Central Forest Region, 1968
Status of Insects in the Sault Ste. Marie District

Weir, H.J.

Information Report O-X-92
(Forest Research Laboratory, Ontario Region)

TABLE OF CONTENTS

INFORMATION REPORTS - INSECT AND DISEASE SURVEYS

Ontario, 1968

FOREWORD

The Forest Insect and Disease Survey maintains a continuing interest in improving existing sampling methods and in developing new techniques for rating forest pests and appraising damage. In 1968, a new approach for evaluating incidence and levels of infection of a number of tree diseases was explored. This involved determining degrees of damage in random and non-random plots in relation to the basal area of infected stands, the ultimate objective being to provide information on the impact of the organisms on forest stands in Ontario. Studies during the winter to test the accuracy of the new sampling system will be useful for planning field work in 1969. Improvement of insect survey methods in 1968 was largely directed toward jack-pine budworm sampling with emphasis on egg population studies. To this end, the distribution of egg masses on individual branches and at various crown levels of sample trees was investigated as a basis for determining the nature and size of samples required to assess population levels. The value of these new approaches in disease and insect sampling will be proven with use in forthcoming field seasons.

Marked changes in insect and disease conditions were recorded in large areas of the Province in 1968. A sharp increase in population levels of the spruce budworm and jack-pine budworm occurred in many parts of Ontario. The largest areas of infestation of the spruce budworm were located in the Burchell Lake area in the Port Arthur District, in parts of the Chapleau, Kapuskasing and Swastika districts and in southeastern Ontario. Localized infestations were centered in Parkinson Township in the Sault Ste. Marie District and in Fairbanks Township west of Sudbury. Egg surveys in most of the above areas except Burchell Lake, indicated that infestations will increase in extent in 1969.

The chemical control operation undertaken by the Ontario Department of Lands and Forests against the spruce budworm in the Burchell Lake area dominated insect surveys in western Ontario during several periods from May until September. Technicians were involved in intensive sampling to delineate the area to be treated, to time the spray applications and to assess spruce budworm numbers before and after the control operation.

Infestations of the jack-pine budworm abated somewhat in the Kenora and Fort Frances districts but several years of severe defoliation, particularly on rocky sites, caused considerable crown damage. In parts of the Sault Ste. Marie and Pembroke districts very severe defoliation of both jack pine and red pine was reported. Other insects occurring in particularly high numbers in 1968 included the saddled prominent, larch casebearer and several species of cedar leaf miners.

Devastation of elm by Dutch elm disease continued in southern Ontario and numerous new centers of infection were found throughout a large part of the range of elm in central Ontario. A vector of Dutch elm disease, the smaller European elm bark beetle extended its range eastward along the north shore of Lake Ontario and St. Lawrence River. Hypoxylon canker of poplar proved to be a serious problem in many parts of Ontario. Evaluations revealed particularly high levels of infection in aspen stands in the Sault Ste. Marie and Sudbury districts. Scleroderris canker of pine again caused considerable

...2

mortality in young red pine and jack pine plantations in parts of central and northeastern Ontario. Fomes root rot usually associated with thinning operations, caused varying amounts of mortality in red pine plantations in southern Ontario. Four new centers of infection of this disease were found in Larose forest in the Kemptville District in 1968. Details on the above and other noteworthy insect and disease problems are contained in the report that follows.

J. E. MacDonald

CENTRAL FOREST REGION

1968

INTRODUCTION

STATUS OF TREE DISEASES (REGIONAL)

INTRODUCTION

CENTRAL FOREST REGION

The most important development in the Central Forest Region in 1968 was the outbreak of spruce budworm infestations in all three districts. Data on this and other noteworthy insects are presented on a district basis, whereas important tree diseases are contained in the regional section of the report.

In 1968, the Gogama District ceased to be an administrative unit. As a result, Foleyet Division was added to the Chapleau District and the Gogama Division was added to the Sudbury District. Mr. W. Ingram was transferred from Gogama to Chapleau as District Technician and Mr. E. L. Houser assumed the duties of District Technician in Sudbury.

The jack-pine budworm and forest tent caterpillar caused severe defoliation in the southern part of the region. The European pine sawfly was found in the Sault Ste. Marie District for the first time. A high level of infection of a spruce needle rust was observed in Ivanhoe Park in the Chapleau District.

Considerable time was devoted to extension calls and Junior Ranger group talks. The valuable assistance extended by the Department of Lands and Forests and Industry is gratefully acknowledged.

H. J. Weir

Dwarf Mistletoe, Arceuthobium pusillum Peck.

Witches' brooms caused by this parasite were found commonly throughout the Central Region in 1968 (Photograph).

In the Sault Ste. Marie District levels of infection were high in extensive black spruce and white cedar swamps in Ley and Ryan townships in the northwestern part of the district (Table 1). An area of heavy infection was observed in a roadside park near Providence Bay on Manitoulin Island in the Sudbury District. In the Chapleau District low levels of infection were observed at numerous locations.

TABLE 1

Summary of Incidence and Levels of Infection of Dwarf Mistletoe on Black Spruce in the Central Region in 1968

Location	Area affected (acres)	Per cent incidence	Level of infection
Sault Ste. Marie District			
Ley Twp.	10	79	Heavy
Ryan Twp.	10	84	Heavy
Sudbury District			
Carnarvon Twp.	20	75	Heavy
Chapleau District			
Twp. 11D	40	5	Light
Twp. 29	10	2	Trace

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

Numerous centres of infection were observed in the region in 1968. In Sault Ste. Marie District pockets of trace infection were located on mature white birch at Montreal River and on sugar maple on St. Joseph Island.

Two pockets of severe infection occurred near Vermillion Lake in Fairbank Township, Sudbury District. Heavy mortality of mature balsam fir was observed at these locations.

Trace levels of infection were observed on jack pine at numerous locations in Chapleau District.

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

There was little change in the known distribution of this disease in the region in 1968. In the Sault Ste. Marie District incidence was high at new centers of infection in Parkinson Township where 87 per cent mortality occurred and near Sailor's Encampment on St. Joseph Island where 4 per cent mortality was observed.

High levels of infection were observed near Mindemoya on Manitoulin Island and near the French River in Struthers Township, Sudbury District.

Needle Rusts, Chrysomyxa ledi de Bary and Chrysomyxa ledicola Lagh.

Little change in levels of infection of these foliar rusts occurred in the region in 1968. A high level of infection was observed in Ivanhoe Township in the Chapleau District where these rusts have been reported at various levels since 1963. Light infection was observed in Township 28 and trace levels were recorded in 11G and Rennie townships (Table 2).

TABLE 2

Summary of Incidence and Levels of Infection of Spruce Needle Rusts in the Central Region in 1968

Township	Host(s)	Area affected (acres)	Per cent incidence	Level of infection
Chapleau District				
Ivanhoe Twp.	bS, wS	5	100	Heavy
Rennie Twp.	bS	10	4	Trace
11G Twp.	wS	20	7	Trace
28 Twp.	bS	10	2	Light

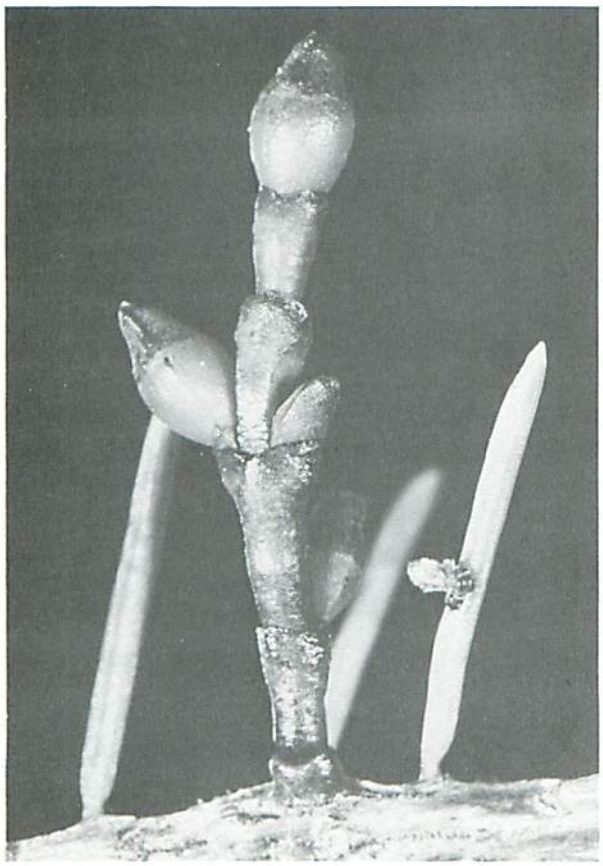
White Pine Blister Rust, Cronartium ribicola J. C. Fischer

This destructive rust was found commonly in the Sault Ste. Marie and Sudbury districts in 1968. Medium levels of infection were observed at all locations evaluated in the Sault Ste. Marie District (Table 3).

Infection levels were medium to high in Lorne, Salter and Allen townships. A trace level was observed in Dawson Township on Manitoulin Island. Little mortality was observed at any of the locations where evaluations were made in the region.

Dwarf Mistletoe:-
Arceutholium pusillum Pk.

Witches broom caused
by mistletoe



Dwarf mistletoe
plant (close-up)

Dwarf mistletoe
plants on branch

Summary of Incidence and Levels of Infection of White Pine Blister Rust in the Central Region in 1968

Location	Area affected (acres)	Per cent incidence	Level of infection
Sault Ste. Marie District			
Aweres Twp.	--	--	Moderate
Curtis Twp.	5	23	Moderate
Thessalon Twp.	1	71	Moderate
Sudbury District			
Allen Twp.	100	20	Moderate
Dawson Twp.	--	--	Trace
Lorne Twp.	50	30	Heavy
Salter Twp.	50	35	Heavy

Crown Deterioration of Birch

Birch crowns were generally thin in most of the southwestern part of the region in 1968. This condition followed heavy cone production in 1966 and 1967. Branch tip mortality was severe in most yellow birch stands in the Sault Ste. Marie District, particularly near Montreal River, Ranger Lake and along Highway 129 in Wells and 188 townships. Similar conditions were observed in a 160-acre stand near Agnew Lake in Baldwin Township in Sudbury District. For additional information on this condition of yellow birch refer to Information Report O-X-79, Department of Forestry, Sault Ste. Marie, Ontario.

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

This disease was found commonly throughout the region in 1968.

In the Sault Ste. Marie District, stands with high levels of infection were observed in Kirkwood, 149, VanKoughnet and Curtis townships. Low to moderate infection levels occurred in Township 188 and Herrick Township respectively (Table 4). High levels of infection were observed in Waters, Carlyle and J townships in the Sudbury District.

Evaluations in the Chapleau District showed that levels of infection were high in Township 29 and Cochrane Township, medium in Borden and Ramsden townships, and low in McGee and Coppell townships.

TABLE 4

Summary of Incidence and Levels of Infection of Hypoxylon Canker of Poplar in the Central Region in 1968

Location	Area affected (acres)	Per cent incidence	Level of infection
Sault Ste. Marie District			
Curtis Twp.	95	81	Heavy
Herrick Twp.	15	48	Light
Kirkwood Twp.	50	85	Heavy
VanKoughnet Twp.	15	70	Heavy
149 Twp.	10	82	Heavy
188 Twp.	15	60	Moderate
Sudbury District			
Carlyle Twp.	50	52	Heavy
J Twp.	60	35	Heavy
Waters Twp.	100	45	Heavy
Chapleau District			
Borden Twp.	20	21	Moderate
Cochrane Twp.	10	83	Heavy
Coppell Twp.	40	—	Light
McGee Twp.	5	14	Light
Ramsden Twp.	50	—	Moderate
29 Twp.	6	75	Heavy

Scleroderris Canker of Pine, Scleroderris lagerbergii (Lager.) Gremmen

Little change in distribution of this canker occurred in the region in 1968. Areas of heavy infection were recorded in the Kirkwood Management Unit in Sault Ste. Marie District and near Flame Lake in Chapleau District. An area of moderate infection was observed near Searchmont in Gaudette Township, Sault Ste. Marie District (Table 5).

TABLE 5

Summary of Incidence and Levels of Infection of Scleroderris Canker on Red Pine in the Central Region in 1968

Location	Area affected (acres)	Per cent incidence	Level of infection
Sault Ste. Marie District			
Gaudette Twp.	5	—	Moderate
Kirkwood Twp.	6	70	Heavy
Chapleau District			
Twp. 8D	2	100	Heavy

TABLE 6

Other Noteworthy Diseases in the Central Region in 1968

Organism	Host(s)	Remarks
Chrysomyxa arctostaphyli Diet.	bS	Trace level of infection in Cosens Twp., Chapleau District
Ciborina whetzelii (Seaver) Seaver	tA Hybrid Po	Trace level in the Sudbury District on trembling aspen and on hybrid poplar on Manitoulin Island
Cronartium comptoniae Arth.	scP	Trace levels of infection in the eastern part of the Sault Ste. Marie District
Cytospora kunzei Sacc.	wS	Light infection in Robinson Twp., Sudbury District
Davisomycella ampla (Davis) Darker	jP	Trace levels of infection near Mount Lake, Sault Ste. Marie District
Isthmiella crepidiformis (Darker) Darker	bS	Trace level in Moncreiff Twp., Sudbury District
Peridermium sp.	scP, jP	Trace levels in the south-eastern part of Sudbury District

TABLE 6 (concluded)

Organism	Host(s)	Remarks
Pollaccia radiosa (Lib.) Bald. & Cif.	tA	Trace levels recorded throughout the region
Polyporus schweinitzii Fr.	wS	Trace levels in the Sault Ste. Marie District
Polyporus tomentosus Fr.	jP	Trace levels observed at Gordon Lake, Sault Ste. Marie District
Pucciniastrum epilobii Otth	bF	Low levels of infection observed throughout the Chapleau District and in the northern part of Sault Ste. Marie District

STATUS OF INSECTS IN THE SAULT STE. MARIE DISTRICT

H. J. Weir

Spruce Budworm, Choristoneura fumiferana (Clem.)

A general increase in population levels of this insect occurred in the southern part of the district in 1968. Severe defoliation of open-grown mature white spruce and balsam fir trees was observed along the Little White River road in Parkinson Township (see map). The current year's foliage of both dominant and understory trees was approximately 75 per cent defoliated in an area of about eight square miles.

Population levels were generally higher at sample locations than in 1967 (Table 7).

TABLE 7

Summary of Spruce Budworm Larval Counts in the Sault Ste. Marie District in 1967 and 1968

Location (township)	Host	Av. d.b.h. of sample trees in inches		Total no. of larvae per 20 tray sample	
		1967	1968	1967	1968
Aberdeen Add'l.	bF	5	5	1	5
Hodgins	wS	-	10	-	1
Lefroy	wS	12	12	57	46
MacDonald	wS	10	10	14	23
Thessalon	bF	-	8	-	10

Defoliation and egg density studies were carried out in the fall to forecast defoliation for 1969 (Table 8).

TABLE 8

Summary of Spruce Budworm Defoliation and Egg Mass Counts in the Sault Ste. Marie District in 1968 and Defoliation Forecast for 1969

Note: Counts were based on the examination of a full branch from the mid crown of six trees at each location

Location (township)	Host	Per cent defoliation	No. of egg masses per 100 sq. ft. of foliage	* Probable defoliation in 1969
Parkinson	wS	74	571	H
Parkinson	bF	16	164	H
169	bF	4	0	Nil - L

* L - light; H - heavy

Jack-pine Budworm, Choristoneura pinus pinus Free.

Population levels of this insect continued to increase in the eastern part of the district in 1968 (see map). Severe defoliation of jack pine stands occurred in Esten, 1A and Haughton townships. Severe defoliation was also observed in a 3300-acre stand of red and jack pine in the Kirkwood Management Unit (see photograph). In these areas defoliation varied from 30 to 93 per cent of the current foliage. Light defoliation of pure jack pine stands was observed in 7D, 2E and Parke townships.

Egg density studies were carried out to forecast defoliation in 1969 (Table 9). Surveys failed to reveal any natural control agents that could significantly reduce jack-pine budworm populations in 1969. A few dead larvae recovered from Kirkwood Township contained the fungus Beauvaria globulifera. Small numbers of cocoons of the parasite Apanteles sp. were found in foliage samples.

TABLE 9

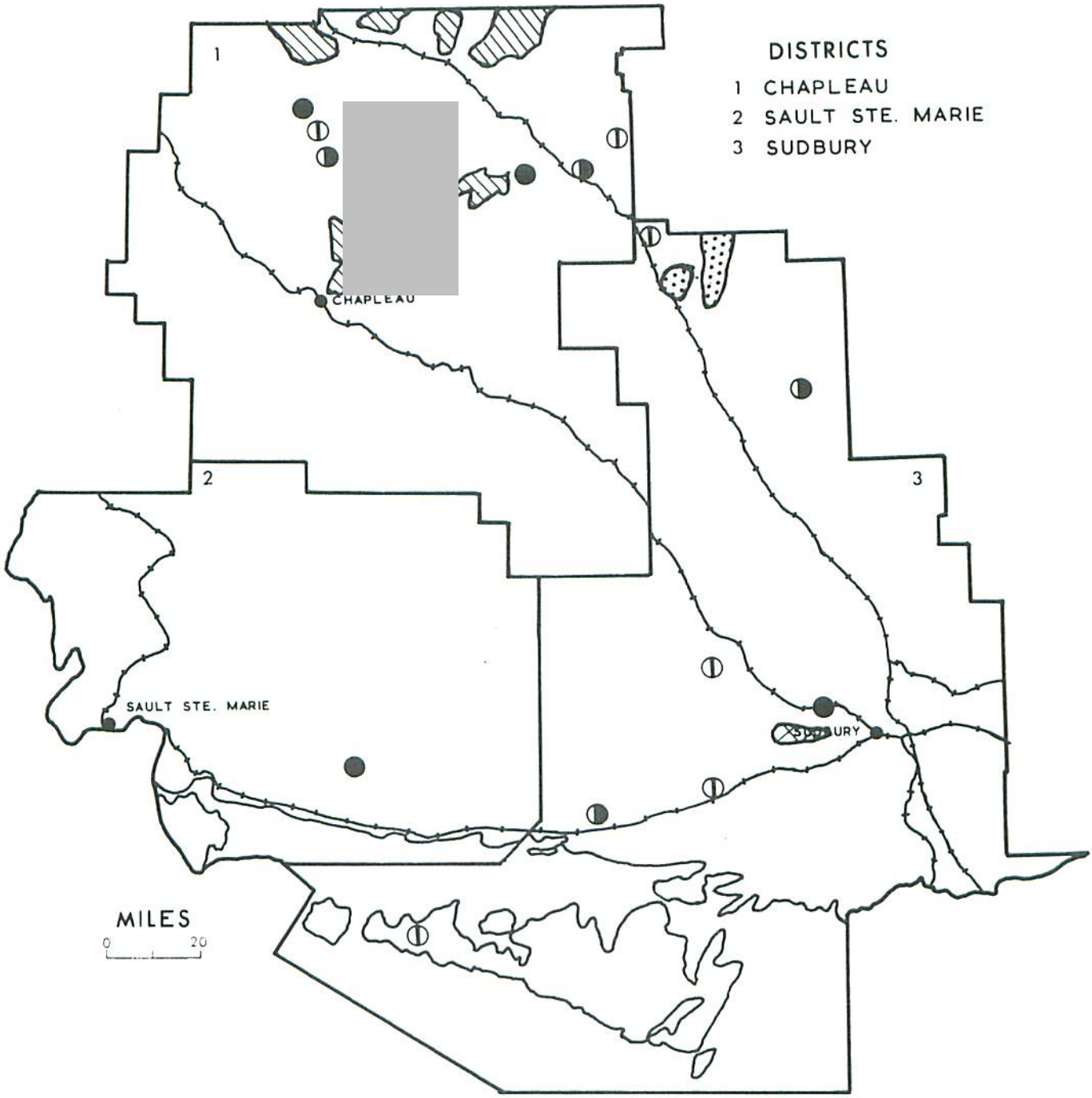
Summary of Jack-pine Budworm Defoliation and Egg Mass Counts in the Sault Ste. Marie District in 1968 and Defoliation Forecasts for 1969

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

Location	Host	Per cent defoliation	No. of egg masses	*Probable defoliation in 1969
Haughton Twp.				
Lot 9 Con. II	jP	86	0	Nil-L
Lot 10 Con. I	jP	30	0	Nil-L
Kirkwood Twp.				
Lot 2 Con IV	jP	35	0	Nil-L
Lot 2 Con. V	rP	35	2	M
Lot 9 Con. V	rP	35	1	L
Lot 10 Con. IV	rP	35	0	Nil-L
Lot 12 Con. VI	jP	85	22	S
Lot 12 Con. VI	rP	60	5	S
Twp. 1A				
Mount Lake	jP	93	21	S
Mount Lake	jP	58	8	S
Wells Twp.				
Lot 6 Con. V	jP	15	0	Nil-L

* L - light: m - moderate; S - severe.

CENTRAL FOREST REGION



SPRUCE BUDWORM
Areas and locations where defoliation was observed in 1968

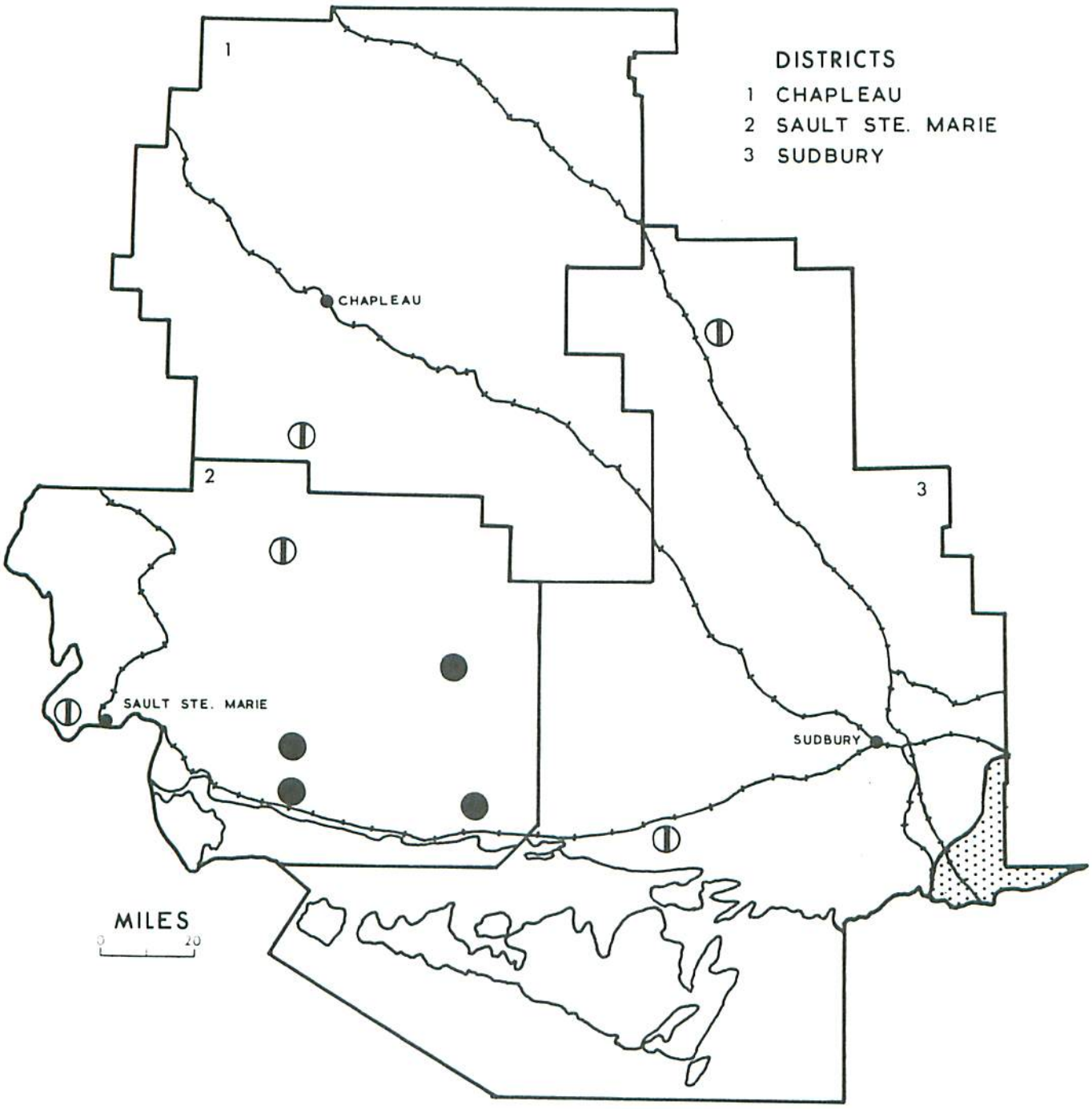
Legend

Light defoliation ---------- and ◐

Moderate defoliation ---------- and ◑

Severe defoliation ---------- and ●

CENTRAL FOREST REGION



JACK PINE BUDWORM

Areas and locations where defoliation was observed in 1968

Legend

Light defoliation --------- ◐ and ▭

Severe defoliation -------- ●

Larch Casebearer, Coleophora laricella Hbn.

Population increases were observed at numerous locations throughout the district. Severe defoliation of approximately five acres of mature tamarack occurred along Highway 17 in the Garden River Indian Reserve (see photograph). Low populations were recorded elsewhere in the district (Table 10).

TABLE 10

Summary of Larch Casebearer Larval Counts in the Sault Ste. Marie District from 1966 to 1968

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

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of larvae per branch tip		
		1966	1967	1968
Garden River I.R.	10	3.50	4.50	122.18
Kirkwood	5	3.10	6.00	6.40
Parke	4	2.10	0.10	0.13
Ryan	5	0.30	2.80	0.38
Thessalon	5	—	6.70	5.81
Wells	3	4.20	4.65	7.20

Birch Leaf Miner, Fenusa pusilla (Lep.)

A general decline in population levels of this insect occurred in the district in 1968. Severe leaf damage was observed on ornamental European birch trees in the city of Sault Ste. Marie for the second consecutive year (Table 11). Very little discolouration of foliage was apparent in natural birch stands.

TABLE 11

Summary of Birch Leaf Miner Counts in the Sault Ste. Marie District in 1967 and 1968

Location (township)	Host	Per cent of leaves mined	
		1967	1968
Cobden	wB	55	27
5G	wB	29	45
3E	wB	27	9
Sault Ste. Marie	European birch	100	83

Eastern Tent Caterpillar, Malacosoma americanum F.

A drastic reduction in populations of this insect occurred in 1968. For example in 1967 an average of 176 tents per sample location was counted compared with 4 tents in 1968 (Table 12).

TABLE 12

Summary of Eastern Tent Caterpillar Colony Counts in the Sault Ste. Marie District in 1967 and 1968

Location (township)	Host	No. of tents per mile of roadside 1967	1968
Aberdeen	ecCh	137	0
Aberdeen Add'l.	ecCh	79	0
Aberdeen Add'l.	wAp	500 +	2
Cobden	ecCh	106	0
Johnson	ecCh	122	15
Parkinson	ecCh	113	10

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Generally infestations of this insect declined in extent and intensity in the district in 1968. The Blind River-Elliot Lake infestation remained virtually the same as in 1967, except that areas of moderate defoliation were observed in most maple and oak stands. The Sylvan Valley-Gordon Lake infestation declined in both area and intensity with severe defoliation occurring only in pure stands of poplar on ridges. Two small pockets of moderate to severe defoliation were observed on St. Joseph Island for the first time in the current infestation (see map).

The parasite, Sarcophaga aldrichi Park. was extremely abundant throughout the infestations. Cocoon dissections in the field showed that parasitism was again heavy in most areas examined (Table 13).

TABLE 13

Summary of Forest Tent Caterpillar Cocoon Mortality
in the Sault Ste. Marie District in 1967 and 1968
Based on the Dissection of 100 Cocoons at each Location

Location (township)	Emerged		Parasitized		Diseased		Predation	
	1967	1968	1967	1968	1967	1968	1967	1968
Day	37	9	63	82	0	9	0	0
Patton	43	6	56	89	0	5	1	0
Plummer	6	21	93	69	1	10	0	0
Proctor	21	10	78	87	0	3	1	0
Striker	8	9	92	84	0	2	0	5

Egg band surveys in the fall indicate a further reduction in populations will occur in the district in 1969 (Table 14).

TABLE 14

Summary of Forest Tent Caterpillar Egg Band Counts in 1968
and Defoliation Forecast for 1969

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of egg banks per tree		*Infestation forecast for 1969
		1967	1968	
Aberdeen	8	26.3	4.0	M
Haughton	6	0.7	0.0	Nil
Jocelyn	3	0.7	0.9	L
MacDonald	4	12.0	10.3	H
Meredith	6	20.3	0.0	Nil
Morin	5	6.0	0.0	Nil
Parkinson	4	2.0	0.3	L
Plummer	6	66.6	14.6	S
Proctor	12	128.3	54.0	S
Spragge	10	67.7	22.6	S
Striker	5	54.0	3.3	L
Thomson	9	39.3	15.6	S
149	8	3.0	1.6	L

* L - light; M - moderate; S - severe.

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

Little change in population levels of this insect occurred in the southern part of the district. Severe defoliation was observed on red pine shelterbelts along Highway 17 between Thessalon and Cutler. A heavy infestation persisted in young red pine plantings in the Garden River Indian Reserve where an average of 1.9 colonies per tree was counted at one location (Table 15). Scattered colonies were observed along Highways 108 and 639 north of Elliot Lake.

TABLE 15

Summary of Red-headed Pine Sawfly Colony Counts
in the Sault Ste. Marie District in 1968

Note: Counts were taken on 100 trees at each location.

Location (township)	Av. height of sample trees in feet	Per cent of trees infested	Av. no. of colonies per infested tree
Cobden	6	13	1.0
Garden River I. R.	3	100	1.9
Gladstone	8	10	1.0
Long	10	12	1.0
Striker	15	50	2.2

Red-pine Sawfly, Neodiprion nanulus nanulus Schedl.

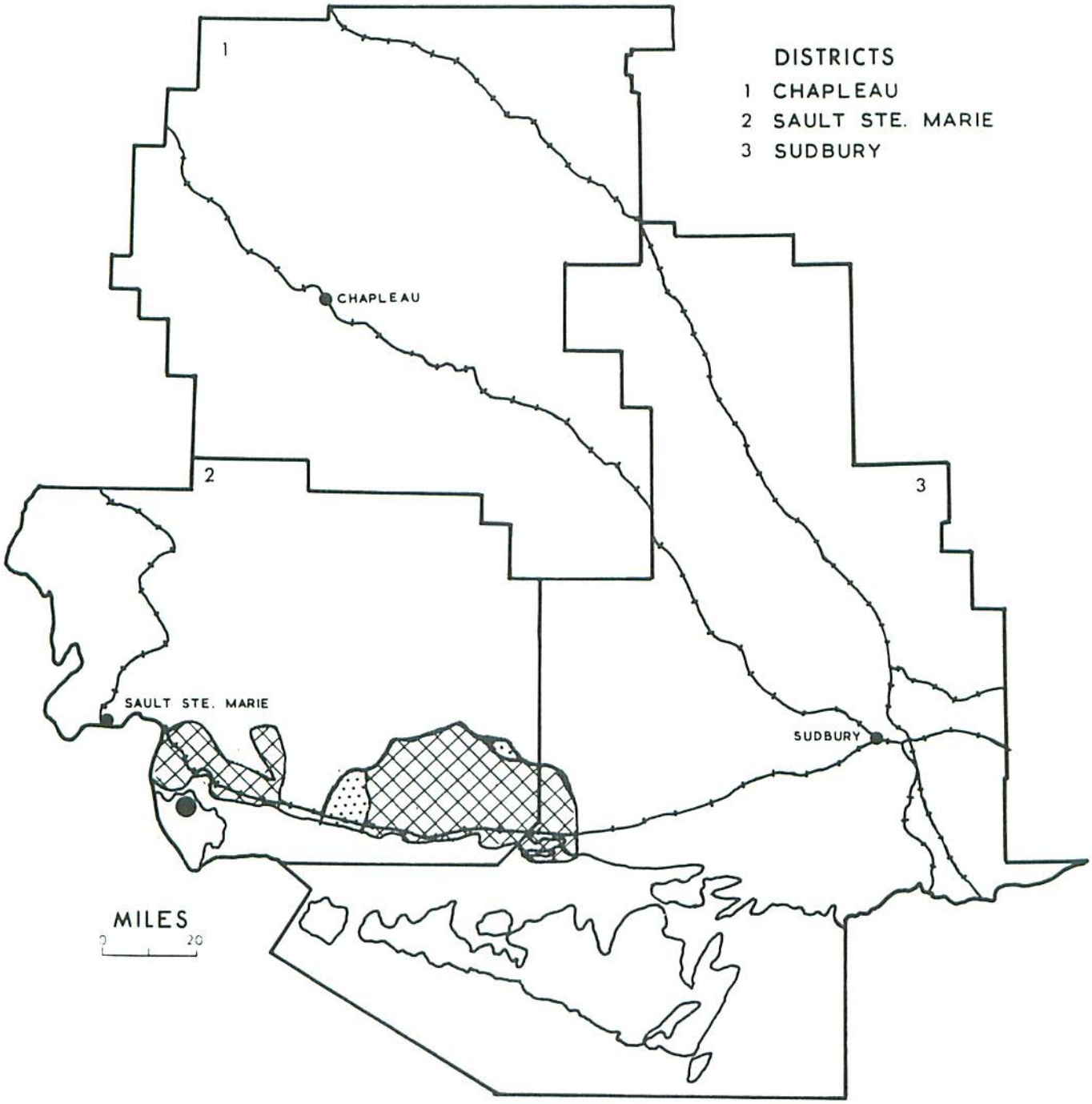
The medium infestation that has persisted in Kirkwood Township since 1964 declined to low intensity in 1968 (Table 16). A pocket of medium infestation in Wells Township virtually disappeared, only one colony being observed in the area. A light infestation persisted near Pointe aux Pins in Parke Township.

TABLE 16

Summary of Red-pine Sawfly Colony Counts
in the Sault Ste. Marie District in 1968

Location (township)	Host	Total no. of colonies per 100 tree sample
Kirkwood	rP	16
Parke	jP	122
Wells	jP	1

CENTRAL FOREST REGION



FOREST TENT CATERPILLAR

Areas where defoliation occurred in 1968

Legend

Light defoliation -------

Moderate to severe defoliation ---------- and

European Pine Sawfly, Neodiprion sertifer (Geoff.)

The discovery of this serious pest of pine in the city of Sault Ste. Marie in 1968 represented a major westward spread in distribution of the insect in Ontario (see map and photograph). Moderate defoliation of individual ornamental Mugho and Scots pine trees occurred in the eastern part of the city. Examination of balled stock at local nurseries showed that stock recently obtained from nurseries in infested areas in southern Ontario contained larvae of this insect.

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

An increase in population levels of this insect occurred in the eastern part of the district (Table 17). Moderate defoliation of roadside jack pine trees was observed along Highway 129 near Peshu Lake and on Highway 108 between Serpent River and Elliot Lake. Scattered colonies were observed in other parts of the district.

TABLE 17

Summary of Red-headed Jack-pine Sawfly Colony Counts in the Sault Ste. Marie District in 1968

Location (township)	Av. d.b.h. of sample trees in inches	Total no. of colonies per 100 trees
Esten	2	48
Grassett	1	13
1A	3	21
2E	2	13
4D	2	16
5D	2	32

White Pine Weevil, Pissodes strobi (Peck)

There was little change in the amount of shoot damage caused by this insect in 1968 (Table 18). Heavy infestations persisted in the Garden River Indian Reserve, near Wharncliffe and near Mississauga Falls. Moderate infestations were observed in the Kirkwood Management Unit and in Township 1B near Mount Lake. Low populations were observed throughout the remainder of the district.

TABLE 18

Summary of Leader Damage by the White Pine Weevil in the Sault Ste. Marie District in 1967 and 1968

Location (township)	Host	No. of trees examined	Per cent of trees infested 1967	1968
Cobden	wP	100	19	16
Garden R. I.R.	wP	100	23	21
Kirkwood	wP	229	--	4
Rose	wP	231	12	10
Wells	scP	100	56	55
1B	jP	100	--	12

Larch Sawfly, Pristiphora erichsonii (Htg.)

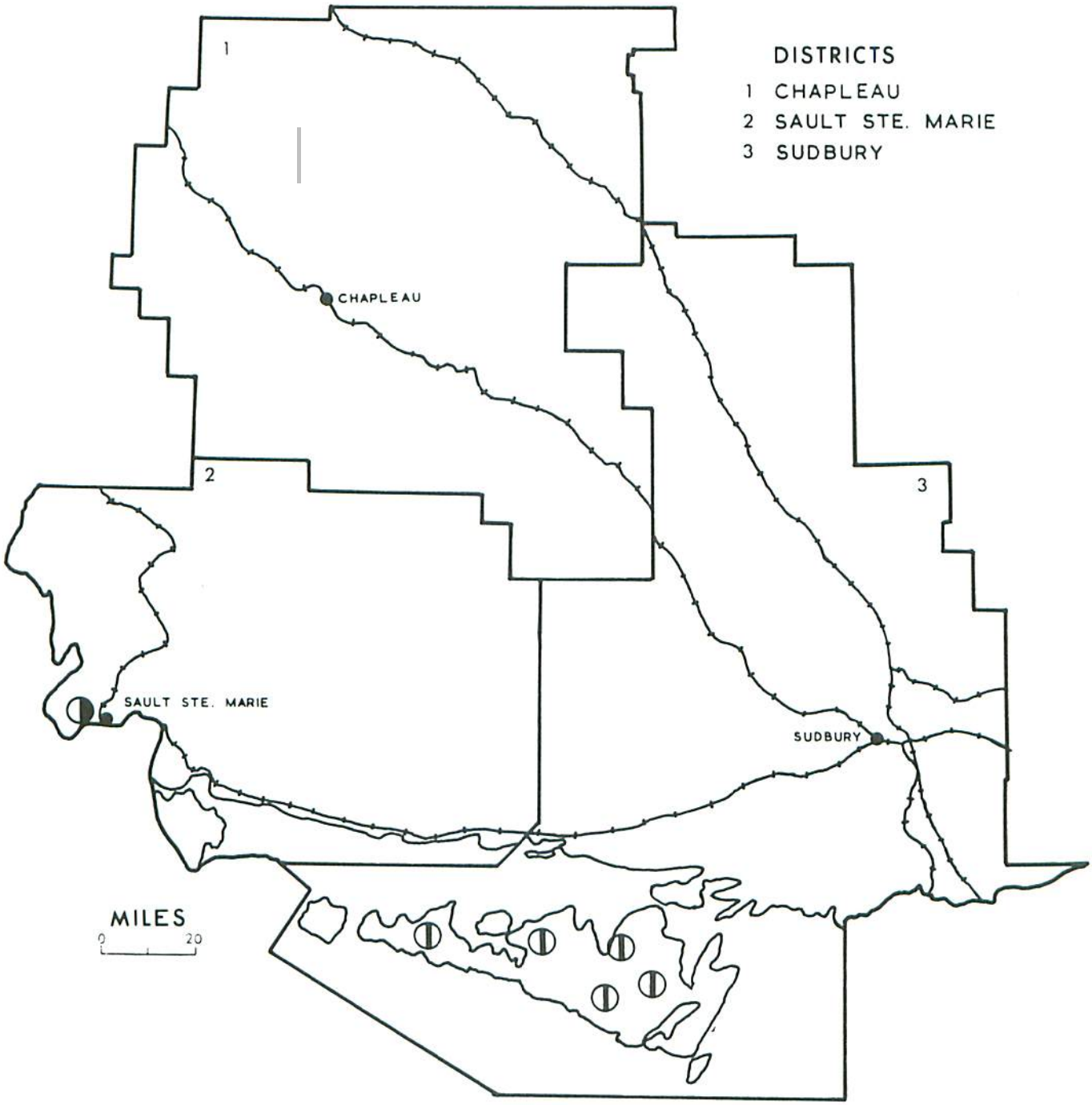
Little change in population levels of this sawfly was observed in the district. Severe defoliation of larch stands occurred in Parkinson, Lewis and Esten townships. Moderate defoliation persisted in Parke and Ryan townships. Light defoliation of roadside trees was observed throughout the remainder of the district.

TABLE 19

Summary of Miscellaneous Insects Collected in the Sault Ste. Marie District in 1968

Insect	Host(s)	Remarks
Acleris variana Fern.	bF, wS	Common on beating tray samples
Acrobasis betulella Hulst.	European birch	One tree heavily infested in Sault Ste. Marie
Amphibolips confluenta Harr.	rO	Light infestation near Hiawatha Park
Anisota rubicunda Fabr.	rM	Moderate defoliation in Lefroy Twp.
Aphrophora parallela Say	jP, wP, rP	Heavy infestation in Kirkwood Management Unit, common in district

CENTRAL FOREST REGION



EUROPEAN PINE SAWFLY

Locations where infestations were observed in 1968

Legend

Light infestation ----------

Moderate infestation ----------

TABLE 19 (continued)

Insect	Host(s)	Remarks
Archips argyrospilus Wlk.	rO	Trace infestation near Hiawatha Park
Archips cerasivoranus Fitch	ecCh	Tents common in district
Arge pectoralis Leach	yB	Few colonies in Lefroy Twp.
Bucculatrix canadensisella Cham.	wB	Light infestation in Montreal River area
Caliroa cerasi Linn.	Cherry	Moderate infestation in Sault Ste. Marie
Cephalcia marginata Midd.	rP	Few web spinning sawflies in Thomson Twp.
Conophthorus resinosae Hopk.	rP	Numerous shoots infested in Lewis Twp.
Croesus latitarsus Nort.	yB	Few colonies on Tribag Mine Rd.
Croesia semipurpurana Kft.	rO	Heavy infestation in Parke and Prince twps.
Dendroctenus obesus Mann.	wS	Several dead trees, heavy infestation of beetles
Diprion hercyniae Htg.	wS	Low populations at s ampling stations
Eacles imperialis pini Michener	rP	Few larvae on roadside trees in Thomson Twp.
Epinotia solandriana Linn.	European birch	Few larvae on ornamental tree in Sault Ste. Marie
Erannis tiliaria Harr.	sM	Low populations in Parkinson Twp.
Fenusa dohrnii Tischb.	Al	Common wherever host was examined
Macrophya punctumalbum L.	Privet	Few larvae on hedges in Sault Ste. Marie
Nematus erythrogaster Nort.	Al	Low populations on Ranger Lake Rd.

TABLE 19 (concluded)

Insect	Host(s)	Remarks
Nematus populi Marl.	tA	Few larvae in Lefroy Twp.
Neodiprion pratti paradoxicus Ross	jP	Few colonies in Aweres and Parke twps.
Neodiprion abietis complex	wS	Few larvae on beating tray samples
Phenacaspis pinifoliae Fitch	jP	Heavy infestation in Parke and Tarentorus twps.
Pikonema alaskensis Roh.	wS, bS	Severe defoliation along Highway 17 east from Thessalon to Cutler. Light defoliation at numerous other locations
Pineus similis Gill.	bS	Heavy infestation in Wells Twp.
Plagodis alcoolaria Gn.	yB	Few colonies on roadside trees on Tribag Mine Rd.
Podosesia syringae Harr.	Lilac	One tree heavily infested in Sault Ste. Marie
Pristiphora geniculata Htg.	aMo	Low populations in Parke and Prince twps.
Profenusa thomsoni (Konow)	wB	Moderate infestation in 3H and 4F twps.
Tetralopha expandens Wlk.	rO	Common in one stand, Lefroy Twp.
Toumeyella numismaticum P. & McD.	jP	Light infestation in Parke Twp.