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Status of Insects in the Parry Sound  
District

Barnes, C.A.

Information Report O-X-90  
(Forest Research Laboratory, Ontario Region)

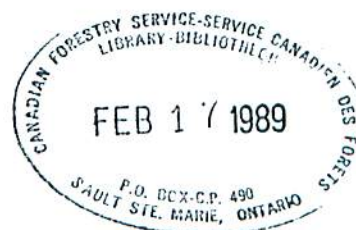


TABLE OF CONTENTS

INFORMATION REPORTS - INSECT AND DISEASE SURVEYS

Ontario, 1968

Foreword, J. E. MacDonald

Forest Region and District	Information Report No.	Page
A. <u>SOUTHEASTERN FOREST REGION</u>		<u>A 1-43</u>
Lindsay District, M.J. Thomson*	O-X-83	A 8
Tweed District, F. Livesey	O-X-84	A 21
Kemptville District, M.J. Applejohn	O-X-85	A 32
B. <u>SOUTHWESTERN FOREST REGION</u>		<u>B 1-51</u>
Lake Simcoe District, R.L. Bowser*	O-X-86	B 9
Lake Erie District, G.T. Atkinson	O-X-87	B 24
Lake Huron District, V. Jansons	O-X-88	B 39
C. <u>SOUTH-CENTRAL FOREST REGION</u>		<u>C 1-44</u>
North Bay District, L.S. MacLeod*	O-X-89	C 9
Parry Sound District, C.A. Barnes	O-X-90	C 21
Pembroke District, R.A. Trieselmann	O-X-91	C 30
D. <u>CENTRAL FOREST REGION</u>		<u>D 1-39</u>
Sault Ste. Marie District, H.J. Weir*	O-X-92	D 7
Sudbury District, E.L. Houser	O-X-93	D 17
Chapleau District, W. Ingram	O-X-94	D 27
E. <u>NORTHERN FOREST REGION</u>		<u>E 1-43</u>
Cochrane District, H.R. Foster*	O-X-95	E 12
Kapuskasing District, J. Baker	O-X-96	E 23
Swastika District, J. Lombard	O-X-97	E 33
F. <u>MIDWESTERN FOREST REGION</u>		<u>F 1-31</u>
Port Arthur District, K.C. Hall*	O-X-98	F 8
Geraldton District, C.N. Davis	O-X-99	F 18
White River District, K.C. Hall, C.N. Davis	O-X-100	F 28
G. <u>WESTERN FOREST REGION</u>		<u>G 1-29</u>
Sioux Lookout District, P.E. Buchan*	O-X-101	G 9
Kenora District, J.A. Mason	O-X-102	G 15
Fort Frances District, J. Hook	O-X-103	G 22

Photographs

Regional Supervisors \*

## 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. Scleroderma canker of pine again caused considerable

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

# STATUS OF INSECTS IN THE PARRY SOUND DISTRICT

	Page
Spruce Budworm . . . . .	<u>Choristoneura fumiferana</u> C 21
Jack-pine Budworm . . . . .	<u>Choristoneura pinus pinus</u> C 21
Larch Casebearer . . . . .	<u>Coleophora laricella</u> C 21
European Spruce Sawfly . . . . .	<u>Diprion hercyniae</u> C 22
Birch Leaf Miner . . . . .	<u>Fenusa pusilla</u> C 22
Saddled Prominent . . . . .	<u>Heterocampa guttivitta</u> C 23
Eastern Tent Caterpillar . . . . .	<u>Malacosoma americanum</u> C 23
Forest Tent Caterpillar . . . . .	<u>Malacosoma disstria</u> C 23
Red-headed Pine Sawfly . . . . .	<u>Neodiprion lecontei</u> C 24
Red-pine Sawfly . . . . .	<u>Neodiprion nanulus nanulus</u> C 24
White-pine Weevil . . . . .	<u>Pissodes strobi</u> C 25
Yellow-headed Spruce Sawfly . . . . .	<u>Pikonema alaskensis</u> C 25
Larch Sawfly . . . . .	<u>Pristiphora erichsonii</u> C 25
Poplar Leaf Rollers . . . . .	<u>Pseudexentera oregonana</u> <u>Sciaphila duplex</u> C 25
Summary of Miscellaneous Insects . . . . .	C 26

C. A. Barnes

Spruce Budworm, Choristoneura fumiferana (Clem.)

Intensive surveys from 1960 - 1966 failed to yield any collections of this insect in the district. In 1967 the insect was found in small numbers in six widely-separated townships, and in 1968 increases occurred on balsam fir and white spruce near Dorset in Sherborne Township and near the French and Pickerel rivers in Mowat and Henvey townships. Defoliation at sample points in these two areas was eight and ten per cent respectively.

Close surveillance of the areas where the spruce budworm was found in 1968 and in other susceptible areas will continue.

Jack-pine Budworm, Choristoneura pinus pinus Free.

Moderate to heavy infestations of this insect persisted for the third consecutive year in the northwest part of the district, covering an area of approximately 300 square miles (see map). Severe defoliation for several years has caused considerable mortality to the upper crown of jack pine throughout this area. On the basis of egg surveys declining population levels are forecast for 1969.

The heavy infestation that occurred in 1967 in a small red pine plantation near Highway 69 and the Pakesley road, collapsed in 1968. Light infestations not exceeding 10 per cent defoliation, were common in Carling and McDougall townships.

Larch Casebearer, Coleophora laricella Hbn.

Although larval counts at sample points showed no change in population levels on both native and European larch, heavy infestations were observed in large pockets of tamarack near Aspdin in Stisted Township and near Parry Sound in McDougall Township. Defoliation at these two locations approximated 40 to 50 per cent. Small numbers of larvae occurred at many points in the remainder of the district. Larval counts are summarized in Table 7.

TABLE 7

Summary of Larch Casebearer Larval Counts in the Parry Sound District,  
1966-1968

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

Location (township)	Tree species	Av. no. of larvae per 18-inch branch tip		
		1966	1967	1968
Ridout	eL	4.2	3.9	3.4
Wallbridge	tL	0.0	0.8	0.6
Stisted (Etwell Road)	tL	-	-	1.1
Chisholm	tL	3.5	1.2	1.3
Perry	tL	0.1	0.3	0.3

European Spruce Sawfly, Diprion hercyniae (Htg.)

Population levels of this sawfly on white spruce increased at all sample points in 1968 compared with 1967 (Table 8). Although larval counts were higher at sample points, defoliation of large open-grown host trees was negligible.

TABLE 8

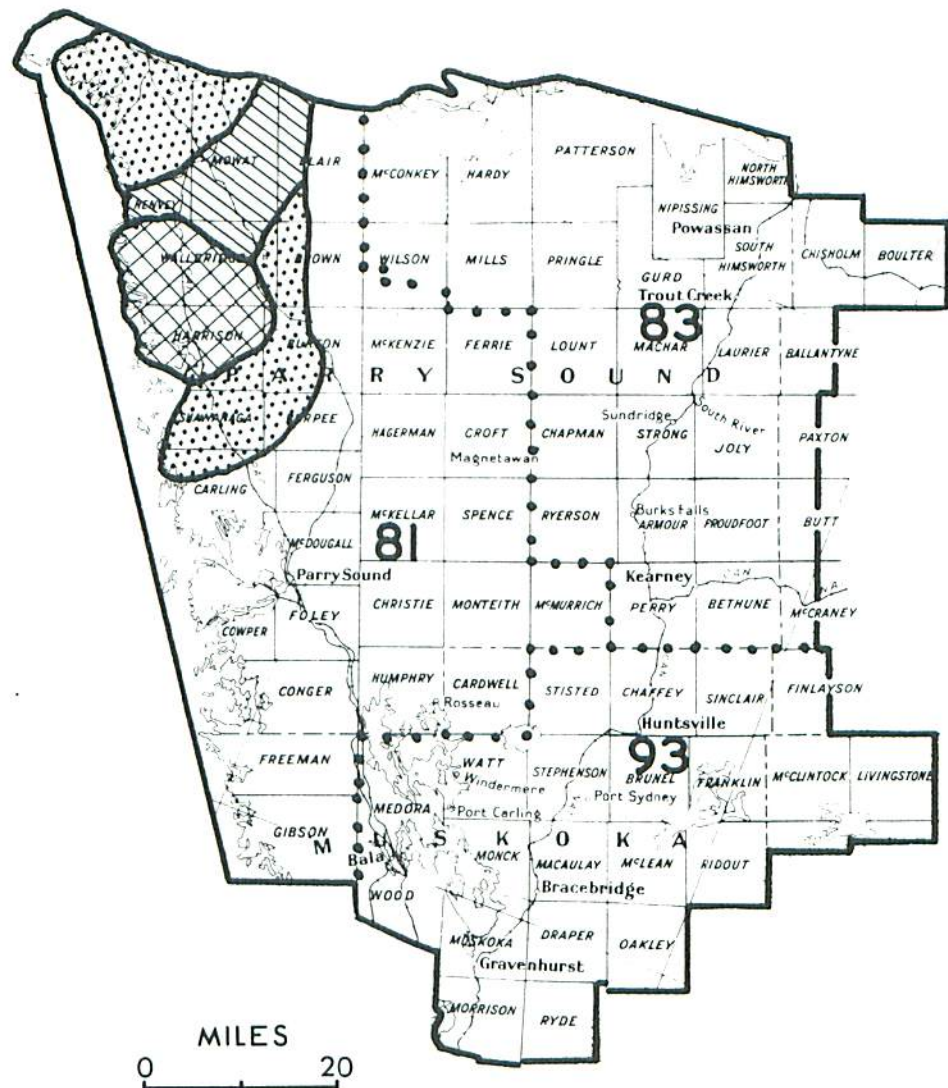
Summary of European Spruce Sawfly Larval Counts Taken on White Spruce Trees  
in the Parry Sound District, 1966-1968

Location (township)	Av. d.b.h. of sample trees in inches	Total no. of larvae per 15-tray sample		
		1966	1967	1968
Perry	7	36	87	97
McLean	6	-	13	51
Ryerson	7	37	0	13
Gurd	8	63	49	62
Joly	6	29	4	5
Machar	12	14	8	20

Birch Leaf Miner, Fenusa pusilla (Lep.)

Many pockets of medium to heavy infestation occurred in the district in 1968. Severe leaf mining was observed on roadside birch along Highway 11 near Powassan and along secondary roads in Machar, Boulter and Strong townships. In most instances approximately 60 to 70 per cent of the leaf surface was affected. Ornamental birch trees were heavily infested in towns and villages throughout the district. Light infestations occurred at many locations elsewhere in the district.

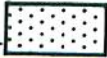


# PARRY SOUND DISTRICT



## JACK-PINE BUDWORM

Areas where infestations occurred  
in 1968

### Legend

Light infestation	-----	
Medium infestation	-----	
Heavy infestation	-----	

Saddled Prominent, Heterocampa guttivitta Wlk.

Heavy infestations, encompassing an area of approximately 150 square miles, were observed on sugar maple, beech and other hardwood species along the eastern boundary of the district in 1968 (see map). These infestations occurred from Boulter Township in the north to Proudfoot and Bethune townships in the south, and from the Algonquin Park boundary west to Highway 11. Defoliation of host species was approximately 60 to 90 per cent in areas of heavy infestation. Scattered pockets of heavy infestation occurred in Franklin, McClintock, Boulter and McLean townships, with defoliation averaging 50 to 60 per cent.

Several other insects causing appreciable defoliation were common in this infestation, particularly, H. amicarica, P. alcoalaria, N. gibbosa and A. rubicunda.

Eastern Tent Caterpillar, Malacosoma americanum F.

A decline in population levels of this tent-forming insect occurred in the district in 1968. The most noteworthy decline occurred in a sample area in Harrison Township where the infestation declined to light intensity (Table 9). Occasional nests were observed in most townships in Divisions 83 and 93.

TABLE 9

Summary of Eastern Tent Caterpillar Colony Counts  
in the Parry Sound District, 1966-1968

Location (township)	Total no. of primary nests along a measured mile		
	1966	1967	1968
McLean	3	11	8
Brunel	1	1	0
Stephenson	2	8	4
Wood	41	23	11
McDougall	22	14	6
Harrison	164	123	42

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Egg band surveys carried out in the fall of 1967 indicated that a moderate to heavy pocket of infestation of this insect would persist in 1968 along the Parry Sound-North Bay district boundary in North Himsforth Township. However, poor egg hatch and wet and abnormally cold spring weather during the early larval period caused a marked decline in population levels. Only a few scattered larvae were observed in the district.

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

Heavy infestations of this sawfly persisted for the fifth consecutive year in red pine plantations in Ridout and McLean townships. Complete defoliation of red pine trees occurred in the Ridout plantation and mortality was common in trees six feet in height and over. Scots pine in a small plantation near Baysville were moderately defoliated before insecticides were used to control the infestation. In McLean Township red pine hedgerows suffered heavy defoliation.

Isolated pockets of moderate to heavy infestation occurred in six townships in Division 93 and occasional colonies were observed at scattered locations in five townships in Division 83.

The moderate infestations that had persisted in plantations in Stephenson and Gibson townships since 1964, declined to scattered colonies in 1968. Approximately 40 to 50 per cent of the trees in these plantations have been killed. Counts based on the examination of 100 trees at five sample points are summarized in Table 10.

TABLE 10

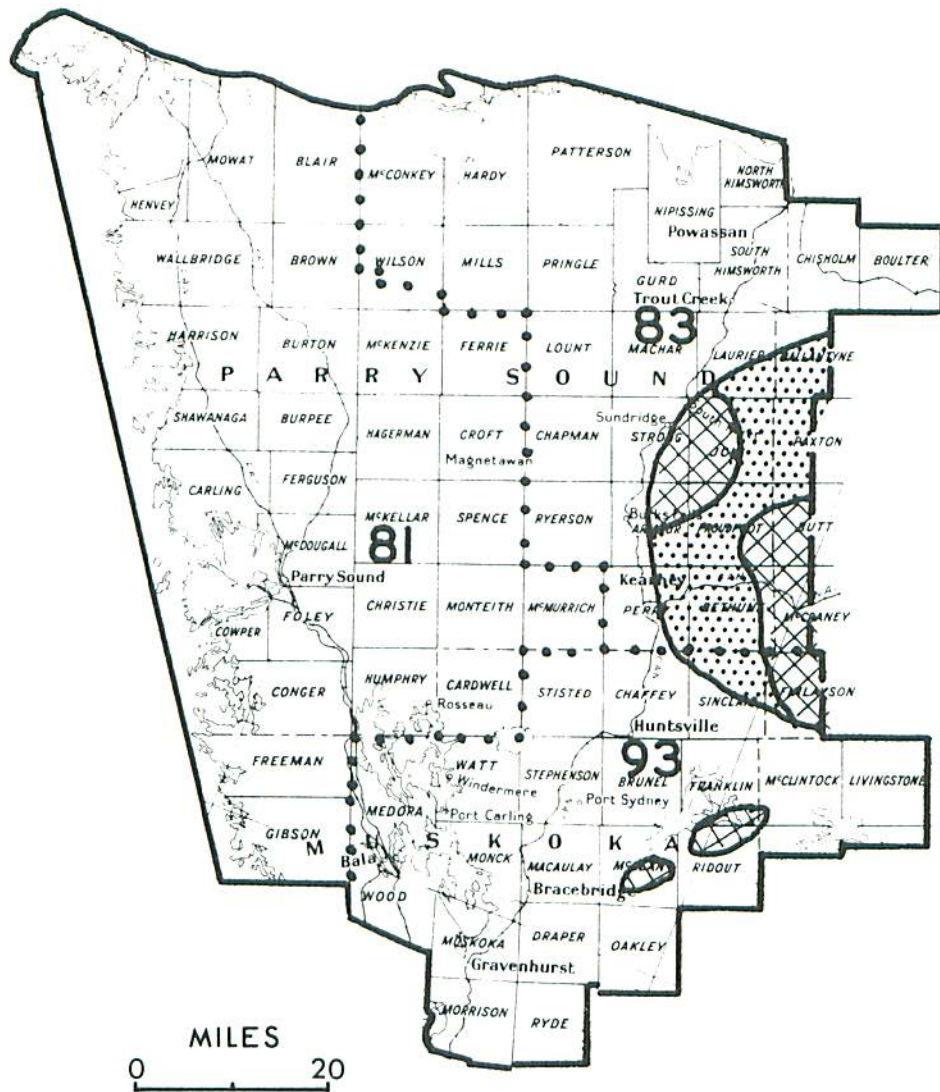
Summary of Red-headed Pine Sawfly Colony Counts in the Parry Sound District in 1967 and 1968

Location (township)	Av. height of sample trees in feet	No. of trees infested 1968	Av. no. of colonies per infested tree	
			1967	1968
Ridout	10	100	3.1	2.7
Perry	30	28	-	1.1
McLean	20	37	-	1.0
Mowat	15	7	-	1.5
Wilson	18	8	-	1.0

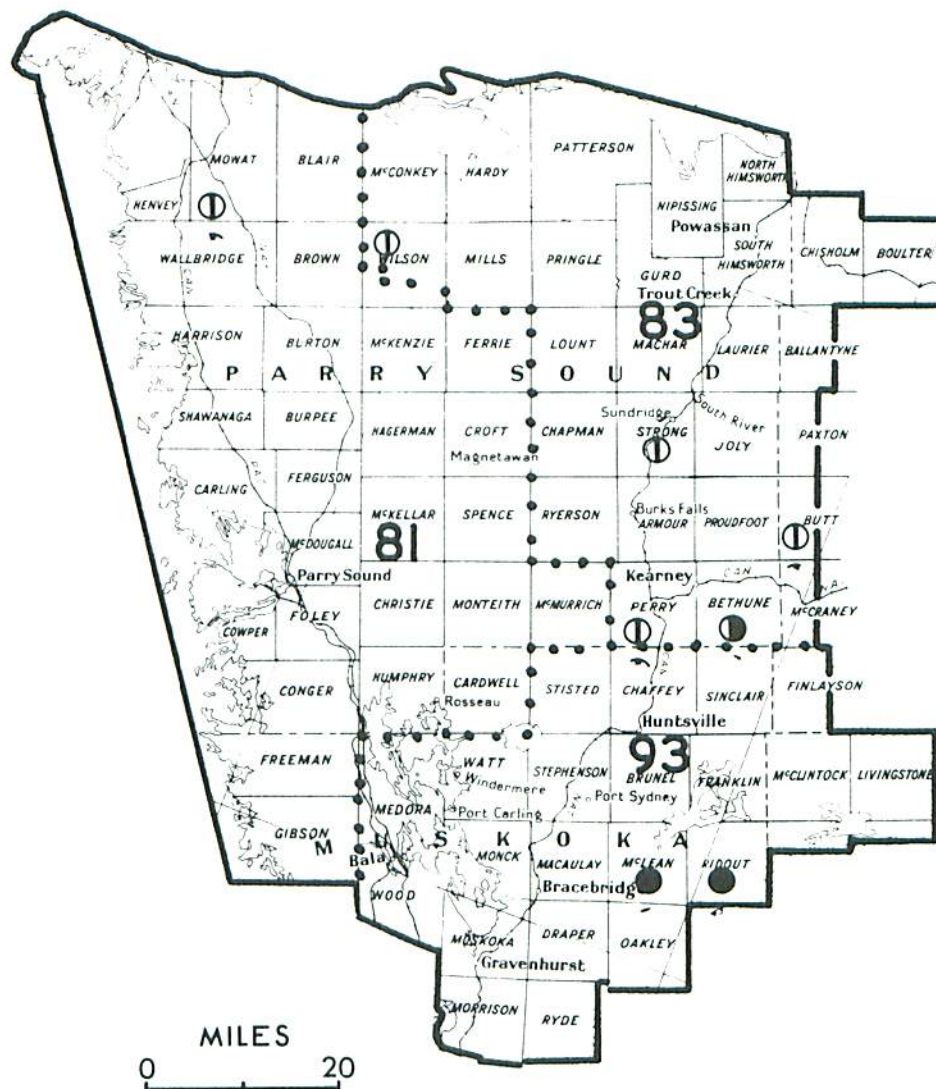
Red-pine Sawfly, Neodiprion nanulus nanulus Schedl.

No appreciable change in colony counts occurred at sample points in the district in 1968. Although increases in population levels were observed in jack pine stands in the northwest part of the district, defoliation only approximated 10 per cent. In red pine plantations defoliation was less than five per cent. In 1968 counts were based on the examination of 100 red pine trees randomly selected in three widely-separated plantations. The results are summarized in Table 11.

# PARRY SOUND DISTRICT



# PARRY SOUND DISTRICT



## RED-HEADED PINE SAWFLY

Locations where infestations were  
observed in 1968

### Legend

Light infestation ----- ○  
Medium infestation ----- ◐  
Heavy infestation ----- ●

TABLE 11

Summary of Red-pine Sawfly Colony Counts on Red Pine  
in the Parry Sound District in 1968

Location (township)	Av. d.b.h. of sample trees in inches	No. of trees infested	Av. no. of colonies per tree
McDougall	6	14	1.0
Franklin	4	2	1.0
South Himsworth	5	5	1.2

White-pine Weevil, *Pissodes strobi* (Peck)

Population levels of this insect increased in white and Scots-pine plantations in Livingstone, Ridout, Armour and MacKenzie townships and in white pine regeneration in Chaffey Township. Most notable increases occurred on white pine in Livingstone and Ridout townships, where 29 and 37 per cent of the leading shoots of sample trees were infested (Table 12). In MacKenzie and Armour townships Scots pine leaders in abandoned Christmas tree plantations were heavily infested. White pine regeneration suffered severe damage in Chaffey Township where 33 per cent of the leaders were infested.

TABLE 12

Summary of Damage by the White-pine Weevil  
in the Parry Sound District in 1968

Note: 100 trees were examined at each location.

Location (township)	Tree species	Total no. of leaders infested 1968
Livingstone	wP	29
Ridout	wP	37
Chaffey	wP	33
Armour	scP	26
MacKenzie	scP	24

Larch Sawfly, Pristiphora erichsonii Htg.

In 1968, population levels of this sawfly increased on native and European larch in the north, northwest and central parts of the district, but defoliation of host trees did not exceed 20 per cent at any location. Occasional colonies were observed in the remainder of the district.

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

White spruce hedgerows and windbreaks were moderately infested by this sawfly along Highway 11 in Chaffey Township, near the Brunel Locks in Brunel Township and in Chapman, Sherborne and South Himsworth townships. Defoliation of new shoots approximated 25 per cent at these locations. Severe defoliation of ornamentals was observed in the towns of Huntsville and Bracebridge and in the village of Aspdin where approximately 80 per cent defoliation of the current year's shoots occurred.

Poplar Leaf Rollers, Pseudexentera oregonana Wlshm.  
Sciaphila duplex Wlshm.

Heavy infestations of Pseudexentera oregonana that had persisted in trembling aspen stands for the past five years collapsed in 1968. Meanwhile infestations of Sciaphila duplex increased to medium intensity in Henvey, Mowat, Harrison and Burpee townships, and light infestations were common in the northern part of the district.

TABLE 13

Summary of Miscellaneous Insects Collected in the Parry Sound District

Insect	Host(s)	Remarks
Abbottana clemataria A. & S.	moM	Small numbers
Acleris variana Fern.	eH, bF, wS	Common at numerous locations through district
Adelges abietis Linn.	wS	Heavy on occasional trees near Dorset
Altica populi Brown	bPo	Light infestation on fringe trees near Scotia in Perry Twp.
Anacampsis innocuella Zell.	1A	Common on roadside trees along park road in Carling Twp.
Aphrophora sp.	eL	Heavy infestations on hedgerow and open-growing trees at scattered locations in Sherborne Twp.

TABLE 13 (continued)

Insect	Host(s)	Remarks
<i>Archips cerasivoranus</i> Fitch	cCh	Heavy infestations along highways and in open fields at many points in the district
<i>Arge pectoralis</i> Leach	wB	Occasional colonies on scattered trees near Dorset, Ridout Twp.
<i>Argyresthia laricella</i> Kft.	tL	Small numbers observed on scattered trees at one location in Chapman Twp.
<i>Cenopis</i> sp.	rM, rO	Moderate infestations on fringe trees near Port Carling and Dorset
<i>Choristoneura rosaceana</i> Harr.	bF	Small numbers
<i>Compsiolechia niveopulvella</i> Cham	tA	Small numbers at one location
<i>Dasineura balsamicola</i> Lint.	bF	Common on understory and open-growing saplings in Pringle and Perry twps.
<i>Dioryctria reniculella</i> Grt.	wS	Small numbers at one location
<i>Ectropis crepuscularia</i> Schiff.	moM	Understory trees moderately defoliated near Oxtongue Lake, Finlayson Twp.
<i>Epinotia solandriana</i> Linn.	tA, wB	Moderate infestations on understory and fringe trees at scattered points in Machar, Mowat and Franklin twps.
<i>Eucordylea resinosae</i> Free.	rP	Light infestations at widely-separated locations in South Himsworth, McDougall, Perry and Chaffey twps.
<i>Exoteleia pinifoliella</i> Cham.	jP	Light to moderate infestations common in Monteith, Brunel and McDougall twps.
<i>Gonioctena americana</i> (Schaeef.)	tA	Moderate defoliation of young growth near Dwight, Franklin Twp. and near Port Sydney, Stephenson Twp.

TABLE 13 (continued)

Insect	Host(s)	Remarks
<i>Hydria prunivorata</i> Ferg.	bCh	Common on occasional trees in Sherborne and Oakley twps.
<i>Hyphantria cunea</i> Dru.	Al	Occasional colonies along roadsides in Chaffey and Wood twps.
<i>Lambdina fiscellaria</i> <i>fiscellaria</i> Gn.	eH	Counts low at seven sample points
<i>Monoctenus fulvus</i> Nort.	ewC	Light infestations common in Machar, Shawanaga, Humphry and Laurier twps.
<i>Nadata gibbosa</i> A. & S.	sM	Small numbers at two locations
<i>Nematus limbatus</i> Cress.	W	Colonies common on open-growing and roadside willow in Carling, Shawanaga and McKellar twps.
<i>Neodiprion pratti banksianae</i> Roh.	jP	Scattered colonies observed at several locations in district
<i>Neodiprion swaini</i> Midd.	jP	Low numbers in Mowat Twp.
<i>Neurotoma fasciata</i> (Nort.)	cCh	Small numbers
<i>Nymphalis milberti</i> Godt.	Nettle	Several colonies near Grundy Lake Park
<i>Ocnerostoma strobivorum</i> Free.	wP	Light infestation on hedgerow trees near Bracebridge
<i>Oligocentria lignicolor</i> Wlk.	Be	Several colonies on understory beech near Arrowhead Park, Chaffey Twp.
<i>Pristiphora geniculata</i> Htg.	Mo	Light to moderate infestations on scattered trees in McDougall, Ridout and Shawanaga twps., defoliation approximated 20 per cent at these locations
<i>Pulicalvaria piceaella</i> Kft.	bF	Small numbers
<i>Phenacaspis pinifoliae</i> (Fitch)	scP	Medium infestation near Parry Sound - lighter than in 1967

TABLE 13 (concluded)

Insect	Host(s)	Remarks
<i>Rhabdophaga swainei</i> Felt.	wS	Common in Chaffey and Stisted twps.
<i>Schizura concinna</i> J. E. Smith	tA	Scattered colonies
<i>Setoptus jonesi</i> Keifer	rP	Small numbers in young red pine plantations in Ridout, McAulay, and Franklin twps.
<i>Sparganothis sulfureana</i> Clem.	wP	Small numbers at one location
<i>Toumeyella numismaticum</i> P. & McD.	jP, scP	Light infestation in Mowat and Machar twps.
<i>Trisetacus alborum</i> Keifer	wP	Severe shoot mortality on occasional white pine near Bracebridge, McAulay Twp.
<i>Vasates quadripes</i> Shim.	SLM, rM	Common at many locations
<i>Xylomyges dolosa</i> Grt.	lA	Small numbers at one location in Carling Twp.
<i>Zeiraphera destitutana</i> (Walker)	wS	Small numbers at one location near Grundy Park