Status of Insects in Kemptville District

Hook, J.

Information Report O-X-36
(Forest Research Laboratory, Ontario Region)

Information Report No.	Subject	Author
O-X-34	Forest Insect & Disease Surveys	
	--Lindsay District	W. J. Miller
O-X-35	--Tweed District	F. Livesey
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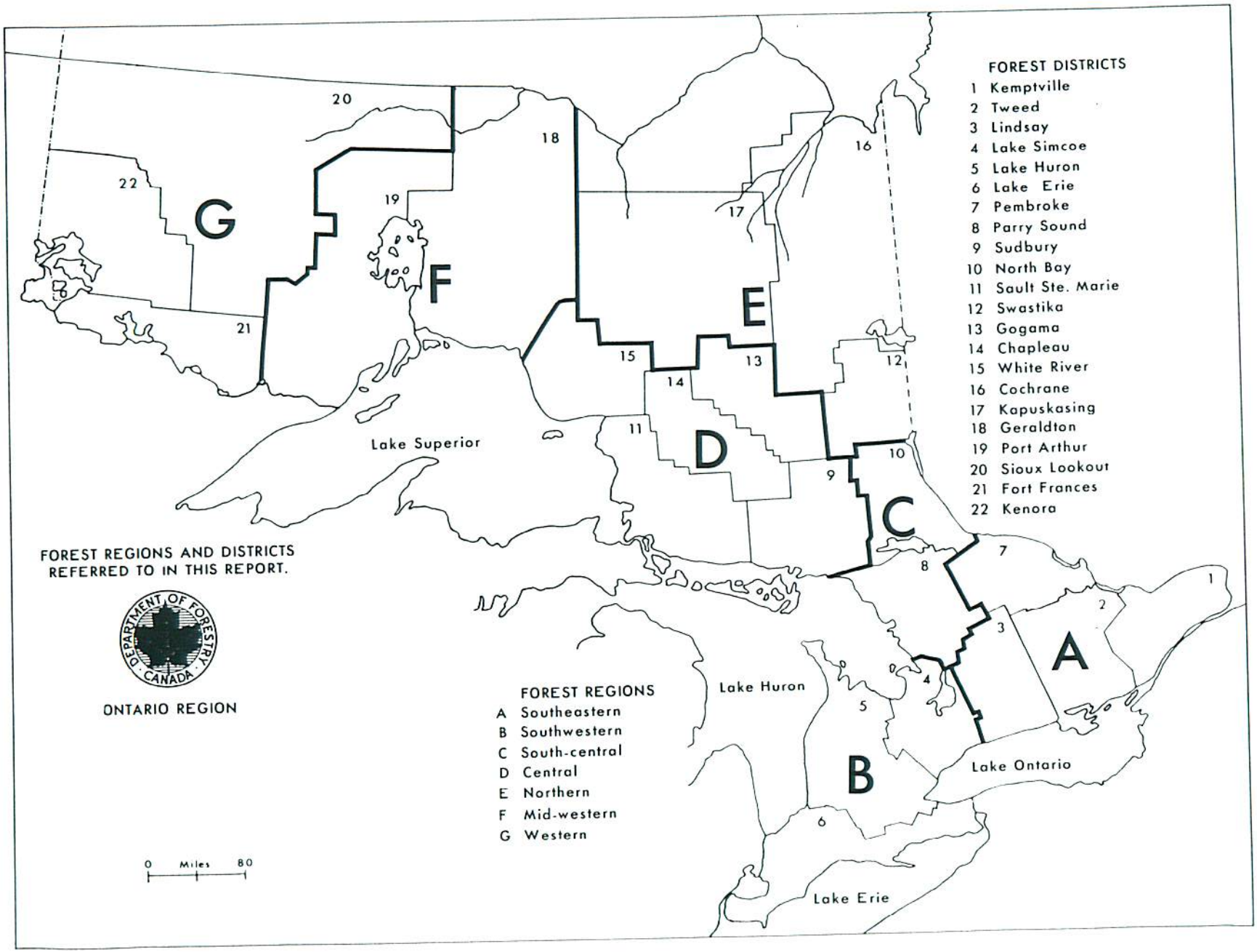
Ontario

* Regional Supervisors


FOREST DISTRICTS
1 Kemptville
2 Tweed
3 Lindsay
4 Lake Simcoe
5 Lake Huron
6 Lake Erie
7 Pembroke
8 Parry Sound
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10 North Bay
11 Sault Ste. Marie
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17 Kapuskasing
18 Geraldton
19 Port Arthur
20 Sioux Lookout
21 Fort Frances
22 Kenora
FOREST REGIONS AND DISTRICTS REFERRED TO IN THIS REPORT.
DEPARTMENT OF FORESTRY CANADA
ONTARIO REGION
FOREST REGIONS
A Southeastern
B Southwestern
C South-central
D Central
E Northern
F Mid-western
G Western
0 Miles 80
Lake Superior
Lake Huron
Lake Ontario
Lake Erie

FOREWORD

J. E. MacDonald

A prolonged period of drought, extending from May until August, seriously affected the growth and survival of forest stands on shallow sites and in plantations, particularly in central and southern Ontario. This was evidenced in August when hardwoods on rocky sites in many areas turned brown and shed their foliage. Serious losses of conifers planted in 1966 were reported in the Sault Ste. Marie, Lake Huron, Lake Simcoe and Lindsay districts.

Intensive surveys were carried out in 1966 to determine the distribution and incidence of Scleroderris canker of pine and of Dutch elm disease. These revealed that Scleroderris canker is widely distributed in northern Ontario. Incidence and tree mortality was highest in young red and jack pine plantations, however, significant losses of jack pine reproduction were also observed in several areas. Incidence of the disease was low in southern Ontario. Dutch elm disease is well established throughout southern Ontario and in localized areas in North Bay and Sudbury districts in northern Ontario. The incidence of infection was particularly high in the Toronto, London and Windsor areas. Over 50 per cent of the elm trees in many areas in southwestern Ontario were infected and the disease has taken a heavy toll of trees in older areas of infection.

Noteworthy changes in the extent and intensity of infestations of the forest tent caterpillar and jack pine budworm occurred in 1966. Weather conditions in the spring brought about a collapse of the forest tent caterpillar outbreak that had occurred over a vast area in Sioux Lookout, Kenora and Port Arthur districts in recent years. Heavy infestations persisted in Fort Frances District and in numerous areas in central and southeastern Ontario, but no outstanding changes in their extent and intensity occurred. Forest tent caterpillar defoliation forecasts for 1967 are contained in the district reports that follow.

Jack pine budworm infestations were reported in three widely-separated parts of Ontario. The largest of these occurred in the western part of Fort Frances and Kenora districts. Pockets of infestation occurred in the southern part of Sault Ste. Marie District and on Manitoulin Island.

The European pine sawfly continued to be a serious pest in pine plantations in southern Ontario. Since its discovery in a Scots pine plantation on Manitoulin Island in 1965, it has been found in five additional plantations on the Island. The results of control measures using virus sprays to contain the sawfly in this northern location will be followed with interest in 1967.

Expansion of the forest research program of the Department of Forestry and Rural Development in Sault Ste. Marie and the establishment of new positions in the Insect and Disease Survey Section has resulted in many changes of duties for Survey technicians. Five new district technicians will be required for the 1967 field season and numerous district re-assignments will be made. A list of technicians and their district assignments will be issued to key personnel of the Department of Lands and Forests and Industry early in the field season.

STATUS OF INSECTS IN KEMPTVILLE DISTRICT

J. Hook

Cherry Ugly-nest Caterpillar, Archips cerasivoranus (Fitch)

An increase in the number of nests formed by this caterpillar occurred in 1966. Light infestations were observed in Montague, South Sherbrooke, Oxford and Beckwith townships (Table 5). Easter choke cherry was the preferred host.

TABLE 5

Summary of Cherry Ugly-nest Caterpillar Colony Counts in Kemptville District

Location by township	Tents per mile of roadside 1966
Beckwith	11
Montague	13
Nepean	20
N. Crosby	4
Oxford	15
S. Sherbrooke	15
Wolford	6

Cedar Leaf Miners, Pulicalvaria thujaella (Kft.)
Argyresthia freyella

For the third consecutive year a decline in population levels of these leaf miners occurred in the district. Small numbers were observed on cedar hedgerows in the Kemptville Nursery and on open-grown clumps of white cedar in Dalhousie and Goulbourn townships.

A Miner on Ironwood, Chrysopelia ostryaella Cham.

A major decline in numbers of this leaf miner on ironwood occurred in the district in 1966. In 1965, heavy infestations and severe mining occurred commonly in most stands containing ironwood trees but, in 1966, very low numbers were found only in Mountain and Nepean townships.

Larch Casebearer, Coleophora laricella (Hbn.)

For the first time in the past decade a small increase in population levels of this introduced casebearer occurred at four widely separated permanent sample points. The highest incidence was recorded on a clump of open-grown larch near Smiths Falls, Montague Township (Table 6).

TABLE 6

Summary of Larch Casebearer Counts in Kemptville District in 1965 and 1966

Location by township	Av. d.b.h. of trees in inches	Av. no. of larvae per 18-inch branch tip	
		1965	1966
Dalhousie	3	0.5	3.7
Montague	4	9.2	10.3
Oxford	4	2.0	3.4
N. Plantagenet	4	1.6	3.4

Pitted Ambrosia Beetle, Corthylus punctatissimus (Zim.)

Little change in population levels of this beetle occurred in 1966. Light infestations causing some mortality to sugar maple reproduction recurred in Beckwith, Goulbourn and Wolford townships (Table 7).

TABLE 7

Summary of Damage by the Pitted Ambrosia Beetle in Kemptville District in 1966

NOTE: Each sample consisted of sugar maple reproduction per square yard quadrat (deep shade).

Location by township	Av. basal diameter in inches	No. of trees examined	No. of trees infested
Beckwith	1/4"	40	2
Goulbourn	1/4"	60	3
Mountain	1/4"	36	0
Wolford	1/4"	50	3

European Spruce Sawfly, Diprion hercyniae (Htg.)

Population levels of this introduced spruce sawfly have remained at a low level in the district for the past decade. Little change in numbers occurred at sample points in 1966 (Table 8).

TABLE 8

Summary of European Spruce Sawfly Larval Counts
in Kemptville District in 1965 and 1966

Location by township	Av. d.b.h. of trees in inches	No. of larvae per 15-tray samples 1965	1966
Beckwith	6	9	1
Cambridge	5	2	0
Mountain	6	6	2
Oxford	5	0	2
Ramsay	6	0	0
S. Crosby	5	2	2

White-pine Shoot Borer, Eucosma gloriola Heinr.

Light damage by this shoot borer was observed commonly on the lateral branches of red, white, Scots and jack pine trees in Marlborough, Oxford, Mountain and Wolford townships. Small numbers occurred on mugho-pine in the Howard G. Ferguson nursery in Oxford Township.

Birch Leaf Miner, Fenusa pusilla (Lep.)

High population levels of this miner persisted in the district for the third consecutive year (see map). Severe browning of the foliage of white birch trees in all diameter classes recurred from Smiths Falls eastward to the Quebec border and as far north as Fitzroy Harbour. Discoloration and withering of foliage of shade trees caused much concern among private property owners, especially in the Constance Bay area and in the town of Kemptville.

Fall Webworm, Hyphantria cunea (Drury)

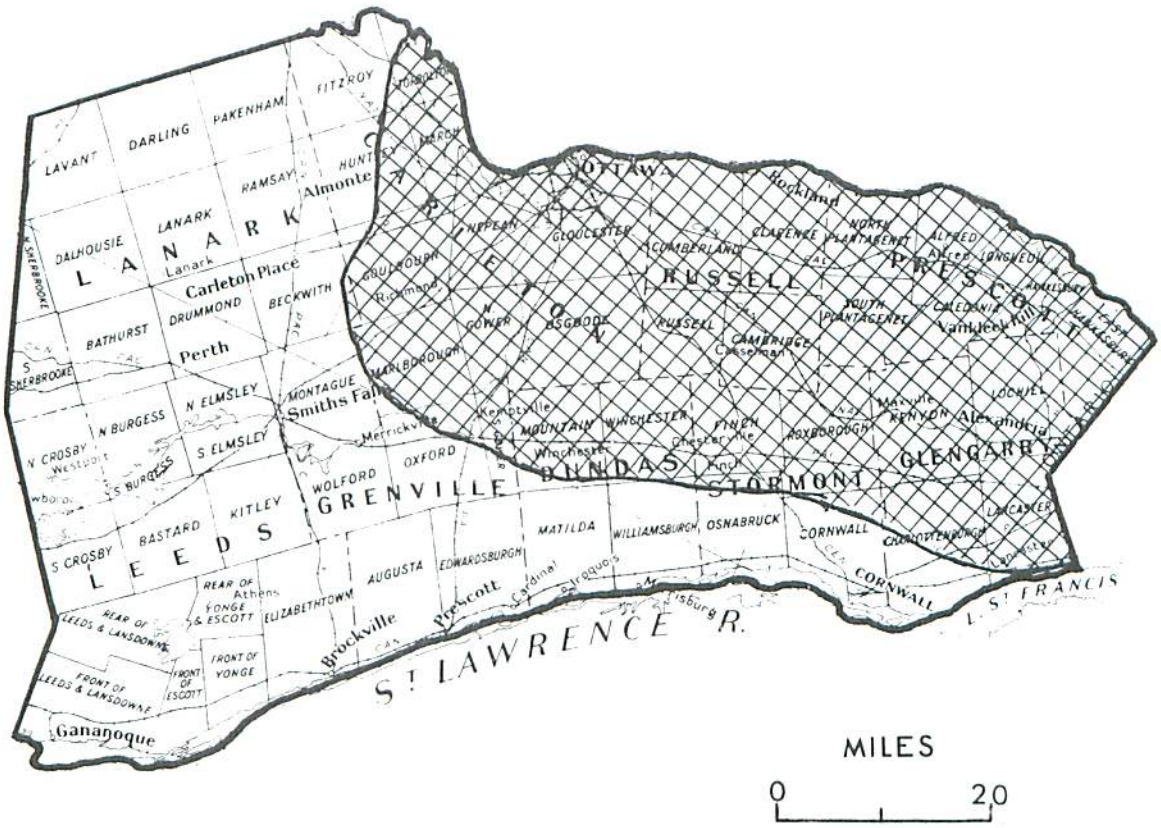
Small numbers of larval colonies were observed throughout the district in 1966. Counts made at seven widely separated locations averaged 2.9 tents per mile of roadside (Table 9).

TABLE 9

Summary of Fall Webworm Counts
in the Kemptville District in 1966

Location by township	Tree species	Number of tents per mile of roadside
Darling	ch	2
Edwardsburg	wE	5
Goulbourn	ch	3
Matilda	wE	6
Montague	wE	1
North Gower	tA	1
Osmabruch	wE	4
Wolford	wE	1

KEMPTVILLE DISTRICT



BIRCH LEAF MINER

Areas in which infestations occurred in 1966

Legend

Heavy infestation . . . . . ▨

Eastern Tent Caterpillar, Malacosoma americanum (F.)

Heavy infestations of this insect persisted northwest of Ottawa in the Constance Bay area where severe defoliation was observed. A small increase in population levels occurred at seven of nine sampling points (Table 10). The highest count was recorded in Drummond Township where 193 tents per mile of roadside occurred.

TABLE 10

Summary of Eastern Tent Caterpillar Colony Counts in Kemptville District in 1965 and 1966

Location by township	No. of tents observed per mile of roadside	
	1965	1966
Bathurst	21	37
Beckwith	6	23
Drummond	153	193
Goulbourn	73	19
Kitley	40	60
Lanark	3	14
Montague	33	53
N. Elmsley	48	30
Oxford	60	69

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Infestations of this caterpillar increased in extent and intensity in the district in 1966 (see map). Severe defoliation of most hardwood stands occurred in Carleton, Russell and the northern part of Dundas counties. Pockets of light defoliation were recorded in Beckwith and Finch townships. The insect caused most concern among cottage owners in the Constance Bay area along the Ottawa River, where trembling aspen and red oak trees were severely defoliated. Egg band counts taken in the fall indicate that defoliation in this area will be severe again in 1967 (Table 11).

TABLE 11

Summary of Forest Tent Caterpillar Egg Band Counts in Kemptville District in 1965 and 1966

Location	Av. d.b.h. of sample trees in inches	Av. no. of egg bands per tree		Forecast for 1967
		1965	1966	
Beckwith	2	0	.6	Light
Cambridge	3	7.3	3.7	Moderate
Clarence	3	-	2.6	Moderate
Finch	3	-	1.3	Light
Mountain	2	-	1.3	Light
McGower	2	-	0	Nil
Osgoode	3	7.0	6.6	Severe
Russell	3	-	2.0	Moderate
S. Plantagenet	3	9.6	6.6	Severe
Torbolton	3	3.3	8.6	Severe
Torbolton	3	-	1.6	Light

Cedar Sawfly, Monoctenus fulvus Nort.

A slight increase in numbers of this insect occurred at all sample points (Table 12). Light infestations were recorded in Beckwith, Huntley and Oxford townships. Four new sampling locations were established to study population trends.

TABLE 12

Summary of Cedar Sawfly Larval Counts in Kemptville District in 1965 and 1966

Location by township	Av. d.b.h. of trees in inches	Total no. of larvae per 15-tray sample	
		1965	1966
Beckwith	3	-	24
Cambridge	3	-	7
Goulbourn	4	1	2
Huntley	3	4	21
Nepean	3	-	7
Oxford	3	-	23
Ramsay	4	3	14

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

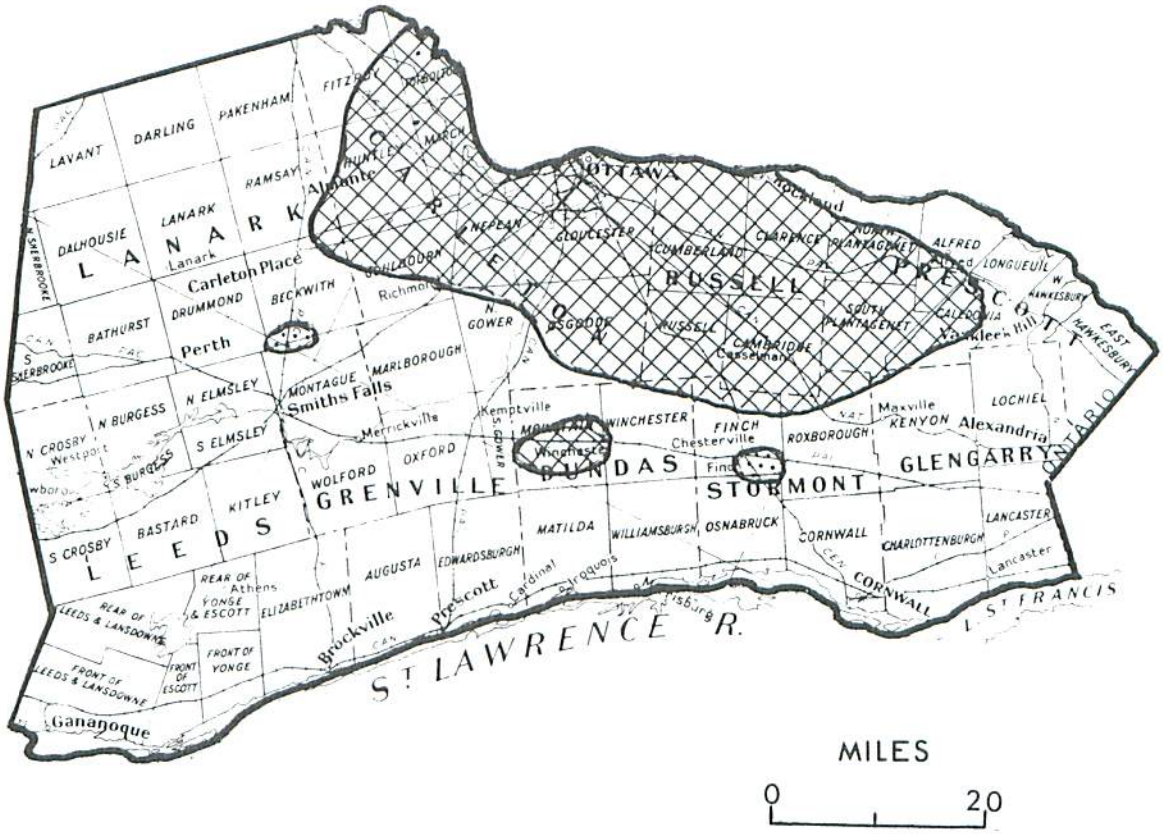
Little change in population levels of this sawfly occurred at quantitative sampling locations in 1966 compared with 1965 (Table 13). Two pockets of heavy infestation occurred on red pine trees in Darling and Wolford townships. Scattered colonies were widely distributed in red and jack pine plantations in the district. Control measures, using emulsifiable D.D.T. in a 2.5 per cent concentration with water and hand-operated pack sprayers, were again carried out by personnel of the Ontario Department of Lands and Forests. The spraying was confined to plantations under the Department's management in the Limerick and Larose forests. Control measures were effective and in most instances defoliation following spraying was negligible.

TABLE 13

Summary of Red-headed Pine Sawfly Colony Counts in Kemptville District in 1965 and 1966

Location by township	Tree Species	No. of trees examined	Average height in feet	No. of trees infested	Av. no. of colonies per infested tree	
					1965	1966
Bathurst	jP	50	16	10	2.0	4.0
Dalhousie	rP	100	16	4	3.6	1.5
N. Elmsley	rP	25	16	6	1.5	1.0
Oxford	rP	100	16	2	1.5	1.5
S. Crosby	rP	50	16	1	2.0	0.1
Wolford	rP	50	16	4	-	2.5

KEMPTVILLE DISTRICT



FOREST TENT CATERPILLAR

Areas in which defoliation occurred in 1966

Legend

Light defoliation . . . . . .

Moderate to severe defoliation . .

Jack-pine Sawfly, Neodiprion pratti paradoxicus Ross

Colonies of this sawfly were more abundant in 1966 than in 1965. Severe defoliation occurred in jack-pine plantations in Drummond, Bathurst, Oxford, North Gower and Cambridge townships. Moderate defoliation was recorded in Edwardsburg, Lanark, Marlborough and Goulbourn townships. Along the St. Lawrence River, west of Brockville, several colonies of this sawfly were observed feeding on pitch pine.

Maple Leaf Cutter, Paraclemensia acerifoliella (Fitch)

A sharp decline in population levels of this insect occurred throughout the district in 1966. The heavy infestation that occurred in Mountain Township in 1965 declined to very light intensity in 1966. Scattered larvae were observed on maple reproduction in Goulbourn and South Gower townships. No larvae were observed elsewhere in the district.

A Leaf Folding Sawfly, Phyllocolpa sp.

For the second year a slight decline in larval population of this insect occurred. Counts taken on poplar trees at six locations showed an average of 26.3 folds per 100 leaves in 1965, compared with 17.0 in 1966 (Table 14).

TABLE 14

Summary of Damage by a Leaf Folding Sawfly on Trembling Aspen in Kemptville District in 1965 and 1966

Location by township	No. of folds per 100 leaf samples	
	1965	1966
Alfred	22	18
Dalhousie	27	6
Goulbourn	31	30
Longeuill	23	-
N. Crosby	13	14
Oxford	40	27

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

Defoliation by this sawfly was observed commonly on open-grown spruce trees throughout the district in 1966. Moderate defoliation occurred on Norway spruce in the Limerick Forest. Groups of white spruce trees along highways and in nurseries suffered light to severe defoliation.

White-pine Weevil, Pissodes strobi (Peck)

Light infestations of this weevil recurred for the fifth consecutive year (Table 15). The highest incidence of damage was recorded in a white-spruce stand in Darling Township where six per cent of the leaders were weevilled.

TABLE 15

Summary of Damage to White Pine by the White-pine Weevil in Kemptville District in 1965 and 1966

NOTE: One hundred white pine trees were examined at each location.

Location by township	Av. d.b.h. of trees in inches	Degree of shade	Per cent of trees weevilled 1965	1966
Augusta	4	0	4	1
Bathurst	3	25	1	1
Cambridge	3	0	1	3
Dalhousie	3	10	3	-
Oxford	3	0	4	3
Stormont	2	0	6	4

Larch Sawfly, Pristiphora erichsonii (Htg.)

For the fourth consecutive year populations of this sawfly remained at a low level. Scattered colonies were observed on open-grown larch reproduction in Oxford, Finch, South Crosby and Clarence townships.

Mountain-ash Sawfly, Pristiphora geniculata (Htg.)

Very low numbers of this insect were observed in 1964 and 1965 but, in 1966 scattered colonies occurred on ornamental and shade trees throughout the district. A light infestation occurred on European mountain-ash in the Howard G. Ferguson nursery in Oxford Township.

TABLE 16

Summary of Miscellaneous Insects Collected in the Kemptville District

Insect	Host(s)	Remarks
Acleris variana (Fern.)	nS	Few larvae collected in Beckwith and Goulbourn townships.
Acrobasis betulella Hltst.	wB	Small numbers on seedlings in Kemptville Nursery.
Adelges abiets Linn	wS	Heavy infestations in Ramsay, Oxford and Wolford townships. Light in Darling Township.
Altica populi Brown	b Pl	Severe mining of foliage in Wolford and Mountain townships.
Altica ulmi Wood	wE	Small numbers observed feeding on underside of foliage on open-grown trees in the Limerick Forest.

TABLE 16 (continued)

Insect	Host(s)	Remarks
Aphrophora parallela Say	wP	Medium infestation on mature white pine, Bathurst Township.
Arge pectoralis (Leach)	wB	Scattered colonies observed on fringe trees in the Limerick Forest.
Caripeta divisata Wlk.	bF	Small numbers collected by beating tray samples in Bathurst Township.
Chionodes obscurusella Cham.	mM	Light infestation on nursery fringe trees, Oxford Township.
Coleophora betulivora McD.	wB	First known record of this insect in Kemptville District.
Dasyneura balsamicola (Lintn.)	bF	Small numbers observed on beating tray in Beckwith Township.
Elaphidionoides parallelum Newn.	rO	Light damage to roadside hosts in Front of Yonge Township.
Eupithecia sobrinata Hbn.	J	Very small numbers occurred in Beckwith Township.
Fenusa ulmi Sund.	wE	Light infestations on roadside elm in Nepean Township.
Gonioctena americana (Scheaf.)	tA	Scattered colonies on reproduction in Torbolton and Mountain townships.
Lepidosaphes ulmi (Linn.)	Do	Heavy infestation in Torbolton Twp.
Lithocolletis hamadryadella Clem.	rO	Low population on reproduction in South Elmsley Township.
Lithocolletis ostryarella Cham.	I	Small numbers observed in Beckwith Township.
Neodiprion abietis Complex	bF	Small numbers collected on beating tray in Bathurst Township.
Nematus hyalinus (Nort.)	w	Heavy infestations on open-grown hosts along the River St. Lawrence, Charlottenburg Township.
Nematus ventralis Say	w	Scattered colonies occurred in Marlborough and Oxford townships.
Nycteola frigidana Wlk.	w	Low population on open-grown hosts in Marlborough Township.
Pineus strobi (Htg.)	wP	Heavy infestations in the Larose Forest, small numbers in Oxford and Torbolton townships.
Plagiodera versicolora Laich.	w	Scattered colonies occurred on nursery stock, Oxford Township.

TABLE 16 (concluded)

Insect	Host(s)	Remarks
Phyllocnistis populiella Chamb.	tA	Small numbers observed on reproduction hosts in Ramsay and S. Gower twps.
Phytophaga piceae Felt	wS	Heavy infestation in a privately owned plantation in Lanark Township.
Prociphilus tessellatus (Fitch)	al	Small numbers observed in the Rideau Provincial Park.
Profenusa canadensis (Marlott.)	Haw	Heavy infestations in Carleton, Grenville and Dundas counties.
Profenusa thomsonii (Konow.)	wB	Very low numbers in Beckwith and S. Crosby townships.
Pseudexentera oregonana Wlshm.	tA	Small numbers of leaf rollers in Mountain and Torbolton townships.
Rhyacionia buskona Hein.	jP	Light damage in the Limerick Forest, Wolford Township.
Sparganothis directana Wlk.	cCh	Small numbers observed on open-grown hosts in Goulbourn Township.
Vespamia pini Kell	wS	Light infestations on wind break hosts in Front of Leeds Lansdowne Township.
Zeiraphera ratzeburgiana Ratz	wS	Commonly found in the Limerick Forest, Wolford Township.