seedling was culled because of root abbreviation in the treated area. In the check beds, culling was notably more common and was general throughout that area. It is impracticable to obtain figures of such culling, although the nursery superintendent is convinced of the validity of the contrast.

The Duncan nursery is now on a four-year rotation, so that henceforth all applications will precede seeding by about one week. This should produce even better protection than in previous years, when applications were followed by a season of green fallow.

On May 17, the new Campbell River nursery received a chlordane application prior to entering its first production of two million seedlings on a four year rotation. In the old nursery, small persistent populations of white grubs had been widespread over the nursery area for several years. This application to new ground was made with the knowledge that these insects are present and with a view to forestalling establishment of populations to prevent possible future build-ups.—D. N. Smith.

Commercial Thinning in Douglas Fir in Relation to Control of Poria Weirii Root Rot.—Advantage was taken of a commercial thinning made by the British Columbia Forest Service in a 50-year-old Douglas fir stand at Cowichan Lake Forest Experiment Station, Vancouver Island, to establish permanent sample plots to observe the effects of thinning as a possible control of root rot caused by *Poria weirii* Murr.

Fourteen one-quarter-acre plots were established in portions of a 50-acre block of Douglas fir from which 41% of the total volume or 44% of the total number of trees had been removed in 1951. An additional 14 plots were established in untreated portions of the same stand. The stand as a whole was heavily infected with root rot at the time of thinning. The 28 plots were established, however, in portions of the stand that showed no evidence of past damage from *P. weirii* or symptoms of current infections. Annual examinations of the plots were scheduled to observe the progress of the disease.

Heavy losses were recorded one year after thinning as the result of windthrow. Most of the windthrown trees had been heavily infected with *P. weirii* at the time of thinning as evidenced by examinations of their root systems. A large portion of the supporting roots of such trees were completely decayed. Consequently, despite an extensive development of adventitious roots, such trees were unable to withstand the removal of adjacent and sheltering trees. Losses during the second and third years after thinning were progressively less than during the first year. Whether or not the losses from *P. weirii* will decrease to a fairly constant low level will depend, in part, upon possible spread of the fungus from active infection centres bordering upon the plots.—G. W. Wallis.

A Disease Causing Flagging on Ponderosa Pine.—An instance of severe flagging of ponderosa pine (*Pinus ponderosa* Laws.) near Kelowna, Kamloops Forest District, British Columbia, was reported by foresters of the Simpson Logging Company, Kelowna, who expressed concern over damage to a recently-pruned 15 to 30-year-old stand on their company holdings. Subsequent examinations showed the flagging to be unrelated to pruning wounds but that it had resulted from girdling lesions on twigs and branches that were remote from any apparent injury. Fructifications of the fungus (*Cenangium ferruginosum* Fr. (*C. abietis* (Pers.) Rehm.) were abundant on the diseased material.

Damage was light, less than 3% of 300 trees sampled having died at the time of the examination. Twenty-three per cent of the affected trees had sustained flagging of apparently vigorous branches in the upper crown although only 5% had lost more than 50% of their foliage. The appearance of disease symptoms had been preceded by two years of severe drought although a loss of host vigour, as expressed by recent growth, was not apparent.

Cultures of single spore isolations from apothecia of *C. ferruginosum* were identical to tissue cultures prepared from diseased material. The latter were frequently obtained in advance of necrosis thereby indicating the ability of the fungus to invade living tissue. Inoculation tests are projected to confirm the pathogenicity of the fungus and to determine its relation to flagging.

The Kelowna record is of particular interest, being the first report of *C. ferruginosum* on ponderosa pine for British Columbia. Previous records of the fungus have described it as being a parasite in association with a dieback and as entering its host at, or near, terminal buds. At Kelowna, however, infections were found to centre at fascicle traces well below terminal growth.—A. C. Molnar.

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