Status of Insects in the Parry Sound

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1965

Barnes, C.A.

District

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Information Report 0-X-13 (Forest Research Laboratory, Ontario Region)

FOREWORD

J. E. MacDonald

Outbreaks of the forest tent caterpillar have highlighted reports dealing with forest insect surveys for the past several years. In 1965, the outbreak in Western Ontario reached its peak and poplar stands within an area of about 34,000 square miles were severely defoliated. Egg surveys in the fall revealed that a marked decline in infestation intensity will occur in Sioux Lookout and Kenora districts but high larval populations will persist in Fort Frances and Port Arthur districts in 1966. Trends in infestation intensities will vary from area to area in eastern Ontario, with the most noteworthy increase in the extent of infestations occurring in the Lake Nipissing outbreak.

The development of new infestations of Bruce spanworm and the European pine sawfly were of particular interest in 1965. Infestations of the former occurred in Sault Ste, Marie, Sudbury and Pembroke districts. Severe defoliation of hardwoods that resulted in relatively large areas represented first records of extensive infestations in Ontario. A major extension in the known distribution of the European pine sawfly was recorded when the insect was found in two Scots pine plantations on Manitoulin Island. This extension places the insect much closer to major stands of jack pine in northern Ontario.

For the third consecutive year low temperatures in the spring caused considerable mortality of the current year's shoots of balsam fir and white spruce at many locations in Ontario. Continued cold weather throughout the summer delayed the development of many insects and in some instances larvae failed to reach maturity before freezing temperatures occurred in the fall.

Tree disease surveys continued to reveal serious losses of white elm resulting from Dutch elm disease in southern Ontario. In northern Ontario two centers of infection occurred on Manitoulin Island and infected elm were found at one location near Spanish on the North Shore of Lake Huron. Intensive surveys to determine the distribution and incidence of this disease will be continued in 1966.

During the early years of the Survey in Ontario Field Technicians were largely concerned with determining the distribution and abundance of forest insects and appraising losses in forest stands. As a consequence the detection aspect of survey work was of a high order. Later, added responsibility for disease surveys and the development of more elaborate sampling procedures, reduced the time available for purely detection work. To compensate for this, greater emphasis has been placed on systematic aerial reconnaissance throughout the vast forested areas of central and northern Ontario.

The Survey welcomed the addition of a Forest Research Technician to its staff in 1965. This appointment now provides one field representative for each district in the Southeastern Region where formerly three men were responsible for survey work in four districts.

In the reports that follow, insects and tree diseases that are of interest in adjoining districts are dealt with on a regional basis. Others are dealt with in detail on a district basis.

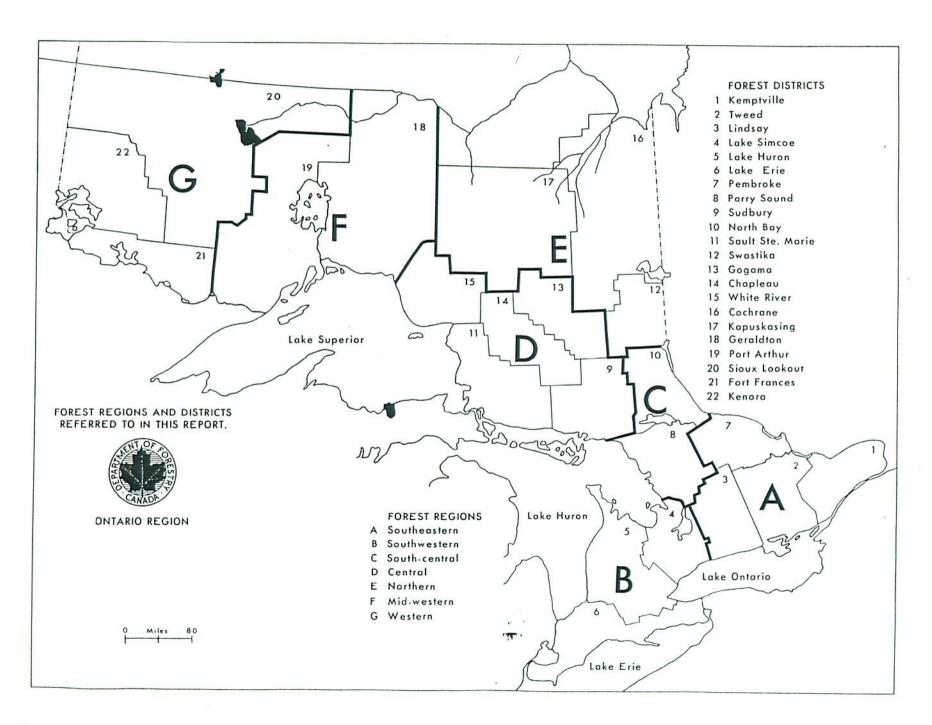


TABLE OF CONTENTS

REPORTS OF FOREST RESEARCH TECHNICIANS

Ontario

A. SOUTHEASTERN FOREST REGION A1-50 Lindsay District, W. J. Miller* A 11 Tweed District, F. Livesey A 22 Kemptville District, J. Hook A 33 Pembroke District, H. J. Weir A 41 B. SOUTHWESTERN FOREST REGION B1-49 Lake Simcoe District, A. A. Harnden* B 16 Lake Huron District, R. L. Bowser B 29 Lake Erie District, J. R. Trinnell B 39 C. SOUTH-CENTRAL FOREST REGION C1-24 North Bay District, L. S. MacLeod* C 5 Parry Sound District, C. A. Barnes C 14 D. CENTRAL FOREST REGION D1-56 Sault Ste. Marie District, H. G. McPhee* D 13 Sudbury District, J. R. McPhee D 20 Chapleau District, D. Ropke D 29 Gogama District, R. A. Trieselmann D 38 White River District, D. C. Constable D 50 E. NORTHERN FOREST REGION E1-42 Cochrane District, H. R. Foster* E 8 Kapuskasing District, G. T. Atkinson Swastika District, M. J. Applejohn E 20 E 32 F. MIDWESTERN FOREST REGION F1-27 Port Arthur District, K. C. Hall*..... F 8 Geraldton District, V. Jansons F 19 G. WESTERN FOREST REGION G1-40 Sioux Lookout District, P. E. Buchan* G 13 Kenora District, G. G. Jackson Fort Frances District, M. J. Thomson G 23 G 33

Photographs

* Regional Supervisors

Foreword, J. E. MacDonald

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Information Report No.	Subject	Author
0-X-5	Forest Insect & Disease Surveys	
	Lindsay District	W. J. Miller
0-X-6	Tweed District	F. Livesey
0-X-7	Kemptville District	J. Hook
0-X-8	Pembroke District	H. J. Weir
0-X-9	Lake Simcoe District	A. A. Harnden
0-X-10	Lake Huron District	R. L. Bowser
0-X-11	Lake Erie District	J. R. Trinnell
0-X-12	North Bay District	L. S. MacLeod
0-X-13	Parry Sound District	C. A. Barnes
0-x-14	Sault Ste. Marie District	H. G. McPhee
0-X-15	Sudbury District	J. R. McPhee
0-X-16	Chapleau District	D. Ropke
0-X-17	Gogama District	R. A. Trieselman
0-X-18	White River District	D. C. Constable
0-X-19	Cochrane District	H. R. Foster
0-X-20	Kapuskasing District	G. T. Atkinson
0-X-21	Swastika District	M. J. Applejohn
0-X-22	Port Arthur District	K. C. Hall
0-X-23	Geraldton District	V. Jansons
0-X-24	Sioux Lookout District	P. E. Buchan
0-X-25	Kenora District	G. G. Jackson
0-X-26	Fort Francis District	M. J. Thomson

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STATUS OF INSECTS IN THE PARRY SOUND DISTRICT

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odon-prile Meeure Miner	Exoteleia pinifoliolla (Obant)		1111
Eastern Tent Caterpillar	Malacogomo amori a anum E		16
Forest Tent Caternillar	Malacosonia americanum F.		16
Forest Tent Caterpillar	Malacosoma disstria Hbn.	С	16
Cedar Sawfly.	Monoctenus fulvus Nort.	C	18
neu-neaded Fine Dawily	Neodiprion lecontoi (Fitch)	C	18
neu-prine Dawrry	Neodinrion nanulus nanulus Cohe 17	C	
Present medded back-prile Dawily.	Neodinrion pratti hankaianaa Dah	C	and the second
Hod Hodded Back-pille Dawily	Neodinnion winginianua complete		200 C
White-pine Weevil	Piscodos atrobi Deals	C.	
Balsam Bud-mining Sawfly	PISSOUES SUPODI Peck	C	
Balsam Bud-mining Sawfly	Pleroneura porealis Felt.	C	21
Larch Sawfly	Pristiphora erichsonii Htg.	C	21
inoundarin-ash Dawrry	Pristinhora geniaulate Uta	C	22
in ropial hear notter	Pseudeventera onogonono Mi-	C	
Summary of Miscellaneous Insects		C	
		0,	R.R.

C. A. Barnes

Page

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STATUS OF INSECTS

Larch Casebearer, Coleophora laricella Hbn.

A decline in population levels of this insect occurred in all but one sample point in 1965 (Table 4). At one points in Ridout Township, an average of 14.8 larvae per 18-inch branch tip was recorded, the highest count since 1961. Approximately 20 per cent defoliation occurred at this location.

In the past three years heavy parasitism by the introduced parasite <u>Agathis</u> <u>pumila</u> (Ratz.), and light parasitism by <u>Chrysocharis</u> (Epilampsis) <u>laricinella</u> (Ratz.) has been recorded in mass collections of overwintering larvae from two locations in the district. In 1965 mass collections of pupae were submitted to determine if <u>Chrysocharis</u> (Epilampsis) <u>laricinella</u> (Ratz.), was more active during this stage of development than in the larval stage. However, only small numbers of both parasites were recovered.

TABLE 4

Location	Tree	Av. no. of	larvae per 18-inch	
(township)	species	1963	1964	1965
Ridout	eL	2.2	6.7	14.8
Wallbridge	tL	0.3	1.2	0.5
Chapman	tL	1.8	0.4	1.0
Perry	tL	1.0	0.4	0.2
McLean	tL	1.3	0.6	0.2
Gurd	tL	0.5	0.3	0.3
Chisholm	tL	1.3	1.5	0.8
Stephenson	tL.	1.4	0.7	0.6

Summary of Larval Counts of the Larch Casebearer in the Parry Sound District, 1963-1965

European Spruce Sawfly, Diprion hercyniae (Htg.)

Increases in population levels occurred at all but one sample point in 1965. The highest number was recorded at a sample point in Joly Township, where 87 larvae were recovered from 15 tray samples (Table 5).

Location	To	otal	no. of	larvae per	15-tray	sample
(township)	10	961	1962	1963	1964	1965
Ryerson		9	12	11	24	43
Chapman		13	6	2	6	24
Gurd		19	25	6	11	51
McMurrich		7	15	8	5	19
Monteith		8	21	18	26	37
Perry		26	69	5	17	40
Croft		5	13	9	14	4
Joly		35	10	7	38	87
Machar		14	10	0	6	11
McLean		13	14	8	10	13

Summary of European Spruce Sawfly Larval Counts Taken on White Spruce Trees in the Parry Sound District 1961-1965

White Pine Shoot Borer, Eucosma gloriola Heinr.

For the second consecutive year population levels of this insect declined substantially at all sample points in the district (Table 6). The maximum number of infested trees was eight per cent.

TABLE 6

Summary of Shoot Damage Caused by the White Pine Shoot Berer in the Parry Sound District, 1963-1965

		Av. height of		cent o		Per cent of trees
Location (township)	Host species	trees in feet in 1965	<u>tree</u> 1963	s infe 1964	1965	with leaders infested in 1965
McLean	rP	9	23	9	2	0
McLean	jP	17	7	5	0	0
Stisted	rP	18	6	6	3	0
McAulay	rP	15	16	11	0	0
McAulay	jP	21	11	6	0	0
McMurrich	rP	9	24	15	0	0
McMurrich	jP	20	5	3	0	0
Armour	scP	13	21	15	8	2

One hundred trees were examined at each location. Note:

Jack-pine Needle Miner, Exoteleia pinifoliella (Chamb.)

Medium infestations of this insect were observed in clumps of jack pine near Parry Sound in McDougall Township, Bear Lake in Monteith Township, and Huntsville in Brunel Township. Approximately 25 per cent of the needles on past year's shoots were infested at each location. Light infestations were common in Boulter, Harrison, and Burpee townships.

Eastern Tent Caterpillar, Malacosoma americanum F.

Light infestations of this insect that occurred along Highway 69 from Parry Sound to the French River for the past six years increased to heavy intensity in 1965. At one location in Harrison Township, counts of initial tents along a measured mile of roadside were the highest recorded in the district for a number of years (Table 7). Population levels declined slightly in the southern part of the district.

TABLE 7

Location				No. of	primary	y tents		
(township)	Sampling area	19	60	1961	1962	1.963	1964	1965
Franklin	square chain plot		7	13	18	11	8	3
Stephenson	21 19 31		3	17	11	14	11	õ
McAulay	FF FF FF		36	47	32	23	3	7
Chisholm	11 11 11		0	1	3	3	í	2
Boulter	11 11 12		0	2	õ	3	2	3
McLean	mile of roadside		79	91	63	42	28	31
Brunel	51 51 FF	10.00	28	31	18	14	7	2
Stephenson	11 11 11	Les 1	21	22	27	21	14	2
Wood	11 II II		31	53	62	40	29	27
McDougall.	11 II II		18	44	51	31	17	14
MacKenzie	11 11 11		16	29	24	11	8	6
Harrison	88 88 88		-		-		-	181

Summary of Eastern Tent Caterpillar Colony Counts in the Parry Sound District 1960-1965

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Population levels of this insect increased in the district in 1965 compared with 1964. Heavy infestations occurred in the Muskoka Lakes area, where sugar maple, red oak, white elm, and trembling aspen were severely defoliated. In the northern part of the district a band of heavy infestation extended from the Dokis Indian Reserve along the French River eastward to North Himsworth Township. The total area of infestation in the district was approximately 970 square miles (see map).

Mass collections of cocoons were made to determine the percentage of parasitism, predation, disease, and moth emergence (Table 8).

CONTRACTOR OF A STORE CONTRACTOR OF	Per cer	nt with	Per	cent		ent dead
Location (township)	emerg 1964	1965	<u>1964</u>	itized 1965		ler causes
Nipissing Medora Wood	38 36	16 34 10	39 41	84 63 90	23 23	0 3 0
Muskoka Humphry		27 30	-	73 70		0

Summary of Dissections of Forest Tent Caterpillar Cocoons in the Parry Sound District, 1964-1965

On the basis of egg band counts an increase in population levels of the insect is expected in the northern part of the district in 1966 (Table 9). Heavy infestations will probably occur in a band from Highway 69 easterly to the Dokis Indian Reserve. Moderate to heavy infestations are expected to develop in the Lost Channel Road area where three egg bands were collected in 1965 compared with nil in 1964. Light infestations are expected in Boulter and the southern part of Nipissing townships, where egg bands were collected for the first time in 1965. No appreciable change in population levels should occur in infestations that have persisted for the past four years in the Muskoka lakes area.

TABLE 9

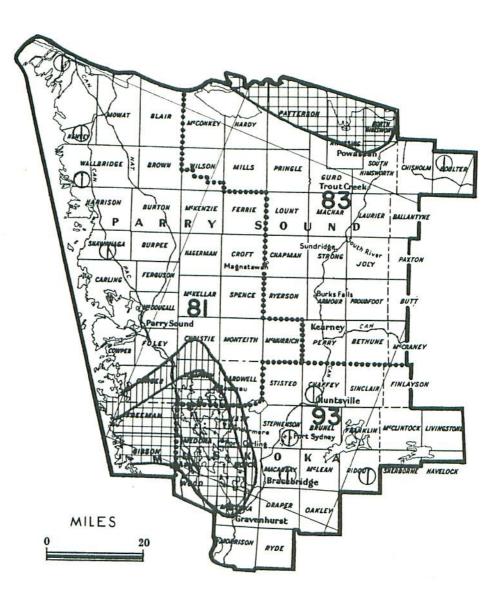
Location	Av. d.b.h. of sample trees	No. of trees sampled			g band			iation
(township)	in inches	 1965	1	962	1963	1964	1965	1966
Nipissing	6	3		_	_	-	24	Severe
French River	5	2		-	1	l	30	11
Mowat	5	3		-	0	0	3	Moderat
ledora	6	1		12	7	56	27	Severe
lood	6	Raber 1 Pare		11	21	16	22	11
Boulter	6	3		-		-	1	Light
South Himswor	th 5	3		-	-		1	88
Vallbridge	in i i and	3		-	-	-	0	Nil
libson	6	1			1 1 m	-	32	Severe
Aulay	of a 5 to 1 to	3			-	-	1	Light
Ridout	5	3		-		- 1	0	Nil
a success	0-11 291 to 171 10	The viewer with						

Summary of Egg Band Counts of the Forest Tent Caterpillar in the Parry Sound District 1962-1965

A light trap has been operated in Ridout Township since 1961 to capture forest tent caterpillar moths. Results show that the number of moths reached a peak in 1962 (Table 10).

TABLE 8

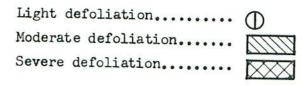
PARRY SOUND DISTRICT



FOREST TENT CATERPILLAR

Areas in which defoliation occurred in 1965

Legend



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TABLE 10

Summary of Malacosoma disstria Hbn. Moths Recovered in a Light Trap in the Parry Sound District for the Years 1961-1965

1062	20/0	and the second second second second	
1702	1963	1964	1965
77	56	21	10
	71	71 56	71 56 31

Cedar Sawfly, Monoctenus fulvus Nort.

No appreciable change in population levels of this insect occurred at sample points in 1965 compared with 1964 (Table 11). Population levels were relatively high for the second consecutive year in Machar and Shawanaga townships.

TABLE 11

Summary of Cedar Sawfly Counts in the Parry Sound District from 1961 to 1965

Location	Av. d.b.h. of sample trees	Total	no. of	larvae per	15-tray	sample
(township)	in inches	1961	1962	1963	1964	1965
Machar	5	2	10	0	28	24
Humphry	6	28	1	17	11	9
McKonkey	6	14	13	5	4	7
Shawanaga	5	47	31	29	54	41

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

Heavy infestations of this sawfly persisted for the second consecutive year in red and Scots pine plantations in Ridout, Stephenson, Livingstone, Wood, Medora, Gibson, McAulay, McClintock, and Freeman townships in Division 93. Mortality of red and Scots pine trees occurred in many of these plantations. Defoliation ranged from 40 per cent on larger trees to 100 per cent on trees up to six feet in height.

Moderate infestations were found commonly on hedgerows and individual red and jack pine trees along roadsides in Wilson, Mills, and Pringle townships in Division 83. Localized pockets of moderate infestation were observed in Machar and Ballantyne townships.

Control measures were recommended and most infested plantation were sprayed with good results. Colony counts based on the examination of 100 trees at each location are summarized in Table 12.

Location	Tree	Av. height of sample trees	No. of trees infested	Av. no. of per infeste	
(township)	species	in feet	1965	1964	1.965
Henvy	rP	7	7	4	7
Mowat	jP	20	0	0	0
Rvde	rP	10	0	0	0
Wilson	rP	8	4	0	4
Ridout	rP	6	61		1.2
Livingstone	rP	6	83	~	1.2
Wood.	rP	20	10	-	4.7
Stephenson	scP	6	52	673	1.2

Summary of Red-headed Pine Sawfly Colony Counts in the Parry Sound District, 1964-1965

Red-pine Sawfly, <u>Neodiprion nanulus nanulus</u> Schedl.

No appreciable change in population levels of this insect occurred in the district in 1965 compared with 1964. Counts based on the examination of ten sample trees at four locations are summarized in Table 13.

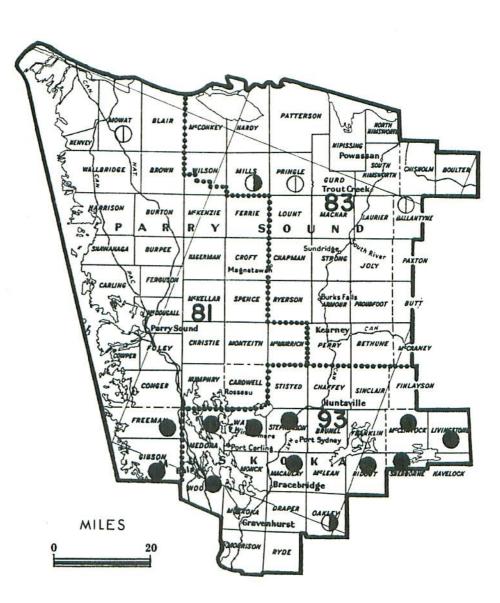
TABLE 13

Summary of Red-pine Sawfly Colony Counts in the Parry Sound District in 1964 and 1965

	Av. d.b.h. of			
Location	sample trees	No. of trees	Av. no. of	colonies per tree
(township)	in inches	infested	1964	1965
McDougall .	5	3	1.1	1.0
Franklin	6	4	0.7	1.7
South Himsworth	6	5	2.0	1.0
Perry	6	3	0.5	1.0

Black-headed Jack-pine Sawfly, Neodiprion pratti banksianae Roh.

A decline in population levels of this sawfly occurred throughout the district in 1965. Fewer jack pine trees were infested in 1965 than in the past four years. Defoliation did not exceed five per cent at any sample point. Counts based on the examination of ten trees at each location are summarized in Table 14. PARRY SOUND DISTRICT



RED-HEADED PINE SAWFLY

Locations where infestations were observed in 1965

Legend

Light infestation	\oplus
Medium infestation	
Heavy infestation	0



Location	No. of tre	es infested	Av. no. of colonies	per infested tree
(township)	1964	1965	1964	1965
Monek	10	0	2.1	0.0
Draper	8	3	2.1	1.0
Ryerson	10	10	1.6	1.4
McDougall	6	l	1.0	1.0
McLean	5	2	1.0	1.5
Medora	6	4	1.0	1.0
Monteith	10	6	1.6	2.2

Summary of Black-headed Jack-pine Sawfly Colony Counts in the Parry Sound District, 1964-1965

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

No appreciable change in population levels of this insect occurred in 1965 (Table 15). Since 1959, only small numbers of colonies have been found in the district.

TABLE 15

	Av. d.b.h. of	Av. no. of colo	nies per tree
Location	sample trees	1964	1965
(township)	in inches	- Charlen (and an Operand a growth and an and and an an operation of a statement	Contraction of the Contraction o
Pickerel River	4	0.0	0.0
lenvey	5	1.7	2.1
Shawanaga	4	0.4	0.5
Burton	5	0.1	0.0
Mowat	5	0.7	0.9

Summary of Red-headed Jack-pine Sawfly Colony Counts in the Parry Sound District in 1964 and 1965

White-pine Weevil, Pissodes strobi Peck

Medium infestations occurred in Scots pine plantations at several locations in McMurrich, MacKenzie, and Armour townships, where 8, 13, and 12 per cent respectively of the trees examined were infested. For the fourth consecutive year a heavy infestation persisted in a pocket of white pine reproduction near Huntsville in Chaffey Township. Light infestations were observed on Scots and jack pine trees in McAulay and McLean townships.

Counts based on the examination of 100 trees at each location are summarized in Table 16.



Location	Tree	Per cent infe		Per cent o damage al	
(township)	species	1964	1965	1964	1965
McLean	rP	0	0	18	18
McLean	jP	3	0	47	47
McAulay	jP	i.	2	55	57
McMurrich	jP	2	0	41	47
McMurrich	scP	-	8		23
MacKenzie	scP	Con.	13		37
Armour	scP	8	12	41	53
Chaffey	wP	638	22		43

Summary of Damage by the White-pine Weevil in the Parry Sound District in 1964 and 1965

Balsam Bud-mining Sawfly, Pleroneura borealis Felt.

As in alternate years in the past, population levels declined at all sample points. Counts of infested buds did not exceed four per cent at any location (Table 17).

TABLE 17

Location	Av. height of sample trees	Per cent buds infested				
(township)	in feet	examined	1962	1963	1964	1965
McLean	24	227	10,8	1.4	17.0	0.0
Chaffey	35	289	15.9	0.6	7.8	0.3
MacKenzie	30	327	6.9	1.1	8.1	3.3
Ferguson	25	296	10.8	2.9	7.1	0.1
Joly	22	311	7.3	1.6	5.8	0.0
Franklin	45	296	6.1	0.4	13.7	0.8
Laurier	· 35	301	21.0	3.0	11.3	0.8
Wilson	35	360	15.6	0.0	6.0	1.0

Summary of Balsam Bud-mining Sawfly Larval Counts in the Parry Sound District, 1962-1965

Larch Sawfly, Pristiphora erichsonii Htg.

Population levels of this sawfly have declined since 1962. However, a medium infestation has persisted in a small 10 acre stand of larch near Byng Inlet in Wallbridge Township. Defoliation approximated 20 per cent at this location. Elsewhere, light infestations were observed on occasional trees at several locations. Defoliation did not exceed 10 per cent.

Mountain-ash Sawfly, Pristiphora geniculata Htg.

Pockets of light infestation of this insect persisted on groups of mountain ash throughout the district, and were most numerous in Gurd, McClintock, Wood, Perry, McAulay, McDougall, Shawanaga, and Wallbridge townships. Defoliation did not exceed 15 per cent.

A Poplar Leaf Roller, Pseudexentera oregonana Wlshm.

Most of the heavy infestations that have occurred in the district since 1963 declined in intensity in 1965. Heavy infestations persisted in the northwest part of the district where defoliation of trembling aspen ranged from 50 per cent to 90 per cent. In the remainder of the district infestations declined to light and moderate intensity and defoliation ranged from 10 to 40 per cent.

TABLE 18

Summary of Miscellaneous Insects Collected in the Parry Sound District

Insect	Host(s)	Remarks
Acleris variana Fern.	wS, eH	Small numbers of insects at each location.
Adelges lariciatus (Patch)	wS, tL	Heavy infestations of this needle gall on numerous trees
Adelges sp.	wS	through the district. Common on scattered trees nea Marshes Falls
Altica populi Brown	bPo	Common on several trees at one location in Perry Twp.
Anchylopera subaequana Zell.	W	Moderate infestation of leaf rollers near Port Carmen in Chapman Twp.
Aphrophora parallela Say	wP, scP	Moderate infestations on whit pine near Katrine in Armour
		Twp. and on jack pine near Vankoughnet in Oakley Twp.
Archips cerasivoranus Fitch	pCh, cCh	Cherry ugly-nest caterpillar at a very low level in the district.
Arge sp.	Al	Few colonies of this sawfly observed in the district.
Argyresthia laricella Kft.	tL	Light infestations of this twig borer common in Chapman and Stephenson twps.
Caripeta divisata Wlk.	wS, bF	Small numbers of larvae in beating samples at each location.
Choristoneura fumiferana Clem.	wS, bF	Collected on beating tray in small numbers.
Coleophora sp.	wB	Collected in small numbers at one location near the French River.

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TABLE 18 (continued)

Insect	Host(s)	Remarks
Dasyneura balsamicola Lintn.	bF	Needle gall common on most
		balsam fir through district.
Epinotia solandriana Linn.	wB, tA	Moderate infestations on
		white birch and trembling
		aspen near French and
		Pickerel rivers.
Eupithecia filmata Pears.	eH, bF	Common in beating samples at
		several locations.
Eupithecia sp.	bF, eH, wS	Common on beating tray at
		several locations through
-		district.
Fenusa dorhnii (Tischb.)	Al	Moderate infestation of this
		leaf miner near Hekkla in
		Cardwell Twp.
Fenusa pusilla (Lep.)	wB	Heavy infestations of this
6.1 (0.1-1)		leaf miner on small white
		birch in Machar, Mowat, and
	Ho. , De	Burpee twps.
Gonioctena americana (Schaeff.)	tA	Several small colonies of
and an an an an an an an		this leaf beetle at two
Under an an district and a LTL	C 177	locations.
Hydriomena divisaria Wlk.	wS, bF	Small numbers of this
Ambantain aunas Day	4.7	looper at all locations.
Hyphantria cunea Dru.	Al	At the lowest level since
		1959, only one colony
Ips pini Say	wP	collected in 1965.
the brut can	WI	Common in logs and stumps
		near Ravenscliffe in Chaffey Twp.
Lambdina fiscellaria	eH, bF	Counts in all sample plots
fiscellaria Gn.	City Di	at a very low level.
Vematus erythrogaster Nort.	Al	Only one colony of this
Vandoughines in General Paper	a Lote	sawfly collected in the
		district.
Veodiprion nigroscutum Midd.	rP	Small numbers of this sawfly
./pintelb	÷.*	observed near Trout Creek.
Operophtera bruceata Hlst.	sM, I, tA	Light infestations common
.Johndalb ella ni beviendo	shrubs	in Findlayson, Sinclair, and
		Livingstone twps.
Petrova albicapitana (Busck.)	jP	Small numbers of pitch nodule
And Stranger and Andrews	0	makers at three locations.
henacaspis pinifoliae Fitch	jP, scP	Heavy scale damage to Scots
		and jack pine trees near Parr
		Sound.
Phyllocolpa sp.	tA	Population levels increased
and I have al		at several locations in the
erement lisus of hearsilob		district.
Phyllocoptes aceris-crumena Rly.	sM	Severe gall damage to leaves
		of sugar maple at several
		locations.
Pikonema alaskensis (Roh.)	wS	Light infestations of this
		sawfly common at three
		locations.

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TABLE 18 (continued)

Insect	Host(s)	Remarks
Pineus coloradensis Gill.	rP	This aphid common on a few scattered trees near Pakesley.
Pityokteines sparsus Lec.	bF	Bark beetles common in fir logs at two locations.
Polygraphus rufipennis Kby.	wS	Bark beetles common in spruce logs at two locations.
Prociphilus testellatus (Fitch)	ΓA.	Woolly aphid on alder common through the district.
Profenusa thomsoni (Konow)	wB	Small numbers of this leaf mining sawfly on birch at one location.
Rhabdophaga swainei Felt	wS	Low populations recorded at all sample points in 1965.
Saperda moesta Lec.	tA	Poplar borer common on small trees near airport in Joly Twp.
Semiothisa dispuncta Wlk.	wS, bF	These loopers found commonly on beating tray at several locations.
Sparganothis acerivorana MacK.	sM	Leaf rollers common on sugar maple trees along Peninsula Road in Medora Twp.
Thera procteri Brower	Juniper	Common on juniper along Highway 103 in Gibson and Freeman twps.
Foumeyella numismaticum P. McD.	jP	Light infestation of tortoise scale near French and Pickerel rivers.
Vasates quadripes Shim	siM	This leaf gall common on this host through district.
Zeiraphera ratzeburgiana Ratz.	wS	Moderate infestations of this new shoot insect at two locations.