and skunk cabbage in swampy condition. Diseased balsam regeneration in Cookson Lake area.

Insects: negative.

Contacts: none

Access: easy travel back of head of the inlet.

iii. Rivers Inlet (Rivers Inlet Cannery to Owikena Lake north side)

(S 144 - S 148) June 13.

5 samples taken - hemlock (w) 2, spruce 2, alder.

Timber stands: Approx. 15 - 20 miles of cutover behind

Ovikena Lake in old spruce logging - regeneration very poor.

Mature spruce, hemlock and cedar along lake shore and river bank.

Ground cover: Salmonberry, thimbleberry, skunk cabbage and devil's club in thick masses under mature in swampy conditions.

Insects: two hemlock looper found on hemlock (w)

Contacts: none.

Access: Boardwalk trail from back of cannery to river mouth and old log dump. River bank trail from here past Indian shacks to start of Ovikena Lake.

iv. Smith Inlet (S149 - S 153) June 14.

Mayssah Inlet

10 samples taken - hemlock (w) 3, spruce 3, cedar 2, alder 2.

Timber stands: Over story of spruce, cedar and hemlock. Under-story of fairly dense hemlock. Steep northerly slope.

Ground cover: Salal, huckleberry and deerfern.

Insects: Lambdina fusc. lugubrosa - 1 off spruce

Neodiprion tsugae - 120 off hemlock (w)

Pikonema alaskensis - 6 off spruce

Pikonema dimocki - 3 off spruce

Neodiprion tsugae - 27 off hemlock (w)

(all north side at Inlet bend)

Margaret Bay (Smith Inlet) (S159 - S161)

3 samples taken - hemlock (w) 2, alder.

Timber stands: Sheltered small valley with hemlock, cedar,

spruce and alder, mostly second growth.

Ground cover: Salal, swordfern and huckleberry, and salmonberry.

Insects: very negative.

Abelakerho Channel mouth and Anchor Cove: (S162 - S174) June 15.

6 samples taken - hemlock (w) 3, balsam, cedar, birch.

Timber stands: Mature cedar, hemlock and balsam with second growth hemlock and odd birch.

Ground cover: Thick salal floor and some moss on rocky outcrop.

v. Boswell Inlet (1, 2 and 3 miles north of cannery) (S175 - S179)

12 samples taken - hemlock (w) 5, balsam 2, June 15.

spruce 3, cedar 2.

Timber stands: hemlock, balsam, cedar and spruce regeneration.

Some mature further up slopes from shoreline.

Ground cover: Salal and huckleberry.

Insects: 3 Neodiprion tsugae found on Hemlock (w)

Contacts: none

Access: One trail at Boswell cannery up flume behind cannery.

vi. Seymour Inlet (S180 - S184) June 16

Belize Inlet Dumaresq Logging (T. L. 10709²)

Timber Stands: Mature over-story 9/10 hemlock, balsam and cedar.

Understory scattered hemlock and balsam.

Ground cover: Swordfern, devil's club, and salmonberry on fertile black soil.

Insects: negative area.

Belize Inlet - Western Bay (S185 - S190) June 17.

14

11 samples taken - hemlock (w) 7, cedar 2, Jack pine, alder.

Timber stands: Second growth scrubby timber on old cedar stumps (burn?) hemlock and cedar stringy.

Ground cover: Salal and scrub hemlock (w) also skunk cabbage in swampy area.

Insects: Neodiprion species on Jack pine and Neodiprion taugee on hemlock in very small numbers.

Seymour Inlet proper (S191 - S210)

15 samples - hemlock (w) 6, spruce, cedar 3, alder 5.

Mauve Bay, Towry Point, Mendorf Point and Henry Point - June 17 - 18.

Timber stands: Hemlock, cedar, spruce and alder second growth yew on shoreline.

Ground cover: Salal throughout on gravelly and rocky floor. Some moss.

Insects: Neodiprion sp. and Neodiprion taugee present in very small numbers.

Contacts: none

Access: One trail at Dumaresq Logging camp (Parson's Lake locality) from camp inland to top of log dump where road starts, and runs 1 1/2 miles up past cutover into mature timber. Note. Towry Point may have logging operation nearby with road by 1951.

c. Knight Inlet District (S211 - S291)

1. Gilford Island (Tribune Channel) June 19 - 20

Viner Sound 9 samples taken - hemlock (w) 3, spruce, 3, cedar, alder 2.

Timber stands: hemlock, spruce and alder second growth

open rocky outcrop mostly.

Ground cover: Salal, huckleberry and bracken.

Insects: Neodiprion teneos found in two collections of 9 and 15 on hemlock (w).

Contacts: none

Access: No trails.

Fraser Creek -

5 samples taken - hemlock (w) 2, spruce, balsam, alder.

Timber stands: open second growth hemlock, spruce cedar and alder for two miles up road. Outcrop for 3 miles to mature hemlock, balsam cedar and spruce.

Ground cover: Swordfern and salal in mature, blackberry, salmonberry and salal in second growth.

Insects: Neodiprion species and Pikonema dimockii on spruce in very small numbers.

Contacts: none

Access: road from wharf up into mature stand of timber. 4 miles approx. to Fraser Lake.

Elizabeth Harbour

15 collections taken - hemlock (w) 4, Douglas fir, spruce 4, cedar 2, alder 3, willow.

Timber stands: varying second growth hemlock, spruce, cedar and Douglas fir on rocky outcrop; some alder patches, very dense.

Ground cover: Salal, bracken, and few salmonberries in valleys.

Insects: Pikonema alaskensis and dimockii present in small numbers on spruce also Neodiprion species. Neodiprion tsugae present in ones and twos on odd hemlock.

Contacts: Access: no trails.

ii. Alert Bay

7 collections taken - hemlock (w) 2, spruce 2, Douglas fir, alder 2.

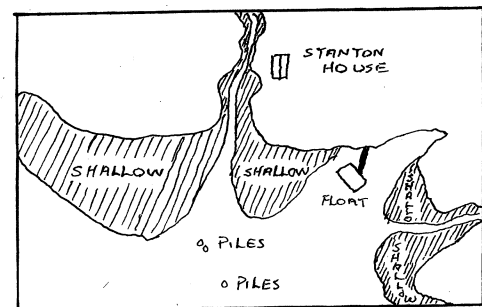
Timber stands: Second growth even stand of hemlock on top hills of island. Spruce, Douglas fir and alder in small patches.

Ground cover: deerfern, salal, huckleberry and swordfern.

Insects: spruce host to Pikonema alaskensis and dimockii and Neodiprion sp. Some Neodiprion species found on hemlock but no tsugae. The numbers found were very small.

c. KNIGHT INLET

Knight Inlet (head)



Mr. Stanton -guide - Kline Kline River to north. Franklin River to east. River boat essential and local knowledge of river invaluable. For Franklin River if tide out drag dinghy far up delta. Small logging company right side of delta to Franklin River.

7 samples taken - hemlock , Douglas fir, spruce 2, cedar,

17

Jack pine, alder.

Timber Stands: Scrubby Douglas fir, hemlock and Jack pine on rocky outcrop of hillsides. Alder, hemlock and spruce populate the lower areas.

Muscel and Laura Lakes locality (up Klinkina River 14 miles)

18 samples taken - hemlock (w) 5, balsam 3, spruce 4, cedar 2, alder 4.

Timber stands: Large stands of hemlock, balsam, spruce and cedar in fertile valleys. Douglas fir average mature higher at 2,000' level.

Ground cover: Swordfern, skunk cabbage, devil's club, huckleberry and blueberry ground cover on flat and rolling sections of valley.

INSECTS: Lambdina fisc. lumbrosia present west end of Laura Lake.

Neodiprion sp. and tsugae present but very small numbers. Pikonema dimmockii also. Collection of 20 tsugae SE corner Muscel Lake.

iii. Franklin River and opposite side of head. June 26.

9 samples taken - hemlock (w) 4, Douglas fir, spruce, cedar, alder 2.

Timber stands: Very dense second growth hemlock, spruce, cedar and Douglas fir in Franklin River valley and medium dense on opposite side of head.

Ground cover: Few deerfern, swordfern, bracken and devil's club in fertile lower regions. Salal on higher rockier soil.

Insects: Lambdina fisc. lugubrosa - two off spruce (Franklin river)

Neodiprion tsugae - 90 off hemlock at opposite side of head.

Neodiprion tsugae - in other small numbers.



No contacts - dinghy should be hauled far up mud flats on left side of delta or tied up to rock shore line and proceed on foot across flats. Small logging camp on right side of river mouth approx. 1 mile from float. N. E. give Franklin River delta wide berth. River is fast and dangerous.

iv. Tom Brown Lake (Glendale Cove) Martin Lake June 28.

11 samples taken - hemlock (w) 8, balsam 3. Timber stands: Logging operation as far as Tom Brown Lake and

6 miles towards Martin Lake from road forks. Mass of hemlock regeneration between wharf and operations, in old cutover. Mature at end of operation consists of hemlock, balsam, cedar and some Douglas fir.

Ground cover: Swordfern and bracken in mixed conditions of open rocky soil and deep fertile soils on rocky terrain.

Insects: Lambdina fise lugubrosia and Neodiprion sp. were present but very scarce. Melanolophia imitata also.

Contacts: Camp closed (formerly B. G. Forest Products).

Road straight up hill for Martin Lake. Road to left for Tom Brown Lake.

d. HARVEY BAY (up Coal Harbour road). (8292 - 8302) June 29. samples taken - hemlock (w), spruce.

Timber stands: hemlock, balsam, spruce, and alder, changing to hemlock and balsam on higher levels.

Ground cover: Thick tall salmonberry, huckleberry, salal and deerfern.

Insects: Neodiprion sp. and Neodiprion tsugae were found in small numbers on hemlock and spruce.

Access: Road up through village bearing left for coal harbour.

e. QUATSINO SOUND (8303 - 8412) (Neodiprion tsugae populations)

i. Fort Alice (Neroutsoo Arm) July 2.

Island opposite Fort Alice and Neroutsoo Arm.

10 samples taken - hemlock (w) 3, cedar 2, spruce 4, Douglas fir.

Timber: Dense second growth hemlock, cedar, and vine maple. Some fir, spruce and yew in gullies and on shoreline.

Ground cover: Salal, bracken, deerfer and salmonberry.

Insects: Neodiprion taugae - 61 larvae east side Neroutsos Arm 1 1/2 miles from head; 6 larvae on west shore opposite Port Alice; 26 larvae island opposite Port Alice. All on hemlock, - no visible defoliation. Pikonema alaskensis also present on spruce in very small numbers.

iii. Victoria Lake area

July 2.

Pipeline trail from Port Alice and east side of Lake

Timber: hemlock, cedar and Douglas fir second growth, fairly dense and good growth. Jack pine on rocky region east side of lake.

Ground cover: Salal, scrub hemlock and Jack pine. Moss on rocks, east side lake.

Insects: Neodiprion taugae - 60 larvae west side Victoria Lake top of hill from pump station - 100 larvae near pump station - 100 larvae on east side Victoria Lake opposite pump station - Neodiprion sp also present in small numbers on Jack pine and balsam.

Road for Victoria Lake - main road past town store and around behind mill. Continue to turbine house and up steps. Approx. 3 1/2 miles also for Marble River.

Jeune Landing section of Neroutsos Arm and Alice Lake.

16 sample taken - hemlock (v) 9, spruce 3, Douglas fir, cedar, alder.

Timber: second growth hemlock, cedar, spruce and alder; odd Douglas fir along Neroutsos Arm. Over-story hemlock, balsam,

spruce and cedar (mature) around Alice Lake, fairly dense,
some overmature spruce, hemlock and balsam.

Ground cover: Salal and huckleberry on Neroutsos Arm.

Salmonberry, thimbleberry, devil's club and skunk cabbage.

Insects: Neodiprion tsugae 60 larvae - west side Neroutsos
Arm two miles north of Port Alice; 54 larvae 2 miles north of
Port Alice east side. Pikonema alaskensis and dimocki and
Neodiprion other species present generally in small numbers.
Jeune Landing (camp closed) - one road through middle of
camp, on 5 - 6 miles to old skid road into Alice Lake (1 1/2 miles)
Gibson's Bros. Camp.

iii. Coal Harbour - Fort Hardy road. July 5.

6 samples taken- hemlock (w) 3, spruce, balsam, alder

Timber: hemlock, balsam and cedar, some spruce. Second growth
fairly dense stand with some mature as mid-island is approached.

Ground cover: salmonberry, bracken and deerfern.

Insects: Neodiprion tsugae and other species also Pikonema sp.
present in small numbers.

Contacts: none

Access: Road from dock leads to Fort Hardy.

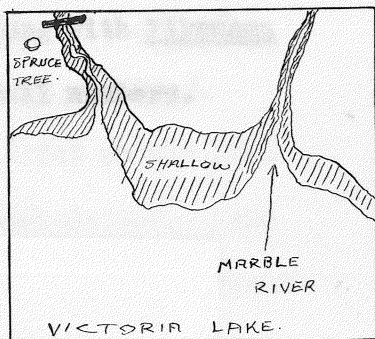
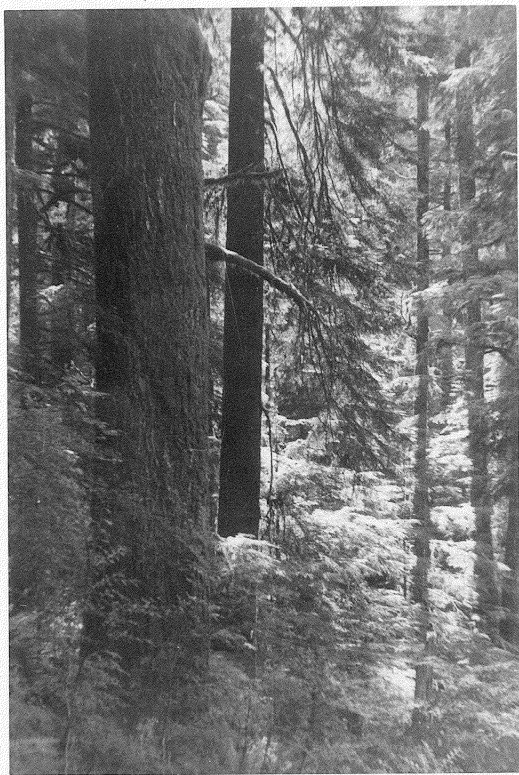
Victoria Lake recheck (also Marble River valley)

10 samples taken - hemlock (w) 7, spruce, alder 2.

Timber: hemlock, spruce and balsam in Marble River valley, dense.

Ground Cover: Swordfern, salmonberry, blueberry, huckleberry and devil's club in Marble River Valley.

Insects: Neodiprion teugae were again collected on west and east sides Victoria Lake in very large numbers. Neodiprion sp. and teugae were found in very small numbers at Marble River.



Marble River: From Fort Alice over to Victoria Lake. Borrow boat at pump house. Six miles to south end of lake.

Take left (east) channel, very narrow and shallow. Paddle up till large log across stream is reached. End of log is by large spruce on east bank. Due east from there approx. 100 yards to old cruise trail.

iv. Rupert Inlet

July 7

14 samples taken - hemlock (w) 5, spruce 5, Douglas fir, cedar, alder.

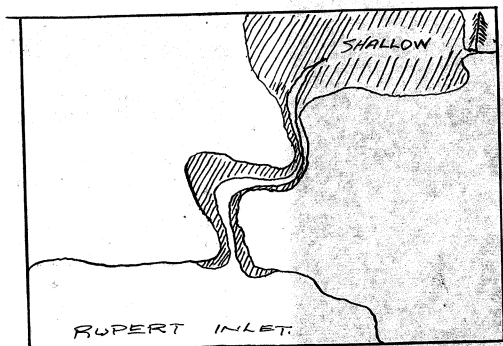
Timber: Principally hemlock and spruce with cedar and fir secondary.

Alder and birch in creek beds. Also some yew. Very dense.

Ground cover: salmonberry, swordfern and salal near shore.

Insects: Neodiprion taugae present in numbers around six and seven per sample. Other Neodiprion species present along with Pikonema alaskensis and dimockii on spruce in general small numbers.





Dinghy can be run to end of channel (entrance to inner basin). Must be paddled across shallow basin to small creek. Tides make this doubtful. Arrow indicates channel entrance. Large spruce, north side of creek marks cruise trail to Beaver harbour.

v. Holberg Inlet and road to San Josef Bay , July 8

23 samples taken - hemlock (w) 10, spruce 5, cedar 3, alder 5.

Timber: Regeneration of hemlock on most part of inlet on old cut-over. Healthy stand after black headed budworm infestation. Some spruce and cedar intermingled and on shoreline. Hemlock and balsam dense stand five miles along road to San Josef Bay.

Ground cover: Salal throughout Holberg Inlet. Bracken in open parts of San Josef area, some maidenhair and deerfern.

Insects: Neodiprion tucuae - 60 larvae found on hemlock (w).

4 $\frac{1}{2}$ miles up spruce river valley, Neodiprion species and Melanolenia imitata general throughout Holberg Inlet in small numbers.



Contacts: Mr. Warren, superintendent.
 Very cooperative. San
 Josef Bay road straight
 off end of trestle road.
 Dahlstrom point 7 miles
 along south shore of Inlet
 from Holberg.



vi. Winter Harbour

July 10

20 samples taken - hemlock (w) 10, balsam, spruce 5, cedar 2, alder 2.

Timber: Mixed second growth hemlock, cedar, balsam and alder with some
 mature. Very stringy scrub surrounding lake behind Winter Harbour.

Ground cover: Thick salal around beach changing to salmonberry and

thimbleberry very dense inland. Some huckleberry and blueberry.

Insects: Neodirron tsugae found in collections of 34 and 60 along lake trail from Winter Harbour village on hemlock. Other Neodirron sp. and Pikonema alaskensis present in small numbers. No contacts. Trail to lake. From back of gymnasium hall, push through jungle for 50 yards to right onto trail. Four miles to lake.

f. KYUQUOT SOUND S412 - S434

(1) Kokshittle Arm (head) up river 1 mile July 11.

8 samples taken - hemlock (w)3, balsam fir 3, spruce, alder.

Timber: hemlock and balsam mature and second growth with spruce and alder in parts.

Ground cover: Swordfern, salmonberry, Devil's club and huckleberry, salal on rocky side hills.

Insects: Neodirron species, Pikonema alaskensis and dimockii and Melanclorhia imitata found in general in very small quantities.





No contacts: - River is only access. Dingy approach - no dock.

(11) Tahleish Inlet

Tahleish River (up river 4 miles)

July 12.

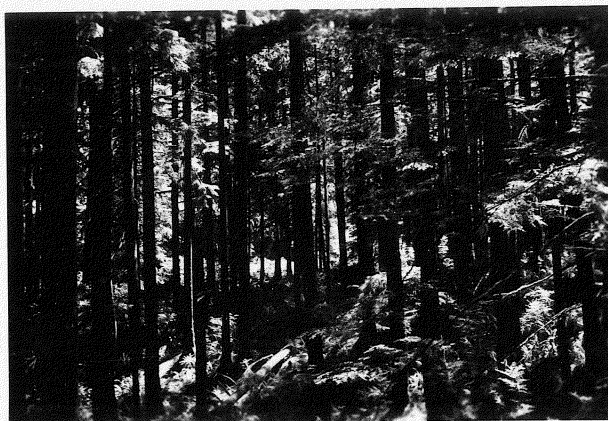
5 samples taken - hemlock (w) 2, spruce, Douglas fir, alder.

Timber: Mature over-story hemlock, spruce, Douglas fir and cedar.

Small amount of second growth.

Ground cover: huckleberry, salmonberry and moss in clumps.

Insects: Neodiprion species and Melanolorhia imitata also Semiothisa granatata present in very small population.



No contacts - High tide prevents entrance to river mouth on foot.
Take beach on east side of river. Use high ground till tide mark
is passed. Cruise trail starts on east side of river.

Artlish River (up river 1/2 mile) July 12

9 samples taken - hemlock (w) 5, spruce 2, cedar, alder.

Timber: Dense stand of mature hemlock, spruce, cedar and alder.

Ground cover: swordfern, salmonberry and devil's club in thick patches.

Insects: Neodiprion tenegea - 23 larvae found at mouth of river
also 19 larvae all on hemlock. Pikonema alaskensis and dinsockii
in small numbers. Two Lambdina fisco. lugubrosia; and other Neodiprion
species found generally through valley.



No contacts -
Dinghy approach
If high tide,
dinghy can be
taken up small
fork, north side
of delta and
tied up to steep
slope. Cruise
trail of sorts
begins approx

400 yards up left bank. If tide low when returning dinghy should be
tied well up beach, left side of river mouth and walk along beach, to
river. After first mile, river bed is best means of travel.
Arrow indicates best place for dinghy if tide will be out on return



No contacts - Dinghy approach. If high tide, dinghy can be taken up small fork, north side of delta and tied up to steep slope. Cruise trail of sorts begins approx. 400 yards up left bank. If tide low when returning dinghy should be tied well up beach, left side of river mouth and walk along beach to river. After first mile, river bed is best means of travel. Arrow indicates best place for dinghy if tide will be out on return.

g. ESPERANZA INLET (s435 - s476)

(1) Eliza Head and Inlet

July 13

14 samples - spruce 3, hemlock (w) 5, cedar 4, alder, lodgepole pine.

Timber: Cedar, hemlock, spruce, rock and gravel shore line collections.

Growth dense with mature cedar and hemlock back from shore.

Ground cover: huckleberry, salmonberry, swordfern, usual dense growth.

INSECTS. Neodiprion tsugae (9), Neodiprion sp (29), Melanolephia imitata (14)



No contacts - no trail - use river bank. Right side of Inlet head (?)



(11) Hemlock Area

July 13

7 samples - hemlock 3, spruce 2, alder, cedar.

Timber: hemlock, spruce, cedar, Douglas fir, average fairly dense growth. Valley steep.

Ground cover: huckleberry, salmonberry, swordfern.

Insects: Neodiprion sp. (18), Neodiprion tsugae (7), Melanolepis imitata (4), Pikonema alaskensis (1).



No contacts - no trail. Leave dinghy by cabin and cut straight through bush.

(111) Zeballos Arm I.

July 14

7 samples - hemlock 4, alder, spruce, balsam

Timber: hemlock and balsam, increasing in volume further up river.

Good mature stand. Cedar in low volume.

Ground cover: salmonberry, swordfern, devil's club, moss, growth medium dense.

Insects: Melanolophia imitata (7), Lambdina fiscellaria (1), lugubrosa (1).

(iii) Zeballos Arm I July 14

7 samples - hemlock 4, alder,
spruce, balsam.

Timber hemlock and balsam, increasing
in volume further up river. Good
mature stand. Cedar in low volume.

Ground Cover - salmonberry, swordfern,
devils' club, moss growth medium dense.

Insects - Melanolechia imitata (7)
Lambdina flacellaria (1) Lugubrosa (1)



Main road from beach approx. 6 miles to Privateer Gold mine. Road
continues at least 4 miles beyond that, to Homeward mine. Hire
transportation for first six miles. Road to left about 2 miles up
crosses river trail and suspension bridge to left about 1/6 mile
beyond town also crosses to left bank. Suspension bridge crosses
at 5 1/2 miles.

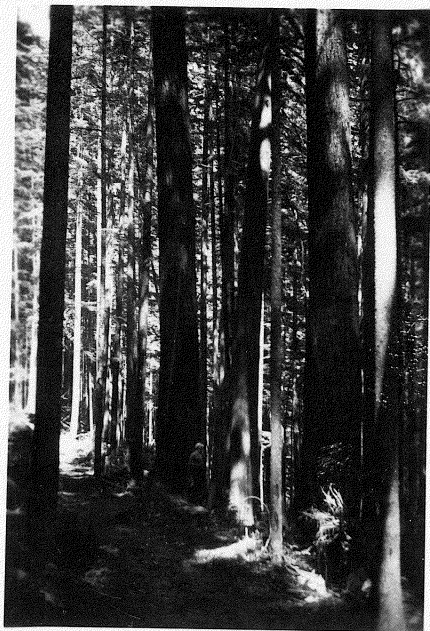
Zeballos Arm II. (Little Zeballos area) July 14.

5 samples - hemlock (w), Douglas fir, spruce.

Timber: Excellent stand hemlock, Douglas fir, spruce.

Ground cover: salmonberry, huckleberry, swordfern, devil's club.
moderate density.

Insecta:



Trail starts at cliff bottom behind saw mill. Good trail when flat tableland reached. Optional road and trail via right bank of little Zeballos River. Trail to Zeballos starts approx. 2 - 2 1/2 miles up "cut-road". Sign on tree at sharp "switch back" corner.

(iv) Taxis Arm

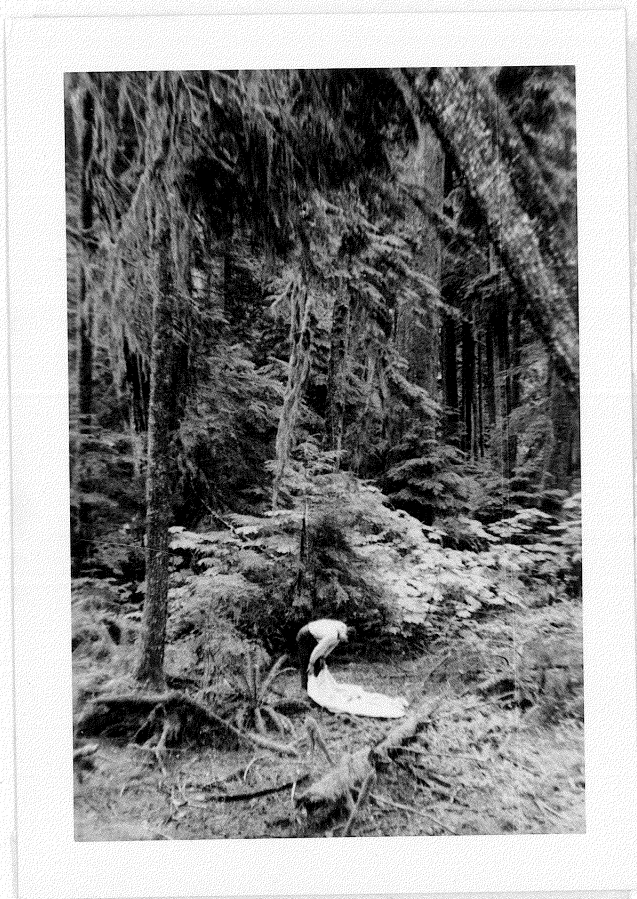
July 15.

9 samples - hemlock (w) 4, balsam 2, Douglas fir 2, alder.

Timber: spruce, hemlock, Douglas fir, cedar, excellent growth, dense.

Ground cover: swordfern, salmonberry, huckleberry, devil's club; deerfern, moderate density.

Insects: Melanolophia imitata (3) remainder very scarce. Weather poor.



Logging truck operation.
Gibson Bros. (now East
Asiatic). If possible
contact Mr. Buckland
(free lance forester).
Road goes 4-5 miles to
Woss Lake 11 miles.

h. NOOTKA SOUND 5477 - 5497

(1) Muchalat Arm I Gold River July 16.

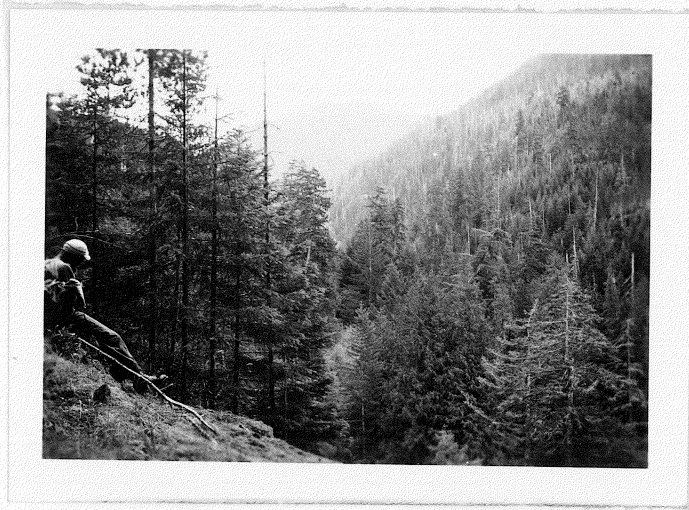
13 samples - hemlock (w) 5, Douglas fir 3, alder 2, cedar, spruce, white pine.

Timber: Rocky terrain, mature hemlock, Douglas fir, cedar, second growth dense hemlock.

Ground cover: Salal, huckleberry, swordfern.

Insects: Pikonema dimmockii (1) Melanerchia imitata (12),

Neodiprion taugae (13)



Anchorage for Swaine. Behind rock point on left. Hingly up river mouth to left bank. Trail starts behind Indian stacks. Good trail through scrub alder then along river side.

Muchalat Arm II. Burman River. July 16.

8 samples - spruce 2, hemlock (w) 3, balsam, cedar, alder.

Timber: spruce and hemlock, then spruce, hemlock, cedar, Douglas fir, alder.

Ground cover: swordfern, devil's club, salal, salmonberry.



Trail starts left bank of river mouth which begins at approx. centre of delta and curves to right. Dinghy can be tied up to grassy bank on long rope, at any point. Trail good approx. 1 mile after which it is best to ford river and use game trails along banks.

1. CLAYOQUOT s498 - s543

(1) Sydney Inlet

July 17

7 samples - hemlock (v) 2, spruce 2, cedar, alder 2.

Timber: mature spruce, hemlock, cedar on river flat. Sidehills mainly cedar stand.

Ground cover: devil's club, swordfern, salmonberry.

Insects: Neodiprion sp. (4), Pikonema dimmockii (1), Melanolophia imitata (1).

No contacts - no trail - use river.

(11) Herbert Inlet - Moyeha River

July 18

9 samples - spruce 2, alder 2, hemlock (w) 4, balsam.

Timber: hemlock, balsam, Douglas fir, beyond 2 miles, spruce.

Ground cover: huckleberry, salmonberry, swordfern.

Insects: Melanolophia imitata (5), Pikonema dimmockii (1),

Pikonema alaskensis (1).



Trail up short channel, centre of delta. Tie dinghy on long rope.

Cross over to main river left of valley then keep to river by fording.

(iv) Bedwell River

July 19.

10 samples - hemlock (w) 6, spruce 2, alder, mountain hemlock
Timber types: River mouth very dense mature stand of balsam, hemlock, spruce, cedar, Douglas fir, alder. Further up river, mainly hemlock and balsam. Good stand up to 5 miles then becomes rocky with poor growing conditions.

Ground cover: salmonberry, huckleberry, swordfern, on rocky site salal and moss.

Insects: Malanolepis imitata (5), Neodiprion sp. (2), Lambdina fiscellaria lugubrosa (1), Pikonema dimockii (1).

No contacts - Good dock - Take dinghy up main river (centre channel not left), approx. 200 yards. Cut through bush at right angles from left bank. Cross secondary creek. Road starts by old cabin and goes up at least 8 miles. This is probable miner's road and trail to Della falls.





LOWER MAINLAND

(k) HOWE SOUND S552 - S620

(1) Gambier Island I

August 6.

Samples - hemlock (w) 3, cedar, Douglas fir.

Timber: Second growth hemlock, Douglas fir, cedar. Old stand
mature alder and maples.

Ground cover: Salal, swordfern, salmonberry.

Insects: Neodivriion sp. (1), melanolenbia imitata (2).

Gambier Island II.

Samples - hemlock (w) 2, Douglas fir 2, cedar, alder, lodge-
pole pine, spruce.

Timber: Second growth, hemlock, cedar, Douglas fir, lodgepole
pine, spruce.

Ground cover: swordfern, salmonberry.

Insects:

Contacts: Mr. Alexander, naturalist, - home behind dock.
west side Camp Artiban.

Access: Trails fork two ways behind Camp Artiban. - east fork goes to east side of island; west fork, up to centre island on old skid road.

(ii) McNab Creek

August 7.

samples - hemlock (w) 3, alder 3.

Timber: hemlock, balsam, spruce, cedar, alder for 2 miles (second growth)..

Ground cover: swordfern.

Insects: Melanolephia imitata (6)

Contacts: Superintendent at logging camp.

Access: Logging road in several miles.

(iii) Rainy River I

samples - hemlock (w) 4.

Timber: Mature and second growth hemlock, cedar, balsam, alder.

Ground cover:

Insects:

No contacts.

Access: Seaside Park for dock. Trail for Rainy River begins at south end of Suspension Bridge at left end of hotel. Turn right off bridge and continue. Trail for north side, (Enemark Logging Co.) leads off to right of hotel.

(144) Rainy River II.

August 7.

samples - hemlock (w) 4, cedar

Timber: second growth pole stand, hemlock (w), fir balsam, cedar.Ground cover: thimbleberry, salmonberry, blueberry.Insects: Melanolophia imitata (15), Neodiprion sp. (3)Contacts:Access: (as in "Rainy River I")(iv) Woodfibres (Mill Creek)

August 8.

samples - hemlock (w) 4, alder 4, fir balsam.

Timber: hemlock regeneration and second growth alder, yew, balsam, cedar.Ground cover: Salmonberry, salal, huckleberry.Insects: Melanolophia imitata (6), Dendroctonus monticolae (1).Contacts: Superintendent Mr. Brennan at mill (if open)Access: Road above town to mill house; flume trail continuation up which is very rickety and unsafe for travel.Woodfibres: (Henrietta Lake)

August 8

samples - hemlock (w) 6, cedar, alder.

Timber: Excellent stands of hemlock and Douglas fir after first mile, up to approx. 2,500 feet. Stand then becomes more rugged, smaller in size till it becomes cedar, balsam, mountain hemlock.Ground cover: Lean site, salmonberry, huckleberry, salal, swordfern.Insects: Semiothisa granitata (2), Neovitia phantasmaria (1),Melanolophia imitata (5), Neodiprion sp. (70)

contacts: Superintendent at mill (if open)

Access: Road approx. 4 miles to skip trail up beside skip.

(v) SQUAMISH

August 9 - 10.

Alta Lake:

samples - balsam (2), hemlock (w) 3, Douglas fir 4, white pine,

Timber: Rocky outcrop, cedar, balsam, hemlock, scattered white pine, lodgepole pine, yew.

Ground cover: huckleberry, salmonberry.

Insects: Eupithacia sp. (4), Neodiprion sp. (11), Semiiothisa granitata (1)

Contacts: Mr. Ray Allett, assistant forest ranger in west side of town radio call VX7A.

Access: Speeder or train up to Alta Lake, Garibaldi up Cheakamus valley. Many trails and roads available at each station.

Squamish

August 9 - 10

samples - hemlock (w), alder

Timber: hemlock, cedar, alder, maple, logged over across Delta country.

Ground cover:

Access:

Brohan Lake:

August 9 - 10

samples - hemlock (w) 2, Douglas fir 2, lodgepole pine 1.

Timber: 15 miles up from Delta, mature stands of hemlock, Douglas fir, cedar, medium density, loam site. Regeneration down on valley floor, hemlock, Douglas fir, lodgepole pine.

Ground cover: devil's club, swordfern, Oregon grape.

Insects: Melanolophia imitata (2), Neodiprion sp. (1), Semiothisa granitata (2), Caripeta divisata.

Contacts: (same as Alta Lake).

Access:

1. JERVIS INLET S621 - S806

August 13

(1) Halfmoon Bay I.

samples - Douglas fir 3, alder, red cedar 3, hemlock (w) 3, white pine.

Timber: Lower slopes logged over. Second growth and regeneration Douglas fir, cedar, white pine, jack pine, with alder and willow.

Mature hemlock and Douglas fir about 7 - 9 miles back.

Ground cover: fireweed, salal, bracken, scrub alder.

Insects: Eupithecia (3), Melanolophia imitata (7), Neodiprion sp. (2), Caripeta divisata (4)

Contacts: Superintendent at Logging Camp (if running).

Access: Logging road which goes to within one mile of Fender Harbour on upper mountains.

Halfmoon Bay (shoreline district)

samples : Douglas fir, cedar 2, hemlock (w) 4, alder 2, balsam.

Timber: Douglas fir, cedar, hemlock patchy, almost mature stands on low lying country near shore, very dense.

Ground cover: bracken, swordfern, salal.

Insects:

No contacts:

Access: lower road to right.

(ii) Irvines Landing: I (Fender Harbour) August 14.

samples - Douglas fir 4, hemlock (w), cedar, apple.

Timber: Typical rocky, low lying country - scattered patches of second growth Douglas fir increasing in density as elevation and slope decrease. Further back from shore line, timber becomes more mature.

Ground cover: Salal, swordfern, bracken, deerfern.

Insects: Hyphantria textor (60 approx. on apple tree).

Melanolephia imitata (5).

No contacts:

Access: Sakinaw Lake trail

Road from Irvines Landing to Garden Bay.

Trail from Irvines Landing to Garden Bay.

(iii) Irvines Landing II.

samples - cedar 3, white pine, hemlock (w) 4, Douglas fir 2, lodgepole pine.

Timber: Almost all regeneration and second growth Douglas fir, cedar, lodgepole and white pine. Gravel site.

Ground cover: salal, huckleberry,

Insects: negative

Contacts: (as for Fender Harbour)

(iv) Sechelt Arm - Gray Creek

August 15.

samples - Douglas fir 2, hemlock (v) 3, lodgepole pine, alder 2, red cedar.

Timber: Second growth hemlock, Douglas fir, balsam, cedar.

Farther back stand also contains lodgepole and Jack pine.

Ground cover: salal, bracken.

Insects: Ambrosia beetles present in burned (June 15, 1949) timber, also in felled and bucked. Melanolephia imitata (2)

Myhantria taxter (approx. 50).



Contacts: Mr. Sweetnam (graduate forester)

Access: Gray creek logging road.

(v) Sechelt

August 15.

samples - hemlock (v) 2, Douglas fir, lodgepole pine.

Timber: alder, Douglas fir, cedar, lodgepole, hemlock,
regeneration and second growth. Gravel site.

Ground cover: salal, huckleberry.

Insects:

No contacts.

Access: Road (main highway) and logging skid road above Seehalt.

(vi) Glewholm Lakes: - (lower) August 16.

samples - hemlock (w) 4, cedar 2, Douglas fir.

Timber: Second growth hemlock and Douglas fir with scattered
cedar. Small part here is 1946 hemlock looper kill.

Ground cover: swordfern, bracken.

Insects: Melanolephia imitata (6) Semiethisa granitata (3)

Contacts: nil

Access: no trails - travel by dinghy in both lakes. Pack
dinghy from harbour up to first lake by trail.

Glewholm (upper)

samples - spruce, hemlock (w) 4, cedar, alder

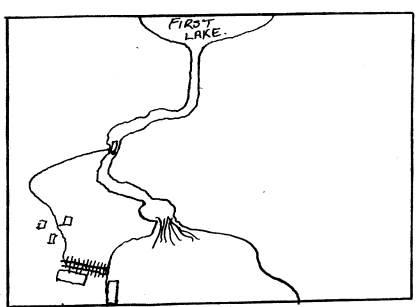
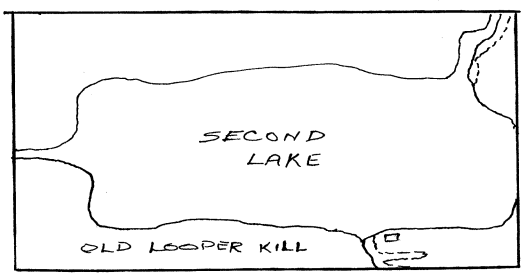
Timber: selective logged for cedar years back. Heavy growth of
hemlock, cedar, Douglas fir, spruce. Sandy loam and loam sites.

Ground cover: swordfern, devil's club, salmonberry, huckleberry
bracken, moss.

Insects: Melanolephia imitata (5), Pikonema alaskensis (1)

Contacts: MR KYM (PRONOUNCED "KIME")

Access:



(vii) Seehelt Creek:

August 16.

samples - hemlock (w) 3, Douglas fir 2, red cedar 2, alder 2, balsam.

Timber: second growth hemlock, Douglas fir, cedar, alder for 3/4 of a mile (1,100') then hemlock, balsam, white pine and yew. Medium dense - steep sided mountain sites.

Ground cover: Salal, huckleberry, fireweed, gravel site.

Insects:

Contacts: superintendent at logging camp.

Access: logging road.

(viii) Tzoonie River

August 17

samples - hemlock (w) 4, alder 2.

Timber: Long valley bottom of alder growth burned out. Small quantity of regeneration hemlock and Douglas fir.

Ground cover: bracken and swordfern.

Insects: Melanolerhia imitata (1)

No contacts:

Access: by old logging road in four miles.

(ix) OSBORNE'S CAMP:

August 17

samples - hemlock (w) 4, Douglas fir 2, alder, cedar 3, balsam.

Timber: hemlock, Douglas fir, cedar, balsam, alder. Steep rocky slopes, partially logged. Stands remaining are mature.

Ground cover: bracken, swordfern, salal.

Insects:

Contact: superintendent at camp.

Access: Logging road.

(x) EGMONT: I

August 18

Timber: Douglas fir, cedar, maple, hemlock scrub growth on rocky site.

Nature timber sparse - second growth moderately dense.

Ground cover: salal, bracken, moss, grass

Insects: Melanolenia imitata (2), Cariceta divisa (14)

Semiothisa (1) Dysectia aurulenta (2), Eumithia (1)

No contacts:

Access: by roads behind Post Office and store.

(xi) JERVIS INLET (Head)

August 19

samples - hemlock (w) 6, Douglas fir 2, balsam, cedar, alder 2.

Timber: heavily wooded in un-logged areas but access difficult due to terrain. Logged areas now regeneration hemlock, Douglas fir, cedar. Second growth is stunted and wind blown. Further along inlet shore (Ruby Creek) dense stand of hemlock, balsam and Douglas fir of moderate sized mature trees.

Ground cover: fireweed, huckleberry, thimbleberry, swordfern, bracken

Insects: Semiothisa granitata (25) Caripeta divisata (22)

Melanolephia imitata (9), Nezytia phantosmaria (2), Hyphantria
textor (132), Eupithecia (4).

No contacts

Access: by dinghy to dock and up Skwaka valley logging road.

(xii) Princess Louisa (Malibu)

samples - hemlock (w) 4, Douglas fir 2, cedar 3, alder.

Timber - second growth hemlock, Douglas fir, cedar, mountain alder.

Intermixed mature and over mature hemlock and Douglas fir.

Ground cover: salal, bracken, swordfern.

Insects: Melanolephia imitata (11) Caripeta divisata (6)

Neodixyon sp. (1), Eupithecia (1), Archips sp. (1), Semiothisa
granitata (1).

Contacts: none

Access: up valley from last hole on golf course - sort of a trail.

(xiii) Deserted Bay:

August 20.

samples - hemlock (w) 4, balsam 2.

Timber: Regeneration spruce, hemlock, cedar and alder for 2 miles
then burnt over and logged area for next 4 miles. Mature stands
of hemlock, balsam and cedar with hemlock and balsam regeneration.

Ground cover: salmonberry, huckleberry.

Insects: Semiothisa granitata (10), Melanolephia imitata (4),

Lambdina fuscicollis lugubrosa (4), Caripeta divisata (4).

Contacts: Superintendent at camp (Gustavsen jr.)

Access: logging roads.

(xiv) Britain River I

August 21.

samples - hemlock (w) 1, balsam 1.

Timber: Valley floor logged off for 6 miles then hemlock, balsam, cedar, good growth and site.Ground cover: swordfern, blueberry, huckleberry, salmonberry.Insects: Lambdina fiscellaris lugubrosa (3), Caripeta divisata (4),Melanolerhia imitata (4), Semiethisa granitata (1), Eupithecia sp. (1).Contacts: superintendent at camp.Access: logging road.Britain River II.

August 21.

samples - hemlock (w) 5, balsam, alder.

Timber: Approx. 6 miles up valley mature timber starts. Area logged and burned up to this point. Logged area has patchy regeneration of hemlock, balsam and alder. Gravel site.Ground cover: Salmonberry, thimbleberry bracken, huckleberry.Insects: Nerytia phantasmaria (1), Melanolerhia imitata (5),Lambdina fiscellaris lugubrosa (1), Caripeta divisata (2)Contacts:Access: (Same as Britain River I)(xv) Vancouver Bay I

August 22.

samples - hemlock (w) 4, Douglas fir 3, balsam, alder.

Timber: from beach to 7 mile point, regeneration Douglas fir, hemlock, cedar, balsam, along valley floor.Ground cover: salmonberry, fireweed, blackberry, huckleberry.Insects:

Contacts: superintendent at camp

Access: logging road.

(xv) Vancouver Bay II

August 22.

samples - hemlock (w) 5, balsam 3.

Timber: Beyond 7 mile point mature stands of hemlock, Douglas fir, cedar, steep sided valley.

Ground cover: blueberry, deerfern, salmonberry.

Insects: Semiothisa granitata (1), Melanolephia imitata (3).

Contacts:

Access: (as Vancouver Bay I).

(xvi) Stillwater

August 25.

samples - Douglas fir 4, alder 2, hemlock (w) 2, cedar 2.

Timber: Douglas fir and alder regeneration. Rocky outcrops, cutover and burned.

Ground cover: swordfern, salal, huckleberry, salmonberry.

Rolling country.

Insects: Melanolephia imitata (3), Hemichroa crocea (33)

Semiothisa granitata (1)

Contacts: Foreman at camp (if open)

Access: north west road, and road parallel to railroad travelling eastward.

n. POWELL LAKE (and GOAT LAKE)

5807 - 5899

(1) Mowat Bay and Haywire Bay

August 26.

7 samples taken - hemlock (w) 2, cedar 2, Douglas fir, alder 2.

Timber: Much over story of alder with understory of hemlock Douglas fir, and cedar, also maple.

Ground cover: salal, swordfern, salmonberry, bracken, huckleberry and Oregon grape on gravelly soil and some rocky soil.

Insects: Hemichroa crocea - very numerous on alder at Mowat Bay - 75% defoliation. Melanolepis imitata present in very small numbers.

Powell Lake (district)

Contacts: either Mr. W. Otto (assistance ranger) or Mr. Black (ranger at Powell River).

Access: dinghy up lake to trails and roads - Inland Lake - trail (old skid road up river to lake. (information at camp)

(ii) East side Goat Island and Goat Lake August 27

18 samples taken - hemlock (w) 5, Douglas fir 3, cedar 3, lodgepole pine, balsam.

Timber: Scrubby fir, cedar and lodgepole pine on rocky outcrop regions. Few fertile valleys with cedar, Douglas fir, hemlock and alder.

Ground cover: salal and huckleberry on rocky outcrop; swordfern, salmonberry, thimbleberry on valley floors.

Insects: Hemichroa crocea - found in very small numbers in this area with no defoliation evident. Semiothisa granitata and Garrista divisata found also in very small numbers.

Goat Lake head - logging road from camp up several miles.

(iii) Powell Lake Head to north tip of Goat Island August 28
16 samples taken - Douglas fir 4, hemlock (w) 3, cedar 4,
alder 5.

Timber: Douglas fir scrub, second growth and maple on rocky outcrop; hemlock, Douglas fir and cedar in valleys, but few fertile.

Ground cover: salal and bracken some swordfern in fertile spots.

Insects: Evidence of defoliator on alder lot No. 1,250, - head Powell Lake no insects present, but old defoliation approx. 80% Suspect a Chrysomelid larvae. No sign of actual insects in any stage. Hyrphantria textor evident on alder. Semiothisa granitata and Caripeta present very small numbers.

Access: old road up several miles.

(iv) Olsen River mouth to T. L. 2046^P August 29
15 samples taken - Douglas fir 4, hemlock (w) 4, cedar 4,
alder 3.

Timber: hemlock, Douglas fir, cedar and alder secondgrowth on fertile valley flats and rockier valley sides.

Ground cover: Hemichroa crocea - very numerous at Lot 522 and T. L. 2046^P defoliation approx. 65%. Semiothisa granitata and Caripeta divisata present in very small numbers.

Access: Olsen Lake - logging road in

Access: Goat Island - skid road up to Clover lake.

36 samples taken - hemlock (w) 12, Douglas fir 6, cedar 7,
white pine, balsam 4, dogwood, alder 7.

Timber: hemlock and Douglas fir second growth mostly with alder
patches and cedars in valley lowlands. O'Brien camp road up as
far as Freda Lake (12 miles) - hemlock and balsam stand.

Ground cover: salal and bracken on rocky (near shoreline) soil;
blueberry and salal in valleys.

Insects: Hemichroa crocea very numerous in Powell River town
Cranberry Lake, and towards Westview 50 - 80% defoliation.

Hyrphantria textor also very noticeable on road from Westview to
Gordon Pasha Lake No. 2. Semiethisa granitata and Caripeta
divisata present in very small numbers.

Contacts and Access: 2nd lake - O'Brien's camp - road up
12 miles to Freda Lake. 3rd lake - McHaire's camp - skid
road up hill 1 1/2 miles. Trail to Horseshoe Lake from
2nd Gordon Pasha Lake - ? ? - road from Powell River to Lang
Bay and branch - offs.

c. MALASPINA INLET S990 - S1072 September 3 - 4.

(1) Lancelot Arm:

21 samples taken - hemlock (w) 5, Douglas fir, cedar 3,
lodgepole pine 2, alder 4.

Timber: hemlock, Douglas fir and cedar with scrub Douglas fir
on rocky outcrop regions but good growth inland.

Ground cover: salal, bracken and scrub willow in rocky region;
swordfern on lower fertile levels.

Insects: Hemichros crocea found in small numbers on alder.

Semiothisa and Caripeta present also but very scarce.

Contacts: Mr. Walter Jansen (ranger) at Lund.

Access: Lund- Penrose Bay road across peninsula.

J. SAVARY ISLAND (end to end) S1023 - 1027 September 7

5 samples taken - Douglas fir 3, hemlock (w), alder.

Timber: Scrubby on south-east end of Island mostly Douglas fir.

North-west end fairly mature Douglas fir in rocky soil 12" - 30" d. b. h.

Ground cover: Thick growing salal.

Insects: Hyrphantria textor present, also Caripeta divisata and

Semiothisa granitata present in ones and twos.

No contacts:

Access: dinghy and road from end to end.

q. LASQUETTI ISLAND S1028 - S1041 September 22

14 samples taken - Douglas fir 6, hemlock (w) 2, cedar,

balsam, lodgepole pine 2, alder 2.

Timber: Mature and second growth hemlock and Douglas fir. Some cedar and alder in cutovers and blowdown.

Ground cover: swordfern in gulches with salal and salmonberry on rocky higher ground.

Insects: Hyrphantria textor present, with Caripeta angustiorata

present in small numbers on lodgepole pine and Douglas fir.

No contacts:

Access: False Bay road.

D. TOBA INLET

S1042 - S1077

(i) Toba and Tahumning Rivers.September 24

11 samples taken - hemlock (w) 3, cedar 3, Douglas fir 2,
balsam, spruce, alder.

Timber: hemlock, cedar, and alder on shoreline some balsam and spruce. Hemlock, balsam and spruce inland, mature stand at top of cutover. Douglas fir on rocky outcrop.

Ground cover: Deep salmonberry and crabapple on shoreline.

Inland - salmonberry, blueberry, huckleberry with moss covered rotted slash on gravel soil.

Insects: Semiothisa and Caripeta divisata present in small numbers.

Contacts: superintendent at camp.

Access: logging road up twelve miles to mature timber.

(ii) Salmon BaySeptember 25

8 samples taken - hemlock (w) 3, spruce, Douglas fir,
balsam, alder 2.

Timber: very dense second growth hemlock and spruce on old cutover some fir and balsam.

Ground cover: salmonberry, thimbleberry, elderberry, swordfern on deep loam soil.

Insects: Semiothisa granitata and Caripeta divisata general in very small numbers.

No contacts:

Access: old road up several miles.

(iii) Forbes Bay

September 25.

12 samples taken - hemlock (w) 7, cedar 4, spruce.

Timber: very dense even second growth 6" - 10" d. b. h.
hemlock, balsam and cedar. Some alder. Inland - hemlock,
cedar and Douglas fir.

Ground cover: swordfern, deerfern, salal and huckleberry;
salmonberry near shoreline.

Insects: *Semiothisa granitata* and *Caripeta divisata* present
in usual small numbers.



Contacts: superintendent at camp.

Access: logging road from log dumps.

s. TEXADA ISLAND S1078 - S1101

(i) Vananda district

September 26.

16 samples taken - Douglas fir 6, hemlock (w) 3, cedar 2,
lodgepole pine, alder 4.

Timber: Douglas fir, cedar and hemlock mid dense second growth
and mature stand on rocky site.

Ground cover: Bracken and salal where open; salal and wild rose,
thistle, and deerfern in some parts inland.

Insects: Caripeta divisata and Semiothisa granitata present in
small numbers

(ii) south end of Texada Island - lot 19 September 27.

8 samples taken - Douglas fir, hemlock (w) 2, cedar,
alder 3, juniper 1.

Timber: cedar and Douglas fir mature and second growth hemlock,
cedar and alder, in rocky lower land of gulch. Scrub Douglas fir
and juniper on rocky side hills of island.

Ground cover: salal and wild rose.

Insects: Caripeta species present but very scarce.

No contacts:

Access: Blubber Bay road.

I. LOWER VANCOUVER ISLAND - 1949.

E. G. Harvey.

This report deals with the forest insect survey work done in the lower Vancouver Island area of British Columbia. This was permanently established in 1948 as that portion of Vancouver Island which lies to the south and east of the highway from Parksville to Port Alberni and the Alberni Canal, including the Channel Islands between Nanaimo and Victoria.

Due to geographical differences, changes of timber types and accessibility it was found more convenient in writing reports to divide this territory into the following eleven districts -

1. Sooke - Goldstream.
2. Victoria - Saanich
3. Jordan River - San Juan River.
4. Shawnigan Lake - Duncan
5. Gulf Islands.
6. Nitinat River - Cayouse River.
7. Cowichan Lake.
8. Ladysmith - Nanaimo.
9. Sarita River.

10. Alberni

11. Parksville.

The above districts being permanently established and the timber types and means of access being nearly constant, descriptions here should be unnecessary since these points are thoroughly covered in the 1948 report.

There were 612 collections, about 9,000 insects, made in the lower Vancouver Island district.

As in previous years the collecting was done by the standard method of beating three of each species of tree for each collection. The regulation 7' x 9' beating sheet was used. The only exceptions were in infestation areas where another method was found to be better for making large collections quickly. It was found, for instance, that by placing a few small branches of green oak leaves under the heavily defoliated trees and picking them up a few hours later they would be covered with hundreds of oak loopers.

All the sample areas are clearly marked on the map, showing at a glance the coverage attained.

A DISTRICTS.

1. SOOKE - GOLDBSTREAM

This, the most southerly part of Vancouver Island, is

covered with scattered stands of trees, mainly Douglas fir.

Collections were made in eleven areas.

Number of samples taken 45

Approximate number of insects enclosed 450

2. VICTORIA - SAANICH

Located east and south of Saanich Inlet, in the most thickly populated section of the island. There are a few small logging and wood-cutting operations carried on here, but possibly of more importance are the parks and the residential areas. The Douglas fir is predominant throughout this district, except in the residential areas around Victoria, which are covered with almost pure stands of oak.

Collections were made in fourteen areas.

Number of samples taken 80

Approximate number of insects enclosed 3,600

This number of insects includes large collections made in infestation areas, which will be discussed in the summary.

3. JORDAN RIVER - SAN JUAN RIVER.

This section, on the south west part of the island, facing on the Strait of Juan de Fuca, is largely inaccessible

by road. It contains some large stands of hemlock and includes the watershed for the Jordan River Power plant.

Collections were made in ten areas.

Number of samples taken 35

Approximate number of insects enclosed 375

4. SHAWNIGAN LAKE - DUNCAN

This section is in the south east part of the E. & N. Land Grant. It contains the Victoria City water supply, as well as the operations of several large logging companies.

Collections were made in eleven areas.

Number of samples taken 46

Approximate number of insects enclosed 435

5. Gulf Islands.

These are the islands lying to the east of Vancouver Island, between Nanaimo and the northern end of the Saanich peninsula. The predominant tree on these islands is the Douglas fir. Eight islands were visited by the J. M. Swaine, and two by car and ferry.

Collections were made in 27 areas

Number of samples taken 116

Approximate number of insects enclosed 1,100

6. NITINAT RIVER - CAYCUSE RIVER.

This section is on the middle western part of lower Vancouver Island, due west of Cowichan Lake. It is a large district most of which is still covered with a virgin stand, predominantly of hemlock. It is inaccessible by road, with logging railways penetrating only the outer edges. Due to the fact that most of this district must be covered on foot, with field pack trips where more than one man is required, most of it had to be passed by for this year.

Collections were made in eight areas.

Number of samples taken 26

Approximate number of insects enclosed 225

7. COWICHAN LAKE

This is a large district surrounding Cowichan Lake, in the central part of lower Vancouver Island. The predominant tree species is hemlock in the virgin stands and Douglas fir in the regeneration and planted areas.

Collections were made in twelve areas.

Number of samples taken 56

Approximate number of insects enclosed 520

8. LADYSMITH - NANAIMO

This is a very large district on the eastern side of

the island. Large tracts have been completely logged off and are now either bare or covered with young regeneration. There are some large logging operations on the higher levels and many small ones lower down. Douglas fir is predominant here.

Collections were made in 28 areas.

Number of samples taken 105

Approximate number of insects enclosed 860

9. SARITA RIVER

This district is located at the north western corner of lower Vancouver Island. It, together with No. 6 to the south, contains the areas which were heavily infested with hemlock loopers from 1945 to 1947. Foliage eating insects in these two districts, with the exception of Chrysomelidae on willow and alder, have been very scarce since the disappearance of the hemlock loopers, and are just beginning to show a slight increase in numbers. Hemlock is the predominant tree here.

During the past year the Bloedel, Stewart & Welch Co. have built roads from Christie Bay south to the Klanawa River and east to a point about three miles above Sarita Lake. This has made it much easier to get into these important areas.

Collections were made in thirteen areas.

Number of samples taken	40
Approximate number of insects enclosed	250

10. ALBERNI

This is the north central part of lower Vancouver Island. It contains large areas of regeneration and plantations, as well as large stands of virgin timber.

Collections were made in eight areas.

Number of samples taken	31
Approximate number of insects enclosed	230

11. PARKSVILLE

This is a small district in the north east end of lower Vancouver Island. It contains the operations of one large logging company, as well as several small operators. Douglas fir is predominant here.

Collections were made in eight areas

Number of samples taken	32
Approximate number of insects enclosed	280

SUMMARY

Insect conditions in the forests of lower Vancouver Island during 1949 were on the whole very good. The only new infestation located was one of only about 100 acres of alder sawfly on Salt Spring Island. This insect, which

was in infestation around Victoria during 1948, practically died out in this area during 1949. The oak loopers, also around Victoria, are still spreading. Douglas fir bark beetles are still attacking a small area of looper damaged timber in Wilson Creek. A small stand of spruce regeneration at Franklin Creek reported in 1948 as being attacked by the spruce weevil is still heavily infested. The former hemlock looper infestation areas, where most other insects seemed to disappear along with the hemlock loopers, are gradually getting back to normal, although the number of insects found there is still below that of other parts of the island.

Oak Looper (*Lambdina sommaria* Hlst.)

This defoliator, which has been on the rampage among the oak trees in the Victoria district for the past four years, is still on the increase. In the past it was prevalent in several distinct areas separated by fairly wide strips of oak trees which were practically untouched by loopers. But during 1949 the infestation spread so that these separating strips were all defoliated along with the rest. In the areas where the oak trees had been de-nuded

before the larvae were through feeding, oak loopers were found on maple, alder, willow and Douglas fir, all of which showed heavy defoliation. In fact, some of the Douglas fir trees have succumbed to these attacks.

Indications for 1950 are that the remaining stands of oak in this district will be infested with these loopers. There was a heavier moth flight in the fall of 1949 than in previous years. One factor contributing to this increase is the apparent disappearance of the parasites which had been building up among these loopers. The following data gleaned from the rearing sheets of the past three years, shows this. The collections were all of from 150 to 300 larvae or pupae each.

1947	5 larvae collections
56.6 % of larvae died	{ 49.2 % disease and miscellaneous
	{ 7.2% Dipterous parasites
43.4 % pupated	{ .2 % Hymenopterous parasites

53.6 % of pupae died (43 % disease and miscellaneous
 (10.4 % Dipterous parasites
 46.4 % of pupae emerged (.2 % Hymenopterous parasites

1948

9 larvae collections.

70.5 % of larvae died (70.5 % disease and miscellaneous
 (29.5 % of larvae pupated (

55.4 % of pupae died (45.4 % disease and miscellaneous
 (5.6 % Dipterous parasites
 44.6 % of pupae emerged (4.4 % Hymenopterous parasites

50 pupae and pre-pupae collections

78 % of pupae died (50.5 % disease and miscellaneous
 (23.8 % Dipterous parasites
 22 % of pupae emerged (3.7 % Hymenopterous parasites

1949

10 larvae collections

67 % of larvae died (disease and miscellaneous
 (33 % of larvae pupated (

50.66 % of pupae died (Disease and miscellaneous
 49.34 % of pupae emerged (Dipterous parasites
 (Hymenopterous parasites

Hemlock Looper (Lambdina fiscellaria lugubrosa Hlst.)

On lower Vancouver Island, where this insect did so much damage before 1948, only four larvae were found. Three of these were found on Douglas fir, one each at Departure Bay, Big Sicker Mountain north of Duncan and Thetis Lake Park. The other one was found on cedar at Nanoose Bay.

False or Green Hemlock Looper (Neolyda phantasmaria Wlk.)

There were only nine larvae of this insect found on lower Vancouver Island. They were all found singly except at Craig where four larvae were taken in one collection from Douglas fir. The others were found to be feeding on Douglas fir, grand fir, hemlock and jack pine.

Alder sawfly (Hemichroa crocea Fourc.)

This species, first recorded on Vancouver Island

in 1948, has made its appearance in several new localities in 1949. An alder stand of about 100 acres near Beaver Point on Salt Spring Island was completely defoliated twice during the year. No larvae were found on trees in the same alder stand 100 yards away from the infested area.

Larvae were found in small numbers in the Nitinat valley, from the junction of the Nitinat and Little Nitinat Rivers to the head of Nitinat Lake. Alder trees in Mt. Douglas Park were also heavily defoliated by this insect in June.

During 1948 the infested areas were around the Gorge Park, Portage Inlet and along the Colquitz River, all bordering on Victoria. However, although there was a fairly large population in these areas early in June this year, they all disappeared shortly after hatching and no larvae were found in these areas at all during the time when the second generation is feeding in late August. The second generation in Mt. Douglas Park hatched and then also started to disappear without reaching maturity. On September 1 all the larvae which could be found, approximately 50, were gathered and taken to Salt Spring Island where they were released in the midst of the thriving infestation there in an effort to spread

the disease which had wiped out the Victoria infestation.

Western Tent Caterpillar (Malacosoma pluvialis Dyar).

North Pender Island was the only place where any noticeable population of these insects remained during 1949. In the spring the willow trees on this island were found to have from one to three tents per tree on them.

Satin Moth (Stilpnotis salicis L.)

Only two larvae were found this year on lower Vancouver Island, on cottonwood at Cassidy B. C.

Sitka Spruce Weevil (Pissodes sitchensis Hopk.)

The spruce regeneration on Vancouver Island is suffering heavily from attacks of this weevil. The worst infestation is along Franklin Creek where 75 per cent of the regeneration spruce have the leaders killed. Other areas with infested trees are the Nitinat and Little Nitinat Rivers and Robertson River.

Spruce Budworm (Choristoneura fumiferana Clem.)

This potentially dangerous insect was found in small numbers around the southern end of Vancouver Island. Larvae were found at only one place north of Goldstream, two being located at Bainbridge Lake near Port Alberni. Seventeen

larvae were found in all, the rest all being single collections except at one point, nine larvae were found on Douglas fir near Durant's Road just south of Todd Inlet. One larva was found on cedar, the others all on Douglas fir.

Hemlock Sawfly (Neodiprion tsugae Midd.)

Larvae of this sawfly were found in twenty-five collections on lower Vancouver Island, twelve of which were from hemlock, six Douglas fir, six grand fir and one balsam. The largest single collection was from hemlock at Little Sicker Mountain, just north of Duncan, where eighty-nine larvae were found. Other collections were Franklin Creek twenty-nine, Cottonwood Creek headwaters seventeen, Christie Bay twelve. The collections were all made between May 20 and August 17, the latter being at an elevation of about 3,000 feet.

Sawfly (Neodiprion spp.)

Various species of Neodiprion sawfly larvae were found throughout the district. They were recorded in seventy-seven collections taken from Douglas fir, hemlock, spruce, cedar, white pine, willow, grand fir, lodgepole pine, alder and cascara. The largest number were found on hemlock at Maple Bay where twenty-eight larvae were found.

Green Striped Looper (Melanolophia imitata)

This was the most wide spread and commonly found larva in the district. A total of 300 larvae were found in 101 collections, the largest collections being from Big Sicker Mt., north of Duncan where 14 were found on cedar and ten on Douglas fir. Larvae were found on all varieties of trees.

Green Cedar Looper (Eupithecia placidata)

This looper was quite wide spread in cedar, 104 larvae being taken in forty collections. Two larvae were found on hemlock and one on Douglas fir. No larvae were taken after July 13 until September 21 when they were again found, newly hatched. The largest number in one collection was ten taken on Mayne Island.

Cascara Looper (Triphosa haesitata)

The cascara trees in the lower Vancouver Island district suffered heavy defoliation, up to 75 per cent, from this looper. From sixteen collections there were 191 larvae taken, and these were mostly taken from very small trees. The heaviest defoliation was on Kuper Island where 42 larvae were taken in one collection.

Budworms (Pyralidae)

The spruce trees, from east Sooke to the Alberni Canal on the west coast, all showed evidence of bud damage. At Otter Point, Jordan River and Port Renfrew larvae, up to 200 at a beating, were found to be feeding during May. On most trees in these areas up to 90 percent of the buds contained larvae, some of which were Griselda sp.

Silver Spotted Tiger Moth (Halisidota argentata Pack.)

Only eleven larvae, in ten collections, were found, scattered throughout the south end of Vancouver Island and on the Gulf Islands.

Red Striped Cutworm (Feralia jocosu)

These larvae were found from June 7 to September 15, about evenly sprinkled throughout the district, seventeen being found in sixteen collections.

Adelges collevi (Gill.)

A few galls were found on spruce trees at Christie Bay and Nitinat Lake. The Douglas fir regeneration in the San Juan River valley was heavily infested with these insects. In places the young trees look yellow and wilted from the attack.

Grey Spruce Looper (Caripeta divisata Wlk.)

This species is very common from the last week in August on to the end of the season. They were found to be feeding on most varieties of trees and in all parts of the district, but in small numbers only, the largest collection being twelve larvae from Douglas fir at Ladysmith.

Green Spruce Looper (Semiothisa granitata)

These loopers were found in 33 collections in lower Vancouver Island but in very small numbers, from one to six per collection. They were all found after the middle of August and evenly distributed throughout the district.

Spotless Fall Webworm (Hyalantria textor Harr.)

The fall webworm was quite common on the alder at the roadside between Nanaimo and the Malahat, but in no place was there a population which could be considered an infestation.

Yellow Headed Spruce Sawfly (Pikonema alaskensis Roh.)

This sawfly was found in small numbers only at east Sooke and Thetis Lake, where eight and twelve larvae were taken. At Frederick Creek one larvae only was found.

Green Headed Spruce Sawfly (Pikonema dimmockii)

Six collections contained larvae of this sawfly, all taken from spruce but on, which was from mountain hemlock near Ladysmith. At east Sooke twelve larvae were taken in one collection.

Leaf Beetles.

Willow Leaf Beetle (Galerucella carbo)

The willow trees in the lower Vancouver Island district were infested with this beetle at all points except at very high elevations. On the eastern side of the island practically all willow trees were 100 per cent defoliated. In some areas they were also heavily attacked by weevils (Chrytorhynchus larathi), especially so at China Creek where many of these trees have been killed.

Altica sp.

This beetle and its larvae are to be found on willows in many areas along with the willow leaf beetle as well as on alder.

Chrysomela aeneicollis.

Alder were up to 50 per cent defoliated by this leaf beetle at Meade Creek, Cowichan Lake and in Cathedral Grove. They were located in small numbers also at Parksville, Alberni and Genoa Bay, in the last place feeding on willow.

UPPER VANCOUVER ISLAND (D. Collis)

A. INTRODUCTION

The survey of the Upper Island District of Vancouver Island was extended during the 1949 season to cover inaccessible points along the coast. The J. M. Swaine and crew making this possible.

As in the past the British Columbia Forest Service and logging operators gave whatever assistance was required.

B. AREA SURVEYED.

The area extends from Englewood and the Nimpkish Valley on the north east coast of Vancouver Island, east along Johnstone Strait to the group of islands including the Thurlows, Sonora, Stuart, Reid, Cortes, Quadra, and north into Bute Inlet.

From here southeast down the coast to Parksville including Denman and Hornby Islands.

From Parksville the boundary runs west along the Alberni Highway to Alberni, south down the Alberni Inlet including Nahmit River and Henderson Lake. Then across Barkley Sound to Ucluelet taking in Effingham Inlet, Pipestem Inlet and

Maggie Lake.

From Ucluelet north up the Ucluth Peninsula to Tofino and Kennedy Lake.

A total of 636 Collections was turned in from the district excluding those made by other personnel on the Swaine.

G. DISTRIBUTION OF COLLECTIONS.

western hemlock	255	spruce	20
Douglas fir	120	willow	5
balsam fir	68	birch	2
grand fir	2	cascara	1
cedar	68	oak	1
alder	37	dogwood	5
white pine	23	yellow pine	1
jack pine	24		

D. INSECT STATUS

(a) Melanolephia imitata (Wlk.) (green striped looper)

This insect was found more often than any other in the district, being in 114 collections. The larvae showed no preference as to coniferous host and were collected from the 29th of May to the 1st of September.

The numbers collected were small, the highest being 15, the next highest 8.

(b) Neodiprion sp.

The larvae of this insect were found in 93 collections from May 30 to August 28 on most coniferous hosts.

Collections containing over ten larvae are listed below:

HOST	LOCATION	No. Collected
jack pine	west end Great Central Lake north side	99
jack pine	west end Great Central Lake north side	55
Douglas fir	block 70 south side Great Central Lake	26
western hemlock	one mile north of Anderson Lake	19
white pine	west end Great Central Lake north side	17
Douglas fir	west end Great Central Lake north side	17

Although the jack pine at the west end of Great Central Lake were sampled on June 25, larvae could not be found on the larger trees, even when defoliation ran as high as 60 to 90 per cent on the old foliage.

Larvae collected were from small shaded trees no more than two feet high.

(c) Caripeta divisa (Wlk.) (grey spruce looper)

Thirty-seven collections containing this larva were sent to Langford from August 11 to September 12 during the 1949 season. Most collections contained only a few larvae. However, in the Nimpkish valley on the Vernon Lake trail twenty larvae

were found in one collection and ten in another.

(d) Neodiprion tsugae (Midd.) (hemlock sawfly)

Thirty-three collections containing larva of this insect were sent in from the upper island district between June 1 and August 17.

The preferred host was western hemlock and only three collections were from other host trees.

Collections of over ten larvae each are as follows:

HOST	LOCATION	No. collected
hemlock	Anderson Lake (Courtenay area)	35
hemlock	two miles west of Echo Lake, upper Campbell Lake road	32
hemlock	five miles west of Cumberland - water reservoir	31
hemlock	block 71 Great Central Lake	26
hemlock	two miles north of Ucluelet on road	21
hemlock	plateau trail at Anderson Lake trail	20
hemlock	two miles south of Tofino on road	17
hemlock	4 1/2 miles south of Tofino on road	17
hemlock	1/2 mile north of Quathiaski Cove: Quadra Island	16
hemlock	six miles north of Ucluelet on road	15
hemlock	mouth of Maggie River - Barkley Sound	14
balsam fir	Great Central Lake Block 58	12

(h) Lambdina fiscellaria lugubrosa Hlst. (hemlock looper)

Nine collections of this looper were sent in, each containing only one larva. Collections dates ranged between June 16 and August 17.

(i) Choristoneura fumiferana (Glem.) (spruce budworm)

Larvae of this insect were found at seven points. The highest collection was seven larvae on Douglas fir 2 and 2/10 miles up the Bowser lookout road from the Island Highway.

At Sayward where this insect caused extensive damage during 1943 and 1944, no larvae were found.

(j) Pikonema alaskensis (Roh.) (yellow headed spruce sawfly)

Fourteen larvae of this insect were found at six points. The highest count per collection was five.

(k) Pikonema dimmockie (Gress.) (green headed spruce sawfly)

These larvae were found at two points, both on spruce. The largest collection was at Fisherman's Lodge on the Campbell River Highway where eight were found.

(l) Galerucella carbo (Lec.) (willow leaf beetle)

These adults and larvae continued to defoliate willow wherever it existed throughout the district.

Heaviest defoliation was in the Campbell River area.

(e) Semiothisa granitata Gn. (green spruce looper)

From August 8 to September 15 inclusive 29 collections were sent to the Langford Insectary.

No preferred coniferous host was shown and the collections averaged only two larvae each.

(f) Neolyda phantasmaria (Wlk.) (false hemlock looper)

Of the 635 sent to Langford, 26 collections contained larvae of this insect. The highest number of larvae per collection was four.

(g) Hemichroa crocea (Fours.) (striped alder sawfly)

This insect continued to defoliate alder up to 100 per cent in a patch 7/10 mile long, six miles north of Campbell River.

The Bute Inlet - Stuart Island area was surveyed at the end of May when most of the larvae had not yet hatched, therefore the damage in this portion of the district is not known.

In the upper Vancouver Island district the larvae were found at Campbell River in the south and block 20 in the Salmon River Valley to the north. On the 14th of September larvae were collected eight miles west of Elk Falls.

- (m) Hypantria textor (Harr.) (spotless fall webworm)

The web of these larvae were noticed throughout the east coast of the district, usually only one web at a point.

- (n) Chrysonella senicollis auct. (spotted leaf beetle)

Larvae were sent in from two points. At one of these on the Alberni Lookout Road, 110 larvae were collected.

- (o) Emithacia placidata (green cedar looper)

Twelve collections containing larvae of this insect were sent in during the 1949 season. The preferred host was red cedar, although a few larvae were found on Douglas fir and hemlock. Collection dates ranged from June 2 to July 12.

N. GENERAL SURVEY INFORMATION

1. NIMPKISH VALLEY

(Canadian Forest Products)

(a) CONTACTS:

Mr. Tom Wright	- forester
Mr. Glen Patterson	- forest protection
Mr. Russel Mills	- superintendent

(b) ACCESS:

If the J. M. Swaine is not available Englewood is served by C. N. R. or Union boats from Vancouver. From Englewood to

Nimkish Lake by speeder. Up the lake by landing barge and on to Camp Voss by speeder. Trails led to Vernon and Muchalat Lakes, speeder or crummy to other points.

The company owns an aircraft which may be put at the disposal of the ranger.

2. SALMON RIVER VALLEY

(Salmon River Logging Company)

(a) CONTACTS:

Mr. Stan Heffer - forester
Mr. Archie Campbell - assistant forester

(b) ACCESS

The camp is located at the north end of the Island Highway. Travel by truck to Leon Lake. From here trails run to the Adams and White Rivers.

The trail to the White River starts at the east end of the lake, walk across the creek on a log with a hand rail. About three hours walking time is required to reach the river. To cross it if the water is high a canoe will be found on the left side of the trail facing the river. If the canoe is used leave it as found with a note of thanks.

There is a small cabin on the east side of the White River but it is small and inadequate. The trail continues on south from here.

The Memokay River trail starts from branch K10.
Assistance would be needed to locate it.

To reach Adams River walk west past Caesar Nichol's cabin on Leon Lake and the trail will show up when the dense undergrowth is passed. The trail ends at a very run down trapper's cabin.

3. BUTE INLET AND ISLANDS

(a) CONTACTS

The British Columbia Forest Service at Thurston Bay.

(b) ACCESS

This area is accessible only by the J. M. Swaine or British Columbia Forest Service boats. Contact can be made with Thurston Bay through the Campbell River Ranger Station. The necessary information can be obtained from the district insect ranger or British Columbia Forest Service personnel at Thurston Bay.

4. BREWSTER LAKE

(Bloodel Stewart & Welch Camp No. 5)

(a) CONTACTS

Mr. W. Backman - Engineer

(b) ACCESS

Take the road from Campbell River out across the dam at Elk Falls and drive on to the road's end at Brewster Lake.

This is a complete railroad operation and coverage is gained by speeder or on foot. A good trail runs from the end of steel into the centre of the island.

5. ECHO LAKE

(Elk River Timber Company)

(a) CONTACTS

Mr. J. Harrinbou - superintendent

(b) ACCESS

To reach the camp take the upper Campbell River road to Echo Lake and obtain a pass from the office. From here drive on to the gate leading to Goooseneck Lake. The area is a network of roads which can be covered by truck.

6. OYSTER BAY

(Iron River Logging Company)

(a) CONTACTS

Mr. Boggs - time-keeper

(b) ACCESS

The camp is located on the Island Highway between Courtenay and Campbell River. The office does not open until 9 A. M. To obtain permission to proceed earlier phone the time-keeper from the shop.

This is a truck operation, coverage is attained by department vehicles.

7. GOMOX LOGGING COMPANY

1. (Headquarters)

(a) CONTACTS

Mr. A. Turner - Engineer (in phone book - Gomox)

(b) ACCESS

A pass is obtainable from the office at headquarters with difficulty. The area is a combination truck and railroad show and the operators would rather have you use their equipment. Catch the work train from Courtenay at 6:45 A. M.

ii. (Gomox Lake)

(a) CONTACTS

Mr. A. Turner - (in phone book - Gomox)

(b) ACCESS

The camp is at the west end of the lake. To reach it catch a boat from the northeast end at about 6:30 A. M. Drive out almost to Bevan and turn left across the railroad tracks. From the camp catch a crummy to the woods.

8. VAN WEST LOGGING COMPANY

(a) CONTACTS

Mr. Valentine.

(b) ACCESS

Acquire a pass from the office on the Cumberland - Royston Highway and proceed to cover the operation by truck.

9. BRAILEY CREEK LOGGING COMPANY

(a) CONTACTS

Bakie Bros.

(b) ACCESS

The road crosses the Island Highway north of Union Bay. On obtaining a pass from one of the operators or someone at the garage, proceed west through vigorous regeneration into mature timber on a good road.

10. BEBAN LOGGING COMPANY

(a) CONTACTS

nil

(b) ACCESS

The garage is located at Buckley Bay. Obtain permission from someone at the shop or the small house just south of the company road.

The north fork of the road leads to the Tsable River Mines while the south leads to the operators.

11. DENMAN AND HORNBY ISLANDS

(a) CONTACTS

nil

(b) ACCESS

To reach Denman catch the car ferry from Buckley Bay. The first ferry leaves Buckley Bay at about 9 A. M. There

is a general store and auto court on the island.

To survey Hornby Island take the dinghy to Gravelly Bay on the eastern side of Denman and run across to the wharf on Hornby Island. From here a road leads around the island.

12. TSABLE RIVER LOGGING COMPANY

(a) CONTACTS

Mr. Fletcher

(b) ACCESS

The camp will be found on the east side of the Island Highway at Fanny Bay. On obtaining permission from the office or Mr. Fletcher proceed up the road with caution.

13. GREAT CENTRAL LAKE

(a) CONTACTS

nil

(b) ACCESS

This whole lake can only be surveyed by dinghy. The government road ends at the east end of the lake. A mining road at the west end goes as far as Della Falls. A small hunter's cabin is located about one hundred feet back from the lake in T. L. 8841.

14. SPROAT LAKE

(a) CONTACTS

Mr. Bothwell

(b) ACCESS

Half the north side of the lake can be covered by logging road leading to Bloedel, Stewart & Welch Camp No. 10. The remainder is covered by dinghy.

A trail, starting at the old airforce road runs from the west end of the lake through to Kennedy Lake on the west coast.

There are three cabins on the trail, the five, eight and thirteen mile. All were in reasonably good condition during the 1949 season.

Another trail leads from the south west corner of Two Rivers arm to Nahmint Lake. To find this trail walk up the old truck road to a log bridge, turn off here 90° to the left. The blazes for this trail start at the base of a large rock.

15. BLOEDEL, STEWART & WELCH

Camp 8 & 10.

(a) CONTACTS

Mr. Koski - superintendent

(b) ACCESS

The camp is located on Great Central Lake, reached by

driving through the village to the lake, left across the bridge.

As yet the superintendent will not allow our trucks on the roads but they are very accommodating with their own vehicles.

16. A. P. L. CAMP NO. 1.

(a) CONTACTS

Mr. More - superintendent

Mr. T. Grove - engineer

(b) ACCESS

The camp is located at the north end of the Beaver Creek road in the Alberni Valley.

This is mainly a railroad operation covering a large section of the country. Coverage is attained by speeder truck and on foot.

17. HENDERSON LAKE

(a) CONTACTS

nil.

(b) ACCESS

The lake is surveyed by dinghy. The "E. V. Uchuck" calls at Kildonan and will carry the dinghy and outboard there. If the lake is entered at or near high tide it is quite easy

to get the dinghy through. There is no habitation on the lake.

18. KENNEDY LAKE LOGGING

(a) CONTACTS

Mr. Baird - superintendent

(b) ACCESS

If the camp is in operation a truck will meet the "Uchuck" at Ucluelet and proceed to the camp. From here a survey of the area can be carried out. The company will take the dinghy and outboard to Kennedy Lake.

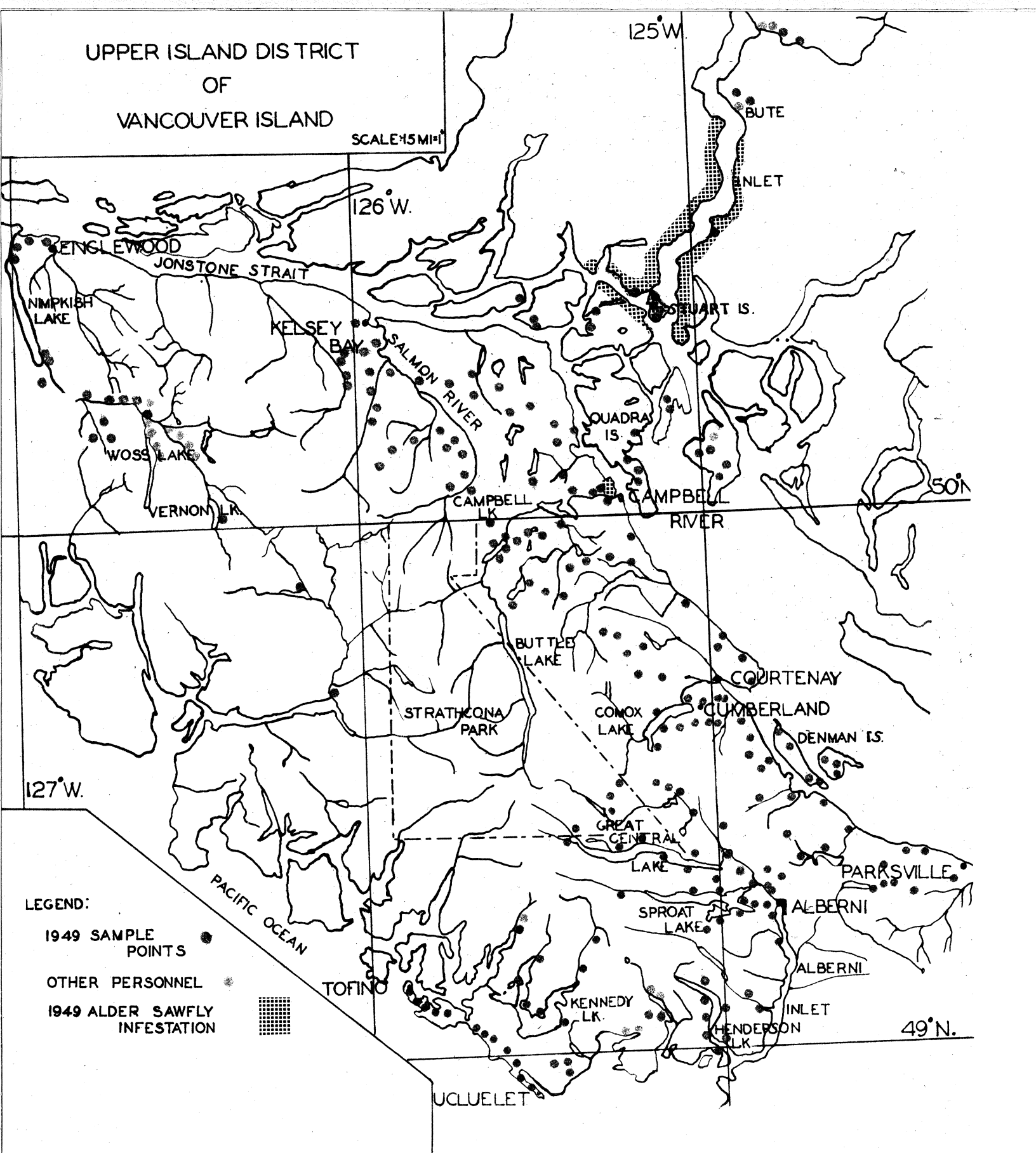
19. UCLUELET TO TOFINO

The road from Ucluelet to Tofino runs through very poor timber most of the way, however, a few stands of hemlock and balsam make the survey worthwhile.

A bus meets the "Uchuck" at Ucluelet and runs to Tofino where there is a small hotel.

UPPER ISLAND DISTRICT
OF
VANCOUVER ISLAND

SCALE: 15 MI



- LEGEND:
- 1949 SAMPLE POINTS ●
 - OTHER PERSONNEL ○
 - 1949 ALDER SAWFLY INFESTATION [Hatched Box]

Stirling Arm - Sproat Lake
June 15, 1949.

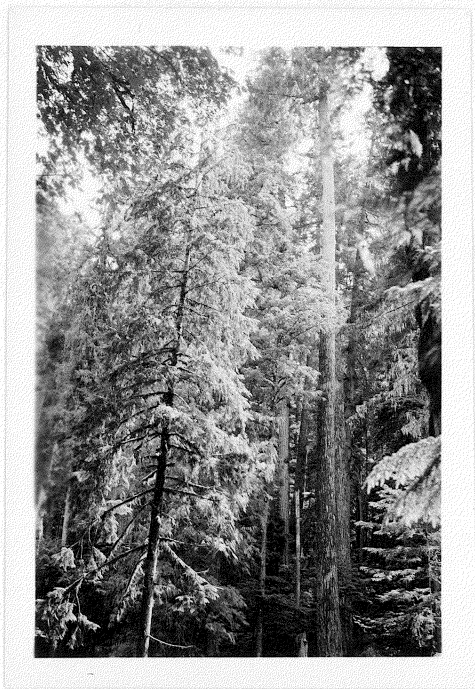


Timber types



Two River Arm Sproat Lake

Old insect kill - not detectable.



Two River Arm Sproat Lake
June 15, 1949.

✓ Timber types



Sproat Lake
June 15, 1949.

✓ Timber types



Union Bay
July 20, 1949.

Second growth Douglas fir



Little Qualicum Falls Park
June 14, 1949.

Defoliation on alder



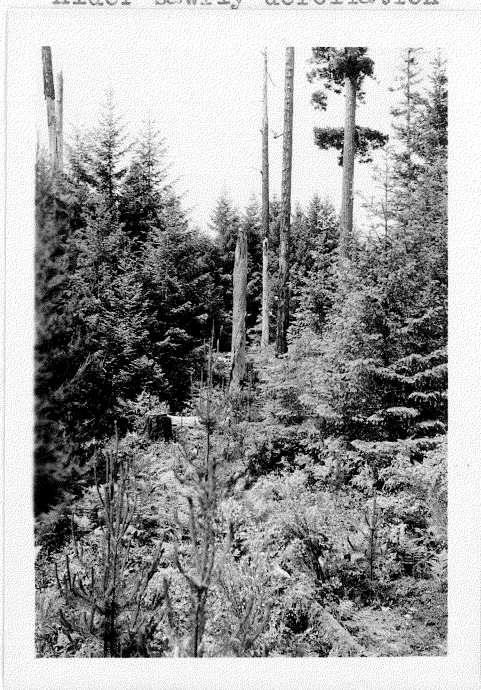
Sayward
July 6, 1949.

Budworm killed hemlock

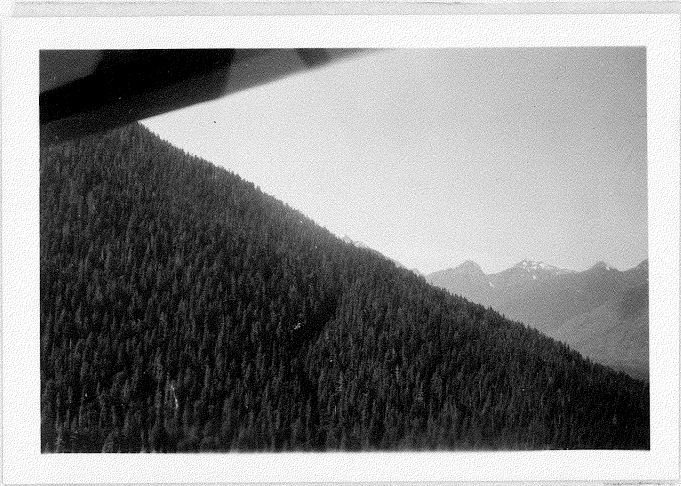


Duncan Bay
August 14, 1949

Alder sawfly defoliation



Comox
June 13, 1949



Vernon Lake area looking west.
August 29, 1949.

Timbered mountain side



Nimpkish Valley
August 29, 1949.

Woss Lake looking south



Sayward White River
July 6, 1949.

Budworm killed timber.

Nimkish Valley,
August 23, 1949.

99



Woss Camp from lookout tower.

Woss Lake looking south
August 28, 1949.



Topography

Nimkish Valley looking east
August 28, 1949.



Topography

ANNUAL REPORT

LOWER MAINLAND DISTRICT (H.E. Vey)

1. Introduction

The Lower Mainland District was again covered during the 1949 insect season. The area covered reached from Vancouver East up the South Fraser River Valley as far as the Hope Mountain area; South to the Columbia Valley; on the North shore of Burrard Inlet to Capilano Creek, Lynn Creek, Lake Buntzen, and Indian Arm; the entire North Fraser Valley including Coquitlam, Pitt, Stave, Allouette, and Harrison Lakes, as well as a certain area of Garibaldi Park, and the University of British Columbia Forest Reserve.

A total of 448 collections was made in these areas, and 4106 insects were sent in to the Victoria laboratory for identification exclusive of mass collections of *Hyphantria textor* larvae, *Galerucella carbo* adults and larvae, and *Hemichroa crocea* larvae.

A special reconnaissance was carried out in the Haney - Mission-McConnell Creek area investigating the occurrence of dead-top Douglas fir which is very prevalent in these areas this year. Further survey work was carried out in the Widgeon Creek area for the purpose of discovering residual populations of Hemlock looper in the previously infested area of that river valley.

Special thanks are due to B.C. Forest Service personnel who co-operated in every way possible with the Survey work in the

district, and also to logging operators who made their roads and equipment available thereby increasing the scope of the Survey to a very great extent.

2. Status of Forest Insects

(a) Lemna fiscellaria lugubrosa (Hlst.)

Small numbers of this insect were found in the Stave Lake and Ruskin areas. On the North Shore of Burrard Inlet at Deep Cove, Lynn Canyon, Horseshoe Bay, Grouse Mountain and Seymour Mountain very small endemic populations were also recorded. In the South Fraser region one or two larvae were found in odd collections in the Cultus Lake area as well as the Elk Mountain area. In two collections on Cannell Lake Road two and one larvae were found respectively. Two larvae were also found in one collection in the Leon Lake area of the U.B.C. Forest. One larva was recorded in the Indian Arm area. Examination of the previously infested Widgeon Creek area revealed no trace of this insect.

(b) Nepytia phantasmaria (Wlk.)

The 1949 survey showed widespread though scattered and small populations of *Nepytia* throughout the Lower Mainland. Most numerous collections were made in the Ioco area, where at least one larva was recorded in most collections. On Berry Road in the Aldergrove area small numbers were noted in a number of collect-

ions. Other areas where larvae were recorded are, in order of importance: Abbotsford, Gultas Lake, Cannell Lake, Stave Lake, Hope Mountain, U.B.C. Forest, and Elk Mountain.

(c) Carineta divisata (Wlk.)

A marked increase both in numbers and distribution of collections was recorded for this insect during the 1949 season. No defoliation has been recorded to date, but the increase in population warrants careful attention. Highest numbers were recorded in the Lake Buntzen area where as high as 35 larvae were noted in one collection, Stave Lake where 30 larvae in one collection were recorded, Indian Arm 27 larvae in one collection, Head of Pitt Lake 27 larvae, and in the Loon Lake area of the U.B.C. Forest 22 larvae in one collection. Collections throughout the entire Lower Mainland show that there are very few areas in the district which have not been visited by this pest in 1949.

(d) Melanolophia imitata

Broadcast distribution of this insect was recorded in the 1949 survey season. No very high collections were recorded for any one particular area, however, the marked increase in distribution should be a matter of concern. In the following areas collections were particularly heavy: Stave Lake, Ioco, Grouse Mountain, Horseshoe Bay, Deep Cove, Seymour Mountain, Green

Timbers, Rainy River and Cannell Lake.

(e) Semiethisa granulata (Guen)

This insect was also on the increase in distribution during the 1949 season. Collections were recorded at Hope and Cultus Lake, in the South Fraser district, but for the most part were confined to the districts of the North Fraser where larvae were found in the following areas in small numbers: U.B.C. Forest, Allouette Lake, McConnell Creek, Chehalis River, Suicide Creek, Stave Lake, Coquitlam Lake, and Pitt Lake. In the North Burrard area, larvae were recorded at Lake Buntzen and Indian Arm.

(f) Hemichrus crocea (Fernald)

This insect continues to spread its havoc in alder stands throughout the B.C. Coastal regions. The following newly recorded areas add to the general picture of widespread distribution: Leon Lake in the U.B.C. Forest, Allouette Lake, and Capilano Canyon.

(g) Hyphantria textor (Harr.)

Fall web worm during the 1949 season shows a general distribution over the entire Lower Mainland. Heavy collections in the following areas were recorded, although this by no means represents an entire picture of their numbers: Cultus Lake, Hope, Essendale, Stave Falls, and Ioco.

(h) Hemlock sawfly (Midd.)

Small populations of Hemlock sawfly still persist throughout the Lower Mainland. Highest numbers of larvae were recorded on the North shore of Burrard Inlet where as many as 56 larvae were recorded in one collection. Areas where collections were particularly noteworthy were: Deep Cove, Horseshoe Bay, Grouse Mountain, Seymour Mountain, and Lynn Canyon. Further collections were made in the following areas of the Lower Mainland: Coquitlam, Leon Lake in the U.B.C. Forest, Stave Lake, Green Timbers, and Lake Buntzen.

(i) Galericella carya (Lec.)

A widespread infestation of this insect on willow is manifest throughout the coastal regions of B.C. Heaviest populations were recorded in the following areas of the Lower Mainland: Chilliwack Lake (on poplar!), Lake Buntzen, Indian Arm, Langley, Green Timbers, Allouette Lake, McConnell Creek, Seymour Mountain, Grouse Mountain, and Mesquite Creek.

(j) Onaritia autumnata

This pest is increasing in prevalence on the Lower Mainland. Particularly is this so on the North shore of Burrard Inlet where small populations were recorded in the following areas: Seymour Mountain, Dog Mountain, Grouse Mountain, Hollyburn, and Lake Buntzen. Further recordings in order of importance were as follows:

Green Timbers, Coquitlam, Stave Falls, Leon Lake, and McConnell Creek.

(k) Chrysomella aspicollis

A small number of these insects was recorded in the following areas: Head of Pitt Lake, Baskin, and Leon Lake.

(l) Eumithesia placidata

Larvae of this insect appeared in collections on Seymour Mountain, at Green Timbers and at Chilliwack. In all cases the numbers were of negligible proportions.

(m) Halisidota argentata (Pack)

One record of collection of Tiger moth larvae was made in North Vancouver.

(n) Choristoneura fusiferana (Clem.)

One collection of one larva of Spruce budworm was recorded on Hollyburn Ridge in the North Burrard Inlet area.

(o) Gabriela dyari

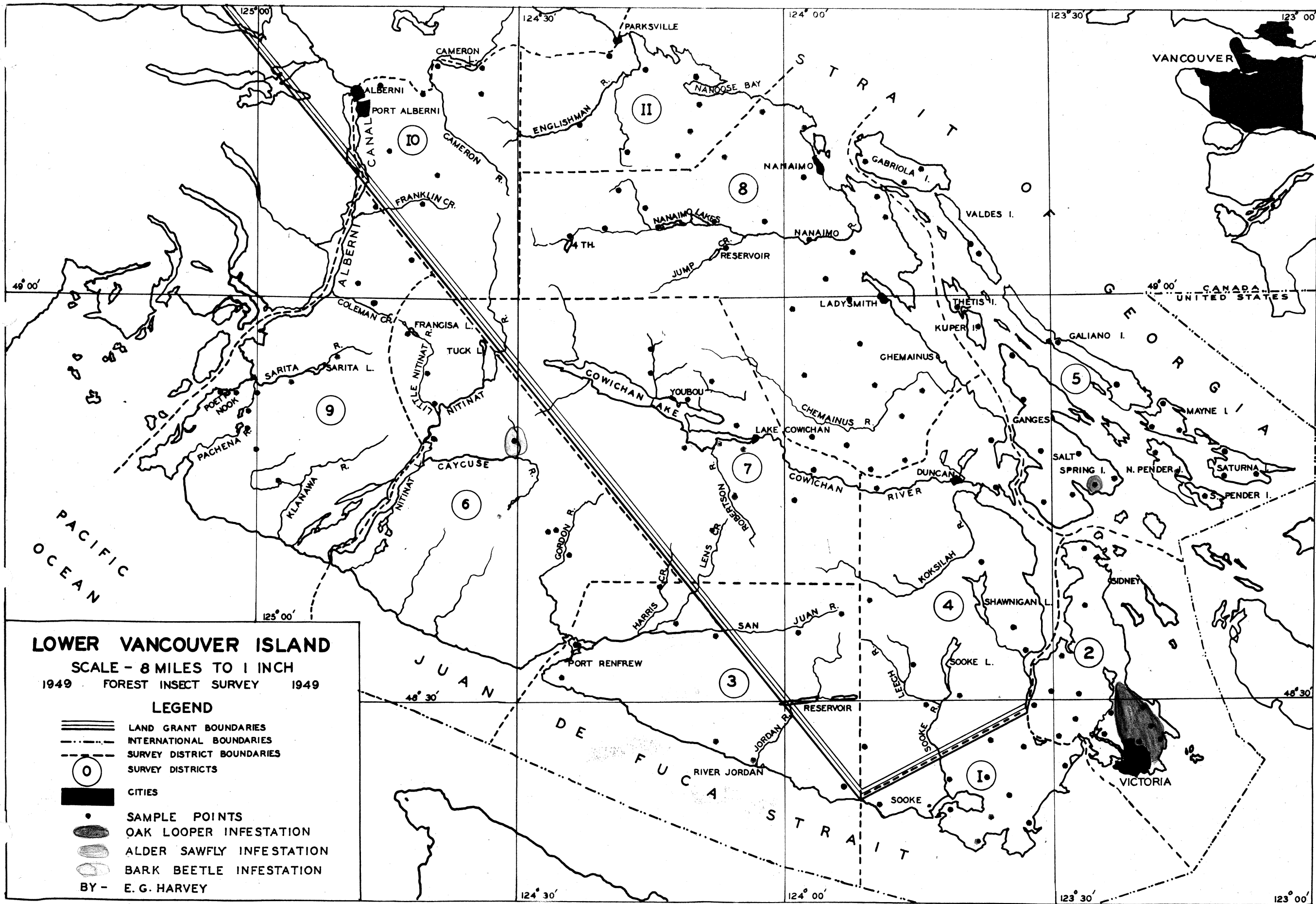
One collection of this larva was sent in from the North Vancouver area.

3. Special Projects.

(a) Dead Top Douglas Fir.

A reconnaissance for the investigation of dead - top Douglas fir in the Haney, Mission, McConnell Creek areas was carried out at the request of W. Robinson - B.C. Forest Service Ranger, to determine if insect damage could be blamed for the occurrence of dead - top Douglas Fir in these areas.

Foliage samples as well as bark samples were taken from different ages of attacked trees from butt, mid-crown, and crown locations, but no trace of insect damage could be found. A check with the Forest Pathology Branch indicated no disease factor. Damage would seem to be due to physiological causes - such as frost or moisture loss, or a combination of both.



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