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Southeastern Forest Region, 1967
Status of Insects in the Lindsey
District

Thomson, M.J.

Information Report O-X-57
(Forest Research Laboratory, Ontario Region)

1967

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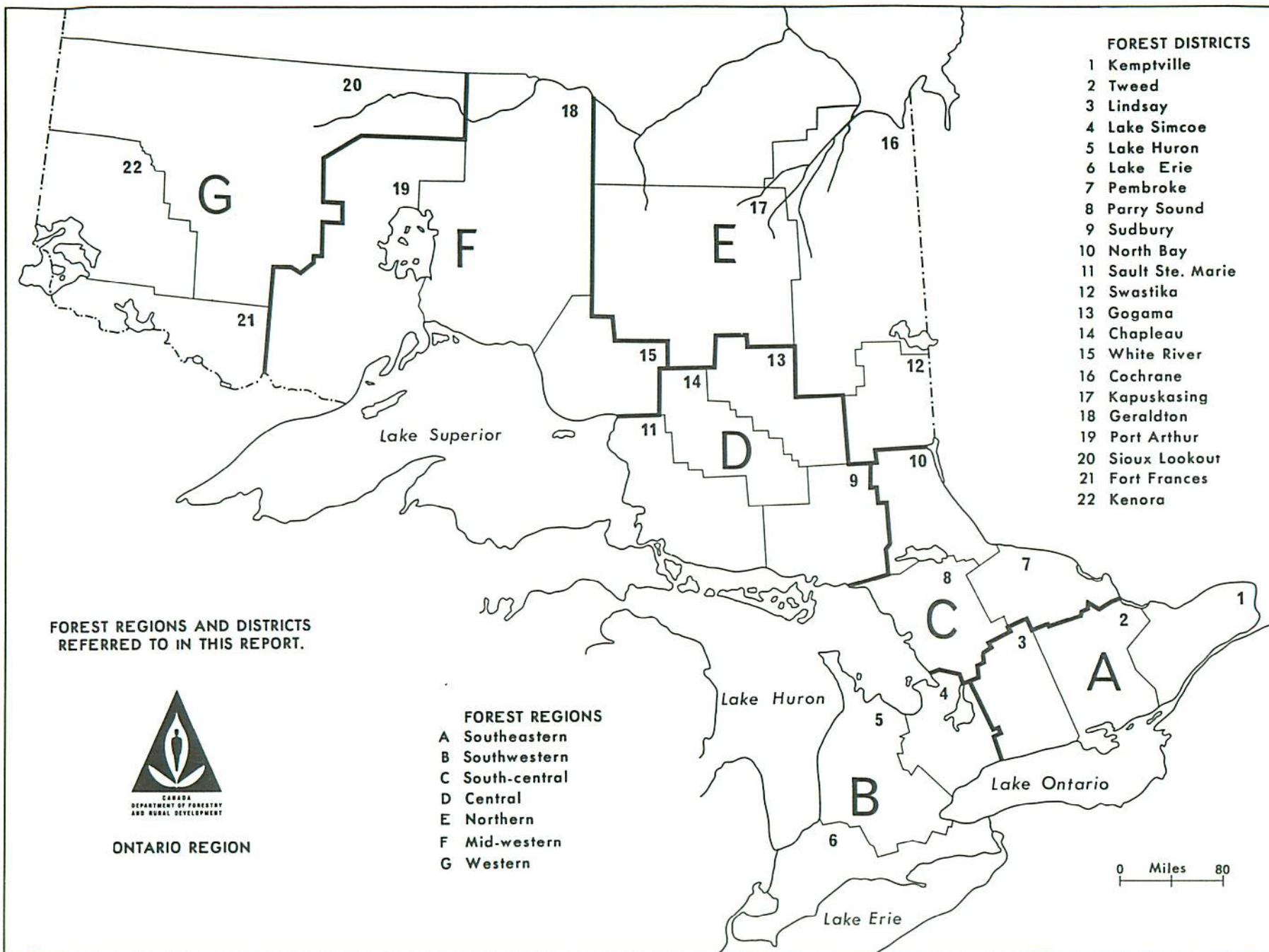
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- 3 Lindsay
- 4 Lake Simcoe
- 5 Lake Huron
- 6 Lake Erie
- 7 Pembroke
- 8 Parry Sound
- 9 Sudbury
- 10 North Bay
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REFERRED TO IN THIS REPORT.**



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FOREST REGIONS

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- B Southwestern
- C South-central
- D Central
- E Northern
- F Mid-western
- G Western

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FOREWORD

Population levels of the spruce budworm increased sharply in widely-separated parts of Ontario in 1967. Heavy infestations occurred in the Burchell Lake area in Port Arthur District and in woodlots in parts of Pembroke, Tweed and Kemptville districts. A light infestation persisted east of Chapleau in the Central Forest Region. The Burchell Lake infestation is of particular concern because of the nature of the forest in that area. Stands currently infested, as well as those to the north as far as Lac Des Mille Lacs, contain considerable mature balsam fir and white spruce which are highly susceptible to attack by the spruce budworm.

For the second consecutive year, weather conditions during May had a pronounced effect on infestations of the forest tent caterpillar. Mortality of eggs and newly-emerged larvae greatly reduced population levels of this pest. The only major areas of infestation remaining in the Province were in the eastern part of Fort Frances District and the southern part of Sault Ste. Marie District.

Two species of sawflies were of major importance in pine plantations. The European pine sawfly continued to extend its range in southeastern Ontario and two new centers of infestation were found on Manitoulin Island. The red-headed pine sawfly caused severe defoliation in red pine shelterbelts and plantations at numerous locations in the central and southern parts of the Province.

Intensive surveys were continued to determine the distribution and incidence of Dutch elm disease and Scleroderris-canker of pine. The discovery of Ceratocystis ulmi (Buism.) C. Moreau in Sault Ste. Marie constituted a marked westward extension of the range of the disease caused by this pathogen. Scleroderris-canker of pine continued to cause severe losses of young red pine and, to a lesser extent, jack pine in numerous plantations in central and northern Ontario. By comparison, damage in southern Ontario was negligible.

Diseases of spruce were caused by Cytospora kunzei Sacc. and Polyporus tomentosus Fr. at widely-separated points in southern Ontario and pockets of infection of Fomes annosus (Fr.) Cke, root-rot persisted in several red pine plantations in Lindsay, Lake Simcoe and Lake Erie districts. Details on the distribution and damage caused by these and other forest diseases and insects are contained in the regional and district sections of this report.

J. E. MacDonald

SOUTHEASTERN FOREST REGION

1967

INTRODUCTION

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INTRODUCTION

Southeastern Forest Region

The following report deals with the status of forest insects and tree diseases in the Southeastern Forest Region in 1967. Tree disease conditions are presented on a regional basis and data on insects are contained in district sections of the report.

The spruce budworm, European pine sawfly, and forest tent caterpillar were the most noteworthy insects in the region. Marked increases in population levels of the spruce budworm occurred in Kemptville and Tweed districts. The distribution of the European pine sawfly extended over a much larger area in Lindsay and Tweed districts than in the past. In contrast, populations of the forest tent caterpillar decreased markedly from large areas of infestation in Tweed and Kemptville districts in 1966 to small pockets of infestation in Kemptville District and endemic populations in Tweed District.

First records of three insects in the Province were obtained. A nodule maker, Petrova comstockiana Fern. on pitch pine and a casebearer, Fumeria casta Pall. on red pine were found in Kemptville District. A leaf miner, Fenusini tribe was collected at scattered points in the southern parts of Tweed and Lindsay districts.

Forest pathology surveys revealed the presence of Scleroderris lagerbergii Gremmen, a canker of pines in each district in the region. An increase in the incidence of Cytospora kunzei Sacc., a branch and stem canker of spruces was observed and a marked increase in the incidence of Dutch elm disease Ceratocystis ulmi (Buism.) C. Moreau occurred throughout the region. The sweet fern blister rust Cronartium comptoniae Arth., a rust infecting jack pine, was recorded for the first time in the region.

A total of 1102 insect and disease samples were submitted to the laboratories and approximately 185 extension and service calls were answered during the field season.

Appreciation is again expressed for the co-operation given to technicians during the field season by Department of Lands and Forests personnel and others.

M. J. Thomson

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

Current mortality and symptoms of this disease were widespread throughout the region in 1967. Small diameter class trees appeared to be more subject to infection than in previous years, with tree mortality often occurring within six weeks after the first symptoms were observed.

In the Kemptville District, one area of extremely high incidence occurred along the north shore of the St. Lawrence River from Prescott to approximately 2 miles west of Brockville. Particularly severe infections occurred in the city of Brockville where 86 per cent of the trees examined showed symptoms of the disease (Table 1). Elsewhere in the district incidence was lower. The next highest incidence recorded was in South Elmsley Township where 15 per cent of the trees examined were diseased.

A marked increase in numbers of trees infected was observed in the Tweed District, especially in the southern parts of Frontenac and Lennox-Addington counties. Elms along Highway 33 between the towns of Bath and Adolphustown were most severely damaged. A count of 150 trees in this area showed that 61 of the trees displayed symptoms of infection.

TABLE 1

Summary of the Occurrence of Dutch Elm Disease Symptoms in the Southeastern Region in 1967

Location (township)	No. of trees examined	Per cent of trees with characteristic symptoms
<u>Lindsay District</u>		
Verulam	100	12
Mariposa	100	8
Darlington	100	11
Galway	100	6
Brighton	100	2
Asphodel	100	9
<u>Kemptville District</u>		
South Elmsley	100	15
Front of Leeds & Lansdowne	100	14
Elizabethtown	100	86
Drummond	100	6
Cumberland	50	2
<u>Tweed District</u>		
South Fredericksburg	150	40

Ink Spot of Aspen, Ciborinia whetzellii (Seav.) Seav.

A decline in incidence of this disease occurred in the Region in 1967. A single pocket of heavy infection occurred near Chaffeys Locks in the Kemptville District. Single pockets of light infection occurred near Denbigh in the Tweed District and in Northumberland, Victoria, and Haliburton counties in the Lindsay District. Occasional infected trees were found throughout the remainder of the region.

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

Infection of white pines by this pathogen remained at much the same low level as in 1966. Light mortality of seedlings occurred in transplant beds in the Howard G. Ferguson Nursery in Kemptville District. White pine regeneration was most commonly attacked in Tweed District. Light mortality was observed along Highway 41 in Lennox and Addington counties, in Lyndoch Township, Renfrew County, and in Pittsburgh Township, Frontenac County. In Lindsay District diseased trees were most commonly observed in natural stands north of Four Mile and Stoney lakes in the northern counties. Light infections also occurred in small trees in plantations in the Northumberland and Victoria forests. Quantitative sampling at one point in each forest revealed four and three per cent mortality respectively.

A Branch and Stem Canker, Cytospora kunzei Sacc.

This disease was found on white and Norway spruce at several locations in each of the three districts of the region. In the Kemptville District moderate mortality was observed in a large windbreak of white spruce in Cambridge Township. Light branch mortality occurred on a white spruce windbreak in the Kemptville Nursery, and bleeding cankers were observed on branches and stems of other trees.

Five white spruce and Norway spruce windbreaks in the southern parts of Frontenac and Lennox-Addington counties sustained high mortality, and all of the living trees were severely infected.

Several Norway spruce trees at the Orono Nursery in Lindsay District were infected and a low incidence of the disease occurred on white and Norway spruce trees in the Victoria County Forest. At both locations only branch mortality occurred.

Fomes Root Rot, Fomes annosus (Fries.) Cooke

Aerial surveys of county forests and plantations throughout the Southeastern Forest Region in late August and early September revealed little change in the status of this butt and root disease. No new centres of infection were found. Light tree mortality occurred in two infected areas reported in the Northumberland County Forest in Lindsay District in 1966.

Cedar Leaf Rusts, Gymnosporangium globosum Parl. and
Gymnosporangium juniperi-virginianae Schw.

These two organisms which cause the well-known cedar apple galls, were widespread throughout the southern part of Tweed District and the southwestern part of Kemptville District.

In the Tweed District, thousands of red juniper trees throughout Prince Edward County and the southern third of Hastings, Lennox-Addington, and Frontenac counties were infected by G. globosum. Widely-varying degrees of infection were observed on individual trees within the same stand, some trees having small numbers of galls and adjacent trees supporting 200 or more galls. G. juniperi-virginianae was observed less commonly.

In the Kemptville District, areas of heavy infection of G. juniperi-virginianae occurred on red juniper near Westport in North Crosby Township and near Lyndhurst in Rear of Leeds and Lansdowne Township. Light infections occurred along Highway 401 east of the Ivy Lea Bridge in Lansdowne and Escott townships.

The alternate hosts, chiefly leaves and fruit of apple and hawthorn, were heavily infected by Gymnosporangium spp. at numerous locations in the Lindsay, Tweed, and Kemptville districts.

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

This disease was observed at scattered locations throughout the region on fringe and open-grown trembling aspen regeneration. In the Lindsay District, damaged shoots were observed at scattered points in Haliburton County, in the North part of Victoria County, and at one point north of Peterborough in Peterborough County. Examination of 20 trees in Cardiff Township and 25 trees in Harcourt Township in Victoria County revealed that 70 per cent of the trees in Cardiff Township were lightly infected and 100 per cent in Harcourt Township were moderately infected.

In the Tweed District, aspen reproduction on a large area of cut-over land in McClure Township was heavily infected.

Light infections on Carolina poplar nursery stock occurred in the Kemptville Nursery. Elsewhere in the district only occasional infected shoots of trembling aspen were found.

Die-back of Pines, Scleroderris lagerbergii Gremmen

Intensive surveys for this fungus were carried out in coniferous plantations and natural stands throughout the region in 1966 and 1967. In 1966, the disease was recorded at one point in Kemptville District. In 1967, the distribution was extended to a second point in Kemptville District and to one point in each of Tweed and Lindsay districts.

Severe damage occurred on the lower branches of small red pine in a plantation in Lanark Township, Kemptville District. Light mortality of Scots pines was caused by the disease in a mixed Scots and red pine plantation near Moira Lake in Tweed District. Typical symptoms of the disease were observed on a small number of trees in the area, indicating

that an increase in mortality will occur. In Lindsay District the disease caused light damage to the lower branches of red pines in a roadside shelterbelt approximately seven miles east of Minden in Haliburton Township.

Deterioration of the Current Foliage of White Pine

Deterioration of the current year's foliage of white pine growing in natural stands was caused by an unknown agent in the area immediately east of Bobcaygeon and north of Stoney Lake in Peterborough County, Lindsay District. Conspicuous discolouration of the terminal half of needle clusters was evident by mid-summer. Field observations indicated that affected trees were generally confined to shallow dry sites.

Drought Injury

Severe drought conditions occurred in part of the Southeastern Region from late June until early August in 1966, causing deterioration and some tree mortality by late fall. In 1967, surveys were carried out in these areas to determine if an increase occurred in deterioration and mortality.

Examination of small red pine planted in scattered openings in shallow soils in Methuen Township, Lindsay District, revealed that current mortality of branch tips, whole branches and additional light mortality did occur. Extensive damage also occurred in a red pine plantation near Orono in Clarke Township to trees averaging two feet in height.

Light damage and premature foliage discolouration was observed in the southern half of Frontenac County, Tweed District. Generally the condition was confined to trees on shallow soils and ridges.

In Kemptville District, drought conditions caused by below normal precipitation recurred for the second consecutive year between Gananoque and Brockville along the north shore of the St. Lawrence River. Conspicuous discolouration and premature dropping of deciduous foliage occurred.

Salt Damage

Foliage discolouration due to salt injury has occurred commonly throughout the region in recent years. The most serious damage in 1967 occurred in the Tweed District where repeated exposure to salt has resulted in light mortality in red pine shelterbelts at five locations along Highway 17 in Horton and McNab townships. Numerous weakened trees at these locations were heavily infested by bark beetles that will undoubtedly cause further mortality.

Light mortality of red and white pine plantings occurred on Highway 7 east of Peterborough in the Lindsay District and of white cedar and red pine along Highways 43 and 16 in the Kemptville District.

As in previous years the most severe damage occurred along the approaches to curves, hills, and intersections and on the east side of roads running north and south.

Maple Deterioration

This condition was conspicuous along heavily-travelled paved roads throughout the region, but little change in incidence was noted (Table 2). Deterioration was less frequently observed along roads where little or no salt or calcium is used as a road conditioner.

In the Kemptville District moderate damage was noted along Highway 16 between Kemptville and Port Johnson and along Highway 31 between Highway 43 and Ottawa.

TABLE 2

Summary of the Occurrence of Deterioration to Sugar Maple Trees in the Southeastern Region in 1967

Location (township)	Number trees examined	Per cent of trees damaged
<u>Kemptville District</u>		
Oxford	100	12
Winchester	50	30
Osgoode	100	17
Bastard	100	14
Drummond	100	12
Dalhousie	100	5
<u>Tweed District</u>		
Bedford	50	11
Pittsburgh	100	14
South Fredericksburg	100	36
Kingston	100	22
Sidney	100	27

Winter Drying of Conifers

This condition was again observed commonly in the region in 1967. In the Lindsay District severe damage occurred in a white pine seedling compartment at the Orono Nursery. Examination of 1000 seedlings revealed 40 per cent mortality. Department of Lands and Forests reports show that a thaw in January, 1967 removed the snow cover from the tops of the seedlings, and subsequent exposure to high winds and low temperatures probably caused the damage. Light damage also occurred in a thinned red-pine plantation in Lutterworth Township.

Winter drying was much less evident in the Tweed District in 1967 than in previous years and although the condition occurred commonly in Kemptville District, no permanent damage resulted.

TABLE 3

Other Noteworthy Diseases in the Southeastern Region in 1967

Organism	Host(s)	Remarks
<i>Aecidium hydroidum</i> Berk. & Curt.	leather wood	Small centre of heavy infection near McArthurs Mills, Tweed District
<i>Apiosporina collinsii</i> (Schw.) Hoen.	June berry	Single clump of trees heavily infected in Cavendish Township, Lindsay District
<i>Armillaria mellea</i> (Fr.) Kummer	wP, scP	Caused light mortality in a mixed plantation in Nepean Township, Kemptville District
<i>Cenangium ferruginosum</i> Fr.	rP	Light infections in single red pine plantations in each of Haliburton and Northumberland counties, Lindsay District
<i>Chrysomyxa weirii</i> Jacks.	wS	Light infection near Franktown, Kemptville District
<i>Coleosporium solidaginus</i> (Schw.) Thum.	rP	Light infections in plantations in the Larose Forest, Clarence Township, Kemptville District
<i>Cronartium comptoniae</i> Arth.	jP	Light infection near Constance Bay, Kemptville District. First record in the Southeastern Region
<i>Cytospora abietis</i> Fr.	bF	Single collection from Peterborough County, Lindsay District
<i>Darluca filum</i> (Biv. Bern. ex Fr.) Cast.	twitch grass	Single collection, Oxford Township, Kemptville District. First herbarium record of this parasite of rust diseases
<i>Dibotryon morbosum</i> (Schw.) Theiss. & Syd.	cherry, plum	Heavy infections recorded near McArthurs Mills, Tweed District, in Drummond and Cambridge townships, Kemptville District, and in the Northumberland Forest, Lindsay District. Light infections were common throughout the region
<i>Gnomonia ulmea</i> (Sch. ex Fr.) Thum.	rE, sE	Heavy infection near Eganville, Tweed District. Light in Smith Township, Lindsay District

TABLE 3 (concluded)

Organism	Host(s)	Remarks
<i>Gymnosporangium clavipes</i> Cke. & Pk.	eMo, Haw.	Collected on fruit of European mountain ash in Victoria County and on hawthorn in Northumberland County, Lindsay District
<i>Hypoxyylon mammatum</i> (Wahl.) Miller	tA	Light infections in most aspen stands throughout the region
<i>Peniophora duplex</i> Burt	jP	Single collection from Manvers Township, Lindsay District
<i>Pestalotia</i> sp.	Austrian pine	Light infection in a plantation at Orono Nursery, Lindsay District
<i>Pestalotia funerea</i> Desm.	ewC	Moderate shoot mortality in Limerick Township, Tweed District
<i>Puccinia coronata</i> Cda.	twitch grass	Light infection in Oxford Township. First herbarium record of the telial stage of this disease
<i>Pucciniastrum epilobii</i> Otth.	bF	Very light infection near Kinmount and near Minden in Lindsay District
<i>Rhytisma acerinum</i> Pers. ex Fr.	rM	Light infections in Cambridge and South Gower townships, Kemptville District
<i>Rhytisma salicinum</i> Pers. ex Fr.	W	Light infection in Clyde Township, Lindsay District
<i>Scoleonectria cucurbitula</i> (Tode ex Fr.) Booth	rP, wP	Heavy infections associated with salt damage on roadside red pine in McNab Township, Tweed District. Light on white pine in Hope Township, Lindsay District
Ash dieback	wAs	A high degree of mortality in roadside plantings in the south and east parts of Tweed District
Frost injury	wS	Light shoot mortality near Carp and near Franktown. Severe distortion of new growth in the Larose Forest, Kemptville District
Needle drop on white pine	wP	Considerable loss of 1966 foliage in a white pine seed orchard in Orono Nursery, Lindsay District

STATUS OF INSECTS IN THE LINDSAY DISTRICT

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Cedar Leaf Miners, Argyresthia spp. and Pulicalvaria thujaella Kft.

Heavy infestations of cedar leaf miners recurred for the sixth consecutive year in the District. Severe damage to eastern white cedar occurred south of a line running roughly through Eldon, Harvey and Belmont townships.

Defoliation of cedars in each of the past six years has caused marked thinning of tree crowns and considerable branch mortality (see photograph). In 1967, scattered tree mortality occurred on the fringes of stands and in open-grown clumps in pasture fields. Further mortality can be expected if the infestation persists.

Spruce Budworm, Choristoneura fumiferana Clem.

Significant increases in population levels of the spruce budworm occurred throughout the southeastern part of Ontario in 1967. In Lindsay District, a light infestation caused approximately four per cent defoliation in a mixed Norway and white spruce plantation in Clarke Township. Larvae were more abundant in beating samples in a plantation in Cartwright Township than in 1966. Small numbers were collected at two widely-separated points elsewhere in the District.

Larch Casebearer, Coleophora laricella Hbn.

Appreciable increases in numbers of this casebearer occurred in 1967 (Table 4). Larvae were found in numerous larch stands throughout the District.

Unusually high populations caused conspicuous browning of the foliage in a European larch plantation stocked with trees averaging eight inches in diameter in Clarke Township. A pocket of medium infestation also caused discolouration of the foliage of larch regeneration near Norwood in Asphodel Township. Light infestations were recorded in Harvey and Cardiff townships north of Peterborough. Small numbers were collected from 20 larch stands elsewhere in the District.

Mass collections of larvae and pupae were submitted to the Forest Insect Laboratory from the heavy infestation in Clarke Township to determine the incidence of parasitism in the area. Examination revealed that 8.8 per cent of the larvae and 3.2 per cent of the pupae were parasitized.

TABLE 4

Summary of Larch Casebearer Counts in the Lindsay District 1965 to 1967

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

Location (township)	Tree species	Av. d.b.h. of sample trees in inches	Av. no. of larvae per 18-inch branch tip		
			1965	1966	1967
Cardiff	tL	4	0.3	0.2	4.0
Asphodel	tL	2	1.2	1.0	14.5
Snowdon	tL	3	0.1	0.5	1.1
Hamilton	tL	8	4.7	4.4	5.5
Haldimand	eL	8	0.2	0.0	0.5
Harvey	eL	2	1.0	2.2	4.5
Anson	eL	6	0.2	0.3	1.0
Clarke	eL	8	-	-	25.3

Nursery Pine Sawfly, Diprion frutetorum (F.)

Low populations of this sawfly persisted in Scots and red pine plantations throughout the District. Quantitative sampling at permanent sample points has revealed no significant change in numbers since 1965 (Table 5).

TABLE 5

Summary of Nursery Pine Sawfly Larval Counts in the Lindsay District
1965 to 1967

Note: Counts are based on the average number of larvae taken on 15 tray samples at each point.

Location (township)	Tree species examined	Av. d.b.h. of sample trees in inches	Av. no. of larvae per tray		
			1965	1966	1967
Somerville	rP	4	1.1	0.1	0.1
Haldimand	ScP	3	1.5	2.0	3.0
Dalton	ScP	3	-	-	0.3
Clarke	ScP	2	0.5	0.5	0.4
Burleigh	ScP	6	0.1	0.0	0.7
Fenelon	ScP	8	0.7	0.1	0.7

European Spruce Sawfly, Diprion hercyniae (Htg.)

Population levels of this sawfly were low on spruce trees throughout the District. The numbers of larvae in quantitative samples averaged less than three per tray at each of five points (Table 6).

TABLE 6

Summary of European Spruce Sawfly Larval Counts in the Lindsay District
1965 to 1967

Location (township)	Tree species	Av. d.b.h. of sample trees in inches	Av. no. of larvae per 15-tray sample		
			1965	1966	1967
Stanhope	wS	12	1.2	0.3	2.3
Glamorgan	wS	8	-	-	1.0
Cardiff	wS	10	0.6	0.6	2.7
Somerville	Ns	14	1.5	1.2	1.3
Clarke	wS	5	-	-	0.0

Eastern Pine Shoot Borer, Eucosma gloriola Heinr.

Infestations of this shoot borer have been reported on pines for more than a decade in the Lindsay District. In 1967, white pine was most severely attacked.

Examination of 100 white pine trees in a seed orchard in Orono Nursery and in a white pine plantation in Somerville Township showed a wide range in numbers of infested shoots. In the former 20 terminal and 95 lateral shoots were damaged, whereas in the latter only one terminal and four laterals were infested.

Although the insect causes little noticeable damage to host trees when lateral shoots are attacked, it frequently attacks and kills terminals thus causing malformation of the host trees (see photograph).

Pine Bud Moth, Exoteleia dodecella Linn.

Populations of this bud moth were observed more commonly in the southern half of the District than in 1966. A moderate infestation occurred on a Scots pine shelterbelt north of Scugog Lake in Mariposa Township. Scots pine plantations were lightly infested in Asphodel Township in Peterborough County, Ops Township in Victoria County and Darlington Township in Durham County.

Examination of 200 bud clusters (50 from each of four trees) in Mariposa and Darlington townships revealed that 17 and 10 per cent respectively were infested.

Jack Pine Needle Miner, Exoteleia pinifoliella Cham.

Population levels of the jack pine needle miner increased markedly in 1967. Severe mining of the previous year's foliage caused conspicuous discolouration in two jack pine plantations in Haldimand Township. Observations revealed that as much as 90 per cent of the susceptible foliage was mined. Small numbers of larvae were collected at three widely-scattered points in Haliburton County.

Birch Leaf Miner, Fenusa pusilla (Lep.)

This leaf miner was found at three points in 1967 compared with seven in 1966. Heavy infestations were observed on ornamental birch trees in the towns of Minden, Norwood, and on a shelterbelt at the junction of Highways 401 and 33 north of Trenton. More than 75 per cent of the foliage was mined in these areas. Roadside white birch regeneration was lightly infested at widely-scattered points in the eastern part of Haliburton County.

A Leaf Miner on White Birch, Fenusini tribe

This leaf miner was first recorded in Ontario on white birch south of Harwood in Hamilton Township in 1967. Subsequent surveys revealed a light infestation on fringe trees near Gore's Landing in the above township and small numbers in Haldimand Township, directly east of Hamilton Township and in Manvers Township in Durham County. Further distribution surveys will be carried out in 1968.

Root and Stump Weevils, Hylobius pales (Hbst.) and Pissodes approximatus Hopk.

Appreciable damage caused by these weevils recurred in Christmas tree plantations in the southern part of the District where harvesting had been done. High numbers of branch tips were killed by adult feeding in a Scots pine plantation in the northwest part of Haldimand Township. Conspicuous flagging was observed at widely-scattered points elsewhere in the southern part of the District.

Pine Engraver, Ips pini Say

Records show that populations of this bark beetle were at a low ebb in the decade prior to 1966 when heavy infestations occurred and caused tree mortality in red and Scots pine plantations at scattered points.

Extensive surveys carried out in 1967 revealed very little damage caused by this insect. Light mortality was observed in a small red pine plantation near Orono and along fringes of red pine plantations in the Victoria County Forest.

Eastern Tent Caterpillar, Malacosoma americanum (F.)

No appreciable change occurred in the status of this insect except in Harvey Township north of Peterborough where the numbers of tents decreased from 36 per mile of roadside in 1966 to four in 1967 (Table 7). Widely-scattered cherry shrubs were heavily infested along fence rows in Ops Township, east of Lindsay.

TABLE 7

Summary of Eastern Tent Caterpillar Colony Counts in the Lindsay District
1965 to 1967

Location (township)	Tree species	Number of tents observed per mile of roadside		
		1965	1966	1967
Harvey	cCh	130	36	4
Percy	cCh	11	0	4
Glamorgan	cCh	5	1	3
Lutterworth	pCh	102	0	10
Manvers	cCh	2	0	0

Monoctenus spp. Sawflies

Surveys were initiated in 1967 to determine the distribution of the Monoctenus spp. in the province. Three species were recorded in the Lindsay District.

The cedar sawfly Monoctenus fulvus Nort. was distributed throughout the District on eastern cedar. Monoctenus juniperinus MacG. was found in small numbers on red juniper at three points within the range of this tree species in the southeastern part of the District. Extensive sampling on common juniper revealed small numbers of Monoctenus suffusus (Cress.) larvae at widely-separated points.

Balsam-fir Sawfly, Neodiprion abietis complex

Larval populations of this sawfly decreased to low levels in 1967. Light damage was caused in Bexley Township by the larval population that occurs in early summer. A colony count in the area revealed an average of 10 colonies per tree.

Small numbers of larvae of the late summer population were found in Dysart and Monmouth townships. A negative count was obtained at a permanent sample point near Highland Grove in Cardiff Township where the insect had persisted for several years.

Red-headed Pine Sawfly, Neodiprion lecontei (Fitch)

Infestations of this sawfly were confined to Haliburton and the northern parts of Victoria and Peterborough counties in 1967 (see map). Heavy infestations occurred for the second consecutive year on small diameter red pine trees in plantations in Stanhope and Glamorgan townships and a new heavy infestation was found in Snowdon Township. Examination of the infested plantations in Stanhope and Glamorgan townships revealed that a decline both in the percentage of trees infested and the average number of colonies per tree occurred in 1967 (Table 8). Medium infestations occurred on a windbreak containing trees averaging 12 feet in height in Minden Township and in a mixed Scots and red pine plantation in Snowdon Township.

Pockets of light infestation were observed on windbreaks and plantations in Somerville Township, Victoria County; in Cavendish, Chandos and Methuen townships, Peterborough County, and in Cardiff and Dysart townships, Haliburton County.

Control measures using an emulsifiable DDT concentrate in water were carried out by personnel of the Ontario Department of Lands and Forests in approximately 800 acres of plantations under the Department's management. The chemical was applied while larvae were in their early instars with the result that generally good control was obtained and defoliation was negligible. For example, in the Stanhope Township plantation surveys revealed that previous to chemical spraying 75 per cent of the trees were infested by an average of 1.7 colonies per tree. However, 10 days after spraying only three colonies were found on approximately 200 trees.

TABLE 8

Red-headed Pine Sawfly Larval Colony Counts made on Red Pine Trees at six Points in the Lindsay District in 1967

Location (township)	Av. d.b.h. of sample trees in inches	No. of trees examined	No. of trees infested	Av. no. of colonies per infested tree
Stanhope	2	100	75	1.7
Cardiff	2	50	3	1.0
Cavendish	3	100	11	1.0
Somerville	3	100	15	1.8
Lutterworth	3	100	32	1.1
Chandos	2	100	11	1.3

Jack-pine Sawflies, Neodiprion pratti banksianae Roh.
Neodiprion pratti paradoxicus Ross.

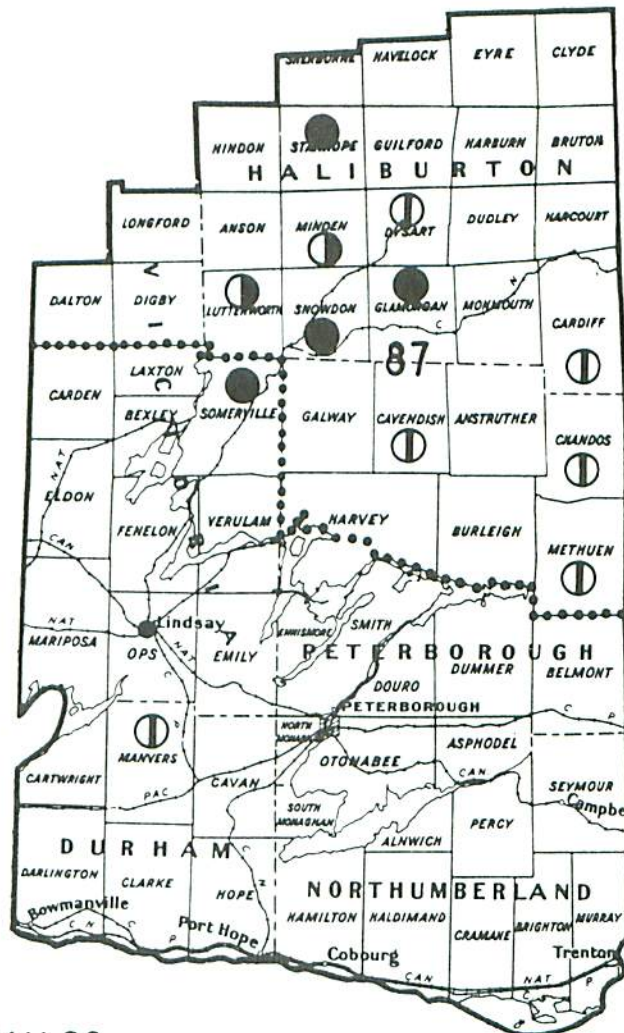
Populations of N. pratti banksianae declined for the fourth consecutive year to reach a low ebb in 1967. Scattered colonies were found on the fringe of jack pine plantations in Dalton and Somerville townships, Victoria County. Colony counts on ten fringe trees at each point averaged one colony per tree.

A heavy infestation of N. pratti paradoxicus recurred and caused severe defoliation of the previous year's foliage in a mixed jack and Scots pine plantation in Haldimand Township, Northumberland County. Small numbers of colonies were found at only one of seven points where light infestations or low populations were reported in 1966.

European Pine Sawfly, Neodiprion sertifer (Geoff.)

The distribution of this sawfly has increased each year since it was first recorded in Lindsay District in 1961, and in 1966 occurred in scattered plantations over an area of approximately 700 square miles. In

LINDSAY DISTRICT



RED-HEADED PINE SAWFLIES

Locations where infestations occurred
in 1967

Legend

- Light infestation (circle with vertical line)
- Medium infestation (half-filled circle)
- Heavy infestation (solid black circle)

1967, a twofold increase in the distribution occurred. Larval colonies were found 30 miles north and 15 miles northeast and east of the 1966 distribution boundary (see map).

Heavy infestations recurred in Darlington and Clarke townships and new heavy infestations were observed in Cartwright, Clarke and Hope townships in Durham County. Large numbers of larvae migrated in search of food in the Cartwright Township infestation. Scots pine trees averaging four feet in height were denuded of all but the current year's foliage (see photograph). Quantitative sampling in the area before migration occurred, revealed an average of 12.5 colonies per tree (Table 9).

Light-to-moderate defoliation was observed in Scots pine plantations and on windbreaks in Haldimand, North Monaghan and Mariposa townships. Scattered colonies were found in Eldon and Asphodel townships.

Control operations using a variety of chemical insecticides and a polyhedral virus disease, have undoubtedly helped to control this insect in many plantations in past years. However, many untended plantations adjacent to areas where control is carried out contain high populations which constitute continuing sources of infestation.

TABLE 9

Summary of European Pine Sawfly Larval Colony Counts in the Lindsay District 1965 to 1967

Location (township)	Tree species	Av. d.b.h. of sample trees in inches	No. of trees infested	Av. no. of colonies per tree		
				1965	1966	1967
Cartwright	ScP	2	100	0.2	3.6	12.5
Clarke	ScP	2	100	-	5.5	7.5
Darlington	ScP	2	100	19.2	22.0	9.0
Haldimand	ScP	2	10	10.0	21.0	1.1
North Monaghan	Austrian P	2	11	-	-	2.0

White-pine Weevil, Pissodes strobi (Peck)

No appreciable change in the status of the white pine weevil was observed in 1967. Pockets of heavy infestation occurred in a Scots pine plantation in Glamorgan Township and in a white pine plantation in Somerville Township (Table 10). Moderate damage occurred in white pine plantations in Galway and Haldimand townships. Elsewhere in the District, small numbers of leaders were damaged in plantations and along roadsides at widely-scattered points.

TABLE 10

Summary of Damage by the White-pine Weevil in the Lindsay District in 1966 and 1967

Note: One hundred trees were examined at each location.

Location (township)	Tree species	Av. d.b.h. of sample trees in inches	Per cent of trees weevilled	
			1966	1967
Galway	wP	3	9	14
Glamorgan	ScP	2	-	24
Somerville	wP	4	-	24
Haldimand	wP	3	-	15

Balsam Bud-mining Sawfly, Pleroneura borealis Felt.

Marked increases in population levels of this sawfly occurred in the northern half of the District. An infestation caused moderate damage to the current shoots of balsam fir in Cardiff Township. Quantitative sampling in the area revealed that 25.9 per cent of the lateral terminals of branches were killed. Light infestations were observed in balsam fir stands along Highway 28 in Anstruther and Burleigh townships.

Infestation records show that populations of the sawfly usually increase every second year and decrease in alternate years, therefore it is expected that the insects will be less abundant in 1968.

Larch Sawfly, Pristiphora erichsonii (Htg.)

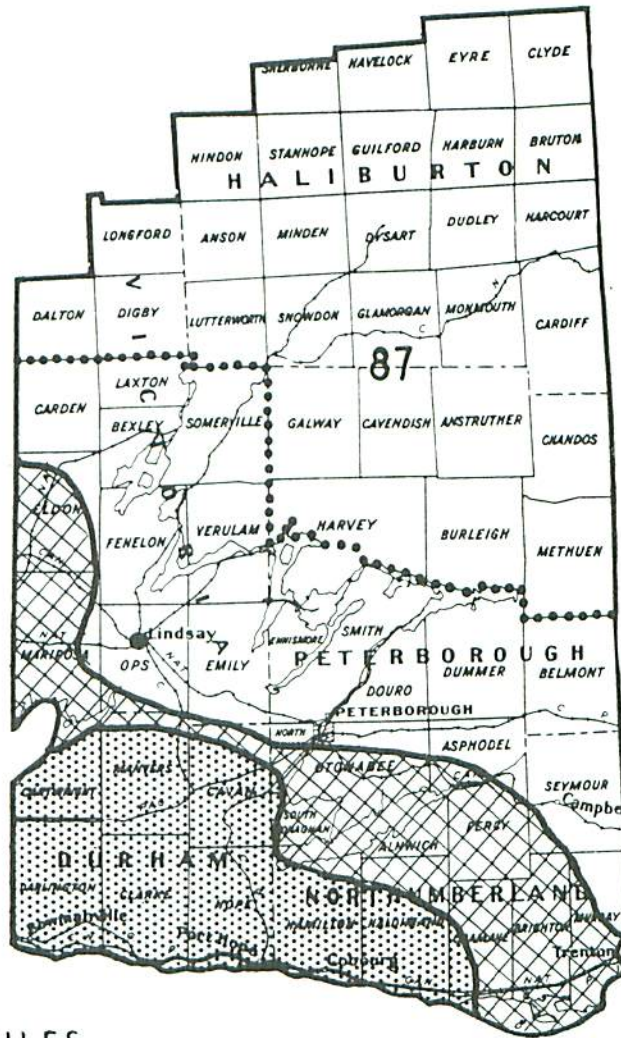
Records show that population levels of the larch sawfly have decreased markedly for six consecutive years in the District. Pockets of light infestation that occurred in Somerville Township and in the Northumberland and Durham County forests in 1966 virtually subsided in 1967. Surveys in the remainder of the District revealed lightly infested fringe trees in Chandos and in Monmouth townships. Elsewhere, small numbers of colonies were observed on fringe and open-grown trees.

Mountain Ash Sawfly, Pristiphora geniculata (Htg.)

A marked increase in population levels of this sawfly occurred in the southern half of the District in 1967. European mountain ash was the preferred host at all locations where infestations were observed.

Medium infestations caused approximately 30 per cent defoliation of semi-mature shade trees in the Orono nursery area and of mature roadside trees in Haldimand Township west of the Northumberland County forest. Light defoliation was observed on small diameter highway plantings at widely-scattered points elsewhere in the southern part of the District.

LINDSAY DISTRICT




EUROPEAN PINE SAWFLIES

Change in distribution in 1967

Legend

Distribution prior to 1967 

Extension in distribution in 1967 .. 

European Pine Shoot Moth, Rhyacionia buoliana (Schiff.)

No appreciable change in population levels of this insect occurred in 1967. A small pocket of heavy infestation caused moderate-to-severe damage in a mixed Scots and red pine windbreak in a pasture field in Clarke Township. Moderate damage recurred in Scots pine windbreaks along the MacDonald-Cartier Highway. Small numbers of the insect were observed at two points elsewhere in the southern part of the District.

TABLE 11

Summary of Miscellaneous Insects Collected in the Lindsay District in 1967

Insect	Host(s)	Remarks
<i>Acleris variana</i> Fern.	wS,bF	In small numbers at five widely scattered points
<i>Agromyza aristata</i> Mall.	wE	Widely distributed in small numbers throughout southern half of District
<i>Alsophila pometaria</i> Harr.	wE	In small numbers at two widely scattered points
<i>Altica corni</i> Woods	Do	Severe defoliation on lakeshore trees in Brighton Township and at one point in Hamilton Township
<i>Altica populi</i> Brown	bPo	Moderate damage at one point in Clarke Township
<i>Anoplonyx luteipes</i> (Cress.)	tL	Generally common on host species, however found at only one point in 1967
<i>Aphrophra parallela</i> (Say)	ScP	Common at one point in each of Mariposa and Haldimand townships
<i>Archips cerasivoranus</i> (Fitch)	cCh	Colonies numerous along roadsides in Hindon Township but widely scattered elsewhere in the District
<i>Caulocampus acericaulis</i> MacG.	sM	The first record of the presence of this insect in southern Ontario since it was first recorded in 1965
<i>Coleophora innotabilis</i> Braun	lPo	The first record of this case-bearer feeding on lombardy poplar
<i>Coleophora pruniella</i> Clem.	wB	Large number collected for laboratory studies in Manvers Township

TABLE 11 (continued)

Insect	Host(s)	Remarks
<i>Datana integerrima</i> G. & R.	bWa, Bu	Light infestations caused 15 per cent defoliation on black walnut trees at one point in Hope Township. Scattered colonies on roadside butternut in Haldimand Township
<i>Datana ministra</i> Dru.	wE	Populations at a low ebb, only three colonies found
<i>Diprion similis</i> (Htg.)	jP, ScP	Quantitative sampling revealed very low populations
<i>Elaphidionoides paralellum</i> Newm.	rO	Light damage to host trees in Somerville and Burleigh townships
<i>Erranis tiliaria</i> Harr.	rO, wB	Small numbers at four widely scattered points
<i>Evodinus monticola</i> (Rand.)	wS	Recovered in trap logs in Hindon Township
<i>Gonioctena americana</i> Schaeff.	tA	Light defoliation was observed on regeneration trees in Monmouth Township
<i>Gracillaria burgessiella</i> Zell.	Do	First Ontario record
<i>Hyphantria cunea</i> Dru.	cCh, wE, rCh	Scattered colonies along roadsides in the southern half of the District
<i>Lambdina fiscellaria</i> <i>fiscellaria</i> Gn.	bF	Small numbers in Somerville Township
<i>Lithocollitis salicifoliella</i> Cham.	tA	Population at an extremely low ebb throughout the District
<i>Neodiprion abboti</i> (Cress.)	rP	Small numbers in beating samples in Snowdon Township
<i>Neodiprion compar</i> (Leach)	rP	Collected in the Victoria County forest in Somerville Township
<i>Neodiprion pinetum</i> (Nort.)	wP	Small numbers on open-grown white pines in the Four Mile Lake area
<i>Nymphalis antiopa</i> L.	tA	Scattered colonies in Hamilton, Harvey and Smith townships
<i>Paleacrita vernata</i> Peck	wE	Small numbers on roadside trees at three points in the southern half of the District

TABLE 11 (concluded)

Insect	Host(s)	Remarks
<i>Pikonema alaskensis</i> (Roh.)	wS	Severe defoliation occurred in a small diameter plantation in Chandos Township
<i>Phyllocoptes acerus-crumena</i> (Rly.)	sM	Moderate damage was caused by this gall mite in Dalton Township
<i>Pineus similis</i> Gill	wS	Heavy infestation on the fringe of a white spruce plantation in Clarke Township
<i>Pineus strobi</i> (Htg.)	wP	Medium infestations were observed in two mixed red and white pine plantations in Clarke Township
<i>Profenusa lucifex</i> Ross	wO	Heavy infestations caused conspicuous discolouration in a white oak stand in Hamilton Township
<i>Profenusa thomsoni</i> (Konow.)	wB	Small numbers observed at three widely scattered points
<i>Schizura concinna</i> J. E. Smith	W	Small number of parasitized larvae collected in Harburn Township
<i>Setoptus jonesi</i> (Keifer)	rP	Small numbers of mites in a plantation in the Victoria County forest
<i>Tischeria castaneaella</i> Cham.	rO	Medium infestations observed on fringe trees in Hamilton Township
<i>Toumeyella numismaticum</i> P. & M.	ScP	One tree lightly infested on the fringe of a red pine plantation in Burleigh Township