

SUMMARY REPORT ON FOREST DISEASE INVESTIGATIONS
IN ALBERTA IN 1952

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INTRODUCTION

The 1952 field season marks the initial programme of research in forest diseases undertaken by the new Laboratory of Forest Pathology which was established recently to serve the region embracing the Province of Alberta, the Northwest Territories, and the Rocky Mountain National Parks. During this first year of organization and development the Laboratory has enjoyed the close co-operation and very helpful assistance given by the Alberta Department of Lands and Forests, the Forestry Branch, Department of Mines and Resources, the National Parks Branch, the Eastern Rockies Forest Conservation Board, and a number of lumber companies.

The new unit, temporarily accommodated in the Customs Building, has now been moved to permanent quarters at 102 - 11th Ave. E., Calgary. The third floor of this building has been entirely renovated to provide excellent facilities in offices and research laboratory rooms.

The following is a brief summary of the research programme initiated this spring. More detailed information on any phase of the work in progress can be obtained on request.

SUMMARY OF INITIAL RESEARCH PROGRAMME.

The forest disease survey has been organized as an essential mechanism to obtain information on the presence, distribution, and development of native and exotic tree diseases. One graduate employee has co-ordinated the activities of the rangers of the Alberta Department of Lands and Forests, the Unit of Forest Zoology, and the staffs of allied federal forest services and lumber companies

to assist in this initial survey of tree diseases in this region. Recognizing the vital importance of co-operators to the successful prosecution of the survey, lectures in forest pathology were presented to the wardens of the National Parks Branch and to the provincial forest assistants at the Ranger School held at Seebe.

Studies of decay in spruce are designed to relate decay to site factors such as soil (quality, texture, nitrogen content, pH, etc.) and flora; to examine relationships of organisms associated with decay; and to show the significance of decay to improved forest management inventory procedures and to factors as diameter, age, density, and growth rate.

A red stain condition in pine is responsible for serious losses in the mine prop, pole, and tie industries in the province. Preliminary investigations on this problem are aimed to elucidate the identity and nature of the agents associated with red stain and to demonstrate the importance of this abnormality in the utilization and management of pine forests. These studies have been located exclusively in fire-injured pine stands to show concurrently the significance of fire scars in the occurrence of stain and decay.

In co-operation with the Forestry Branch, the Alberta Department of Lands and Forests, and the Unit of Forest Zoology long term investigations have been established to study the rate of deterioration of pine slash. Sample plots 1/5 acre in size are located within nine 10-acre blocks of an 84-year old stand of pure lodgepole pine treated by various silvicultural cuttings. The treatments executed by the Forestry Branch include conversion cuttings,

harvest cuttings, and thinnings. The pathological aspects of this programme have been devised to assess the influence of the different silvicultural cutting treatments on the rate of deterioration of slash; the possible forest disease danger of decaying slash; the relation between slash deterioration and fire danger; the importance of fungi associated with slash decay; the factors that favor decay; the relation of insects to deterioration and the distribution of slash fungi; and the comparative rates of deterioration of slash sprayed with nutrients and with blended cultures of Lenzites saepiaria, a fungus of primary importance in the decay of pine slash.

This season preliminary observational work on the distribution and severity of the destructive dwarf mistletoe of pine was made concurrently with the forest disease survey. Fundamental physiological and biological studies on destructive tree parasites are being maintained at the main laboratory at Calgary. A stock culture collection of forest disease organisms prevalent in the region is being developed.
