FOREST INSECT AND DISEASE SURVEYS IN THE CENTRAL REGION OF ONTARIO, 1975

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DEPARTMENT OF THE ENVIRONMENT

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ACKNOWLEDGMENTS

The assistance and cooperation received from personnel of the Ontario Ministry of Natural Resources during the 1975 field season are gratefully acknowledged.

Frontispiece. A broad-leaved tree being defoliated by the forest tent caterpillar, *Malacosoma disstria* Hbn.

SURVEY HIGHLIGHTS

Cedar leafminers in combination with weather factors caused much browning on eastern white cedar foliage. This created public concern and prompted many extension calls. Considerable dieback and some tree mortality were evident in several areas in the Region. Other insect pests that were important in 1975 included the basswood looper, fall cankerworm, fall webworm, oak leafmining sawfly, blackheaded budworm and yellowheaded spruce sawfly. Damage levels of several other insects, including jack pine budworm, walnut caterpillar and jack pine sawfly, declined. Provincial forestry authorities carried out control measures against the yellowheaded spruce sawfly and the white pine weevil.

The main emphasis in pathology was on the evaluation of the white pine blister rust. Surveys were also made in provincial nurseries for Cylindrocladium root rot. In addition to the Midhurst nursery where Cylindrocladium had been collected in 1974 the organism was isolated from soil samples taken at the Orono Nursery. Other important disease problems included anthracnose damage to hardwood foliage, Armillaria root rot and the Cenangium dieback of pine.

This report includes results of insect and disease surveys carried out by Raymond L. Bowser who passed away August 12, 1975 following heart surgery in Toronto. Ray is greatly missed by his associates and friends.

H. R. Foster

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INSECTS

Blackheaded Budworm, *Acleris variana* Fern.

Large white spruce (*Picea glauca* [Moench] Voss) trees were moderately infested in Wellesley Township, Cambridge District, and light numbers were recorded in Medonte, Mara, Innisfil and West Gwillimbury townships in the Huronia District. This insect was observed less commonly in the Maple and Cambridge districts than in 1974.

Fall Cankerworm, *Alsophila pometaria* (Harr.)

Defoliation by this pest of hardwoods was more prevalent in 1975. Scattered white elm (*Ulmus americana* L.), basswood (*Tilia americana* L.) and Manitoba maple (*Acer negundo* L.) trees were severely defoliated north and south of Hwy 9 in Albion and Adjala townships in the Huronia District. Elsewhere in Huronia District and in the adjoining Cambridge District defoliation was light at many points.

Cedar Leafminers, *Argyresthia aureoargentella* Brower, *A. thuiella* Pack., *A. canadensis* Free. and *Pulicalvaria thujaella* (Kft.)

High populations of cedar leafminers caused severe browning in stands or groups of white cedar (*Thuja occidentalis* L.) trees in most of the Lindsay and Maple districts, in the southern half of Huronia District and in the northern two-thirds of Cambridge District (see Appendix, Fig. A1). Thus a wide band of damage occurred across the Region south of Lake Simcoe, with the southern limit extending from Toronto to New Hamburg. Populations in the eastern extremities of this band declined to light levels northeast of Cobourg. Elsewhere in the Region populations were scattered and generally light. As in former years *A. thuiella* was the most abundant species present.

In addition, browning of older cedar foliage was prevalent throughout much of the area affected by the leafminers.

Much branch mortality and limited tree mortality were observed in the Peterborough-Lindsay area as far north as Bexley Township; in the Uxbridge and Schomberg-Orangeville areas in the Maple District; and in the Hespeler, Lake Luther and Puslinch Township areas in the Cambridge District.

Spruce Budworm, *Choristoneura fumiferana* (Clem.)

The results of damage surveys, population sampling and egg-mass counts have been included with those of other survey regions in a special report by G.M. Howse et al. (Report O-X-250). This report

provides a complete description and analysis of developments in the spruce budworm situation in Ontario in 1975 and gives infestation forecasts for the province for 1976.

Larch Casebearer, *Coleophora laricella* Hbn.

A heavy infestation persisted for the fourth consecutive year in a stand of European larch (*Larix decidua* Mill.) in Whitchurch Township in the Maple District. A pocket of medium infestation occurred in a stand of tamarack (*Larix laricina* [Du Roi] K. Koch) near Luther Lake in the Cambridge District. Damage was of little consequence elsewhere in the Region.

Oak Leaftier, *Croesia semipurpurana* (Kft.)

There has been little change in population levels of this insect in the past 5 years as high populations continued in approximately 16,000 acres (6,480 ha) of red oak (*Quercus rubra* L.) in the Ganaraska-Durham and the Northumberland county forests, and moderate-to-heavy infestations occurred in pockets of about 500 acres (202 ha) each in Manvers and Haldimand townships. Populations were high in the Uxbridge-Ballantrae area in the Maple District. Damage increased to moderate and severe in Tiny and Oro townships, and remained moderate north of Orr Lake in Flos Township in Huronia District. Elsewhere in Huronia District damage was light.

Deterioration of red oak stands continued with generally light mortality in Huronia District. In one stand in the Ganaraska-Durham County Forest, 40% of the red oak trees have died in recent years.

Basswood Looper, *Erannis tiliaria* Harr.

This defoliator of hardwoods has not been reported causing damage in the Region for several years but in 1975 notable increases in larval numbers were recorded. Light infestation occurred in mixed hardwood stands in Medonte, Oro, Melancthon and Nottawasaga townships in Huronia District; in Erin Township in Cambridge District; and in Albion Township in Maple District. Larvae were commonly observed elsewhere in the above districts and in the adjoining Lindsay District.

A Birch Leafminer, *Fenusa pusilla* (Lep.)

High larval populations continued in the Angus-Base Borden area and in Nottawasaga Township in Huronia District, and in the central and southern parts of the Cambridge District. The high populations recorded in 1974 declined to medium intensity in Uxbridge Township,

Maple District, and to low levels in the Durham County Forest in Lindsay District. Ornamental birch trees (*Betula* spp.) were again heavily attacked throughout much of the Region.

Fall Webworm, *Hyphantria cunea* Dru.

High populations occurred throughout most of the Lindsay District but especially in the southern part. Damage by the fall webworm worsened and was much more extensive in the southern part of Niagara District and in the northern part of Huronia District, particularly in the tourist resort areas along Georgian Bay near Honey Harbour and Severn River. The presence of unsightly silken feeding nests on roadside trees exaggerated the amount of damage actually caused and prompted many inquiries. Elsewhere in the Region webs were much less conspicuous.

Eastern Tent Caterpillar, *Malacosoma americanum* F.

Large numbers of feeding tents and defoliation were conspicuous on cherry (*Prunus* spp.), apple (*Malus* spp.), hawthorn (*Crataegus* spp.) and trembling aspen (*Populus tremuloides* Michx.) at numerous locations in the central and northern parts of Huronia and Lindsay districts. Infestations were particularly heavy along highways 400 and 103 north of Barrie in the Huronia District. Localized patches of medium-to-heavy infestation occurred at scattered points elsewhere in the above districts. A polyhedral virus disease killed a large proportion of the larvae in heavy infestations in the northern part of the Huronia District.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

Following a period of several years during which this insect was not found, a buildup in numbers was reported in 1974. The buildup continued in 1975 and defoliation reached moderate-to-severe proportions in the northerly sections of the Region as follows: in about 120 acres (48.6 ha) of mixed hardwoods with a high content of sugar maple (*Acer saccharum* Marsh.) in Mulmur and Melancthon townships, and in a 20-acre (8.1-ha) stand in Tay Township in Huronia District; in about 50 acres (20.2 ha) of mixed hardwoods in the Hillsburgh area in Erin Township, Cambridge District; and in the vicinity of the town of Lindsay in the Lindsay District (see Appendix, Fig. A2). Light-to-moderate defoliation was recorded in Medonte Township, Huronia District. Light infestations occurred on the periphery of these infestations and caterpillars could readily be found in hardwood stands in Essa, Tiny, Oro and Nottawasaga townships in the Huronia District.

Egg-band counts at four locations indicate that infestations will continue to build up in parts of Huronia and Cambridge districts (Table 1).

Table 1. Summary of forest tent caterpillar egg-band counts in two districts in 1975 and infestation forecasts for 1976. (Counts were based on the examination of one branch from each of five trees in each area.)

Location (Twp)	Avg DBH of trees (in.)[a]	Tree species	Total number of egg bands		Infestation forecast for 1976
			new	old[b]	
Cambridge District					
Erin	8	sM	20	3	heavy
Huronia District					
Tay	7	sM	4	0	heavy
Melancthon	6	sM	5	2	heavy
Melancthon	9	sM	37	11	heavy

[a] 1 in. = 2.54 cm

[b] Counts of old egg bands are inaccurate indicators of previous populations but their presence does indicate the occurrence of infestation the previous year.

A Birch Leafminer, *Messa nana* Klug

This introduced leafmining sawfly was found at scattered locations in the southern parts of Huronia and Maple districts. Infestations declined from heavy in 1974 to moderate intensity in 1975 in the Ganaraska-Durham County Forest and counts showed a similar decline in Clarke and Haldimand townships in the Lindsay District (Table 2).

Table 2. Summary of damage by *Messa nana* in the Lindsay District from 1972 to 1975. (Counts were based on the examination of 100 leaves selected randomly from three trees at each location.)

Location (Twp)	Host	Avg DBH of trees (in.)[a]	Percent of leaves mined			
			1972	1973	1974	1975
Lindsay District						
Clarke	wB	5	100	100	100	67
Haldimand	wB	4	100	70	67	33

[a] 1 in. = 2.54 cm

Balsam Fir Sawfly, *Neodiprion abietis* complex

Known infestations remained unchanged. Light-to-moderate defoliation of balsam fir (*Abies balsamea* [L.] Mill.) trees recurred at several locations in the Maple District, in the Shelbourne-Orangeville and the Angus-Creemore areas, and at a few locations north of Barrie in the Huronia District.

Redheaded Pine Sawfly, *Neodiprion lecontei* (Fitch)

Damage to red pine (*Pinus resinosa* Ait.) trees increased generally in the Lindsay District, except in Balsam Lake Provincial Park where controls using hand picking and insecticide spraying have held this insect in check over the years. The greatest known increases were in Dummer and Harvey townships where defoliation in one instance was almost complete in a red pine stand. Light defoliation recurred in a plantation near Sebright in Rama Township, and near Severn Falls in Matchedash Township in Huronia District (Table 3).

Table 3. Summary of redheaded pine sawfly counts in two districts in 1975. (Counts were based on the examination of 100 randomly selected trees at each location.)

Location (Twp)	Host	Avg DBH of trees (in.)[a]	Total no. of colonies per 100 trees
Lindsay District			
Harvey	rp	1	67
Harvey	rP	2	13
Harvey	rP	2	6
Mariposa	rP	2	4
Huronia District			
Rama	rP	1	3

[a] 1 in. = 2.54 cm

European Pine Sawfly, *Neodiprion sertifer* (Geoff.)

The older infestations of the European pine sawfly have undergone minor changes since 1973 (Table 4). Infestations were severe in 1975 in a plantation of 8-ft (2.44-m) Scots pine (*Pinus sylvestris* L.) trees in Beverly Township, Cambridge District, in a red pine planting south of Hwy 7 near Omemee in Emily Township, Lindsay District, and in a 15-acre

(6.1-ha) plantation in Maple District. Moderate defoliation occurred in a 20-acre (8.1-ha) plantation of Scots pine trees in Vespra Township in Huronia District. Elsewhere in the Region damage by this insect was light.

Table 4. Summary of European pine sawfly colony counts and degrees of infestation in four districts from 1973 to 1975. (Counts were based on the examination of 100 trees at each location.)

Location (Twp)	Host	Avg ht of trees (ft)[a]	Avg no. of colonies per infested tree			Trees infested (%)			Degree of infestation[b]
			1973	1974	1975	1973	1974	1975	
Huronia District									
Mulmur	ScP	15	4.0	2.0	1.5	75	50	41	L
Tosorontio	ScP	12	1.0	1.0	2.0	33	33	52	L
Sunnidale	ScP	12	3.0	1.0	1.0	80	40	24	L
Maple District									
Albion	ScP	15	1.0	2.0	5.0	30	60	65	L
Whitchurch	ScP	15	-	2.0	1.0	-	73	38	L
Cambridge District									
Beverly	ScP	8	-	6.0	6.3	-	100	100	H
Lindsay District									
Clarke	ScP	7	1.0	1.0	1.0	20	61	51	L
Clarke	rP	5	-	1.0	1.0	-	30	40	L
Cartwright	ScP	6	1.0	1.0	1.0	37	86	60	L
Mariposa	rP	3	-	1.0	1.0	-	14	20	L
Verulam	rP	5	1.0	1.0	1.0	10	31	8	L
Emily	rP	4	-	-	1.8	-	-	100	H

[a] 1 ft = 30.48 cm

[b] L = light, H = heavy

Yellowheaded Spruce Sawfly, *Pikonema alaskensis* (Roh.)

Persistently heavy infestations in a 260-acre (117-ha) plantation of white spruce in Balsam Lake Provincial Park in the northern part of the Lindsay District caused appreciable tree mortality in previous years. An aerial spraying program was instigated by the Ontario Ministry of Natural Resources in 1975 to protect the remaining trees.

Good control was obtained using Sumithion applied when the larvae were mainly in the third instar. Two smaller areas that were missed by the aerial spraying were later sprayed by hand to complete the control program. No living larvae were observed in subsequent checks. Numbers increased substantially in young white spruce plantings in parts of the Huronia and Cambridge districts and recurred at moderate-to-high levels in the Lindsay District (see Fig. 1). Moderate damage also occurred in West Garafraxa and East Luther townships in Cambridge District and in Flos and Melancthon townships in Huronia District.

White Pine Weevil, *Pissodes strobi* (Peck)

Weevil damage remained low at Orr Lake in Flos Township where good levels of control had been achieved in 1973. Aerial spraying and mistblower controls were applied by the Ontario Ministry of Natural Resources at 10 other locations in the Huronia District in 1975. Weevil damage was again severe in a plantation in Medonte Township, Huronia District, in a young white pine (*Pinus strobus* L.) plantation in Whitchurch Township, Maple District, and in scrub spruce and white pine in Haldimand Township, Lindsay District (Table 5).

Table 5. Summary of leader damage by white pine weevil in three districts in 1975. (Counts were based on the examination of 100 systematically selected trees at each location.)

Location (Twp	Host	Avg DBH of trees (in.)[a]	Trees weeviled in 1975 (%)
Huronia District			
Medonte	wP	3	36
Maple District			
Whitchurch	wP	3	56
Lindsay District			
Bexley	wP	2	4

[a] 1 in. = 2.54 cm

Fig. 1. Severe defoliation of a young spruce tree by the yellowheaded spruce sawfly

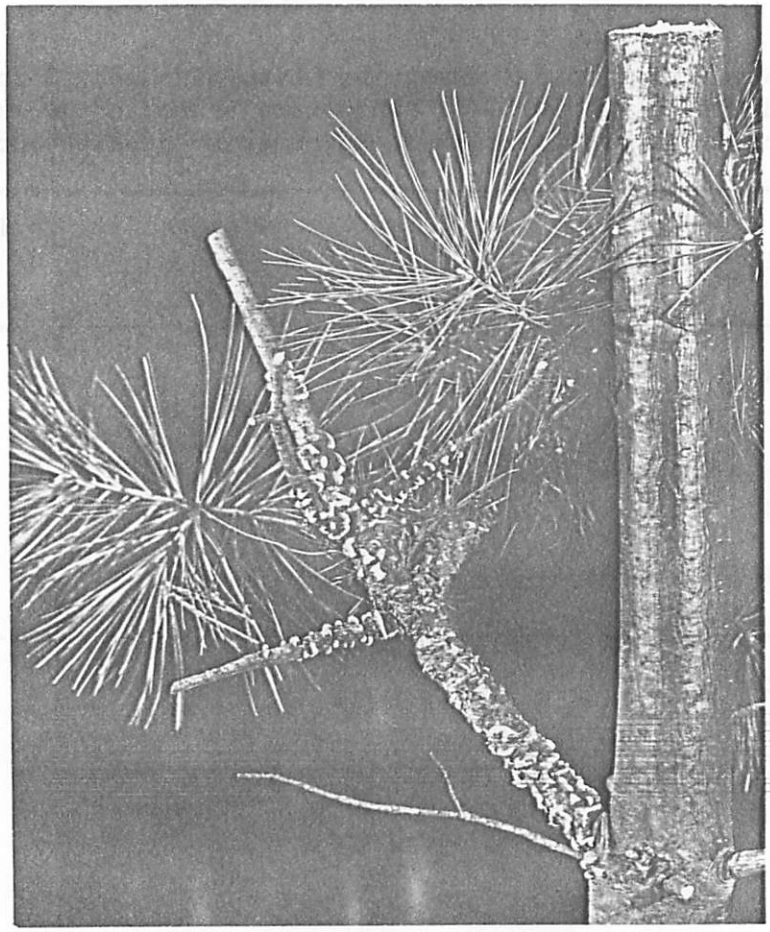

Fig. 2. Fruiting of white pine blister rust on white pine

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Plantations of European larch were heavily infested in West Gwillimbury Township in Huronia District and in Whitchurch Township in Maple District. A 15-acre (6.1-ha) plantation of Japanese larch (*Larix leptolepis* Sieb. & Zucc. Gord.) was heavily infested in Clarke Township in Lindsay District. Infestations on native tamarack trees were light at points in Huronia and Cambridge districts.

Oak Leafmining Sawfly, *Profenusa lucifex* Ross

This insect caused severe browning of white oak (*Quercus alba* L.) foliage and some red oak at four locations in the eastern part of the Lindsay District. The damage intensity was highest in about 15,000 acres (6750 ha) south of Rice Lake in Hamilton Township. Other pockets of severe damage occurred in Haldimand, Manvers and Belmont townships. Elsewhere in the Lindsay District damage levels were low.

European Pine Shoot Moth, *Rhyacionia buoliana* Schiff.

Shoot moth numbers increased for the third consecutive year at sampling points in Puslinch, Eramosa and North Dumfries townships in Cambridge District and damage was severe in 1975 (Table 6). A heavy infestation was also noted in a small plantation of 2-ft. (60.96-cm) red pine trees east of Belwood Lake in East Garafraxa Township in Huronia District. Moderate damage occurred on 20-ft (609.6-cm) Scots pine trees in Erin Township, Cambridge District, and in a plantation in West Gwillimbury Township, Huronia District. In the southern part of the Region shoot damage was more common than in 1974.

Table 6. Summary of shoot damage by the European pine shoot moth in two districts from 1973 to 1975. (Counts were based on the examination of 100 bud clusters systematically selected at each location.)

Location (Twp)	Host	Avg ht of trees (ft)[a]	Bud clusters infested (%)		
			1973	1974	1975
Cambridge District					
Puslinch	rP	5	18	26	37
Eramosa	rP	5	26	39	67
N. Dumfries	rP	6	-	80	96
Huronia District					
Melancthon	ScP	15	-	49	33

[a] 1 ft = 30.48 cm

Table 7. Other forest insects

Insect	Host(s)	Remarks
Agonopterix robiniella Pack.	bLoc	light on a few trees in Oro Twp, Huronia District
Anisota finlaysoni Riotte	wO	generally light defoliation of fringe and open-grown trees in the southern part of the Region
Aphrophora parallela (Say)	ScP, wP	severe browning of foliage occurred on scattered trees south of Rice Lake in Hamilton and Haldimand twp in Lindsay District, but damage was generally light when found elsewhere in the Region
Archips cerasivoranus Fitch	bCh	high populations in Sunnidale Twp and low in Melancthon Twp, Huronia District; widely scattered colonies elsewhere in the Region
Argyresthia oreasella Clem.	Haw	caused light shoot damage in W. Gwillimbury Twp, Huronia District; scarce elsewhere in the Region
Caulocampus acericaulis MacG.	sM	caused moderate leaf drop in Erin Twp, Cambridge District
Cenopis pettitana Rob.	Ba, sM	low larval populations at scattered points in Huronia and Cambridge districts
Choristoneura conflictana Wlk.	tA	caused moderate-to-severe defoliation in approximately 100 acres (40 ha) in the Angus-Base Borden area, Huronia District
Choristoneura pinus pinus Free.	ScP, jP	notable decreases to low numbers in Albion and Tecumseh twp in Huronia and Cambridge districts, respectively

(continued)

Table 7. Other forest insects (continued)

Insect	Host(s)	Remarks
Coleophora serratella Linn.	Mo	light in W. Garafraxa Twp in Cambridge District
Corythucha sp.	Ba	moderate damage in Whitchurch and Flos twp in Maple and Huronia districts, respectively
Datana integerrima G. & R.	Wa	Damage generally decreased from moderate in 1974 to light in 1975 on scattered trees in Maple, Cambridge and Niagara districts.
Dioryctria disclusa Heinr.	jP, ScP	caused light cone damage in Albion Twp, Maple District and heavy damage in Haldimand Twp, Lindsay District
Diprion fruitetorum (F.)	rP	trace population observed in Whitchurch Twp, Maple District
Diprion hercyniae (Htg.)	wS	Populations remained low at scattered locations in the Region
Diprion similis (Htg.)	rP	light population in Whitchurch Twp, Maple District and in Balsam Lake Provincial Park, Lindsay District
Eucosma gloriola Heinr.	rP, wP	reduced from heavy to light in Rama Twp, Huronia District; continued light on white pine in Orono Nursery, Lindsay District
Fenusa ulmi Sund.	wE	scattered patches of heavy infestation in the Region
Heterocampa guttivita Wlk.	sM	light population in Oro and Medonte twp, Huronia District

(continued)

Table 7. Other forest insects (continued)

Insect	Host(s)	Remarks
Lepidosaphes ulmi (Linn.)	wAs	light populations observed in Flos Twp, Maple District
Lithocolletis hamadryadella Clem.	burO	moderate leafmining in Pickering Twp, Maple District
Neodiprion pratti banksianae Roh.	jP	declined considerably to low numbers in Albion and Uxbridge twp, Maple District and in Tiny Twp, Huronia District
Neodiprion pinetum (Nort.)	wP	a few colonies in Uxbridge Twp, Huronia District but scarce in the Region
Neodiprion virginianus complex	jP	light defoliation on a few open-grown trees in Mara Twp, Huronia District
Phigalia titea Cram.	sM	light in Erin Twp, Cambridge District
Pikonema dimmockii (Cress)	wS	small numbers in Huronia and Maple districts
Pristiphora geniculata (Htg.)	Mo	generally reduced from moderate in 1974 to light in 1975 at scattered locations
Proteoteras aesculana Riley	siM	reduced to trace level in 1975 in the Midhurst Nursery, Huronia District
Pseudexentera oregonana Wlshm.	tA	moderate damage in a 100-acre (40-ha) stand in King Twp, Maple District
Psilocorsis quercicella Clem.	rP	light in Medonte Twp, Huronia District
Pyrrhalta cavicollis Lec.	pCh	severe leaf damage in Whitchurch Twp, Maple District

(continued)

Table 7. Other forest insects (concluded)

Insect	Host(s)	Remarks
Pyrrhalta luteola (Mull.)	wE	light damage by this introduced species in Orillia Twp, Huronia District
Pyrrhalta tuberculata (Say)	W	light damage in Nottawasaga Twp, Cambridge District
Sparganothis sulfureana Clem.	rP	observed commonly in plantations in Lindsay District

TREE DISEASES

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

This disease was responsible for the death of individual red pine and Scots pine trees at numerous locations in Huronia and Maple districts. In a 5-ft (152.40-cm) high red pine plantation in Essa Township, Huronia District recent tree mortality was evaluated at 5%. *Armillaria mellea* was associated with dead and dying red pine trees that had been weakened previously by other factors such as insect defoliation and adverse weather. Scattered young red oak and other deciduous trees also die each year, and in them rhizomorphs of *A. mellea* are commonly found.

Cenangium Dieback of Pine, *Cenangium ferruginosum* Fr. ex Fr.

This condition which seriously affected Scots pine plantations in the Lindsay District in 1973 and then virtually disappeared in 1974 was again active at one location in 1975. In a stand in Haldimand Township 14% of the Scots pine trees had dead tops in 1975. *Cenangium ferruginosum* was again associated with the damage.

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

A special survey of white pine blister rust was carried out in 1975. Two juvenile plantations were selected at random from a list of plantations in which white pine predominates for each of the four northernmost districts (Table 8). Damage which was generally low to moderate in Huronia, Cambridge and Maple districts was comparable to that recorded for the disease in the previous year. Damage was moderate in white pine plantings in Clarke and Verulam townships in Lindsay District and tree mortality in the latter was high. Fruiting by the white pine blister rust is shown in Figure 2.

Cylindrocladium Root Rot, *Cylindrocladium floridanum* Sob. and Seymour

This organism has created a serious problem in various nurseries in the United States and is known to affect a wide variety of tree species. Symptoms are damping off, root rot and shoot blight. In 1974 the organism was first identified in Ontario from cultures from 2-0 black spruce (*Picea mariana* [Mill.] B.S.P.) seedlings from Compartment A14 of the Midhurst Nursery, Huronia District. In the fall of 1974 the disease was isolated from other compartments and from conifers other than black spruce. In 1975 some mortality of black spruce seedlings occurred in

Compartment A14. The disease was also isolated from soil samples taken from the Orono Nursery in Lindsay District during a detection survey that was carried out to ascertain the presence or absence of this organism in four major provincial tree nurseries in southern Ontario. Apparently experimental controls are being considered for testing in 1976 in Compartment A14 of the Midhurst Nursery.

Table 8. Summary of white pine blister rust damage and mortality in juvenile plantations in four districts in 1975

Location (Twp)	Host	Avg DBH of trees (in.)[a]	Trees affected (%)	Trees severely damaged (%)	Tree mortality in 1975 (%)
Huronia District					
Flos	wP	4	6.6	2.7	0.0
W. Gwillimbury	wP	4	7.3	6.0	1.3
Maple District					
Albion	wP	5	6.6	6.0	0.7
Uxbridge	wP	3	0.7	0.0	0.0
Cambridge District					
Puslinch	wP	3	0.0	0.0	0.0
W. Luther	wP	4	3.3	2.7	0.7
Lindsay District					
Verulam	wP	3	53.5	19.3	2.6
Clarke	wP	3	86.0	22.0	2.0

[a] 1 in. = 2.54 cm

Abiotic Damage

Extensive browning of old foliage of cedar appeared over the central and northern sections of the Region and was thought to be caused by some unfavorable weather condition.

Salt damage occurred at several locations along main roads in the Region.

Damage resulting from other abiotic conditions was not observed.

Table 9. Other forest diseases

Organism	Host(s)	Remarks
Anthracnose	sM, bAs	occasional light-to-moderate damage on several broadleaf species growing along roadsides in the Region
Ceratocystis ulmi (Buism.) C. Moreau Dutch elm disease	wE	Mortality is now high in the Region.
Ciborinia whetzelii (Seaver) Seaver Ink spot of aspen	tA	light damage to small trembling aspen at scattered locations in the northern parts of the Region
Coleosporium sp. A rust on red maple	rM	light infection in Vespra Twp, Huronia District
Cytospora chrysosperma (Pers.) Fr. Canker and dieback	W	medium shoot infection near Acton in Cambridge District
Cytosporella sp. Canker on branch	ScP	trace damage on scattered trees in Oro Twp, Huronia District
Fomes annosus (Fr.) Karst. Fomes root rot	rP	no new infections found
Lophodermium pinastri (Schrad. ex Hook.) Chev. Needle cast	jP, rP	not found at damaging levels
Phyllostica sp. A rust on hawthorn	Haw	medium-sized trees affected in Flos Twp, Huronia District
Pollaccia radiosa (Lib.) Bald. & Cif. Leaf and twig blight	tA	light damage in Essa Twp, Huronia District; trace to light at other points in Region
Rhytisma acerinum (Pers. ex Saint Amans) Fr. Tar spot on red maple	rM	medium-sized trees affected on scattered individuals in Nassagaweya Twp, Cambridge District

(continued)

Table 9. Other forest diseases (concluded)

Organism	Host(s)	Remarks
Semimature tissue needle blight	wP	not present at damaging levels in the Region
Leucostroma kunzei (Fr.) Munk Canker of conifers	wS	no new infections found

APPENDIX

CENTRAL REGION

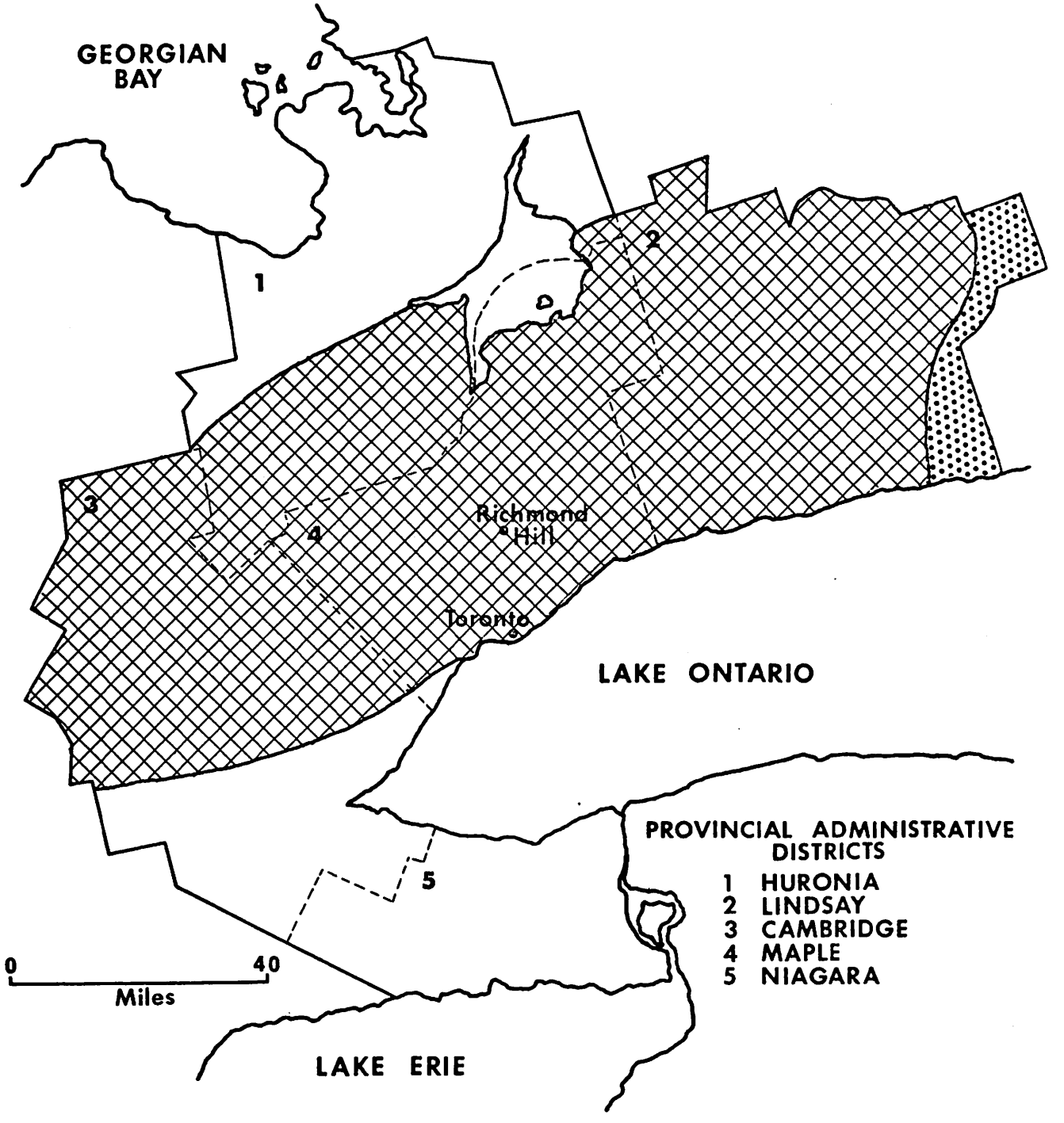

Fig. A1. CEDAR LEAF MINERS

Areas within which damage to eastern white cedar occurred in 1975

Severe browning of foliage . . .

Light browning of foliage . . .

CENTRAL REGION

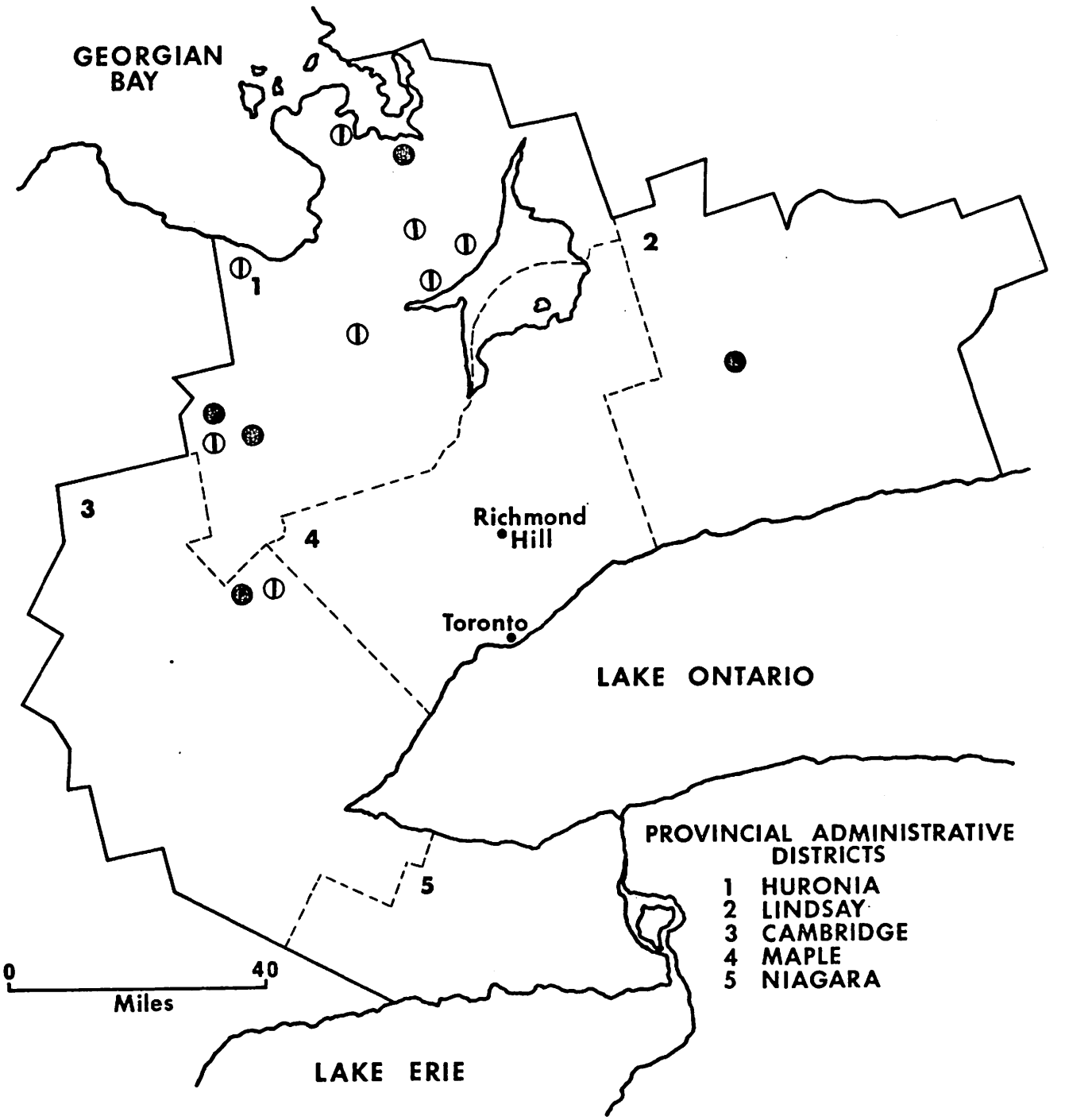

Fig. A2. FOREST TENT CATERPILLAR

Locations where defoliation occurred in 1975

Light defoliation . . . . . ◐

Moderate-to-severe defoliation . . . ●