

Conservation

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Forest Pests in British Columbia

The stately forest giants of British Columbia are exposed to the attacks of various minute but dangerous foes, which are receiving much attention at present from the Division of Entomology of the Dominion Department of Agriculture and the Provincial Forest Branch. The enemies in question are, chiefly, certain scolytid beetles of the genus *Dendroctonus*, commonly called bark beetles. They burrow under the bark of the trees and there deposit their eggs, which hatch into grubs that eat the sappy layer between the wood and the bark, driving tunnels in all directions, and finally so interfering with the circulation of the sap as to cause the death of the tree. An area affected by them will be indicated by a clump of withered trees, known as "red tops," conspicuous among the surrounding evergreens. Another danger signal is tubes of pitch surmounting holes through the bark, bored by the adult insects.

The bark beetle attacks many kinds of trees. The western white or mountain pine, *Pinus monticola*, is attacked by *Dendroctonus monticolae*, which is giving great trouble in Washington and Oregon as well as in British Columbia. A large body of fine timber has been killed in the Sugar Lake and Mabel Lake regions in the Shuswap valley, B.C., and outbreaks have been discovered near Cowichan lake and Campbell river in Vancouver Island. Other species attack the Sitka spruce, the bull pine, the lodgepole pine, the Douglas fir, and the balsam fir.

The only remedy against these ravages is to cut down the infected trees and strip off and burn the bark. Up to date, the foresters and entomologists in Canada have devoted themselves rather to survey work, locating infected areas and preparing a report, which will shortly be published, on the remedial measures proposed.

Besides the bark beetles, other seriously destructive pests may be mentioned, such as the ambrosia beetles that attack dying trees and freshly cut logs, and caterpillars that infest the cones of the Douglas fir and the bull pine, eating the seeds and preventing reproduction, while spruce gall insects of the genus *Chermes* are seriously de-

Tunnels Made by Bark Beetles



(Cut No. 23)

A bull pine killed by bark beetles. Part of the bark has been removed, showing the tunnels of the Western Pine Bark-beetle on the surface of the wood.

The new Chinese republic has established a department of agriculture and forestry. For a long time China had been pointed out as the most backward nation in forest work.

structive to the Sitka spruce in Stanley Park, Vancouver, and in the parks of other towns and cities. —Summarized from a report by J. M. Swaine, M.Sc., Asst. Entomologist, Dept. of Agriculture.

Smoke Consumers on Grand Trunk Railway

Yard Locomotives to be Equipped
with New Device which Ensures
Complete Combustion

The Grand Trunk railway has been experimenting for some time with smoke consumers for application to locomotives, and has so far met with sufficient success to warrant equipping all the yard locomotives at Windsor, Ont., as well as a few others at different points on the system. The type used is very similar to those in use by railways in Chicago, where an anti-smoke campaign has compelled them to use some device that will materially reduce the smoke. Along the side of the firebox, from 16 to 18 ins. above the fire, there are eight tube openings. On the outside are small steam jets, so placed that the jet at the point of entering the tube creates a strong draught and carries in a volume of air over the top of the fire. The air brought in through these side openings mixes thoroughly with the smoke in the firebox immediately after it is given off from the bed of coals, and with a bright fire burning the smoke is almost completely consumed. In a demonstration several shovels of coal were thrown on a bright fire, resulting in dense smoke being given off. Turning on the steam through these side jets reduced the smoke almost instantaneously, so that the vapour given off at the stack was just slightly coloured. The results of the experiments have been so successful that it is not at all unlikely the yard locomotives all over the system will be so equipped. The road locomotives may likewise be so equipped, but the advantages accruing are not considered to be as great as in yard locomotives, where the question of smoke in the atmosphere is of considerable importance to the community.

TO NEWSPAPERMEN

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