

1922

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ANNUAL REPORT FOR 1922.

to Ottawa.

On my return from Ottawa in the latter part of May, 1922, I immediately established crews at Pike Mountain and Voght Creek of approximately 20 men each. This was for the control of the infestation in Yellow Pine (*Pinus ponderosa*) which had greatly increased during the past year on Voght Creek due to the unburned tops, cull logs etc. left on the area just below the infestation, and also to the bark beetles bred in the unyarded logs which were left on the area and which prevented the burning of the slash. In addition, crews were also established at Coutlee Plateau and at Adams Lake. The total expenditure during the direct control work covering April, May and June was approximately \$15,500.00 by the Provincial Government. The Federal Government also established a control crew on Spious Creek and cleaned up the lower part of the area worked on in 1920 and 1921.

With an allotment of \$150.00 cages were built to contain three infested trees, a Yellow Pine (*Pinus ponderosa*), a Lodgepole Pine (*Pinus contorta*), and a Douglas Fir (*Pseudotsuga taxifolia*). These cages were built during the latter part of July and the emerged insects collected daily during the following ten weeks. The results will be embraced in a separate, detailed report. 17,495 insects were recovered from the Yellow Pine cage alone, many of which were interesting parasites.

Besides the regular inspections of the camps, the condition of slash on numerous logging operations was examined and recommendations made to the Provincial Forest Branch of the methods of disposal. Biological data has also been collected on about 56 experiments, many of which were small breeding experiments of caged portions of infested coniferous trees.

We have found that direct control work on infestations reduces the infestations 80%. If no work is done on an epidemic infestation an increase results of from 100 to 150%, according to careful checks made from 100% cruises of several areas. In some cases the increase in one year has been 200%, depending largely upon the number of years the epidemic has been running. On this basis the work of 1922 has resulted in a saving of 5 1/2 million feet of timber, worth at a stumpage valuation of \$1.50 per 1000 feet, \$8,000.00. This is only the actual saving for one year, which can be definitely fixed. I do not hesitate to say that without the control work in the Midday Valley in 1920 the loss in six years (up to 1925), if no control work had been done, would have amounted to \$30,000.00. It cost \$6,000.00 to prevent this. Furthermore I consider this a very conservative estimate.

With an asked for allotment of \$150.00 three infested trees of different species were cut and enclosed in cheese cloth cages. These were a Yellow Pine (*Pinus ponderosa*), 24" D.B.H.; a Lodgepole Pine (*Pinus contorta*), 18" D.B.H.; and a Douglas Fir (*Pseudotsugae taxifolia*), 22" D.B.H. Unfortunately the Douglas Fir chosen was the result of an early attack of the present year and aside from a few secondary insects very little emergence resulted, and what did emerge was probably from the *Dendroctonus* adults which had attacked the tree about one week before it was caged. The collection of bark beetles and other insects from the other two cages was remarkable, about 6,682 emerging from the

Lodgepole Pine and 17,495 from the Yellow Pine.

Collections were made from the cages every day over a period of about ten weeks and all possible data collected. Uninfested, uncaged trees of the above three species were also felled and check data collected. The detailed results will be embraced in a separate report. These cages will be recovered in the spring in order to determine whether any considerable portion of injurious species hold over until the second year. For this purpose, that is, the continuation of the experiments already begun and also the caging of other species of coniferous trees, an annual allotment of \$200.00 is requested for a period of at least three years.

An effort has been made this year to collect portions of all the species of trees infested and a large number have already been caged and the injurious beetles bred.

Aside from the regular epidemic outbreaks, situated around Merritt, and for which provision has already been made for control work, various increases in bark beetle infestations have been noted where small groups of infestation have increased in the number of infested trees. This is noticeably so around Nicola Lake and on the Coldwater River below Midday Creek. One or two small spots on One Mile Creek and in the Aspen Grove country are also slightly increasing. These areas are all in Yellow Pine (*Pinus ponderosa*). Lodgepole Pine infestations have broken out above Chute Lake, east of Penttonton and also near Lorna. The latter is apparently confined to about a mile square of virgin timber and cannot spread unless it jumps a considerable distance over burned areas. This area is being watched. The Chute Lake area has just been discovered and no examination has as yet been made.

Four areas in Yellow Pine were also reported from the Cranbrook District and examined. Although the epidemics were fairly serious they were all on land which will finally be entirely cleared for agricultural purposes, three of them being on cut-over areas, and none of them threatening any body of virgin timber. It was therefore not considered advisable to recommend the expenditure of any monies for control.

Two epidemics in True Fir (*Abies lasiocarpa*) were inspected. These were found to be attacked and killed by *Dryocetes confusus* Sw., but owing to their inaccessibility no control work has been recommended.

The Tussock Moth outbreak on the Douglas Fir (*Pseudotsuga taxifolia*) seemed to be still continuing in the city of Vernon as many young larvae were found this spring. The whole area within the city limits was immediately sprayed with arsenate of lead under my supervision. Either due to the spraying or to some unknown cause they immediately disappeared. This doubt is expressed as outside unsprayed areas, epidemic in 1921, also failed to develop, and the infestation has dropped out of existence. As this is a new species of Tussock Moth and the first record of its appearance in epidemic form, its time of reappearance is problematical.

Besides the regular field work which occupies a large part of the field season, such as numerous examinations of slash and small reported infestations, 7595 specimens have been mounted, labeled and many of them identified and approximately 30,000 collected. Much of the material consists of bark beetles bred out in the cages, the commoner species of which will be used for Riker Mounts such as *Dendroctonus*, *Ips*, *Pityogenes* and *Pseudohylesinus*.

From April 1st to Dec. 1st, 1922, a period of 8 months, the following letters and packages have left this office:

Letters - 142.

Packages- 14.

My correspondence from January 1st to April 1st, 1922 is included in the records of the Ottawa office.

The number of MSS pages typed has approximated 180.

In conclusion I wish to express my pleasure in the efficient work performed by the assistants to this office, Messrs W.L. Cutler, H.H. Thomas, and Geo. R. Hopping, and especially the careful work done by Mr. Cutler.

The attached summary of the direct control work for 1920, 1921, 1922 has been tabulated as a matter of record and will be continued from year to year.

DEC. 15TH, 1922.

NAME OF PROJECT	YEAR WORKED	APPROX. ACREAGE WORKED	NO. OF TREES WORKED	AVERAGE TOTAL FT. B.M. OF INFESTED TREES PER TREE	% OF REINFESTATION						
MIDDAY VALLEY	1920	4000	3150	177	556.145						
(RECLEANED)	1921	4000	575	200	113.310	20.4%					
(EXTENDED)	1921	700	435	171	74.600						
INFESTED TREES NOT WORKED	1922	4700	498	212	105.414	16.7%					
KINGSDALE	1921	1280	2945	165	486.435						
VOGHT VALLEY	1922	1440	4502	199	893.658						
PIKE MT.	1922	1572	2619	399	1,045.091						
COUTLEE	1922	72	536	419	224.768						
ADAMS LAKE	1921		493	69	34.335						
ADAMS LAKE	1922		415	86	35.717						

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Annual Report.

Vernon, B.C.

Nov. 14th, 1922.

Chief Forester,

Victoria, B.C.

Dear Mr. Caverhill,-

I have just finished an inspection trip of the infested areas in the Cranbrook district.

While these areas are real epidemics, they are for several reasons not serious, and do not demand immediate attention. I would not suggest spending any money on them for the present, if at all.

There were four areas examined. The three near Ft. Steele are on alienated land, cut over and not near or threatening any body of commercial mature timber. The fourth, about two miles beyond Phillip's Bridge on the Elk River, while in commercial timber is only in a small area of Yellow Pine and is attacked by *Dendroctonus brevicornis* only which does not attack any other species of tree. Of *Dendroctonus monticolae* I could not find a trace in any part of the district I examined.

I hope to have a full report ready for you by

2.

Mr. Caverhill.

January 1st. covering the Insect Control work to date as I shall not go to Ottawa this winter.

Control work should begin in the spring of 1923 about March 15th or earlier if the weather will permit. The number of men on each crew will depend largely on the season. If we are able to put on five crews, I believe the bulk of the epidemic infestation will be controlled this coming year. For 1924 will remain the recleaning of these areas and the control of small outbreaks in the Aspen Grove and One Mile regions which in three years from now will assume large proportions, but can then be controlled at a small percentage of the cost if not worked until say 1926.

The amounts recommended for the work of these five crews are as follows :

1. Coutlee Plateau.....	\$ 3000.
2. Midday Valley (X2076).....	\$ 3500.
3. Voght Creek.....	\$ 6000.
4. Pike Mountain.....	\$ 5000.
5. Adams Lake.....	<u>\$ 2500.</u>
TOTAL.....	\$20,000.

3.

Mr. Caverhill.

I would call your attention to the reinfestation on the areas which we have already CONTROLLED, which amounts to about ten per cent of the original epidemics ; and to that of the UNCONTROLLED areas which increased one hundred and fifty per cent of last year's infestation.

I therefore hope you will be able to get the necessary appropriation, as the loss of mature timber in this, the only considerable stand of Yellow Pine in B.C., is far greater than that of any loss from fire in this timber type.

Sincerely yours,

Dominion Forest Entomologist for B.C.

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<i>Dendroctonus monticolae</i>	6
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<i>Dendroctonus sp.</i>	4
<i>Ips sp.</i>	4
<i>Pityogenes sp.</i>	4
<i>Pseudohylesinus</i>	4
tussock moth	3