Geraldton and White River Districts, 1969
Reports of Forest Research Technicians

Davis, C.N. and Weir, H.J.

Information Report O-X-131
(Forest Research Laboratory, Ontario Region)

CANADA

OUR FILE NO.
NOTRE DOSSIER NO

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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 16 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

WLS/ar

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.

GERALDTON DISTRICT

1969

(Continued)

TREE DISEASES (Cont'd.)

INTRODUCTION

The first part of this report deals with the status of forest insects and tree diseases in the Geraldton District in 1969, while the second deals with the status of forest insects and tree diseases in the White River District.

Again in 1969 extensive surveys failed to reveal a spruce budworm infestation in the Geraldton District. Larch sawfly infestations increased in most stands. White pine weevil populations also increased generally throughout the district. The infestation of Fenusa pusilla increased while that of Profenusa thomsoni declined.

Two cankers of pine, Cronartium comptoniae and Peridermium stalactiforme were common in many stands of jack pine in the district. Several large areas of black and white spruce were heavily infected with needle rust, Chrysomyxa ledi and C. ledicola with the largest, approximately 200 square miles, in the Auden area.

The assistance and cooperation extended by Ontario Department of Lands and Forests and woods operating personnel is gratefully acknowledged.

C. N. Davis

Spruce Budworm, Choristoneura fumiferana Clem.

High spruce budworm populations in adjoining districts in 1968 and 1969 prompted an extensive survey to determine population levels in the Geraldton District. Periodic ground checks were made at nine permanent sample plots in the hazard area and aerial surveillance was maintained throughout the district but no budworm infestation was observed. In late summer balsam fir foliage from four locations was checked for budworm egg masses (Table 1). A concerted effort will again be made in 1970 to locate incipient populations of the insect.

TABLE 1

Defoliation of the Current Year's Growth of Balsam-fir Trees in the Geraldton District and Defoliation Forecasts for 1970 Based on Egg Mass Density

Location	Per cent defoliation 1969	No. of egg masses per 100 sq. feet of foliage		Defoliation forecast for 1970
		1968	1969	
Rossport (Twp. 86)	Trace	15	0	Nil
Limestone Lake	Trace	4	0	Nil
Sturgeon River (Colter Twp.)	Trace	0	0	Nil
Longlac	Trace	0	0	Nil

Larch Casebearer, Coleophora laricella (Hbn.)

Population levels of the larch casebearer remained low at all sample points in 1969 (Table 2). Populations increased slightly in Township 87 from .06 larvae per 18 inch branch tip in 1968 to 1.0 in 1969.

TABLE 2

Summary of Larch Casebearer Larval Counts in the Geraldton District from 1967 to 1969

Note: Counts were based on the examination of 4, 18-inch branch tips from each of 4 trees at each location.

Location	Av. d.b.h. of sample trees in inches	Av. no. larvae per 18" branch tip		
		1967	1968	1969
Twp. 87	6	0.4	.06	1.0
Croll Twp.	6	0.2	1.1	0.9
Lydia Lake	5	—	—	0.3

Wandering Sawfly, Dimorphopteryx melanognathus Roh.

This defoliator was more common in the Geraldton District in 1969 than in 1968. The increase was noted particularly along the north shore of Lake Superior where a heavy infestation occurred in a small stand of open-grown white birch at Rainbow Falls Provincial Park. Elsewhere defoliation remained light.

A Birch Leaf Miner, Fenusa pusilla (Lep.)

The infestation of this leaf miner at Orient Bay increased in size from 10 acres in 1968 to approximately 20 acres in 1969. Populations increased sharply from 28 per cent leaves mined in 1968 to 77 per cent in 1969. The average number of mines per leaf also increased from 3 in 1968 to 5 in 1969. Heavy infestations persisted on regeneration with a light infestation on larger trees in the immediate area. This infestation was the only known occurrence of the insect in the district.

Red Pine Sawfly, Neodiprion nanulus nanulus Schedl

Generally, population levels of this sawfly remained low throughout the district in 1969. An exception was noted in Summers Township where an average of 10 colonies per tree on 40 trees was recorded. Scattered colonies were common elsewhere in the district but defoliation was negligible.

Pitch Nodule Maker, Petrova albicapitana (Busck.)

Pitch nodule maker populations declined at two locations in the district in 1969 (Table 3). Injured tips on young open-grown trees were frequently broken off by the wind.

TABLE 3

Summary of Nodule Counts of Pitch Nodule Maker in the Geraldton District in 1968 and 1969

Note: Counts represent all inhabited nodules on 100 trees.

Location	Av. d.b.h. of sample trees in inches	Total nodules 1968	1969
Longlac	1	45	42
Goldfield Rd.	1	11	1
Nakina Twp.	1.5	18	9
Twp. 84	0.5	2	0
Stevens	2	3	5
Irwin Twp.	3	--	63

A Birch Leaf Beetle, Phratora hudsonia Brown

Populations of this comparatively rare leaf beetle increased from light to moderate in two pockets of open-grown birch in Township 86. Many trees sustained moderate to heavy defoliation in both Rainbow Falls and Rossport parks. White birch in the 5 square miles between the two parks was lightly infested. In most instances defoliation was confined to the lower branches of host trees.

Yellow-headed Spruce Sawfly, Pikonema alaskensis (Roh.)

This sawfly was common on roadside and ornamental black and white spruce trees in 1969. Several trees in the town of Geraldton sustained 90 to 100 per cent defoliation of new foliage. A low population was noted in a young black spruce plantation in the Hillsport area. Elsewhere damage was negligible.

White Pine Weevil, Pissodes strobi (Peck)

White pine weevil populations increased slightly for the second consecutive year at all quantitative sample points in the district in 1969 (Table 4). The highest population recorded was on black spruce at Mile 66 of the Goldfield Road where 31 per cent of the trees were weevilled compared with 13 per cent in 1968. Moderate populations were noted at Flynn Lake, Stevens, on the Maple Road, and in Legault Township. Elsewhere populations and damage were generally light.

Heavy damage caused by this insect was usually confined to young open-grown plantations. However, a heavy infestation persisted in a natural stand of 18 to 30 foot open-grown black spruce in Walters Township where 17 per cent of the trees were weevilled in 1969.

TABLE 4

Summary of Damage by the White Pine Weevil in the Geraldton District from 1967 to 1969

Note: Counts were based on the examination of 100 black spruce trees at each location.

Location	Av. height in feet	Per cent trees weevilled		
		1967	1968	1969
Flynn Lake	4	1	10	10
Stevens	7	9	9	12
Maple Road	8	2	5	8
Booth Twp.	7	-	3	4
Walters Twp.	18	-	16	17
Legault Twp.	6	-	2	8
Caramat	7	-	1	2
Mi. 66 Goldfield Rd.	8	-	13	31
Mi. 36 Goldfield Rd.	8	-	2	5

Larch Sawfly, Pristiphora erichsonii (Htg.)

Larch sawfly populations continued to increase throughout the district in 1969 (Table 5). A heavy infestation with up to 90 per cent defoliation persisted in a 5-acre semi-mature stand in Croll Township. A heavy infestation was noted in Colter Township and small stands in Ledger, Croll, and Errington townships and at Toupee Lake sustained moderate damage with up to 60 per cent defoliation. Lightly defoliated stands were observed at many other locations in the district.

TABLE 5

Larch Sawfly Curled Tip Counts in the Geraldton District in 1968 and 1969

Note: Degree of infestation is based on a sequential sampling system using numbers of curled tips.

Location	Av. d.b.h. of sample trees in inches	Per cent curled tips 1968	Per cent curled tips 1969	Degree of infestation 1969
Croll Twp.	4.5	29.7	40.0	Severe
Colter Twp.	8.0	17.0	28.8	"
Ledger Twp.	8.0	21.0	22.1	Moderate
Croll Twp.	7.5	16.6	13.5	"
Toupee Lake	7.0	15.0	17.3	"
Errington Twp.	4.0	2.5	12.5	"
Irwin Twp.	7.5	3.6	6.9	Light
Lindsley Twp.	5.5	3.1	5.0	"
40 Mi. E. Longlac	5.0	4.1	4.5	"
Lindsley Twp.	5.0	2.9	3.7	"
Lydia Lake	7.0	2.5	3.7	"
Twp. 81	8.0	1.4	2.8	"
Twp. 87	6.0	1.7	1.4	"

Amber-marked Birch Leaf Miner, Profenusa thomsoni (Konow)

Population levels of this leaf miner continued to decline at most quantitative sample points in the district in 1969. The only notable increase was at Pamela Lake where leaf mining increased from 2 per cent in 1968 to 51 per cent in 1969 (Table 6). In Ashmore Township leaf mining declined from 86 per cent in 1968 to 52 per cent in 1969. Heavy damage usually occurred on open-grown trees but moderate defoliation was noted in several forest stands.

TABLE 6

Summary of Damage by the Amber-marked Birch Leaf Miner
in the Geraldton District from 1967 to 1969

Note: Counts were based on the examination of 100 leaves at each location.

Location	Per cent leaves mined		
	1967	1968	1969
Caramat	84	71	75
Daley Twp.	42	38	20
Stevens	74	2	4
Beardmore	12	1	1
Pic Twp.	8	7	7
Twp. 86	5	1	3
Twp. 85	—	1	1
Pamela Lake	—	2	51
Ashmore Twp.	—	86	52

TABLE 7

Other Noteworthy Insects

Insect	Host(s)	Remarks
Altica corni Woods	Opposite dogwood	Heavy defoliation, Ashmore Twp. and Hillsport
Anchylopera burgessiana pruni Heinr.	pCh	Moderate defoliation to roadside trees, Ashmore Twp.
Epinotia solandriana Linn.	tA, bPo, wB	Collected commonly throughout district
Neurotoma inconspicua Nort.	pCh	Heavy defoliation to 5 trees, Fulford Twp.
Operophtera bruceata (Hlst.)	tA, W	Trace to light populations common in most tA stands in district

TABLE 7 (continued)

Insect	Host(s)	Remarks
Phratora purpurea purpurea Brown	bPo, tA	High numbers, Twp. 85
Pristiphora geniculata (Htg.)	Mo	Three colonies recovered from Twp. 85, first record this district
Pyrrhia exprimens Wlk.	bPo	Light defoliation to open young regeneration, Ashmore Twp.
Serica sp.	tA	Large numbers of adults causing light defoliation, Summers Twp.

Needle Rust of Spruce, Chrysomyxa ledi de Bary and C. ledicola Lagh.

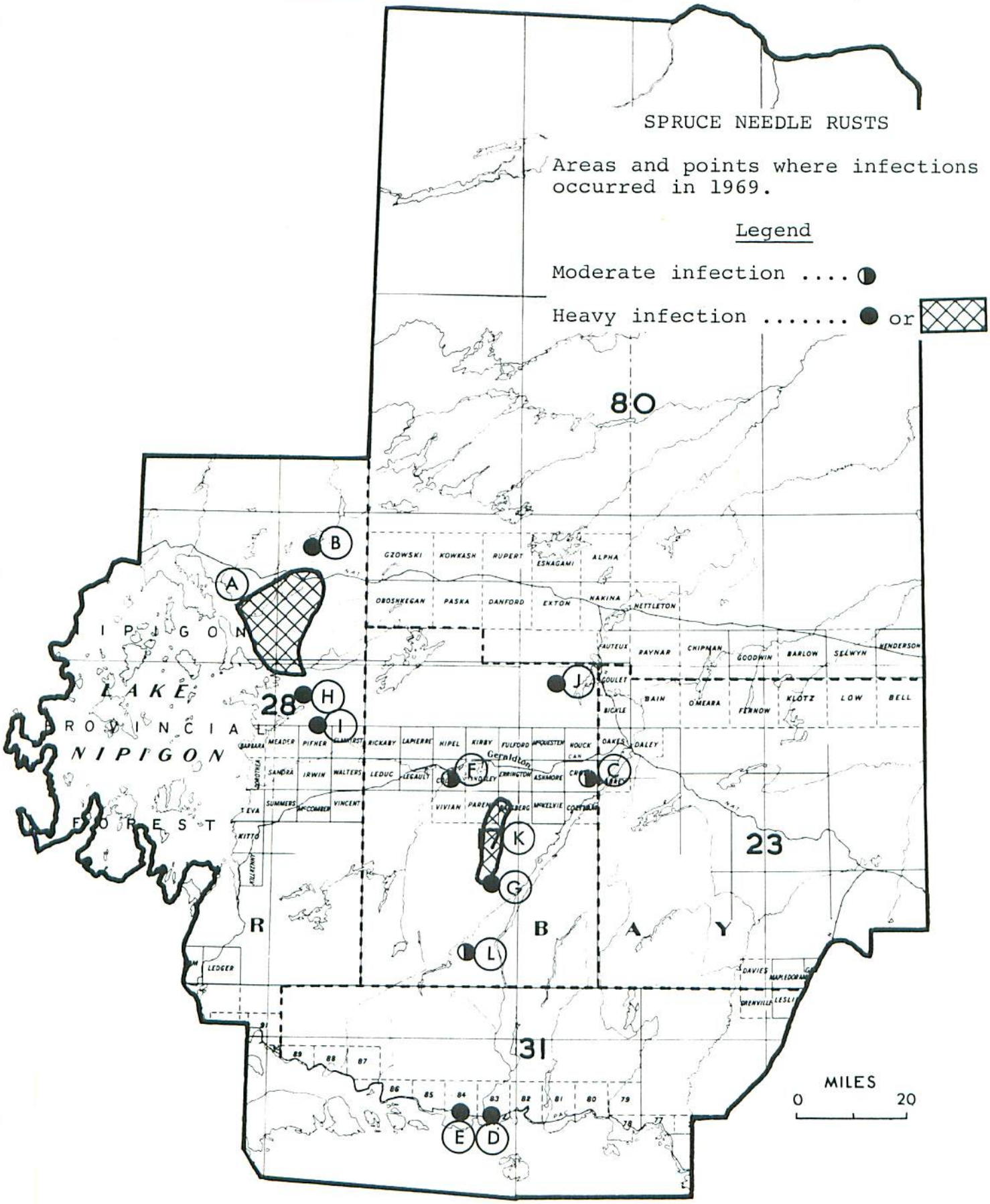
Needle rusts of both black and white spruce were extremely heavy in many parts of the Geraldton District in 1969. The disease was generally heavier on white than on black spruce although it was not as evident on white spruce because of low stocking in most areas. Small pockets of heavy infection were common throughout the district. Moderate to heavy infection occurred on all white spruce in an area of approximately 30 square miles between miles 66 and 76 of the Goldfield Road (Table 8). This included a heavy infection in approximately 300 acres of regeneration at McClusky Lake. Heavy infections were also noted in 5 acres of semi-mature open-grown white spruce in Township 84. Approximately 250 square miles of black spruce were also moderately to heavily infected in the Camp 40 to Auden area. Other infections were designated as points on the accompanying map (see map).

TABLE 8

Summary of Incidence and Infection Levels of Needle Rust on Black and White Spruce in the Geraldton District in 1969

Location	Map symbol	Tree species	Basal area per acre	Area affected	Level of incidence	Level of infection
Ombabika Road	A	bS	36	200 sq. mi.	High	Heavy
Frank Lake	A	bS	53	" " "	High	Heavy
Ombabika Dam	A	bS	85	" " "	High	Heavy
Toronto Lake	B	bS	93	30 acres	High	Heavy
Croll Twp.	C	bS	96	1-2 sq. mi.	High	Moderate
Twp. 83	D	wS	46	5 acres	High	Heavy
Twp. 84	E	wS	105	300 acres	High	Heavy
Colter Twp.	F	wS	92	15 acres	High	Moderate
McClusky Lake	G	wS	30	300 acres	High	Heavy

GERALDTON DISTRICT



Ink Spot of Aspen, Ciborinia whetzelii (Seaver) Seaver

Trace infection levels of this disease were observed commonly in most aspen stands throughout the district in 1969. Exceptions were noted in Croll and Pifher townships where moderate infections were recorded in 30 and 200 acre stands of aspen regeneration respectively.

Pine Needle Rust, Coleosporium asterum (Diet.) Syd.

This needle rust on jack pine was noted at several locations in the district in 1969. Small areas of moderate infection with high incidence were observed in Sandra Township and at Limestone Lake. A light-to-moderate infection in an area of undetermined acreage occurred in a young plantation near Hillsport. Trace infections were common elsewhere throughout the district.

Sweetfern Blister Rust, Cronartium comptoniae Arth.

Sweetfern blister rust was found commonly on all diameter host trees throughout the district in 1969. Highest number of cankers were recorded in a small young jack pine plantation in Pic Township (Table 9). Thirty-five per cent of the trees were diseased and five per cent mortality had occurred. Heavy infection also occurred in pockets in Sandra Township. Moderate damage occurred in Exton Township and light damage in Errington Township, Township 83 and along the Pagwachuan Lake Road. Although mortality attributed to this disease was confined to Pic Township it is possible that the canker could become a problem in the Geraldton District.

TABLE 9

Summary of Incidence, Infection Levels, and Mortality of Jack Pine Caused by Sweetfern Blister Rust in the Geraldton District in 1969

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

Location	Basal area per acre	Area affected	Per cent incidence	Level of infection
Sandra Twp.	67	Unknown	27.5	Heavy
Pic Twp.	—	10 acres	35.0	Heavy
Exton Twp.	91	500 acres	10.0	Moderate
Sandra Twp.	32	10 acres	17.5	Moderate
Errington Twp.	55	30 acres	5.0	Light
Pagwachuan Lake Rd.	80	1000 acres	5.0	Light
Twp. 83	78	35 acres	2.5	Light

Needle Cast of Jack Pine, Davisomycella ampla (Davis) Darker

This needle cast disease of jack pine occurred commonly throughout the district in 1969. A moderate level of infection occurred in a 100 acre stand in Sandra Township with 35 per cent of the semi-mature trees being heavily infected.

A Canker of Jack Pine, Peridermium stalactiforme Arth. & Kern.

Cankers on jack pine thought to be caused by this organism were observed commonly throughout the district in 1969. They were especially common along the Caramat Road and in the Nakina area. One 20-acre stand of mature jack pine examined in Exton Township showed a heavy level of infection with 28 per cent of the main stems cankered. It is anticipated that more work will be done on this organism in 1970 to determine its actual range and impact when positive identification is possible.

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

Approximately 1000 acres of trembling aspen regeneration in Sandra Township sustained a heavy level of infection of this foliage disease in 1969. Elsewhere in the district the disease occurred commonly in most smaller diameter stands of aspen at trace levels of infection. This disease is seldom a problem on larger diameter trees.

Winter Drying of Conifers

Winter drying was confined to ornamental white pine throughout the district in 1969. The only serious damage occurred in Sandra Township and in MacLeod Provincial Park in Ashmore Township. Elsewhere the incidence and level of infection was generally lower in 1969 than 1968 probably as a result of a heavier snow fall in the past winter.

Frost Damage

Exceptionally late spring frosts throughout the district caused considerable damage to many conifers. High mortality to new buds on black and white spruce was particularly noticeable in Pic Township and along the Caramat Road. Many roadside larch had up to 50 per cent of their needles browned as a result of unseasonably cold weather. In most cases only smaller diameter hosts were seriously affected.

TABLE 10

Other Noteworthy Diseases

Organism	Host(s)	Remarks
Hypodermataceae	bF	Heavy infection on four semi-mature trees, Ashmore Twp.
Melampsora sp.	tL	Trace infection throughout district
Puccinia coronata Cda.	Alderleaf buckthorn	Heavy infection in small area, Sandra Twp.

WHITE RIVER DISTRICT

1969

(Continued)

TREE DISEASES (Cont'd.)

INTRODUCTION

The following report deals with the status of insects and tree diseases in the White River District. Because severe defoliation by the spruce budworm was predicted for the Chapleau and Kapuskasing districts immediately adjacent to the eastern boundary of the district, an intensive ground and aerial survey was carried out in 1969. Few larvae and no defoliation were observed in this area. Large aspen tortrix caused some defoliation to trembling aspen in the Wawa-Hawk Junction area. The amber-marked birch leaf miner again caused severe defoliation of white birch trees. Needle rusts of spruce were prevalent in the district and there was little change in the status of Scleroderris canker on pine or Hypoxylon canker of poplar.

Mr. J. Clarkson carried out the duties of District Technician for the field season from mid-May to mid-September.

Sincere appreciation is expressed to members of the Department of Lands and Forests and woods industries for valuable assistance given during the field season.

H. J. Weir

Large Aspen Tortrix, Choristoneura conflictana Wlk.

A new infestation of this insect occurred in the Wawa-Hawk Junction area in 1969. Defoliation of trembling aspen ranged from 60 to 70 per cent over an area of approximately 40 square miles in four townships.

Spruce Budworm, Choristoneura fumiferana (Clem.)

Intensive larval surveys were carried out in the eastern part of the district adjacent to the heavy infestations in Chapleau and Kapuskasing districts, but few larvae were found. Single larvae were recovered from beating samples in the Manitowadge area. Aerial surveys of the eastern section of the district failed to reveal any areas of defoliation.

Larch Casebearer, Coleophora laricella (Hbn.)

Populations of this insect remained at endemic levels at all sample points in the district (Table 1). The highest number of cases observed was in Township 29 Range 23 and in Township 30 Range 26 where 1.6 and 1.5 larvae per branch respectively were collected.

TABLE 1

Summary of Larch Casebearer Counts in the White River District from 1967 to 1969

Note: Counts were based on the examination of four 18-inch branch tips from each of four sample trees at each location.

Location	Av. d.b.h. of sample trees in inches	Av. no. larvae per branch tip		
		1967	1968	1969
Twp. 29 Rge 23	5	0	0.1	1.6
Twp. 30 Rge 26	4	0.5	0.2	1.5
Pic Twp.	5	0	0.1	0.1
Leslie Twp.	4	0	0	0.9

Wandering Sawfly, Dimorphopteryx melanognathus Roh.

Several pockets of severe defoliation occurred in the southern part of the district adjacent to the large areas of defoliation in Sault Ste. Marie District (see map). This insect caused severe defoliation and damage to both white and yellow birch stands in this area in 1966.

European Spruce Sawfly, Diprion hercyniae (Htg.)

There was a general increase in population levels of this insect in 1969. Quantitative samples taken at five locations are shown in Table 2.

TABLE 2

Summary of European Spruce Sawfly Larval Counts in White River District in 1969

Location	Host	Av. d.b.h. of sample trees in inches	Total no. of larvae per 15 tray sample
Magone Twp.	wS	8	62
Pic Twp.	bS	4	6
Twp. 30 Rge. 26	bS	4	9
Twp. 72	wS	3	11
Twp. 74	wS	4	20

Jack-pine Sawfly, Neodiprion pratti banksianae Roh.

Population levels of this sawfly increased in most areas in 1969. Numerous colonies were observed near Wawa, Mobert, and Manitowadge.

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

There was an increase in population levels of this insect in 1969. The heaviest infestation was located near the village of White River in Hunt Township. Pockets of light infestation were observed near Wawa and in the Mobert-White Lake areas.

White Pine Weevil, Pissodes strobi Peck

Little change in population levels occurred in 1969. Light to moderate damage was observed at three locations (Table 3).

TABLE 3

Summary of White Pine Weevil Damage in the White River District in 1969

Note: Counts are based on examination of 100 trees at each point.

Location	Host	Per cent of trees weevilled
Barbara Lake	wS	4
Black River	bS	4
Flood Twp.	bS	9

Larch Sawfly, Pristiphora erichsonii Htg.

Generally, populations remained at low levels in 1969. Heavy defoliation occurred in a larch stand near Dubreuilville in Township 29 Range 26 where 60-70 per cent defoliation was observed. Elsewhere in the district only scattered open-grown trees were infested.

Mountain Ash Sawfly, Pristiphora geniculata Htg.

A decline in population levels of this sawfly occurred in 1969. Moderate infestations persisted between Agawa Bay and Wawa. No extension in the distribution of this insect was observed in 1969.

Amber-marked Birch Leaf Miner, Profenusa thomsoni Konow

Pockets of heavy infestation persisted in the White River-White Lake areas but declines were observed at numerous other locations. Results of quantitative samples comprising 100 leaves selected at random from three trees at each location are shown in Table 4.

TABLE 4

Summary of Damage by the Amber-marked Birch Leaf Miner in the White River District from 1967 to 1969

Location	Av. d.b.h. of sample trees in inches	Per cent of leaves mined		
		1967	1968	1969
Bryant Twp.	3	83	42	44
Hunt Twp.	4	84	51	70
Magone Twp.	3	--	--	75
Twp. 70	2	83	76	70
Twp. 71	4	80	72	41

TABLE 5

Other Noteworthy Insects

Insect	Host(s)	Remarks
Choristoneura pinus pinus Free.	jP	Trace level in Twp. 30, Rge 23
Enargia decolor Wlk.	tA	Low populations in Twp. 51, Twp. 28 Rge. 23, and Twp. 27 Rge 23
Neodiprion maurus Roh.	jP	Two colonies near Manitowadge
Petrova albicapitana (Busck)	jP	Low numbers in Twp. 64, and Cecil Twp.

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

Light levels of infection were observed at two locations in the district in 1969. The pathogen was found on jack pine near Copper Lake and on black spruce near Manitowadge. Little mortality was observed at the two locations.

Yellow Witches' Broom of Spruce, Chrysomyxa arctostaphyli Diet.

Witches' brooms caused by this pathogen occurred at four locations in the district. The largest number of brooms occurred in Township 29 Range 23 where 13 brooms on 10 trees were observed. Single brooms were observed in Township 30 Range 23, Mikano and Cecile townships.

Needle Rust of Spruce, Chrysomyxa ledi (Alb. & Schw.) d By. and Chrysomyxa ledicola Lagh.

There was a general increase in the level of infection in 1969. Evaluations recording incidence and infection levels were made in Township 30 Range 23 where incidence was 100 per cent and the infection level was light, and at Camp 53 near Manitowadge where incidence was 97 per cent and the infection level was light. Light infection centres were also observed in Township 26 Range 23 and eight miles north of the junction of Highway 17 and Highway 614.

Ink Spot of Aspen, Ciborinia whetzelii (Seaver) Seaver

Little change in infection levels of this foliage disease occurred in the district. Assessment of damage to stands in Township 73 and Bryant Township showed 100 per cent and 73 per cent incidence, with trace and light infection levels respectively. No other assessments were made in the district.

Sweetfern Blister Rust, Cronartium comptoniae Arth.

Stem cankers caused by this pathogen were observed at two locations in 1969. Evaluations made in Township 30 Range 23 revealed 22.5 per cent incidence and a moderate infection level. Numerous cankers were observed in a jack pine stand in Magone Township.

Needle Cast of Jack Pine, Davisomycella ampla (Davis) Darker

Little change in infection levels of this needle cast occurred in the district. An assessment made in Township 30 Range 23 revealed 50 per cent of the trees examined were infected and the infection level was light. The disease was not found at numerous points examined elsewhere.

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

Galls caused by this pathogen were observed at numerous locations in varying degrees of infection. In Township 64, 45 per cent of the trees examined were infected and the infection level was trace. Trace infection levels were also observed at numerous locations elsewhere in the district.

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

Little change in the status of this disease occurred in 1969. Assessment of 120 trees at each of four locations was taken to note infection levels and incidence (Table 6).

TABLE 6

Summary of Hypoxylon Canker Damage to Trembling Aspen in White River District in 1969

Note: * Per cent incidence shows the per cent of trees infected.
* Per cent level of infection shows the per cent of trees seriously infected. See foreword.

Location (township)	Av. d.b.h. of sample trees in inches	* Per cent incidence	* Per cent level of infection	Per cent tree mortality
Cecile	8	34	13	0
Hunt	8	36	9	.8
Knowles	6	20	13	0
70	7	23	12	0

Scleroderris Canker of Pine, Scleroderris lagerbergii Gremmen

No important change in the status of this organism occurred in the district in 1969. Light infection levels were observed in Township 30 Range 23, Pic and Hunt townships.

Frost Damage

Severe frost damage to current foliage of balsam fir trees occurred along Highway 17 east of White River in Township 64 in 1969. Light damage was observed at numerous other locations in the district.

TABLE 7

Other Noteworthy Diseases

Organism	Host(s)	Remarks
Cenangium abietis (Pers.) Rehm.	jP	Trace level, Magone, Twp. 28 Rge 23, and Twp. 30 Rge 23; in the latter incidence was 48 per cent
Melampsorella caryophyllacearum Schroet.	bF	Single witches' brooms in Leslie, Manitowadge, and 70 Twp.

TABLE 6 (continued)

Organism	Host(s)	Remarks
Pollaccia elegans Serv.	bPo	Trace level near Manitowadge, common near Copper Lake
Pollaccia radiosa (Lib.) Bald. & Cif.	tA	Moderate level near White River, Hunt Twp.
Scoleconectria curcurbitula (Tode ex Fr.) Booth	jP	Trace level, common in Flood, Cecile, and Cecil Twp.