Sioux Lookout District, 1969
Reports of Forest Research Technicians

Barnes, C.A.

Information Report O-X-132
(Forest Research Laboratory, Ontario Region)

CANADA

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DEPARTMENT OF FISHERIES AND FORESTRY
CANADIAN FORESTRY SERVICE

MINISTÈRE DES PÊCHES ET DES FORÊTS
LE SERVICE CANADIEN DES FORÊTS

FOREST RESEARCH LABORATORY
BOX 490
SAULT STE MARIE, ONT.

25 May 70

Dear Sir:

This is a composite of 18 individual Information Reports of Forest Insect and Disease Surveys which were issued and mailed several weeks ago to district foresters and other key forestry personnel in the various districts across Ontario. These reports were numbered consecutively as listed under the table of contents beginning with Lindsay District as O-X-115 and continuing to Fort Frances District as O-X-134, with Geraldton and White River combined as O-X-131. The content is confined to the results of field surveys of insect and disease conditions exclusive of those directly associated with aerial spraying operations carried out by the Ontario Department of Lands and Forests in 1969. Brief resumés of these operations as prepared for the Interdepartmental Committee on Forest Spraying operations in November are provided for your information as supplement reports at the back.

Yours very truly,

W. Lloyd Sippell

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W.L. Sippell,
Head, Insect and Disease Survey,
Ontario Region.

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REPORTS OF FOREST RESEARCH TECHNICIANS

Ontario, 1969

FOREWORD

The Forest Insect and Disease Survey Unit carried out their annual damage detection and censusing program in Ontario between May 1 and September 12, 1969. The results are reviewed in detail for the area shown in the title of each specific report. The following is a general summary of the more important insect and disease situations in the Province.

The spruce budworm was the dominant forest insect problem in 1969. In northeastern Ontario, new or enlarged infestations occurred in the forest districts of Chapleau, Kapuskasing, Cochrane, Sudbury, Swastika, and Sault Ste. Marie. In southeastern Ontario heavy infestations persisted in parts of Pembroke, Tweed and Kemptville districts, and in the western part of the Province two small areas of severe defoliation appeared in the Port Arthur District. Jack pine budworm population levels increased sharply; heavy infestations recurred in the Sault Ste. Marie and Pembroke districts and new areas of severe defoliation were recorded in the districts of Sudbury, North Bay, and Parry Sound.

Aerial spraying operations were carried out against the spruce budworm by the Ontario Department of Lands and Forests in the Port Arthur and Fort Frances districts and against the jack pine budworm and white pine weevil in the Sault Ste. Marie District. Jack pine budworm infestations on the Canadian Forces Base (Petawawa) and on the Petawawa Forest Experiment Station were sprayed by the Canadian Forestry Service. Field technicians were heavily involved in the delineation of areas to be treated, in the timing of spray applications, and in the assessment of populations before and after spraying. Separate reports of these operations are in preparation.

Disease surveys emphasized the evaluation of incidence, infection levels and degree of damage by various pathogens on infected stands. Although no extensive changes in the distribution of the Dutch elm disease occurred in 1969, the pathogen caused considerable mortality of elm, particularly in southern Ontario. Two important diseases of poplar were ink spot and Hypoxylon canker. Scleroderris canker of pine continued to be a major problem in pine plantations. Cankers of pines and hardwoods were evaluated in many stands and details on these and other problems are discussed in the following report.

On January 16, 1970 the Unit lost the valuable services of its Chief Field Technician, J.E. MacDonald, who retired after guiding the Survey Field Service in its various programs and in the compilation of annual district reports for the past 25 years.

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The objectives and working principles of the Insect and Disease Survey are currently being thoroughly reviewed and re-evaluated, and it is now clear that fewer technicians will be involved in carrying out surveys of forest insect and disease conditions in Ontario in 1970. Future reports on the details of these surveys will probably cover five regions or sections of the Province.

L. S. MacLeod
Acting Chief Technician

April, 1970.

SIOUX LOOKOUT DISTRICT

1969

INTRODUCTION

In previous years tree diseases have been reported on a regional level; beginning in 1969, however, insect and disease summaries are dealt with on a district basis. The following report deals specifically with problems pertaining to the Sioux Lookout District.

A decline in population levels of the jack-pine budworm recurred in 1969 and larch sawfly infestations increased in intensity at many points.

The gall rust of hard pines, Endocronartium harknessii (J. P. Moore) Y. Hiratsuka, continued to be a mjaor disease problem, severe damage to branches, twigs and reproduction jack pine was observed at many points. Acknowledged as a first herbarium record was the pathogen Leptosphaeria faulii Darker and as district records, Melampsora medusae Thuem., Cronartium comandrae Pk. and Peridermium stalactiforme J. P. Moore.

I wish to thank personnel of the Department of Lands and Forests and woods operators for the assistance and co-operation extended during the past field season.

C. A. Barnes

Spruce Budworm, Choristoneura fumiferana (Clem.)

Low population levels of this insect occurred for the ninth consecutive year. Only three larvae were found at eight widely separated locations (Table 1). In 1970 additional sample points will be established in high hazard areas to monitor fluctuations in population levels.

TABLE 1

Summary of Spruce Budworm Larval Counts Taken on Twenty Beating Mat Samples at Eight Locations in 1969

Sioux Lookout

Location	Tree species	No. of branches sampled	Total no. of larvae per 20 mat samples 1969
Sowden Lake	wS	63	0
Young Lake Road	wS	71	0
McAree Twp.	wS	67	0
Norway Lake	bF	81	0
Wenasaga Lake	bF	68	0
Drayton Twp.	wS	76	2
Dewan Twp.	bF	53	0
White Otter Lake	wS	72	1

Jack-pine Budworm, Choristoneura pinus pinus Free.

The heavy infestations reported in 1968 in the Goudie, Gullwing and Mickle lakes area declined in intensity in 1969. Medium to heavy infestations persisted near the Dryden Pulp and Paper fertilization plot, where approximately 6000 acres of pole size jack-pine suffered moderate defoliation. A light infestation occurred on jack-pine trees along the old mill road west of Hudson.

Defoliation estimates and egg mass counts carried out in late summer are summarized in Table 2. The egg mass counts taken near the fertilization plot indicate a recurrence of medium infestations in 1970.

TABLE 2

Defoliation of Current Year's Growth of Jack-pine Trees in Sioux Lookout District and Probable Defoliation in 1970 Based on the Total Egg Masses Found

Location	Per cent defoliation	Total no. of egg masses	Probable defoliation in 1970
Dryden fertilization plot	25	4	M
Dryden paper plot east	70	5	M
Goudie Lake	17	0	L
Mickle Lake	10	0	L

M - moderate; L - light

A Bark Beetle, Conophthorus sp.

Populations of this bark beetle continued to cause appreciable mortality of jack-pine twigs at several locations in 1969. Medium to heavy infestations were common in young jack-pine stands in Vermilion Additional, Pickerel, Dewan and Lomond townships, and near White Otter Lake (Table 3). Light to medium infestations persisted in the Dryden Pulp and Paper limits, along Highway 72 in McAree Township and near Savant Lake. The insect was observed in smaller numbers at several other points.

TABLE 3

Summary of Damage Caused by a Bark Beetle at Five Points in the Sioux Lookout District in 1969

Location	Av. d.b.h. of sample trees in inches	No. of trees infested 1969
Vermilion Additional Twp.	2	37
White Otter Lake	3	16
Pickerel Twp.	2	48
Dewan Twp.	3	14
Lomond Twp.	1	53

A Noctuid, Enargia decolor Wlk.

Since 1959 population levels of this leaf tier on trembling aspen have remained at relatively low levels. In 1969 light infestations with less than 15 per cent defoliation occurred along Highway 105 from the district boundary north to Red Lake, and on pole size trembling aspen along the Scotch Lake road south-east of Ignace. Small numbers of larvae were observed in Drayton, Poisson and Ponsford townships, and numerous adult moths were captured in a light trap operated near Sioux Lookout.

A Leaf Roller on Birch, Epinotia solandriana Linn.

Heavy infestations of this leaf roller occurred over a large area in the western part of the district in 1969, with stands of white birch near Red Lake, Perrault and Ear Falls suffering up to 60 per cent defoliation.

Red-pine Sawfly, Neodiprion nanulus nanulus Schedl

Population levels of this sawfly declined except on Ruby Island in Minitaki Lake where 14 colonies per 100 trees were counted. Larval development was extremely slow in 1969, consequently some defoliation occurred to the new growth. Defoliation approximated 10 per cent in this area. No colonies were observed in the remainder of the district.

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

For the past five years population levels of this sawfly have remained low. In 1969, populations increased and colonies were common at several locations. The most notable increase occurred near Sioux Lookout, and on scattered trees in Drayton and Block no. 10 townships (Table 4). Defoliation did not exceed 15 per cent at any location. Occasional colonies were observed near Moonlight Falls and in McNevin Township.

TABLE 4

Summary of Colony Counts of the Red-headed Jack-pine Sawfly on 100 Jack-pine Trees at Each Location in 1968 and 1969

Location	Total no. of colonies observed 1968	1969
Drayton Twp.	1	8
Block no. 10 Twp.	-	11
Moonlight Falls	1	4
McNevin Twp.	-	6

Pitch Nodule Maker, Petrova albicapitana (Busck.)

Severe damage to the leading shoots of sapling size jack pine was caused by this insect at several locations in 1969. The most notable damage occurred in Echo Township where 78 of 100 trees examined had two or more pitch nodules per tree. Although damage in Cathcart and McNevin townships was not as severe, over 40 of the trees examined had injured terminals. Light infestations were common in the aerial seeded plot near Goudie and Centrefire lakes.

Spruce Needle Gall, Pineus similis Gill.

This needle gall caused considerable damage to the new shoots of white spruce at several locations in 1969. In the Abram Lake Park, Drayton Township, over 80 per cent of the new shoots of some white spruce were infested. Medium infestations occurred on shoreline white spruce near White Otter and Sowden lakes, and on open-growing trees near Stewarts Lodge on Big Sandy Lake. Small pockets of light infestation were observed on scattered trees at several locations.

White-pine Weevil, Pissodes strobi (Peck.)

There was no appreciable change in the number of weeviled trees at all sample locations, see Table 5.

TABLE 5

Summary of Damage by the White-pine Weevil on 100 Jack Pine Trees at Each Point in the Sioux Lookout District from 1967 to 1969

Location	Per cent of trees weeviled		
	1967	1968	1969
Martin Road South	1	3	2
Pickle Lake	-	3	4
Echo Twp.	3	2	6
Ignace Twp.	7	9	7
Red Lake	-	1	0

Larch Sawfly, Pristiphora erichsonii (Htg.)

Infestations of this sawfly increased at many points in 1969. Medium infestations were observed near Ignace, along the Great Lakes roads south of Highway 17, and in several small stands near Red Lake, Sioux Lookout and Hudson. Approximately 25 to 30 per cent defoliation occurred in these areas. Light infestations were common at several other points.

A Leaf Roller on Poplar, Sciaphila duplex Wlshm.

Population levels of this leaf roller on trembling aspen increased in the district in 1969. Light to medium infestations were observed along the Red Lake road north of Ear Falls, near Norway Lake in McNevin Township and in stands of young aspen near Sioux Lookout. Light infestations were common at numerous other points. Defoliation averaged 25 per cent in areas of infestation.

TABLE 6

Other Noteworthy Insects Collected in Sioux Lookout District in 1969

Insect	Host(s)	Remarks
Altica ambiens alni Harr.	Al	Heavy infestations of this leaf beetle near Sundstrum Lake
Depressaria groteela Rob.	Hazel	Heavy infestations near White Otter Lake
Dimorphopteryx melanognathus Roh.	wB	Light infestation along Bower road, Drayton Township
Gonioctena americana (Schaef.)	tA	Light to moderate infestations near Norway and White Otter lakes
Gonioctena notmani (Schaef.)	W	Severe defoliation of willow near Ignace
Mindarus abietinus Koch.	bF	New shoots heavily infested in Drayton Township
Nycteola cinereana N. & D.	bPo	Medium infestations of this insect near White Otter Lake
Phenacaspis pinifoliae (Fitch)	jP	Heavy infestation near Sioux Lookout
Pikonema alaskensis (Roh.)	wS	Hedgerow trees moderately defoliated in Sioux Lookout and Ignace
Pineus strobi Htg.	jP	Heavy infestations near Hudson
Pyrrhalta nymphaeae (Linn.)	Sweet gale	Medium infestations along shoreline of Minataki Lake
Schizura unicornis J. E. Smith	wB	Light infestation on fringe trees near Lac Seoul
Toumeyella numismaticum (P. & M.)	jP	Heavy infestation on small trees near Sioux Lookout

Armillaria Root Rot, Armillaria mellea (Vahl. ex Fr.) Kummer

Light to moderate infection levels were observed in a red pine plantation southeast of Hudson. An evaluation in this plantation revealed a moderate infection level, when ten per cent of the trees examined were dead.

Needle Rust of Jack-pine, Coleosporium asterum (Diet.) Syd.

An area encompassing approximately 20 acres of jack pine reproduction was heavily infected by this needle rust in 1969. A random evaluation was carried out in the above area to determine the severity of the infection. All trees examined had varying degrees of damage. Elsewhere light infection levels were common at many points in the Dryden Pulp and Paper limits and near the English River.

White Trunk Rot of Hardwoods, Fomes igniarius (L. ex Fr.) Kickx

This heart rot of hardwoods was observed in trace or light infection levels at many points in the district. However, an area of heavy infection occurred in a large stand of trembling aspen along the Wenasaga Lake road east of Ear Falls, an evaluation in this area showed an incidence of 47.5 per cent trees infected, associated with a mortality of 25 per cent.

Hypoxylon Canker of Poplar, Hypoxylon mammatum (Wahl.) Miller

Although this canker can be found without difficulty in stands of trembling aspen, year to year changes in the infection and distribution level are gradual. A light infection was recorded near Balmertown where ten per cent of the trees examined were diseased.

Gall Rust of Hard Pines, Endocronartium harknessii (J. P. Moore) Y. Hiratsuka

This gall-forming pathogen continued to cause appreciable branch and twig mortality on jack pine at numerous points. In 1969 evaluations were carried out at three widely separated points, in all instances severe infection levels were recorded (Table 7). Additional plots were established by H. Gross, Disease Survey Officer and P. E. Buchan in the Dryden Pulp and Paper limits, two in regeneration, one in a young stand and one in a semi mature stand, these surveys established the presence of Cronartium comandrae and Peridermium stalactiforme. Extensive surveys for the secondary host of P. stalactiforme was carried out during the late summer. Cow Wheat was found in abundance, however Bastard Toad Flax, the alternate host of C. comandrae has as yet not been collected.

Surveys will continue in 1970, with the emphasis on additional plots to establish the relative abundance of the three pathogens.

TABLE 7

Summary of Incidence and Infection Levels of the Western Gall Rust on Jack Pine in the Sioux Lookout District in 1969

Note: Based on the examination of 40 trees at each location.

Location	Per cent incidence	Level of infection
Moonlight Falls	87.5	Severe
Fertilization Plot	76.0	Severe
Red Lake	100.0	Severe

Poplar Leaf and Twig Blight, Pollaccia radiosa (Lib.) Bald. & Cif.

Pollaccia radiosa, a foliage and twig tip disease, was observed at many points in the district in 1969, usually in trace or light infection levels. A moderate infection was observed on roadside trees along Highway 72 near Sioux Lookout, and in the vicinity of Central Patricia. Light infections were common on shoreline trees near White Otter Lake.

Frost Damage

Late spring frosts caused considerable damage to the new shoots of white spruce and balsam fir at many points. The most notable damage occurred in Jordan, Drayton and Pickerel townships and near Norway, Williams, Fry and White Otter lakes. In most instances damage to new shoots approximated 25 to 50 per cent.

Hail Damage

Approximately 10 square miles of jack pine, balsam fir and black spruce were severely damaged by hail near Kay Lake, Ignace Division. Inspection of the damaged trees within this area indicate a full recovery of jack pine and black spruce, however, heavy mortality to young balsam fir was common. Deciduous trees suffered moderate damage to the upper crown, consequently foliage was quite sparse during the summer.

TABLE 8

Other Noteworthy Diseases in the Sioux Lookout District in 1969

Organism	Host(s)	Remarks
Chrysomyxa ledicola Lagh.	wS	Trace infection levels in Drayton, and Skey twps.
Ciborinia whetzelii (Seaver) Seaver	tA	Light infection on small trembling aspen near Fry Lake
Gymnosporangium cornutum Arth. ex Kern	Mo	Moderate to severe infection on occasional trees in Drayton and Ponsford twps., common at many points in the district
Melampsorella caryophyllacearum Schroet.	bF	Trace levels of infection common at many points in the district
Melampsora medusae Thuem.	tL	Trace infection near Savant Lake
Pucciniastrum epilobii Otth	bF	Trace infection near Hudson