

The characteristics of the red stain stage of the two decays are:

Fomes pini

In cross section, red stain in a central core, sometimes with a "ring" character, but not typically with "fingers" radiating from the central core.

Small white pockets sometimes present.

Colour—reddish.

Stereum pini

In cross section, red stain in a central core, typically with radiating "fingers".

White pockets not present.

Colour—brownish.

Stereum pini stain occurs as a central core and has not been found associated with wounds. Its position suggests the possibility that it may enter through branch stubs, but no definite association with these stubs has been found. The decay usually occurs above breast height and may extend for a considerable distance up the trunk in a similar manner to *Fomes pini* decay.

At Kananaskis, the sampled lodgepole pine occurred in mixture with white spruce. The lodgepole pine here was much older than at Caroline, in some cases over 200 years. The appearance of the stain or incipient decay was similar to that found at Caroline. The wood was stained, but quite firm. In spite of the much greater age of the lodgepole pine in this area, no cases of advanced decay were found, and the exact character of the advanced decay has not been observed.

From the common occurrence of *Stereum pini* in two widely separated regions of Alberta, it is suspected that this fungus is of major importance.—W. B. G. Denyer, Saskatoon Laboratory.

BRITISH COLUMBIA

Canker damage to Lodgepole Pine.—Following a report by the British Columbia Forest Service of severe canker damage near Kelowna, British Columbia, an examination was undertaken of a 53-year-old stand of lodgepole pine in the Grizzly Hills area. Studies revealed an epidemic of infection by *Cronartium stalactiforme* A. and K. and *Atropellis* sp. Neither organism had previously been reported in the Interior Region, but surveys have since shown that both parasites are widely distributed.

Records of damage were completed on 16 growth and yield plots established by the Forest Service in the area of most severe infection. Combined infection averaged 87 per cent and reached 100 per cent in 3 of the 16 plots. Only 13 per cent of all trees were free from infection.

Damage consisted of stem malformation and a general reduction in tree vigour. Infected trees appeared susceptible to secondary attack by other forest fungi and bark beetles. A damage-severity rating showed that 44 per cent of the trees had cankers extending 6 or more feet over the merchantable portion of the bole. Many trees were infected throughout their total length. Damage of this nature is severe.

Rust cankers tended to spiral on the main bole, thus increasing stem malformation. Rodents, gnawing on wood impregnated with the pycnial exudate of the fungus, stripped the bark at the perimeter of the cankers thus hastening the desiccation of the cambium. The wood beneath rust cankers was frequently impregnated with resin.

Atropellis cankers were more numerous but smaller than rust cankers, seldom exceeding 3 feet in length. Many trees were rendered unmerchantable, however, through multiple infections, one or more cankers being present at each branch whorl. A dark-brown stain was associated with *Atropellis* cankers and penetrated several inches in the underlying sapwood.

Cruises made adjacent to the plot area showed that *Atropellis* was present throughout the lodgepole pine type at intensities varying from 15 to 45 per cent of infected stems. The rust, however, appeared to be sporadic in occurrence with infection ranging from 0 to 50 per cent. Surveys of other areas at Pearson Creek, McCulloch, Bear Lake, Manning Park, Lunby, Whatshan Park, and Nakusp indicated an intensity of combined infection of less than 15 per cent. In these latter areas, moreover, individual trees appeared to be less severely damaged than those in the Grizzly Hills area.—A. C. Molnar.

RECENT PUBLICATIONS

Prebble, M. L. and J. E. Bier.

Protection of the forest against insects and disease. (Paper to be presented to Sixth British Commonwealth Forestry Conference to be held in Canada, 1952).

White, L. T.

Studies of Canadian Theleporaceae VIII. *Corticium galactinum* (Fr.) Burt. Can. J. Botany, 29: 279-296. 1951.

Blais, J. R.

Relationship of the spruce budworm to the flowering condition of balsam fir. Can. J. Zoology 30: 1-29, 1952.

Smith, S. G.

Evolutionary changes in sex chromosomes of Coleoptera. Genetica 25: 522-524. 1951.

Forest Biology: Timber of Canada 12(6): 36-51, 100-101. Feb. 1952.

Balch, R. E.

Studies of the Balsam Woolly Aphid, *Adelges piceae* (Ratz.) and its effects on Balsam Fir, *Abies balsamea* (L.) Mill. Publication 867. Canada, Dept. of Agr. 1952.

Reeks, W. A.

Establishment of *Exenterus* spp. (Hymenoptera: Ichneumonidae), Parasites of the European spruce sawfly, near points of introduction. Canadian Entomologist 84(3): 76-86. 1952.

Clark, J.

The spruce bud midge, *Rhabdophaga swainnei* Felt. (Cecidomyiidae: Diptera). Canadian Entomologist 84(3): 87-89. 1952.

EDMOND CLOUTIER, C.M.G., O.A., D.S.P., Queen's Printer and Controller of Stationery, Ottawa, 1952.

O. H. M. S.

G. W. Barter

FI.
G. W. BARTER,
DOMINION ENTOMOLOGICAL LABORATORY,
FREDERICTON, N.B.

SCIENCE SERVICE
DEPARTMENT OF AGRICULTURE
OTTAWA