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Northern Forest Region, 1968
Status of Insects in the Cochrane District

Foster, H.R.

Information Report O-X-95
(Forest Research Laboratory, Ontario Region)

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FOREWORD

The Forest Insect and Disease Survey maintains a continuing interest in improving existing sampling methods and in developing new techniques for rating forest pests and appraising damage. In 1968, a new approach for evaluating incidence and levels of infection of a number of tree diseases was explored. This involved determining degrees of damage in random and non-random plots in relation to the basal area of infected stands, the ultimate objective being to provide information on the impact of the organisms on forest stands in Ontario. Studies during the winter to test the accuracy of the new sampling system will be useful for planning field work in 1969. Improvement of insect survey methods in 1968 was largely directed toward jack-pine budworm sampling with emphasis on egg population studies. To this end, the distribution of egg masses on individual branches and at various crown levels of sample trees was investigated as a basis for determining the nature and size of samples required to assess population levels. The value of these new approaches in disease and insect sampling will be proven with use in forthcoming field seasons.

Marked changes in insect and disease conditions were recorded in large areas of the Province in 1968. A sharp increase in population levels of the spruce budworm and jack-pine budworm occurred in many parts of Ontario. The largest areas of infestation of the spruce budworm were located in the Burchell Lake area in the Port Arthur District, in parts of the Chapleau, Kapuskasing and Swastika districts and in southeastern Ontario. Localized infestations were centered in Parkinson Township in the Sault Ste. Marie District and in Fairbanks Township west of Sudbury. Egg surveys in most of the above areas except Burchell Lake, indicated that infestations will increase in extent in 1969.

The chemical control operation undertaken by the Ontario Department of Lands and Forests against the spruce budworm in the Burchell Lake area dominated insect surveys in western Ontario during several periods from May until September. Technicians were involved in intensive sampling to delineate the area to be treated, to time the spray applications and to assess spruce budworm numbers before and after the control operation.

Infestations of the jack-pine budworm abated somewhat in the Kenora and Fort Frances districts but several years of severe defoliation, particularly on rocky sites, caused considerable crown damage. In parts of the Sault Ste. Marie and Pembroke districts very severe defoliation of both jack pine and red pine was reported. Other insects occurring in particularly high numbers in 1968 included the saddled prominent, larch casebearer and several species of cedar leaf miners.

Devastation of elm by Dutch elm disease continued in southern Ontario and numerous new centers of infection were found throughout a large part of the range of elm in central Ontario. A vector of Dutch elm disease, the smaller European elm bark beetle extended its range eastward along the north shore of Lake Ontario and St. Lawrence River. Hypoxylon canker of poplar proved to be a serious problem in many parts of Ontario. Evaluations revealed particularly high levels of infection in aspen stands in the Sault Ste. Marie and Sudbury districts. Scleroderris canker of pine again caused considerable

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mortality in young red pine and jack pine plantations in parts of central and northeastern Ontario. Fomes root rot usually associated with thinning operations, caused varying amounts of mortality in red pine plantations in southern Ontario. Four new centers of infection of this disease were found in Larose forest in the Kemptville District in 1968. Details on the above and other noteworthy insect and disease problems are contained in the report that follows.

J. E. MacDonald

NORTHERN FOREST REGION

1968

INTRODUCTION

STATUS OF TREE DISEASES (REGIONAL)

INTRODUCTION

Northern Forest Region

This report deals with insect and tree disease conditions in the Northern Region in 1968. Tree diseases are presented on a regional basis, and data on insects are contained in the district section of the report. New field technicians were assigned to Swastika and Kapuskasing districts. Survey work in Division 72, formerly a part of the Gogama District, was carried out in 1968 by the Cochrane District Technician.

For the second successive year mild weather in the spring favoured an increase in numbers of bud and foliage insects on conifers. Spectacular increases in population levels of the spruce budworm occurred along the southern part of Kapuskasing District and in the Matachewan area of Swastika District. Other insects showing increases in population levels included the yellow-headed spruce sawfly, the jack pine sawfly and leaf rollers on trembling aspen.

A leaf roller on white birch, Gracillaria sp., that occurred in outbreak numbers in the Little Long Rapids and Abitibi Canyon areas in 1967 collapsed in 1968. New distribution records of the leaf miner, Fenusa pusilla Lep., were made in Cochrane and Swastika districts and three collections were taken from alder trees in Cochrane District.

New methods were used in 1968 to determine the incidence and evaluate infection levels of foliage diseases, cankers, galls, witches' brooms and root rots. The term "incidence" is used in this report to denote the prevalence of diseases and infection levels are an expression of damage.

A leaf spot, Linospora tetraspora G. E. Thompson, increased in 1968 causing severe browning and premature leaf drop in balsam poplar stands in Division 74 in Kapuskasing District.

Diseases that showed appreciable declines in infection levels or incidence in 1968 included Scleroderris lagerbergii (Lager.) Gremmen, Pollaccia radiosa (Lib.) Bald. & Cif., Melampsora medusae Thuem. and cone rusts on balsam fir and white spruce trees.

Reforestation of burnt over areas, poorly stocked and low-value stands with conifers has been stepped up by the Department of Lands and Forests. Since conifer plantations often present optimum conditions for tree diseases and insects, more time is necessary each year for survey work in these areas. Several insects and diseases have caused severe damage in plantations in the Cochrane District. Among the more important of these are Scleroderris canker of pine, white pine blister rust, sweet fern blister rust, some root diseases, yellow-headed spruce sawfly, larch sawfly and white-pine weevil.

Sincere appreciation is again expressed for the assistance given field technicians by timber operators and personnel of the Ontario Department of Lands and Forests.

H. R. Foster

Eastern Dwarf Mistletoe, Arceuthobium pusillum Peck

The eastern dwarf mistletoe was found in six areas in Kapuskasing District and at two locations in the Cochrane District in 1968. Infection levels were highest in Idington, Derry and Langermark townships in the Kapuskasing District (Table 1).

TABLE 1

Summary of Incidence and Infection Levels of Eastern Dwarf Mistletoe on Black Spruce Trees in the Northern Region in 1968

District	Location (township)	Total area in acres	Incidence in per cent	Infection level
Cochrane	German	20	23	Light
Kapuskasing	Shannon	100	5	Light
	McMillan	300	40	Moderate
	Idington	200	20	High
	Derry	50	100	High
	Langermark	20	90	High
	Gill	20	15	Trace

Needle Rusts on Spruce, Chrysomyxa spp.

The needle rusts, Chrysomyxa ledi de Bary and C. ledicola Lagerh. that attack both black and white spruce foliage occurred commonly in the region as in 1967. A moderate infection occurred in about a 5-acre area in Deloro Township south of Timmins in Cochrane District (Table 2). Although incidence of these rusts was high in numerous areas, damage levels were generally light.

TABLE 2

Summary of Incidence and Infection Levels of Chrysomyxa spp. on Black and White Spruce Trees in the Northern Region in 1968

District	Number of evaluations	Tree species	Total area affected in acres	Average incidence in per cent	Infection level
Cochrane	1	wS	5	100	Moderate
	2	wS	250	90	Light
	3	wS	160	90	Trace
	5	bS	405	100	Light
	1	bS	5	40	Trace
Kapuskasing	4	bS	430 +	100	Light
	4	bS	100 +	40	Trace
	1	wS & bS	25	95	Trace
Swastika	1	bS	30	100	Light
	1	wS	10	90	Trace

Ink Spot of Poplar, Ciborina whetzelii (Seaver) Seaver

Infection levels of the ink spot disease declined for the third consecutive year reaching trace to light intensity in Cochrane and Kapuskasing districts. Infection levels in Swastika District were moderate in Marquis Township and light in Catharine, McIlroy and Gauthier townships.

Sweetfern Blister Rust, Cronartium comptoniae Arth.

High infection levels recurred in large areas in Cochrane and Swastika districts but to date this disease has not been found in Kapuskasing District. Heavy infection continued along the Texas Gulf Road north of Timmins and at many points along gravel eskers from Nellie Lake south to Lipsett Lake in the Cochrane District. High infection levels also occurred in sizable areas in Cairo and Michaud townships in Swastika District. A moderate level of infection was recorded in Henwood Township in the Swastika District (Table 3).

TABLE 3

Incidence and Infection Levels of Sweet Fern Blister Rust on Jack Pine Trees in the Northern Region in 1968

District	Location (township)	Area affected in acres	Per cent of trees attacked	Level of infection
Cochrane	Tisdale	32000	47	High
	Aurora	6400	25	High
	Calvert	100	40	High
	Sheraton	500	40	High
	Mountjoy	100	20	Moderate
	Denton	25	10	Moderate
	Sheraton	50	5	Light
	Whitesides	10	5	Light
Swastika	Cairo	2000	40	High
	Michaud	6000	43	High
	Henwood	200	40	Moderate
	Hislop	100	4	Light
	Farr	200	5	Light
	Catharine	200	10	Light
	Burt	80	5	Light

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

The white pine blister rust occurred generally at light infection levels in stands scattered through the region in 1968. An appraisal in a plot in Studholme Township in the Kapuskasing District showed a moderate infection level and 27 per cent incidence in a mixed plantation of eastern white pine and white spruce. In the Cochrane District light infections occurred in forest stands in McArthur, Bartlett and Keefer townships and on plantation trees in Whitesides and Sheraton townships.

Hypoxylon Canker of Poplar, Hypoxylon mammatum (Wahl.) Miller

Evaluations in 1968 showed that this disease is widespread in the region and causes more damage than casual observations had indicated before plot work was carried out. Surveys revealed that over one-third of the plot trees were attacked by the disease and infection levels were generally moderate or high (Table 4). The column containing total areas in acres in the following table refers to the stands evaluated and comprises only a small fraction of the trembling aspen in the region.

TABLE 4

Summary by Districts of the Incidence and Infection Levels of Hypoxylon Canker of Poplar on Trembling Aspen Trees in the Northern Region in 1968

District	Total area surveyed in acres	Average incidence of attack in per cent	Number of areas in each infection category			
			Nil	Light	Moderate	High
Cochrane	1850	46	-	1	5	-
Kapuskasing	4660	34	-	-	6	3
Swastika	380	38	1	-	4	1

Leaf Blight on Balsam Poplar, Linospora tetraspora G. E. Thompson

High infection levels of this blight have persisted since 1964 in the Kapuskasing and Cochrane districts occurring generally on young open-grown balsam poplar trees. In 1968 the disease increased considerably and attacked many stands of trees nearing maturity. Severe browning and early leaf drop occurred in the southwestern part of Kapuskasing District and the western part of Cochrane District. Pockets of mature and overmature balsam poplar on moist sites were also heavily infected at many other points in Kapuskasing and Cochrane districts.

This blight was the only condition found consistently on the leaves of balsam poplar trees. An evaluation of the disease in Cargill Township, Kapuskasing District, showed 100 per cent incidence and the foliage of 75 per cent of the trees was severely damaged.

A Needle Rust on Tamarack, Melampsora medusae Thuem.

Infection levels of this rust declined from heavy in 1966 to trace intensity in 1968 in tamarack stands in Calder and Clute townships in Cochrane District. Heavy infection reported on plantation trees in Sheraton Township in 1967 declined to light intensity in 1968 (Table 5). Elsewhere in Cochrane and adjoining districts only trace levels of infection were found. Incidence was high in Sheraton and moderate in Clute and Ogden townships.

TABLE 5

Summary of Infection Levels and Incidence of Melampsora medusae on Tamarack Trees in the Cochrane District in 1968

Location (township)	Area affected in acres	Incidence in per cent	Infection level
Clute	25	45	Trace
Ogden	20	40	Trace
Kendrey	10	20	Trace
Sheraton	5	100	Light

Leaf and Twig Blight of Poplar, Pollaccia elegans Serv.

Infections of this leaf and twig blight have declined since 1965 and only trace levels of intensity occurred generally on balsam poplar trees in the region in 1968. The incidence of the blight on young open-grown trees was high at several points in Cochrane District, but generally was trace to absent in stands of larger trees. A high infection recurred on ornamental trees in the Town of Iroquois Falls. Several of the severely damaged trees were removed in 1968.

A Rust on Balsam Fir, Pucciniastrum epilobii Otth.

Infections of this rust that declined from high levels in the Smooth Rock Falls area in the Cochrane District and the Rogers Township area in Kapuskasing District in 1965 to low levels in 1966, have since declined to trace levels in 1968. Although infections have declined to very low levels the incidence of the rust has remained high at many points in the region (Table 6).

TABLE 6

Summary of Infection Levels and Incidence of Pucciniastrum epilobii on Balsam Fir Trees in the Northern Region in 1968

District	Number of plots	Estimate of acreage affected	Incidence of disease	Infection level
Cochrane	9	2400	High	Trace
Kapuskasing	6	11500	High	Trace
Swastika	5	1000	Moderate	Trace

Scleroderris Canker of Pine, Scleroderris lagerbergii (Lager.) Gremmen

An appreciable decline of this disease occurred in the region in 1968 and fruiting bodies were difficult to find even in areas where high infection levels persisted. Infection levels were high in red pine plantations in German, Adams and McCart townships in Cochrane District and in Wicksteed Township in Kapuskasing District (Table 7). Elsewhere in the region infection levels in red pine plantations were greatly reduced as tree growth and vigour increased. Moderate infection occurred in jack pine plantations in Wicksteed and Munro townships in Kapuskasing and Swastika districts respectively.

TABLE 7

Summary of Incidence and Infection Levels of Scleroderris Canker of Pine in Red and Jack Pine Plantations in the Northern Region in 1968

District	Location (township)	Total area in acres	Tree species	Incidence of disease in per cent	Infection level
Cochrane	Sheraton	1000	rP	62	Moderate
	McCart	25	rP	30	High
	German	25	rP	85	High
	Dempsay	25	rP	10	Trace
	Adams	25	rP	40	High
	McCart	5	jP	30	Trace
Kapuskasing	Wicksteed	10	rP	64	High
	Wicksteed	10	jP	24	Moderate
Swastika	Munro	40	jP	75	Moderate
	Grenfell	1	rP	5	Trace

Frost Damage

Heavy frost on the thirteenth of June caused severe damage in many low-lying areas in the central and northern parts of Cochrane and Kapuskasing districts. Balsam fir twigs up to three inches in length were killed in many areas and almost all the twigs were destroyed on groups of young trees. Generally, only the twigs on lower branches of larger trees were affected. Severe damage was observed in Haggart, Nesbitt, Dargavel, Heightington, Challies, Steele, Adair and Clive townships in Cochrane District and in McMillan, Gill, Shearer, Parnell, Gurney and Fauquier townships in Kapuskasing District. Damage to black and white spruce trees was generally light in the above areas.

Hail Injury

Light to high hail damage occurred on plantation jack pine trees in about 500 acres in Sheraton Township in Cochrane District. Almost complete stripping of needles of jack pine trees occurred in a small area in the center of the plantation. Considerable scarring of the tender bark on new shoots occurred on the windward side of the young trees. Damage was less conspicuous on older natural jack pine and on six-to ten-year-old white and red pine trees.

Roadside Damage

Severe damage to all tree species occurred in a 30-mile stretch of Highway 66 near Matachewan in Swastika District. Jack pine trees were heavily scorched and trembling aspen and balsam poplar lost their foliage in early September. Light damage to balsam and jack pine foliage occurred at two locations along Highway 101 in the Cochrane District. In all cases considerable drift from herbicide sprays occurred.

Winter Drying

Moderate tree mortality occurred in a compartment of one-year-old red pine seedlings in the Swastika Nursery. The affected compartment was located adjacent and parallel to a snow fence whereas compartments farther away from the fence were less affected. The foliage of the trees turned red before the roots died and winter drying is suspected as the cause of the mortality.

Light damage occurred in white and red pine plantations in Sheraton, German and Whitesides townships in Cochrane District.

TABLE 8

Other Noteworthy Diseases Collected in the Northern Region in 1968

Organism	Host(s)	Remarks
Armillaria mellea (Vahl. ex Fr.) Kummer	jP	Observed less commonly than 1967, light in plantation in Sheraton Township in Cochrane District
Chrysomyxa pirolata Wint.	wS	Collected in all districts in 1967 but scarce in 1968
Cladosporium subsessile Ell. & Barth.	tA	Collected in Gurney and McGowan townships, Kapuskasing District
Coccomyces hiemalis Higgins	pCh	Low incidence in Dowsley Township, Kapuskasing District
Coleosporium asterum (Diet.) Syd.	jP	Trace infection in three plots in Kapuskasing District and light in Tisdale Township, Cochrane District

TABLE 8 (continued)

Organism	Host(s)	Remarks
Coniothyrium faullii Darker	bF	Common on old foliage on understory tree in Howells Township in Kapuskasing District
Cytospora kunzei Sacc.	bS	Found in Kapuskasing and Swastika districts
Davisomycella ampla Davis	jP	Light infection on a few trees in Freele and Tisdale townships, Cochrane District
Dibotryon morbosum (Schw.) Th. & Syd.	pCh	Found sparingly in Swastika and commonly in Cochrane districts
Epicoccum sp.	tA	Single collections in Fauquier Township, Kapuskasing District
Fomes connatus (Weinn.) Gill.	tA	One collection in Sulman Township, Kapuskasing District
Fomes igniarius (L. ex Fr.) Kickx	tA	Collected in Sulman Township in Kapuskasing District
Fomes pini (Thore ex Pers.) Lloyd	wS	One collection from each district in 1968
Fomes pinicola (Sw. ex Fr.) Cke.	wS	Found in McMillan Township, Kapuskasing District
Gloeosporium coryli (Desm.) Sacc.	Ha	Collected in McMillan Township, Kapuskasing District
Gloeosporium quercinum (Westd.)	bO	Collected in New Liskeard
Gymnosporangium cornutum Arth. ex Kern	moAs	High infection on some trees in Tisdale and light in Scapa townships in Cochrane District
Helvella infula Schaeff.	tA	Collected in Nicol Township in Swastika District
Isthmiella crepidiformis (Darker) Darker	bS	High incidence on old foliage in Gauthier Township, Swastika District

TABLE 8 (continued)

Organism	Host(s)	Remarks
Lenzites saepiaria (Wulf. ex Fr.) Fr.	wS	Collected in Lamplugh Township in Swastika District
Lirula mirabilis (Darker) Darker	bF	Heavy on one tree in Howells Township in Kapuskasing District
Lophodermium pinastri (Schrad. ex Hook.) Chev.	jP	Medium infection in Munro Township in Swastika District
Macrophoma sp.	eC	Heavy infection on a few roadside trees in McCoig Township, Kapuskasing District
Melampsora epitea Thuem.	W	Light to moderate infection at many points in the region
Melampsorella caryphllacearum Schroet.	bF	Two plots in the region showed trace and four others light infection levels
Melanconis alni var. marginalis (Pk.) Wehm.	Al	Collected in Harmon Township, Kapuskasing District
Peridermium sp.	jP	Generally trace infection levels and incidence. Three collections from Cochrane and one from Swastika districts
Pestalotia truncata (Lev.)	eC	Collected in Keefer Township in Cochrane District
Phlebia strigosa zonata (Schw.) Lloyd	tA	Light incidence in Matheson Township, Cochrane District and in Fauquier Township, Kapuskasing District
Phomopsis sp.	rP	High infection on a few trees in Fauquier Township, Kapuskasing District
Phyllactinia corylea (Pers.) Karst.	wB	Moderate infection in Puskuta Township, Kapuskasing District

TABLE 8 (continued)

Organism	Host(s)	Remarks
Pollaccia radiosa (Lib.) Bald. & Cif.	tA	Light infection in four plots in Cochrane District and trace in 10 other plots in the region
Pollaccia saliciperda (Allesch. and Tub.) Arx.	W	Collected in Harley Township, Swastika District
Polyporus abietinus (Dicks. ex Fr.)	wS,bS	Collected in Arnold Township, Swastika District and in McEwing Township, Kapuskasing District
Polyporus tomentosus Fr.	wS	Collected in Clute Township, Cochrane District
Puccinia bolleyana Sacc.	Elderberry	Light at several points in Cochrane District
Puccinia cornata Cda.	Alternate-leafed buckthorn	Light to moderate infection levels at several points in Cochrane District
Puccinia porphyrogenita Curt. ex Thuem.	Bunchberry	Light in Denton Township, Cochrane District
Pucciniastrum sp.	bS	Collected in 1967 in Cody and Fournier townships in Cochrane District
Rhytisma acerinum Pers. ex Fr.	rM	Moderate infection in Evelyn Township and light at many other points in the region
Rhytisma punctatum (Pers.) Fr.	moM,mM	Light to medium infection common in the region with a pocket of high in Mons Township in Kapuskasing District
Rhytisma salicinum (Pers.) Fr.	W	Light to heavy infection common in the region
Sarcotrochila balsameae (Davis) Korf	bF	High infection on old foliage in Howells Township, Kapuskasing District

TABLE 8 (concluded)

Organism	Host(s)	Remarks
Sclerophoma pithya (Thuem.) Hoehn.	wP	Trace to moderate infection levels in Cochrane District
Sclerophoma pithyophila (Cda.) Hoehn.	eC	Light infection in Keefer Township, Cochrane District
Scoleconectria cucurbitula (Tode ex Fr.) Booth	jP, rP, wP	High infection on white pine in Studholme Township, moderate in Sheraton and Whitsides townships and light on jack pine trees in Wicksteed Township
Scytinostroma sp.	wS	Collected in McMillan Township, Kapuskasing District
Septoria musiva Pk.	bPo	Moderate infection in Hearst Township, Swastika District
Thyronectria balsamea (Cke. & Pk.) Seeler	bF	Light infection in Laughton and Potter townships in Cochrane District
Tubercularia vulgaris Tode ex Fr.	Elderberry moAs, pCh	Three collections from the Swastika District
Uncinula salicis (DC.) Wint.	W	Light infection in Whitney Township, Cochrane District, light and moderate in Rogers and Fauquier townships respectively in Kapuskasing District
Valsa pini (Alb. and Schw.) Fr.	jP, wP, rP	Trace to light infections in Cochrane and Kapuskasing districts
Deterioration of Birch	wB	White birch trees showed considerable improvement in 1968 from the serious dieback condition observed in 1967
Fume Damage	All species	Fume damage was severe near Virginiatown in Swastika District
Wind Damage	All species	About 20 square miles of blowdown occurred in Griffin Township, Kapuskasing District

STATUS OF INSECTS IN THE COCHRANE DISTRICT

H. R. Foster

Spruce Budworm, Choristoneura fumiferana Clem.

Light infestations of the spruce budworm occurred at many points in the southwestern part of Division 43 (see map). The main area of infestation was centered in McKeown, Doyle and Hassard townships with small pockets at scattered locations in 16 adjoining townships. The infestation was largely in balsam fir but along the western border of the district mature white spruce was attacked. Branch samples at 12 locations showed that defoliation of the current year's growth ranged from one to 13 per cent on balsam fir, and two to 14 per cent on white spruce. Egg counts at the above locations indicate that infestations will persist at somewhat higher levels in 1969 than in 1968 (Table 9).

Although the area involved is about 1000 square miles, extensive cutting operations and bush fires over a long period of time have reduced the susceptible balsam fir-white spruce content to such an extent that no serious losses should result from this spruce budworm attack. Similar forest conditions north of the infestation minimizes the danger of extensive spread of infestations into that area. Relatively small susceptible stands exist in the direction of Night Hawk Lake where patches of more mature balsam fir occur.

Killing frosts that occur frequently in the spring when the shoots of balsam fir and white spruce are developing may be responsible for the fluctuations in population levels that have marked the history of spruce budworm infestations in the Cochrane District. In 1968 severe frosts on June 13 killed the shoots of balsam fir in many areas in the central and northern parts of the district. Larvae were plentiful in early June in Kendrey Township before the shoots of balsam fir were destroyed by frost, but no mature larvae could be found in the area after the loss of shoots. The effect of weather on budworm populations in the Cochrane District is an interesting feature of forest insect survey observations in the district.

TABLE 9

Defoliation of the Current Year's Growth of Balsam Fir and White Spruce Trees in the Cochrane District and Infestation forecasts for 1969 Based on Egg Mass Density

Note: Based on the examination of the foliage on two branches taken from the mid crown of each of two trees at each location.

Location (township)	Tree species	Per cent defoliation	No. of egg masses per 100 square feet of foliage	Forecast for 1969
McKeown	bF	6	33	L-M
Timmins	bF	4	0	N-L
Sewell*	bF	4	0	N-L
Sewell*	wS	14	0	N-L
Hassard*	bF	13	0	N-L
Enid*	wS	2	0	N-L
Michie	bF	1	0	N-L
Hutt*	bF	1	0	N-L
McBride*	bF	6	22	L-M
Pharand	bF	2	0	N-L
Zavitz*	wS	4	3	L
Semple*	bF	8	0	N-L

N-L . . . . nil to light infestation
L . . . . . light infestation
L-M . . . . light to medium infestation

* Townships added to Cochrane District in 1968

Jack Pine Budworm, Choristoneura pinus pinus Free.

A medium infestation on scattered trees in Sheraton Township in 1967 declined to light intensity in 1968. However, scattered pockets of light infestation continued on open-grown jack pine trees from Lipsett Lake in Timmins Township to Nellie Lake in Calvert Township. Low numbers of jack pine budworm larvae were observed on young plantation trees in Timmins and Sheraton townships. Counts on 18-inch branch tips in German and Sheraton townships averaged 1.4 and 0.6 larvae respectively.

Larch Casebearer, Coleophora laricella Hbn.

A light infestation recurred in a tamarack swamp south of Iroquois Falls in Calvert Township where the number of larvae per 18-inch branch tip increased from 1.3 in 1967 to 2.95 larvae in 1968 (Table 10). Minor increases occurred in Clute, Calvert and Mountjoy townships and no larvae were found in the Haggart Township plot.

NORTHERN FOREST REGION

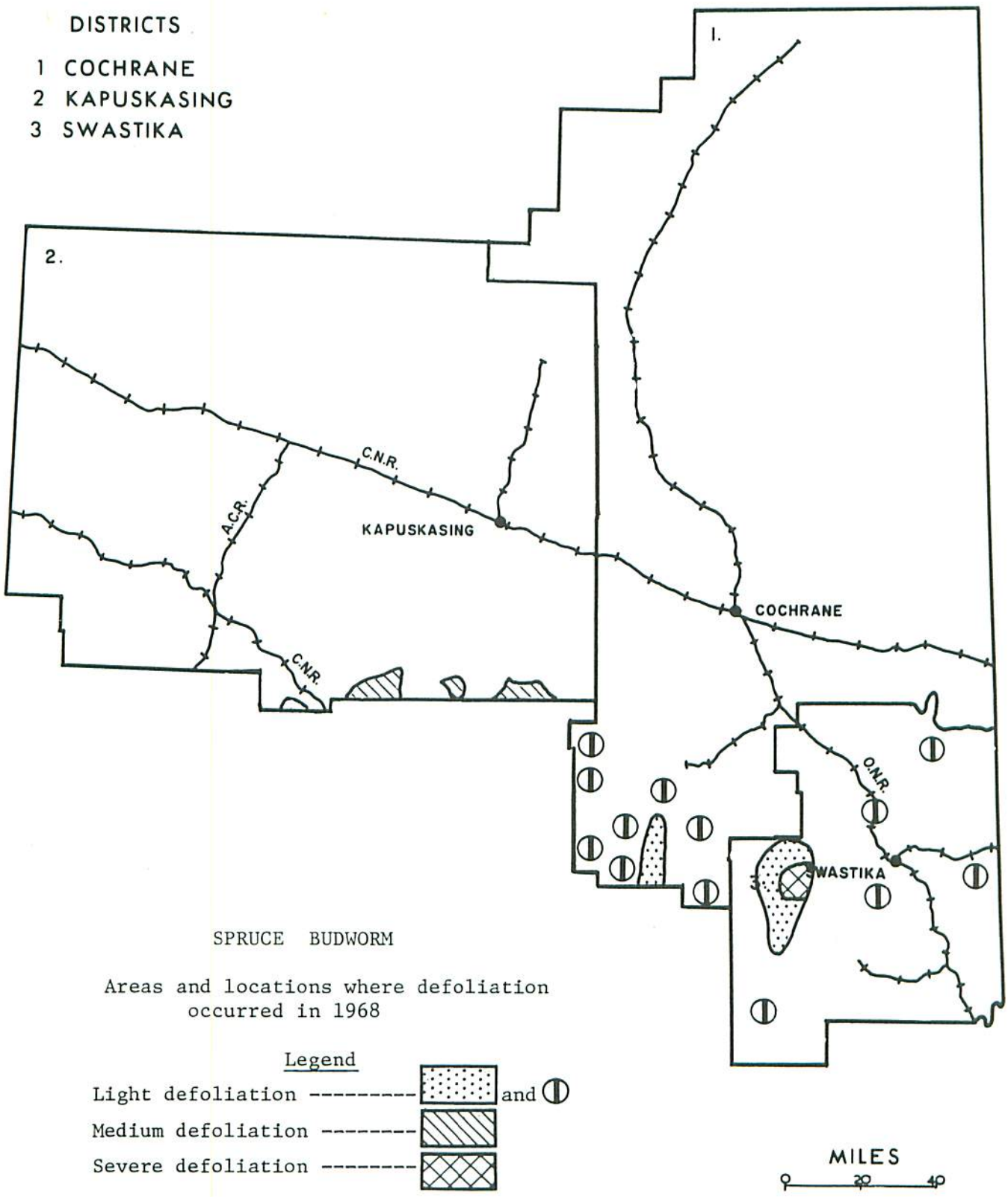

TABLE 10

Summary of Larch Casebearer Counts on Tamarack Trees in the Cochrane District in 1967 and 1968

Location (township)	Av. d.b.h. of sample trees in inches	Average number of larvae per 18-inch branch tip	
		1967	1968
Clute	4	0.2	0.8
Calvert	4	1.3	3.0
Mountjoy	3	0.1	0.4
Carscallen	2	0.0	0.2

A Twig Borer on Jack Pine, Conophthorus sp.

Light infestations of this insect occurred at sample points in Sheraton, Tisdale and Robb townships (Table 11). Counts were negative at sample points in McKeown and Murpny townships. Damaged twigs were rarely observed elsewhere in the district in 1968.

TABLE 11

Summary of Damage by a Twig Borer on Jack Pine Trees in the Cochrane District from 1966 to 1968

Location (township)	Av. d.b.h. of sample trees in inches	Total number of damaged shoots			No. of leaders infested in 1968
		1966	1967	1968	
Sheraton	5	2	1	3	0
Tisdale	5	5	3	11	0
Murphy	4	2	0	0	0
Robb	4	15	46	24	0
McKeown	4	1	2	0	0

Birch Leaf Miner, Fenusa pusilla Lep.

Infestations on ornamental trees in Timmins and South Porcupine declined from heavy in 1967 to generally light intensities in 1968. New distribution records of this introduced insect in the Cochrane District in 1968 were established by collections from Pharand, Cody, Timmins, Deloro and Mortimer townships.

A Root Weevil, Hylobius warreni Wood

A light infestation of this weevil recurred in a Scots pine provenance test plot in German Township. Tree growth in the plot has been poor and small numbers of trees have been killed each year since 1965. Observations in 1968 showed that even trees in poor condition can survive attack by small numbers of this root weevil. This insect pupates below ground level in a pitch-sand mass formed close to the larval feeding galleries (see photograph).

Western Tent Caterpillar, Malacosoma californicum pluviale Dyar

Pockets of medium infestation occurred in Semple and Sewell townships. Light infestations occurred sporadically in Timmins, Michie, Deloro, German, Whitney, Calvert and Fournier townships. Colony counts were negative in Godfrey, Ogden and Thorneloe townships and low at three other sample stations.

Balsam-fir Sawfly, Neodiprion abietis Harr.

Population levels of this sawfly have shown a gradual decline since 1960 and in 1967 only scattered colonies were observed. A reversal of this trend occurred in 1968, when light infestations occurred in Tisdale, Whitney, Hillary, Timmins, Fournier and Calder townships. Open-grown and fringe balsam fir trees were the favoured hosts but individual white and black spruce trees were attacked also.

Red Pine Sawfly, Neodiprion nanulus nanulus Schedl.

Populations of this sawfly declined in the district in 1968 to the lowest levels since 1962. Light infestations on red pine trees in Kirkland and Hillary townships in 1967 declined to trace levels in 1968. Only scattered colonies were observed on jack pine trees in Dundonald, Clergue, Calvert, Tisdale and Matheson townships. Colony counts on 100 red pine trees in Hillary Township and on 100 jack pine trees in Calvert Township totalled 11 and 21 colonies respectively.

Red-headed Jack-pine Sawfly, Neodiprion virginianus Roh.

A medium infestation on small trees at the western outskirts of Schumacher in 1967 declined to light intensity in 1968. Pockets of light infestation occurred more commonly in the southern part of Division 43 and less commonly in the central and northern area of the district than in previous years. Colony counts at sample stations were comparable to 1967 (Table 12).

TABLE 12

Summary of Red-headed Jack-pine Sawfly Counts on Jack Pine Trees in the Cochrane District in 1967 and 1968

Location (township)	Av. d.b.h. of sample trees in inches	No. of trees examined in 1968	Per cent of trees infested in 1968	Total number of colonies counted 1967	1968
Robb	4	10	80	3	16
Tisdale	5	10	70	11	12
Fournier	4	10	50	4	7
Calvert	5	10	60	11	7
Calvert	5	100	6	-	7
Tisdale	5	100	68	-	78

Yellow-headed Spruce Sawfly, Pikonema alaskensis Roh.

Infestations were heavy in white spruce plantations at Driftwood River in Calder Township and medium in Greenwater Lake Park in Colquhoun Township. Light to heavy infestations occurred on ornamental white and black spruce trees in Timmins, South Porcupine, Iroquois Falls, Cochrane and Smooth Rock Falls. Light infestations were observed commonly on white spruce regeneration along roadsides in Division 43.

White-pine Weevil, Pissodes strobi Peck

A medium infestation occurred in a small white pine plantation in Sheraton Township. Light infestations occurred on Scots pine in a provenance test plot in German Township and on black spruce trees in the Smooth Rock Falls area. Elsewhere in the district infestation intensities varied from nil to light (Table 13).

TABLE 13

Summary of Leader Damage by the White-pine Weevil in the Cochrane District in 1967 and 1968

Location (township)	Tree species	Av. height of sample trees in feet	Per cent of trees weevilled 1967	1968
Sheraton	bS	14	2	0
Sheraton	jP	16	4	3
Calder	wS	9	4	6
Whitney	wS	9	5	8
Hanna	bS	15	2	0
Dempsay	bS	14	0	2

Larch Sawfly, Pristiphora erichsonii Htg.

Heavy infestations occurred in a small tamarack plantation in Sheraton Township, on small trees at Kamiskotia Lake in Robb Township and on scattered trees in German and Calvert townships. Pockets of medium to heavy infestation occurred between Little Abitibi Lake and the Quebec border and on regeneration in clear-cut areas in Heightington Township. Elsewhere in the district infestation intensities were trace to light.

Mountain-ash Sawfly, Pristiphora geniculata Htg.

Little change in population levels of this introduced insect occurred in 1968. Medium infestations recurred on showy mountain ash in MacIntyre Park and on American mountain ash trees in Scapa, Hepburn and Adair townships. A second generation late in September caused appreciable defoliation in the area north of Abitibi Lake. New distribution records were obtained in Godfrey, Robb, Fournier, Steele, Abbotsford, Potter and Dargavel townships.

Amber-marked Birch Leaf Miner, Profenusa thomsoni Konow

Infestations of this insect reached outbreak proportions in 1964, gradually declined to low intensities by 1967, then increased appreciably in numbers in 1968. Heavy infestations occurred on the high ground between Harris Lake and Abitibi Canyon. Pockets of light and medium infestation were common in the central and northern sections of the district. Although medium infestations were observed less commonly in the southern part of the district, appreciable increases were recorded at sample points in Tisdale, Hillary and Evelyn townships (Table 14).

TABLE 14

Summary of Damage caused by the Amber-marked Birch Leaf Miner in the Cochrane District in 1967 and 1968

Location (township)	Av. height of sample trees in feet	Per cent of leaves infested in 1968	Total no. of mines per hundred leaves	
			1967	1968
Tisdale	20	49	11	83
Glackmeyer	25	15	16	21
Timmins	18	8	5	11
Hillary	20	54	14	110
Evelyn	25	53	14	90
Mortimer	30	24	61	64

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

Populations of a poplar leaf roller Pseudexentera oregonana Wlshm. declined from medium to trace levels in the Smooth Rock Falls-Cochrane area in Division 44. However, other leaf rollers increased in numbers in 1968 with the result that moderate damage to trembling aspen foliage occurred in the above area and at several points in Division 43. The leaf roller Sciaphila duplex Wlshm. which has been scarce in the Cochrane District in recent years occurred commonly in samples in 1968. Other poplar foliage insects collected in the above areas were Choristoneura conflictana Wlk., Compsolechis niveopulvella Cham., Xylomyges dolosa Grt. Pandemis canadana Kft., Enargia decolor Wlk., Hydriomena furcata Thun. and Ipimorpha pleonectusa Grt.

Pine Tip Moth, Rhyacionia adana Heinr.

Light infestations of this insect occurred on jack pine regeneration along roadsides and in cutover areas in divisions 43 and 45, and on red pine trees in Kirkland Township. Attacks on leaders of jack pine seedlings in Timmins and Sheraton townships has caused stag topping and the development of scrub trees. Counts of trees attacked by the pine tip moth were made at four locations along the Gibson Lake Road (Table 15).

TABLE 15

Summary of Pine Tip Moth Attack on Jack Pine Seedlings in the Cochrane District

Note: Based on the examination of 100 trees at each location.

Location (township)	Mileage on Gibson Lake Road	Average height of trees in feet	Per cent of trees attacked
Sheraton	12	3	7
Sheraton	14 1/2	3	9
Timmins	18	2	11
Timmins	21	2	16

TABLE 16

Summary of Miscellaneous Insects Collected in the Cochrane District in 1968

Insect	Host(s)	Remarks
Acleris variana Fern.	wS, bF	Low numbers in beating mat samples, but found more commonly in 1968 than in recent years.

TABLE 16 (continued)

Insect	Host(s)	Remarks
Acrobasis betulella Hlst.	wB	Light on a few trees in Laughton and Heightington twps.
Adelges lariciatus Patch	wS	Light on small trees in cutover areas in Scapa and Haggart twps.
Aleyrodidae (white flies)	bPo	Light at several points in the district
Altica corni Woods	Do	Generally light but common in the district
Archippus packardianus Fern.	wS	Low numbers in Pinard and Fournier twps.
Archips cerasivoranus Fitch	ecCh	Pockets of heavy infestations in Clute Township but generally light in Division 44
Argyresthia aureoargentella Brower	eC	Light in Hassard, Thorneloe and Keefer twps.
Argyresthia laricella Kft.	tL	Small numbers of twigs attacked in Bristol Twp.
Biston cognataria Gn.	bPo	A few larvae in Homuth Twp.
Bucculatrix canadensisella Cham.	wB	Populations remained at low levels
Campaea perlata Gn.	bF	A few larvae in Tisdale Twp.
Caripeta angustiorata Wlk.	rP	A few larvae
Cecidomyia reeksi Vock.	jP	Quantitative sampling was discontinued in 1968 but observations showed light population levels at several points
Clepsis persicana Fitch	wS	A few larvae
Coleophora betulivora McD.	wB	Low numbers on open-grown white birch trees
Coleophora pruniella Clem.	wB	Very low numbers at several points

TABLE 16 (continued)

Insect	Host(s)	Remarks
Dasineura balsamicola Lintn.	bF	Light at several points in the district
Datana ministra Dru.	mAs	One colony, Whitney Twp.
Dimorphoteryx melanognathus Roh.	Al	Scattered larvae in Deloro Twp.
Dioryctria reniculella Grt.	wS	Populations increased to light at 14 points in the district
Diprion hercyniae Htg.	wS	Populations reduced to low numbers
Eupithecia filmata Pears.	wS	A few larvae
Euura hospes Walsh	Narrow-leafed W	Light galls in Hanna Twp.
Fenusa dohrnii Tischb.	Al	Light in Tisdale and Bradburn twps.
Feralia jocosa Gn.	bF	Single larva at scattered points
Galerucella decora (Say)	W	Light in Fournier Twp.
Gonioctena americana Schaef.	tA	Light in Hillary, German and Michie twps.
Gracillaria invariabilis Braun.	pCh	Light at points in Division 43
Gracillaria syringella Fabr.	Lilac	Light to heavy in Timmins-Porcupine area
Gracillaria sp.	wB	Heavy infestation of leaf rollers in 1967 collapsed in 1968 and larvae were scarce in the Abitibi Canyon-Little Long Rapids area
Gypsonoma fasciolana Clem.	bPo	A few larvae in Homuth Twp.
Lithocolletis betulivora Wlshm.	wB	Low numbers at several points in the district
Lithocolletis salicifoliella Cham.	bPo, tA, wB, W	General decline in population to low levels in 1968
Macremphytus varianus Nort.	Do	Light at many points in the district

TABLE 16 (continued)

Insect	Host(s)	Remarks
Malacosoma disstria Hbn.	tA	Cast skins of one colony found in Tisdale Twp. but no larvae found in 1968. Egg band checks in the fall were negative.
Monoctenus fulvus Nort.	eC	Light in Tisdale Twp.
Nematocampa filamentaria Gn.	bF	A few larvae, Tisdale Twp.
Nematus limbatus Cress.	W	Scattered colonies in the district but found more commonly in the southern part of Division 43
Nematus populi Marl.	tA	One colony collected
Nepytia canosaria Wlk.	wS	A few larvae in Colquhoun Twp.
Nyctobia limitaria Wlk.	wS	One larva collected in Colquhoun Twp.
Ortholepsis pasadamia Dyar	wB	Small numbers collected
Orthosia hibisci Gn.	bF	Single larva collected in mat samples
Orthosia revicta Morr.	bF	Single larva in mat samples
Papilio glaucus Linn.	tA	One larva collected
Pareophora minuta MacG.	bAs	Light in Cody and Pharand twps.
Petrova albicapitana Busck.	jP	Light damage in young jack pine plantations in Sheraton and Timmins twps.
Phyllocnistis populiella Cham.	tA,bPo	Low numbers in first generation but more numerous in second generation
Phyllocolpa sp.	tA	Light at many points
Phyllocolpa sp.	bPo	Medium to heavy on some young open-grown trees

TABLE 16 (concluded)

Insect	Host(s)	Remarks
Phyllocolpa agama (Roh.)	Narrow-leafed willow	Heavy on a few trees in Hanna Twp.
Pikonema alaskensis Cress.	wS	Low numbers in beating mat samples
Pleroneura borealis Felt	bF	Light at five sample locations
Polia radix Wlk.	bPo	One larva collected in Homuth Twp.
Pristiphora lena Kinc.	wS	Low numbers north of Smooth Rock Falls
Pulicalvaria thujaella Kft.	eC	Low numbers collected
Pyrrhia experimens Wlk.	bPo	A few larvae in Homuth Twp.
Rhabdophaga swainei Felt	wS,bS	Light infestation at several points in the district
Rhyacionia busckana Heinr.	jP	Light on open-grown trees in Division 43
Swammerdamia cuprescens Braun	wB	A few larvae collected in Deloro Twp.
Tenthredinidae # 29	bPo	Some small colonies in Homuth Twp.
Tenthredinidae # 43	tA	Light in Tisdale, Stimson, Fournier, Evelyn and Homuth twps.
Tenthredinidae # 43	bPo	Collected from balsam poplar for the first time in Cochrane District in 1968
Thyridopteryx ephemeraeformis Haw.	jP,rP	A few larvae in Kettle Lakes Park and in Sheraton Twp.
Vespamia pini Kell.	wS	A few larvae
Zeiraphera canadensis Mut. and Free.	wS	Light on open-grown spruce in Division 43
Zeiraphera destitutana (Walker)	wS	A few larvae collected
Zeugophora spp.	tA,bPo	Low number of mines occurred in the first generation