

Combating Budworm Attack

Question of Vital Importance to Governments and Individuals Requires Prompt Action

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CONTROL operations against bark-beetles have been successfully conducted in the United States for many years and more recently in Western Canada. This is the first control operation that has ever been attempted against balsam bark-beetles. Due to the three insects involved, the balsam root rot, the effects of the recent budworm outbreak, and the effects of logging operations, it presents a complicated situation. The results will be of great interest and value in formulating future methods of forest protection in Eastern Canada. There is every reason to believe the results will be satisfactory and justify the expense.

The actual result of this work cannot be definitely ascertained until next Summer. A cruise will then be made and the number of new beetle-killed trees counted. One of the three beetles killing the trees—the balsam weevil—requires two years to complete its development and during the second Winter it hibernates in the soil. Consequently cutting these trees will not kill the entire brood of this insect and some additional attack must be expected during the coming Summer. Whether this will be sufficient to justify further control work next Fall will be determined later.

If successful in checking further dying of these trees it will give us a practical method of combatting the after effects of the budworm in many localities. It is, of course, obviously impossible to carry out such procedure on areas where a large percentage of the timber has been killed. On such areas the procedure is restricted to that of salvaging as rapidly as possible. While logging in areas of greatest damage beetle control operations should be conducted in those regions where conditions are better. If this is not done continued deadenings from beetle attack will accumulate so that when the time comes to log in these areas they may be in a condition similar to those just salvaged.

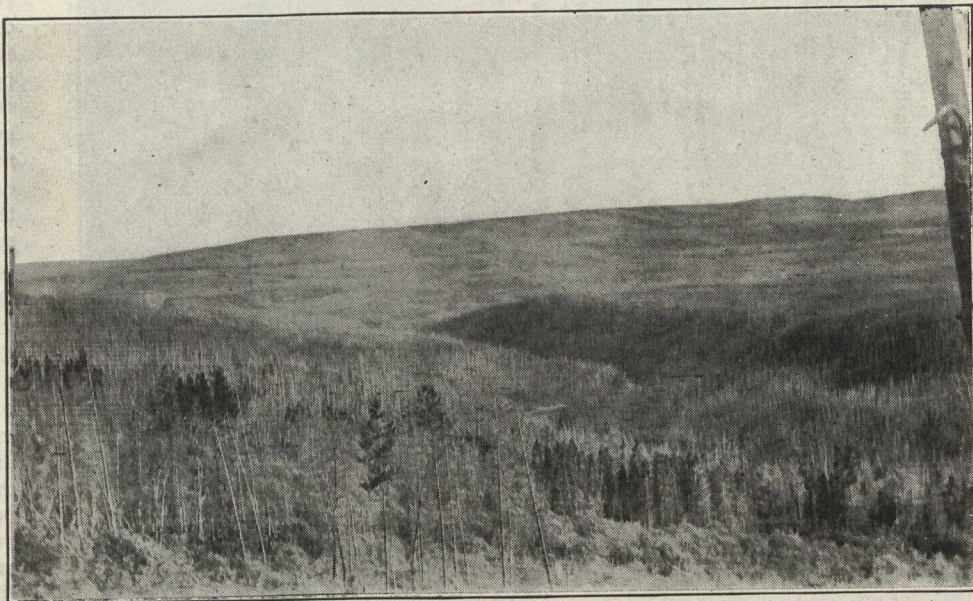
A Vital Question

This question of fighting these beetles is just as vital to the Governments as the lessees of the lands.

It is obvious that if a company stops the dying of these trees the governments will benefit in stumpage returns later. Therefore some method of sharing costs of operations should

topped trees are in evidence. A report on conditions a year or two after the budworm passed means nothing at present.

In greener areas, especially if not



A recent burn on Porcupine River, Alberta.

be devised. Unless some such adjustment is made it is not probable that many companies will undertake such work. In the past two years the Province of British Columbia and the Dominion Forestry Branch have spent over \$25,000 in fighting bark-beetles in western yellow pine. The United States Congress has recently voted \$150,000 for this same purpose in California and Oregon during the coming year. Private operators have agreed to spend similar amounts.

General Recommendations

In conclusion these general recommendations are suggested for bettering conditions in the budworm invaded territory.

All limits should be explored and logging operation concentrated on these areas where the greatest amount of dead timber or red-foliage trees are found. (Provided conditions are not already past the salvage stage.) The percentage of red-topped trees indicates the rate of dying.

Yearly examinations should be made through limits as long as red-

virgin forest, beetle control operations should be conducted to remove and place in the water, or utilize before Spring all red foliage trees, so that the stands can be held for future supplies.

In conducting logging operation in budworm injured areas the cutting should be clean, i. e., it is not sufficient to cut only the trees that give most economical returns, but it is essential to remove the inferior trees that will later die, both large defective and smaller suppressed trees.

The tops should be utilized to as small a diameter as possible.

The operations should be continuous from year to year into the adjacent green timber.

The Division of Forest Insects of the Dominion Entomological Branch is greatly interested in doing all within its power to help better the present situation and will gladly extend any assistance possible in looking over infested regions suggesting recommendations.