Sault Ste. Marie District, 1969
Reports of Forest Research Technicians

Hall, K.C.

Information Report O-X-124
(Forest Research Laboratory, Ontario Region)

CANADA

OUR FILE 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.

SAULT STE. MARIE DISTRICT

1969

continued ...

TREE DISEASES

INTRODUCTION

This report deals with the status of forest insects and tree diseases in the Sault Ste. Marie District in 1969. Tree diseases are presented on a district basis rather than regionally as in previous years.

Spruce budworm populations persisted in Parkinson Township at a level comparable to 1968 and are expected to continue in 1970. Population levels of the jack pine budworm declined to endemic levels in Esten Township but were comparable in Haughton Township. White pine weevil leader damage was more prevalent in all untreated areas. A substantial reduction in the size and intensity of forest tent caterpillar infestations occurred and forecasts indicate the declining trend will continue. Infestations of birch skeletonizer, Bucculatrix canadensisella, and wandering sawfly, Dimorphopteryx melanognathus, were mapped in numerous areas in Division 36.

The northerly range of Dutch elm disease was extended in 1969 to Hodgins Township and Township 169. Pathogens which attack poplar such as ink spot, leaf and twig blight, and Hypoxylon canker were collected most frequently and were widespread in the district. A high level of infection of dwarf mistletoe, Arceuthobium pusillum, continued in two areas.

Two aerial spraying operations were carried out to protect valuable plantations and stands by controlling populations of the white pine weevil and jack pine budworm.

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

K. C. Hall

Ugly-nest Caterpillar, Archips cerasivorana Fitch

A substantial increase in the population levels of this insect occurred in 1969. Very high numbers of colonies were observed at two locations in Rose Township and moderate populations occurred commonly in Haughton Township. Light infestation was present on choke cherry and pin cherry along roadsides in Aweres Township. Elsewhere in the district population levels were comparable to 1968.

Birch Sawfly, Arge pectoralis (Leach)

One small pocket of light infestation of this sawfly occurred along a 1/2 mile section of the White River road in Township 169. Colony counts averaged 8.3 per tree on large diameter yellow birch in the area. Colonies were found frequently on white birch in Bridgland Township and on elm in Hodgins Township. Elsewhere in the district population levels were low.

Pine Spittle Bug, Aphrophora parallela (Say)

A marked increase in the population levels of the pine spittle bug was observed in 1969. In Township 1A high populations occurred commonly on the pure jack pine stand at Mount Lake. A medium infestation was present on white pine at Hiawatha Park and on Scots pine in Kirkwood Township. Light infestations occurred on jack pine in Aweres and Haughton townships. The insect was observed at numerous other locations in the district in low numbers.

Birch Skeletonizer, Bucculatrix canadensisella Cham.

High populations of this skeletonizer persisted at numerous locations in Division 36. Heavy infestations, varying in size from small pockets to four square miles, occurred along the North Channel, St. Joseph Island, Goulais, Batchawana, Pancake, and Mica bays and at Montreal River. Skeletonizing in all instances was very heavy and resulted in severe browning of the foliage in September. It is also interesting to note that all high populations were confined to stands immediately adjacent to lakeshores.

Large Aspen Tortrix, Choristoneura conflictana (Wlk.)

One small pocket of heavy infestation of this insect occurred east of Bruce Mines in Plummer Additional Township. Defoliation ranging from 40 to 65 per cent was common on all diameter size aspen trees. Small populations were present in Vankoughnet Township and in several stands in Sault Ste. Marie.

Spruce Budworm, Choristoneura fumiferana (Clem.)

Because the current budworm outbreak is spread over a number of districts which cannot realistically be treated separately, a broader approach has been adopted. The following account was extracted from Information Report O-X-135 titled "The Current Spruce Budworm Situation in Northeastern Ontario", to which the reader is referred for additional information.

In 1968, aerial and ground reconnaissance revealed major increases in the intensity and extent of the Borden Township infestation and a number of new infestations were detected over a large part of northeastern Ontario. The Borden infestation northeast of Chapleau had increased to medium intensity and extended over approximately 300 square miles. New infestations extended over approximately 800 square miles in the northern parts of the Chapleau District and into the Kapuskasing District. Both first and second year infestations were largely of light or moderate intensity with pockets of severe defoliation in Borden, Conking, Ivanhoe, and Amundsen townships. New or enlarged infestations were also delineated in the Cochrane, Sudbury, Swastika, and Sault Ste. Marie districts. Elsewhere in northeastern Ontario, infestations were generally light, interspersed with small pockets of medium to heavy intensity, the most important of which were in Baden Township and Indian Reserve 72 in the Swastika District, in Fairbank Township in the Sudbury District, and in Parkinson Township in the Sault Ste. Marie District.

In 1969, a further major development was evident. In the Chapleau District and the southern part of the Kapuskasing District, medium and heavy infestation extended over more than 2,000 square miles (see map). Stands within this area have obviously been changing from mixed woods, with a dense hardwood overstory that overtopped the fir at the time of the last outbreak, to a predominantly spruce-fir forest with scattered mature white spruce in the overstory and a dense semi-mature balsam fir understory. In some stands the defoliation of balsam fir was particularly severe with upwards of 75 per cent of the old foliage removed in addition to all of the new needles. In the Sudbury District, a new medium to heavy infestation comprising approximately 400 square miles occurred in the area between Onaping Lake and the Canadian National Railway. Also, the light infestation of 1968 in Emerald and Gouin townships increased to heavy intensity, and two widely-separated heavy infestations, in Fairbank and Asquith townships, expanded. Eight additional, but smaller and widely-separated infestations, ranging in size from 1 to 35 square miles, were observed in the district. In the Swastika District, an infestation in Yarrow Township enlarged and increased from medium to heavy intensity, and a new heavy infestation was found in Milner Township. Reductions in the extent of damage in the Cochrane District and the northern part of the Swastika District in 1969 compared with 1968 resulted from a severe frost in mid-June of 1968 that killed most of the new shoots of balsam fir thus eliminating the food supply for the budworm. In Parkinson Township, Sault Ste. Marie District, a small, heavy infestation on white spruce recurred in 1969.

In order to forecast damage in 1970, egg mass counts were made at a large number of points in and around the infested area. The results of this survey are shown in Table 1.

Moderate and severe defoliation can be expected again in 1970 providing, of course, that normal conditions prevail next spring. A major extension of moderate and light defoliation is expected southward and southwestward of the largest infestation in the Chapleau District and probably beyond the points at which samples were taken. Similar extensions are forecast around Horwood Lake and Foleyet in the eastern part of the Chapleau District and again to the east and south of the large Onaping Lake infestation in Sudbury District. A sufficient number of nil returns were obtained from areas north and west of the infestations in the Kapuskasing District to suggest a static situation in this area for 1970.

Because this outbreak was widespread and the weather at the time of moth flight (July 15 to 28 at Chapleau) was bright, dry, and conducive to moth dispersal, new infestations will probably extend in 1970 beyond the 1969 borders of infestation.

TABLE 1

Spruce Budworm

Summary of Balsam Fir Defoliation Estimates and Egg Mass Counts in 1969, and Infestation Forecasts for 1970 in Northeastern Ontario

Location (township by district)	Per cent defoliation of 1969 foliage	Number of egg clusters per 100 square feet of foliage	Damage forecast for 1970
Chapleau			
Abigo	3	0	0 *
Borden	60	68	M
Brutus	0	0	0
Calais (Prov. Park)	66	633	S
Carty	11	10	L
Conking	8	47	M
Coppell	4	22	L
Denyes	2	40	M
Foleyet	16	56	M
Halcrow	0	0	0
Halsey	3	48	M
Hardiman	8	68	M
Hill	5	84	M
Horwood	12	64	M
Ivanhoe (Prov. Park)	60	309	S
Kapuskasing	71	860	S
Keith	32	89	M
Kirkwall	65	244	S
Lerwick	74	335	S
Lincoln	52	235	S
Makawa	1	0	0
Montcalm	6	20	L
Muskego	3	0	0
Ossin	33	185	S
Oswald	1	0	0
Penhorwood	2	12	L
Rollo	1	12	L
Saddler	3	83	M
Shenango	91	4008	S
11 D (Prov. Park)	2	7	L
11 H	1	6	L
12 F	1	0	0
12 G	1	13	L
12 H	1	42	M
13 G	3	54	M
29	2	8	L
32	1	60	M
35	3	5	L

* S - Severe; M - Moderate; L - Light; 0 - Nil or Very light.

TABLE 1 (continued)

Location (township by district)	Per cent defoliation of 1969 foliage	Number of egg clusters per 100 square feet of foliage	Damage forecast for 1970
Cochrane			
Hassard	8	16	L *
Kapuskasing			
Champlain	63	107	M-S
Clouston	3	0	O
Lisgar	7	76	M
Mons	71	160	S
Puskuta	3	0	O
Radisson	1	0	O
North Bay			
Badgerow	1	10	L
Dunnet	31	151	S
Sault Ste. Marie			
Parkinson (white spruce)	83	677	S
Sudbury			
B	35	476	S
Baynes	2	0	O
Beresford	1	0	O
Beulah	37	363	S
Botha	6	81	M
D	3	6	L
Dale	6	9	L
Dunbar	18	36	M
Edinburgh	1	0	O
Emerald	14	37	M
Emo	55	547	S
Fairbank	64	191	S
Halliday	2	3	L
Hess	2	12	L
Howey	8	31	M
Inverness	6	14	L
Leask	5	9	L
MacMurchy	3	9	L
McCowan	1	9	L
Miramichi	64	822	S
Moher	50	466	S
Moncrieff	16	14	L
Muldrew	2	0	O
Northrup	4	0	O
St. Louis	3	0	O
Shelly	51	475	S
Starlak	1	3	L
Tyrone	2	4	L

* S - Severe; M - Moderate; L - Light, O - Nil or Very light.

TABLE 1 (continued)

Location (township by district)	Per cent defoliation of 1969 foliage	Number of egg clusters per 100 square feet of foliage	Damage forecast for 1970
Swastika			
Milner	67	324	S *
Tyrell	1	0	0
Yarrow	66	273	S

* S - Severe; M - Moderate; L - Light; 0 - Nil or Very light.

Although no infestations occurred in the Sault Ste. Marie District except in Parkinson Township spruce budworm larvae were collected more frequently than previously along the Ranger Lake road, the Chapleau Highway, White River road and in the Thessalon area, Table 2.

TABLE 2

Summary of Spruce Budworm Larval Counts in the Sault Ste. Marie District in 1968 and 1969

Note: Counts based on two mat samples from each of ten trees at each location.

Location (township)	Host	Total no. of larvae per 20 tray sample 1968	1969
Aberdeen Add'l.	bF	5	7
Thessalon	bF	10	21
Thessalon	wS	-	41
Lefroy	wS	46	102
3H	bF	-	7
Aweres	wS	-	7

Jack-pine Budworm, Choristoneura pinus pinus Free.

In 1968 heavy infestations of the jack pine budworm were reported in the Kirkwood Management Unit, Mount Lake area and in Haughton and Esten townships. Damage in all areas was severe with much of the current year's foliage killed and in some instances considerable damage to old foliage due to back feeding.

In 1969 populations persisted in Haughton Township on a comparable level with heavy defoliation occurring on numerous scattered jack pine trees. In Esten Township no defoliation was visible in aerial surveys. Aerial spraying operations were carried out in the Kirkwood Management Unit and at Mount Lake to prevent further damage to valuable stands of red and jack pine. Surveys following control measures showed negligible damage to red pine and heavy defoliation of two small pockets of jack pine in the Kirkwood area. In the Mount Lake area heavy defoliation occurred on numerous host trees. Counts carried out in the fall showed a marked reduction in number of egg masses in both sprayed and unsprayed areas. The presence of small numbers of egg masses in Haughton Township and Mount Lake area indicate that some defoliation is probable there in 1970 (Table 3).

TABLE 3

Summary of Jack Pine Budworm Egg Mass Counts
in the Sault Ste. Marie District in 1968 and 1969

Note: Counts based on the examination of one 24-inch branch tip from the mid-crown of six trees at each location.

Location	Host	No. of egg masses 1968	1969
Haughton Township			
Lot 9 Con II	jP	0	0
Lot 10 Con I	jP	0	1
Kirkwood Township			
Lot 2 Con IV	jP	0	0
Lot 9 Con V	rP	1	0
Lot 10 Con IV	rP	0	0
Lot 12 Con VI	jP	22	0
Lot 12 Con VI	rP	5	0
Township 1A			
Mount Lake	jP	21	2
Mount Lake	jP	8	1

Larch Casebearer, Coleophora laricella (Hbn.)

Population levels of the larch casebearer generally declined in the district in 1969. The most noteworthy population was again present in one stand in the Garden River Indian Reserve east of Sault Ste. Marie and although a decline in larval density did occur populations were sufficient to cause heavy defoliation. A new pocket of light infestation on small diameter open grown hosts occurred in Hilton Township on St. Joseph Island. At all other sampling points populations were low (Table 4).

TABLE 4

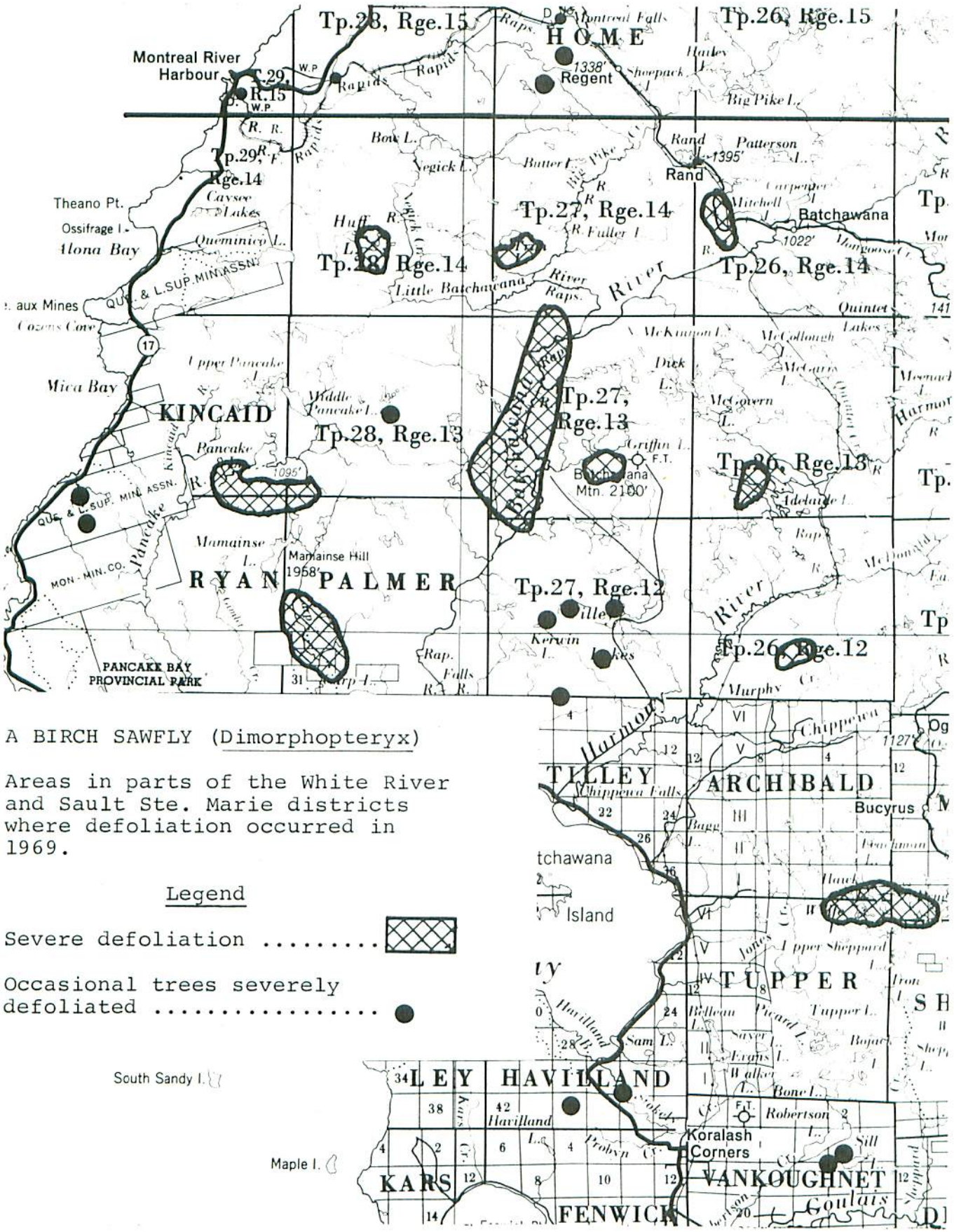
Summary of Larch Casebearer Counts in the Sault Ste. Marie District from 1967 to 1969

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

Location	Av. d.b.h. of sample trees in inches	Av. no. of larvae per branch tip 1967	1968	1969
Garden River I.R.	10	4.5	122.1	90.3
Parke Township	4	.1	.1	.5
Ryan Township	5	2.8	.3	0.0
Thessalon Township	5	6.7	5.8	.4
Wells Township	3	4.6	7.2	.3
Hilton Township	4	-	-	5.6

A Tortricid on Oak, Croesia semipurpurana (Kft.)

No appreciable change in the status of this insect was observed in 1969. Population levels were comparable to 1968 and caused generally light defoliation and occasional heavy damage to red oak in Prince and Parke townships and at several locations in Sault Ste. Marie.



A BIRCH SAWFLY (Dimorphopteryx)

Areas in parts of the White River and Sault Ste. Marie districts where defoliation occurred in 1969.

Legend

Severe defoliation .....

Occasional trees severely defoliated .....

Wandering Sawfly, Dimorphopteryx melanognathus Roh.

The last outbreak of this sawfly occurred in 1966. Aerial surveys in 1969 showed heavy infestations along the Batchawana River and in the Mitchell, Huff, Pancake, Carp, Adelaide, Griffin and Wolfe lakes area. Defoliation of large diameter yellow birch in these infestations exceeded 60 per cent. New small isolated pockets of heavy infestation were mapped in Twp. 27 Rge. 12 and in Havilland, Vankoughnet, Ryan, and Home townships (see map). Elsewhere through the northern portion of Division 36 population levels were light in all areas sampled. Rearing records indicate that this insect goes into prolonged resting periods which accounts for the extended periods between outbreaks.

Maple Trumpet Skeletonizer, Epinotia aceriella Clem.

A marked upward trend in the population level of this insect was observed in 1969. Light-to-medium infestations occurred commonly on sugar maple at several locations on St. Joseph Island. Light infestation was found commonly throughout the south portion of Divisions 65 and 36.

Birch Leaf Miner, Fenusa pusilla (Lep.)

Populations of this miner were widespread in the district in 1969. Medium infestations occurred commonly on small roadside hosts along the Elliot Lake, Kindiogami and Ranger Lake roads and in Gaudette, Kars, Ley, and Lewis townships. Light infestation was present at numerous locations along the Tribag mine road. Population levels on large diameter hosts in all areas sampled was very low.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Population levels of the forest tent caterpillar showed a marked decline in 1969. In 1968 medium and heavy infestations occurred in an area of approximately 850 square miles extending from Iron Bridge to Cutler and as far north as Five Mile Lake. In addition approximately 150 square miles of heavy infestation was present in the Echo Bay-Sylvan Valley area.

In 1969 five areas of infestation were mapped. The largest infestation, about 150 square miles, was located in the eastern section of the district extending throughout Proctor, Lewis Spragge and Esten townships. Smaller pockets ranging in size from 1 to 20 square miles occurred in McGivern, Striker, Mack, and Parkinson townships (see map). Infestation levels in these areas were generally moderate with scattered pockets of heavy infestation. Egg band counts in the fall indicate a further reduction of populations in 1970 (Table 5).

TABLE 5

Summary of Forest Tent Caterpillar Egg Band Counts at Five Locations in 1968 and 1969 and Defoliation Forecast for 1970

Location (township)	Av. number of egg bands per tree		Defoliation forecast for 1970
	1968	1969	
Proctor	54.	5.	Light
Spragge	22.6	6.6	"
Striker	3.4	.3	"
149	1.6	.3	"
Thompson	15.6	0.0	Nil

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

Population levels of this sawfly declined generally at all sample points in 1969. Although the average number of colonies per tree at Garden River declined from 1.9 in 1968 to 1.6 in 1969 severe damage to young red pine occurred. Quantitative sampling carried out along Highway 17 East in Cobden, Gladstone, Long and Striker townships showed negative results. Scattered colonies were reported along highways 108 and 639 north of Elliot Lake.

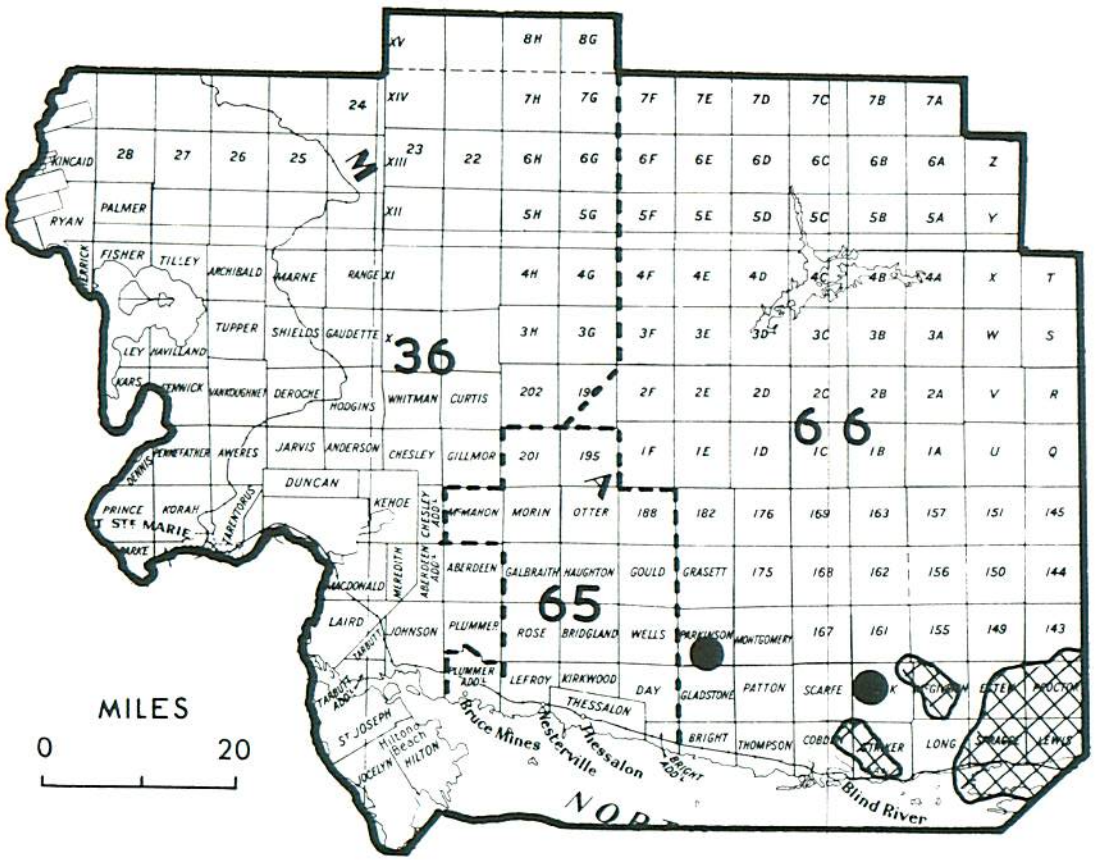
Red-headed Jack Pine Sawfly, Neodiprion virginianus complex

An appreciable decline of populations of this sawfly was observed at all sample points in 1969. The highest number of colonies occurred in townships 4D and 5D where 3 and 5 per tree was recorded, a substantial decline compared with 1968 when 16 and 32 respectively was reported. Negative results were recorded at all other quantitative sampling locations.

White Pine Weevil, Pissodes strobi Peck

Population levels of the white pine weevil increased in the district in 1969 as shown in quantitative counts carried out at numerous sampling points (Table 6). The most severe damage was again present in a Scots pine plantation in Wells Township where 69 per cent weevilling was recorded. Heavy damage in recent years has resulted in badly deformed trees. Infestation intensities in white pine plantations increased substantially at all sample points except in one small plantation south of Portelance Lake where a small decrease was recorded.

SAULT STE. MARIE DISTRICT



FOREST TENT CATERPILLAR

Areas within which defoliation occurred in 1969.

Legend

Moderate to severe defoliation ..... ● and ▨

TABLE 6

Summary of Leader Damage by the White Pine Weevil in the Sault Ste. Marie District in 1968 and 1969

Location	Host	Number of trees examined	Per cent of trees infested 1968	1969
Wells Twp.	ScP	100	55.	69.
Cobden Twp.	wP	100	16.	39.
Rose Twp.	wP	162	--	33.
Garden River Ind. R.	wP	100	21.	29.
Haughton Twp.	wP	191	9.9	24.6
Portelance Lake	wP	111	3.6	9.9
Kirkwood Twp.	wP	222	2.2	9.0
Portelance Lake	wP	70	5.7	2.8

Larch Sawfly, Pristiphora erichsonii Htg.

No important change in the status of this sawfly was observed in 1969. Heavy defoliation of larch stands occurred in Spragge, Thessalon, Lewis, and Parkinson townships. In the remainder of the district light defoliation of roadside hosts was observed.

TABLE 7

Other Noteworthy Insects Collected in the Sault Ste. Marie District in 1969

Insect	Host(s)	Remarks
Besma endropiaria G. & R.	sM	Light to moderate populations Rge XI
Cecidomyia reeksii Vock.	jP	Medium infestation in Parkinson and 1A townships
Cephalcia sp.	rP	Forty-two colonies on 100 trees east of Iron Bridge
Gonioctena americana (Schaef.)	tA	Light infestation on small trees Vankoughnet and Galbraith townships. Defoliation 10 to 20 per cent
Lambdina fiscellaria fiscellaria (Hulst)	sM	Light populations in association with Besma endropiaria in Rge XI

TABLE 7 (continued)

Insect	Host(s)	Remarks
Lecanium sp.	rO	Large numbers at one location, Parke Township
Neodiprion abbotti (Leach)	rP	One colony Lewis Township
Neodiprion pratti banksianae Roh.	jP	Marked reduction in Parke Township
Pristiphora geniculata (Htg.)	mAs	Heavy defoliation on occasional hosts along Chapleau Highway, White River, Red Rock, and Ranger Lake roads
Prociphilus tesselatus Fitch	Al	Several large colonies Twp. 4D
Schizolachnus piniradiatae Dav.	rP	High populations Army Lake

Eastern Dwarf Mistletoe, Arceuthobium pusillum Peck

A high level of infection of this disease persisted in Ley and Ryan townships in 1969. Quantitative sampling showed a small increase in the incidence of the disease on black spruce in both areas (Table 8). The organism was not collected elsewhere in the district.

TABLE 8

Summary of Incidence and Levels of Infection of Dwarf Mistletoe on Black Spruce in the Sault Ste. Marie District in 1968 and 1969

Note: Based on assessment of four trees in each of ten plots at each location.

Location (township)	Level of incidence		Level of infection	
	1968	1969	1968	1969
Ley	High	High	Heavy	Heavy
Ryan	High	High	Heavy	Heavy

Dutch Elm Disease, Ceratocystis ulmi (Buism.) C. Moreau

New distribution records of this important pathogen were established in the Sault Ste. Marie District in 1969. In 1967 a westerly extension of the disease to the Sault Ste. Marie area was recorded as the result of four positive cultures of the organism. No significant spread of the disease was observed in 1968. In 1969 diseased trees occurred commonly along the White River road as far north as Township 169 where 65 per cent incidence was recorded. A new northerly distribution point was established in the Sault area with the occurrence of light infection in Hodgins Township.

Ink Spot of Aspen, Ciborina whetzelii (Seaver) Seaver

This foliage disease was widespread in the district and in the majority of cases at trace levels of infection. Exceptions were observed in Bridgeland Township where light infection occurred in one stand of large diameter trembling aspen. In Lewis and W townships moderate and light infection occurred commonly on small hosts.

White Pine Blister Rust, Cronartium ribicola J. C. Fischer

This rust occurred commonly in the Sault Ste. Marie District in 1969. A light level of infection was recorded on large diameter white pine in Township 2E. Trace levels of infection were observed in several plantations and on roadside plantings in the Kirkwood Management Unit. Aerial surveys showed the disease well established in larger host trees in the Boland River area of Division 66.

Cedar Apple Rust, Gymnosporangium spp.

This rust which attacks the leaves, fruit, and twigs of serviceberry was observed at numerous locations in the district in 1969. The most noteworthy occurrence was observed in Township 163 where heavy infection was present on numerous hosts in one open jack pine stand. Light infection was present in several areas near Sault Ste. Marie and in Township 1F. Trace levels of infection occurred elsewhere in the district.

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

This disease which attacks trembling and largetooth aspen was widely distributed in the district in 1969. The highest level of infection was evaluated in one stand in Township 188 where branch or stem cankers were present on 75 per cent of the assessed trees. Moderate level of infection was recorded in a small stand of pole size aspen in Gladstone Township, light infection and incidence was evaluated in Vankoughnet Township.

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

This disease was found commonly in the district in 1969 confined principally to open grown small diameter hosts. A moderate level of infection occurred in two areas; the largest in Township 163 where approximately 2 acres of trembling aspen was affected and in Hodgins Township where damage was most common on largetooth aspen. Light infection occurred commonly at numerous areas in Township W. Elsewhere in the district trace levels of infection were observed.

TABLE 9

Other Noteworthy Diseases

Organism	Host(s)	Remarks
Armillaria mellea (Vahl ex Fr.) Kummer	rP	Trace levels in Twp. W
Aureobasidium pullulans (d By.) Arn.	pCh	Moderate-to-heavy damage to new foliage at one location, Kincaid Township
Hendersonia sp.	bF	One acre of heavy infection Twp. 3H
Nectria sp.	M	Widely distributed, trace level of infection
Peridermium sp.	ScP	Old galls common in one plantation of large diameter hosts in Kirkwood Twp., not found on adjacent small trees. Trace levels on jack pine along Chapleau Highway
Pollaccia elegans Serv.	bPo	Trace infection on small hosts Kirkwood Twp.
Pucciniastrum epilobii Otth.	bF	Trace level of infection common in Ranger Lake area
Rhytisma acerinum (Pers. ex Saint Amans) Fr.	sM	Scattered hosts moderate-to-heavily infected, Hilton Twp.
Scleroderris lagerbergii	rP	Light level of infection Gaudette Twp. Trace level Vankoughnet Twp.