

Northern Forest Region, 1965
Status of Insects in the Cochrane
District

Foster, H.R.

Information Report
(Forest Research Laboratory, Ontario Region)

O-X-19

FOREWORD

J. E. MacDonald

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

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

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

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

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

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

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

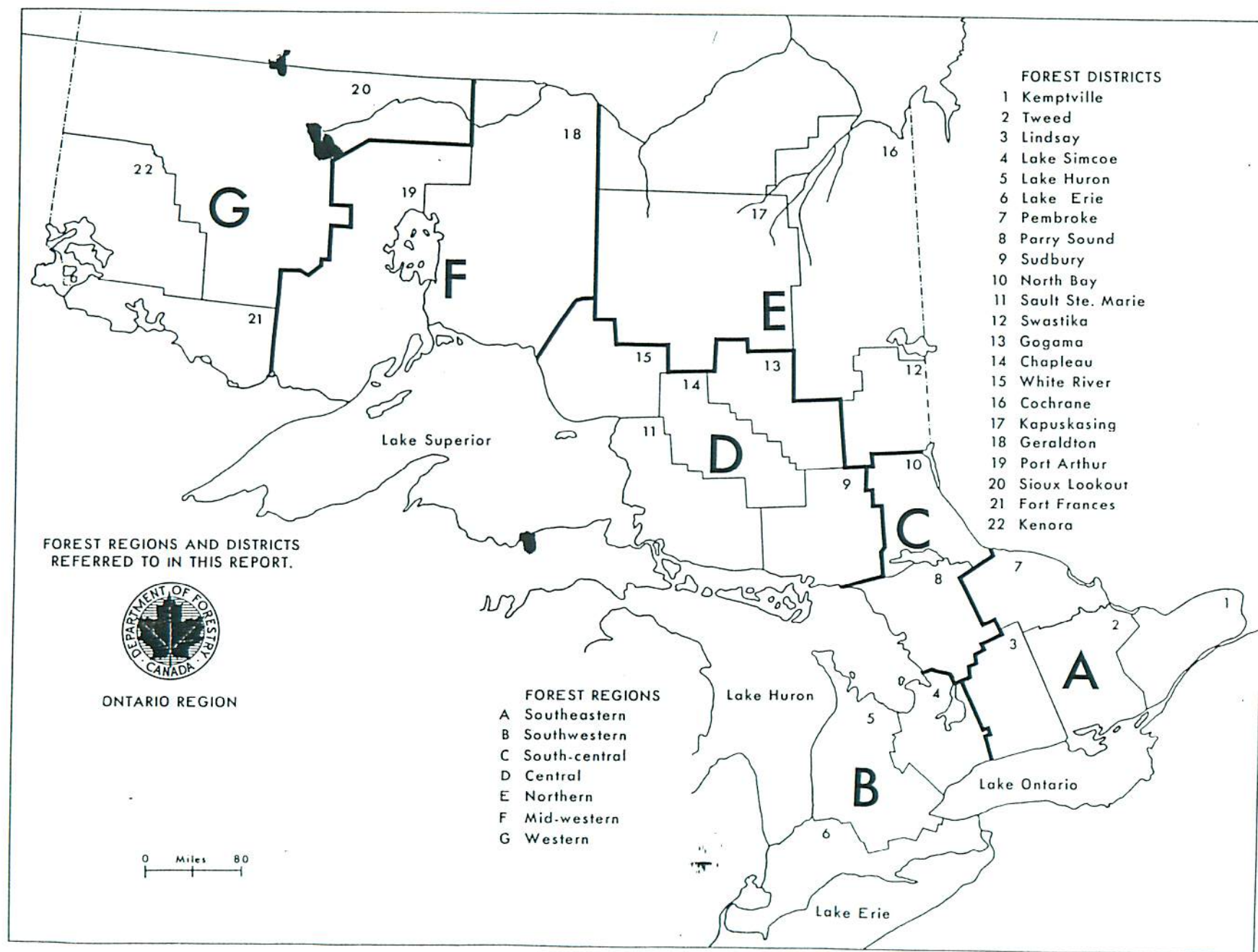


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Photographs

* Regional Supervisors

1965

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NORTHERN FOREST REGION

1965

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1.1	1.1.1	1.1.1.1	1.1.1.1.1	1.1.1.1.1.1	1.1.1.1.1.1.1
1.2	1.2.1	1.2.1.1	1.2.1.1.1	1.2.1.1.1.1	1.2.1.1.1.1.1
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1.4	1.4.1	1.4.1.1	1.4.1.1.1	1.4.1.1.1.1	1.4.1.1.1.1.1
1.5	1.5.1	1.5.1.1	1.5.1.1.1	1.5.1.1.1.1	1.5.1.1.1.1.1
1.6	1.6.1	1.6.1.1	1.6.1.1.1	1.6.1.1.1.1	1.6.1.1.1.1.1
1.7	1.7.1	1.7.1.1	1.7.1.1.1	1.7.1.1.1.1	1.7.1.1.1.1.1
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1.89	1.89.1	1.89.1.1	1.89.1.1.1	1.89.1.1.1.1	1.89.1.1.1.1.1
1.90	1.90.1	1.90.1.1	1.90.1.1.1	1.90.1.1.1.1	1.90.1.1.1.1.1
1.91	1.91.1	1.91.1.1	1.91.1.1.1	1.91.1.1.1.1	1.91.1.1.1.1.1
1.92	1.92.1	1.92.1.1	1.92.1.1.1	1.92.1.1.1.1	1.92.1.1.1.1.1
1.93	1.93.1	1.93.1.1	1.93.1.1.1	1.93.1.1.1.1	1.93.1.1.1.1.1
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1.96	1.96.1	1.96.1.1	1.96.1.1.1	1.96.1.1.1.1	1.96.1.1.1.1.1
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1.99	1.99.1	1.99.1.1	1.99.1.1.1	1.99.1.1.1.1	1.99.1.1.1.1.1
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2.03	2.03.1	2.03.1.1	2.03.1.1.1	2.03.1.1.1.1	2.03.1.1.1.1.1
2.04	2.04.1	2.04.1.1	2.04.1.1.1	2.04.1.1.1.1	2.04.1.1.1.1.1
2.05	2.05.1	2.05.1.1	2.05.1.1.1	2.05.1.1.1.1	2.05.1.1.1.1.1
2.06	2.06.1	2.06.1.1	2.06.1.1.1	2.06.1.1.1.1	2.06.1.1.1.1.1
2.07	2.07.1	2.07.1.1	2.07.1.1.1	2.07.1.1.1.1	2.07.1.1.1.1.1
2.08	2.08.1	2.08.1.1	2.08.1.1.1	2.08.1.1.1.1	2.08.1.1.1.1.1
2.09	2.09.1	2.09.1.1	2.09.1.1.1	2.09.1.1.1.1	2.09.1.1.1.1.1
2.10	2.10.1	2.10.1.1	2.10.1.1.1	2.10.1.1.1.1	2.10.1.1.1.1.1
2.11	2.11.1	2.11.1.1	2.11.1.1.1	2.11.1.1.1.1	2.11.1.1.1.1.1
2.12	2.12.1	2.12.1.1	2.12.1.1.1	2.12.1.1.1.1	2.12.1.1.1.1.1
2.13	2.13.1	2.13.1.1	2.13.1.1.1	2.13.1.1.1.1	2.13.1.1.1.1.1
2.14	2.14.1	2.14.1.1	2.14.1.1.1	2.14.1.1.1.1	2.14.1.1.1.1.1
2.15	2.15.1	2.15.1.1	2.15.1.1.1	2.15.1.1.1.1	2.15.1.1.1.1.1
2.16	2.16.1	2.16.1.1	2.16.1.1.1	2.16.1.1.1.1	2.16.1.1.1.1.1
2.17	2.17.1	2.17.1.1	2.17.1.1.1	2.17.1.1.1.1	2.17.1.1.1.1.1
2.18	2.18.1	2.18.1.1	2.18.1.1.1	2.18.1.1.1.1	2.18.1.1.1.1.1
2.19	2.19.1	2.19.1.1	2.19.1.1.1	2.19.1.1.1.1	2.19.1.1.1.1.1
2.20	2.20.1	2.20.1.1	2.20.1.1.1	2.20.1.1.1.1	2.20.1.1.1.1.1
2.21	2.21.1	2.21.1.1	2.21.1.1.1	2.21.1.1.1.1	2.21.1.1.1.1.1
2.22	2.22.1	2.22.1.1	2.22.1.1.1	2.22.1.1.1.1	2.22.1.1.1.1.1
2.23	2.23.1	2.23.1.1	2.23.1.1.1	2.23.1.1.1.1	2.23.1.1.1.1.1
2.24	2.24.1	2.24.1.1	2.24.1.1.1	2.24.1.1.1.1	2.24.1.1.1.1.1
2.25	2.25.1	2.25.1.1	2.25.1.1.1	2.25.1.1.1.1	2.25.1.1.1.1.1
2.26	2.26.1	2.26.1.1	2.26.1.1.1	2.26.1.1.1.1	2.26.1.1.1.1.1
2.27	2.27.1	2.27.1.1	2.27.1.1.1	2.27.1.1.1.1	2.27.1.1.1.1.1
2.28	2.28.1	2.28.1.1	2.28.1.1.1	2.28.1.1.1.1	2.28.1.1.1.1.1
2.29	2.29.1	2.29.1.1	2.29.1.1.1	2.29.1.1.1.1	2.29.1.1.1.1.1
2.30	2.30.1	2.30.1.1	2.30.1.1.1	2.30.1.1.1.1	2.30.1.1.1.1.1
2.31	2.31.1	2.31.1.1	2.31.1.1.1	2.31.1.1.1.1	2.31.1.1.1.1.1
2.32	2.32.1	2.32.1.1	2.32.1.1.1	2.32.1.1.1.1	2.32.1.1.1.1.1
2.33	2.33.1	2.33.1.1	2.33.1.1.1	2.33.1.1.1.1	2.33.1.1.1.1.1
2.34	2.34.1	2.34.1.1	2.34.1.1.1	2.34.1.1.1.1	2.34.1.1.1.1.1
2.35	2.35.1	2.35.1.1	2.35.1.1.1	2.35.1.1.1.1	2.35.1.1.1.1.1
2.36	2.36.1	2.36.1.1	2.36.1.1.1	2.36.1.1.1.1	2.36.1.1.1.1.1
2.37	2.37.1	2.37.1.1	2.37.1.1.1	2.37.1.1.1.1	2.37.1.1.1.1.1
2.38	2.38.1	2.38.1.1	2.38.1.1.1	2.38.1.1.1.1	2.38.1.1.1.1.1
2.39	2.39.1	2.39.1.1	2.39.1.1.1	2.39.1.1.1.1	2.39.1.1.1.1.1
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INTRODUCTION

Northern Forest Region

This report summarizes insect and tree disease conditions in the Northern Region for 1965. Sections of the report dealing with tree diseases are presented on a regional basis, whereas data on insects are contained in the district sections.

Severe frosts after the inception of tree growth and insect development in 1963 and 1964 reduced populations of bud miners, leaf rollers and other early insects, and probably prevented an increase in population levels of the forest tent caterpillar in the Cochrane and Swastika districts. However, heavy infestations of the forest tent caterpillar occurred in three small areas of the Kapuskasing District in 1965.

Infestations of the birch skeletonizer and the amber-marked birch leaf miner, the only insects reaching outbreak proportions in 1964, declined in the region as a whole in 1965. Extensions in the distribution of the larch casebearer in Swastika and Cochrane districts and the mountain ash sawfly in the Cochrane District were observed. Insects recorded for the first time in the region were a borer in the new shoots of white birch in the Swastika District, the introduced birch leaf miner on white birch in the Cochrane District, Warren's collar weevil in Cochrane and Kapuskasing districts, and a new leaf-feeding beetle on wild rose.

The ink spot disease caused moderate-to-severe damage to trembling aspen foliage in extensive areas of the region. First herbarium records included, Coryneum septosporioides (C. negundinis) Sacc & Syd. on Manitoba maple in the Cochrane District, Scleroderris lagerbergii Gremmen on red pine seedlings, and Melampsoridium betulinum (Fr.) Kleb. on white birch in the Swastika District.

Balsam fir mortality continued as a major problem in the Guilfoyle area of the Kapuskasing District but the number of trees which died in 1965 was much lower than in recent years. Considerable balsam fir mortality was observed also in swampy areas north of Iroquois Falls in the Cochrane District.

An interesting development in the economics of forest products in the Northern Region has been the increased use of poplar by plywood factories and pulpwood mills. As a result the utilization of overmature trembling aspen and balsam poplar emphasized the importance of decays and heart rots to the plywood industry.

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

H. R. Foster

STATUS OF TREE DISEASES

Ink Spot Disease of Poplar, Ciborinia whetzelii (Seav.) Seav.

Infection levels of this disease increased in the Northern Region for the second consecutive year. A large area of medium-to-heavy infection occurred in Divisions 39, 42, the northern part of Division 63 in the Swastika District, in a large part of Division 43 and in a narrowing band across Division 44 to Homuth Township in the Cochrane District (see map). A second large area of medium-to-heavy infection in the Kapuskasing District extended from Owens and Cumming townships to the western part of Division 74 and the southern part of Division 47. Elsewhere in the region and south of a line joining Neely and Clive townships infection levels were light (see photograph).

Sweetfern Blister Rust, Cronartium comptoniae Arth.

Heavy infections of this rust recurred along the Bigwater Lake Road north of Timmins in the Cochrane District and along the eastern border of Division 43 from Nellie Lake to Sheraton Township. Light-to-heavy infections recurred in 11 townships in the Swastika District. New areas of light infection were found in Thorneloe and Clifford townships in the Cochrane and Swastika districts respectively. The rust was collected from its alternate host, sweet fern, in Macklem and Tisdale townships in the Cochrane District, and in Gross Township, Swastika District.

A plot was established in jack pine regeneration in Sheraton Township to determine the effects of this rust on young trees. Fifty trees 12 to 15 inches in height were tagged and the fruiting area was measured in relation to the circumference of the stems. One effect of the attack by the rust was shown in measurements of tree leader growth. The average leader length on infected trees was four inches compared with 10 inches on check trees.

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

This disease was found at most locations where white pine occurs in the Swastika District (see photograph). The highest incidence was again recorded in Grenfell Township where 16 per cent of the sample trees were infected (Table 1). Light infections occurred in eight other townships in the Swastika District, in Sheraton and McArthur townships in the Cochrane District, and in the Spruce Falls Nursery in the Kapuskasing District.

TABLE 1

Incidence of White Pine Blister Rust in the
Swastika District in 1965

Location (township)	Av. d.b.h. of trees in inches	Number of trees examined	Per cent of trees infected
Tyrrell	3	50	12
Grenfell	2	50	16
Milner	8	50	8
Arnold	2	100	2
Harris	6	50	8
Dunmore	6	50	6

Leaf Blight, Linospora tetraspora G. E. Thompson

This leaf blight of balsam poplar occurred commonly in the region. Heavy infections were recorded in Harker and Teck townships in the Swastika District, Homuth, Tisdale, and Mountjoy townships in the Cochrane District, and in Casselman, Frost, Usnac, Ecclestone, and Fintry townships in the Kapuskasing District. Infections of this organism caused darkening of the foliage of young balsam poplar at many points in the region.

A Needle Rust on Tamarack, Melampsora medusae Thum.

Infection levels of this rust on tamarack increased in 1965. Medium to heavy infections occurred in Clute, Calder, Lamarche, Calvert, and Ogden townships in the Cochrane District, and in Holloway, Harker, Milner, Holmes, Bond, and Lee townships in the Swastika District. Elsewhere in Cochrane and Swastika districts, and in the Casselman and Fauquier areas of Kapuskasing District infections were light.

The highest levels of infection occurred on young vigorous tamarack on abandoned farmlands, and on regeneration in swamps. However, the rust was collected from trees of all sizes regardless of soil or moisture conditions.

A Leaf and Twig Blight of Poplar, Pollaccia elegans Serv.

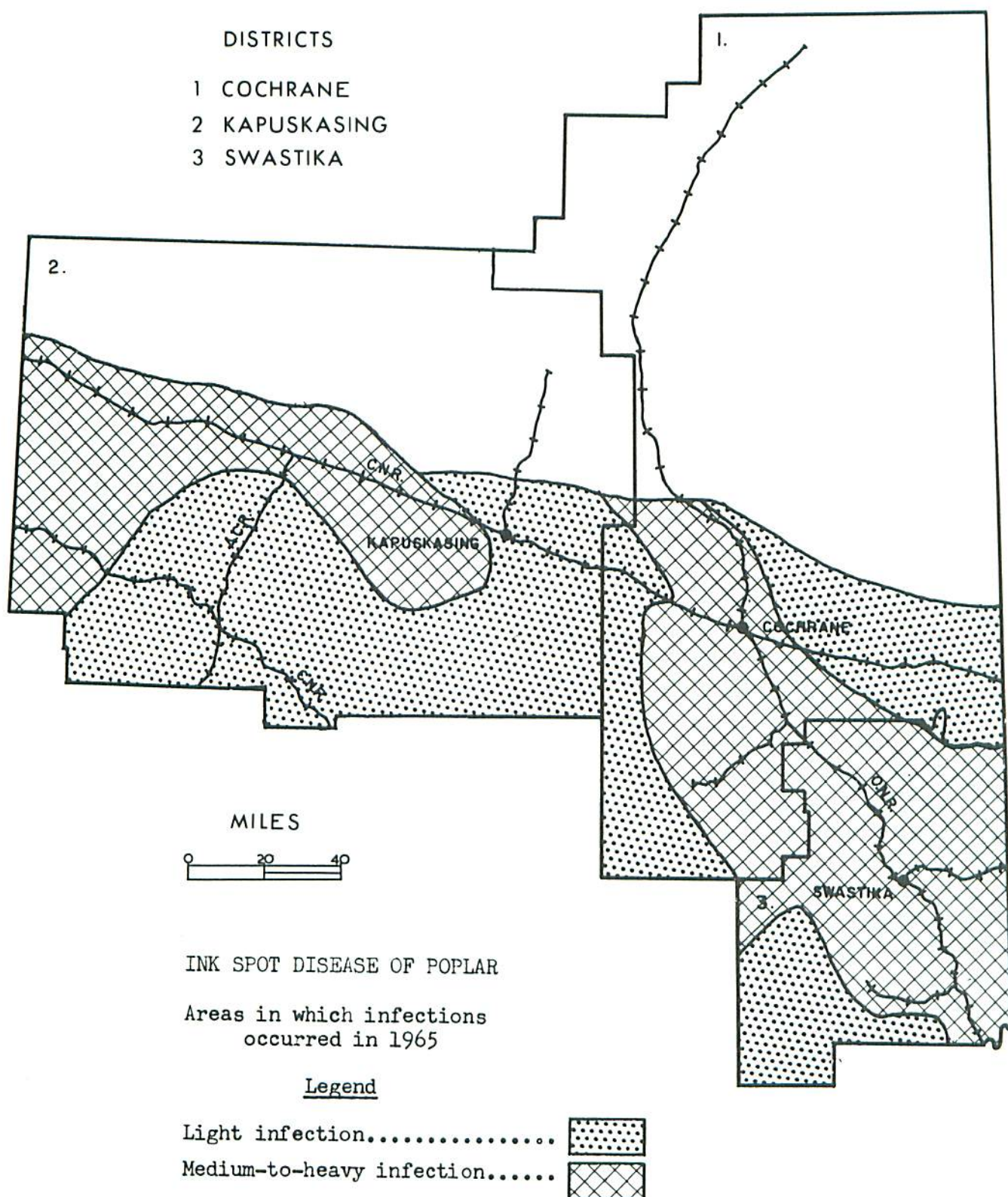
An increase in the incidence of tip blight on balsam poplar occurred in the Cochrane and Swastika districts and heavy infections recurred in the Kapuskasing District. Light infections at several points in the Cochrane District in 1964 increased to heavy intensity in 1965. In the Swastika District, an increase in infection levels occurred in the townships of Yarrow, Evantural, Pacaud, McVittie, and Benoit, while light infections were observed elsewhere in the district (Table 2). In the Kapuskasing District the incidence of infection was over 50 per cent wherever balsam poplar regeneration was examined. A collection of the ascigerous stage, Venturia populina (Vuill.) Fabric., was obtained in the Cochrane District.

TABLE 2

Severity of Pollaccia elegans Infections on Balsam Poplar Trees
in the Swastika District in 1965

Location (township)	No. of shoots in sample	Per cent of shoots infected	Severity of infection
McVittie	50	24	Heavy
Pacaud	50	28	Heavy
Benoit	100	15	Medium
Evantural	100	39	Heavy
Yarrow	50	12	Medium

NORTHERN FOREST REGION



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

An increase in the incidence of this twig blight on trembling aspen regeneration was observed throughout the Northern Region. Medium to heavy infections were reported in the Cochrane and Kapuskasing districts. The highest infection levels in the Cochrane District occurred in the townships of Homuth, Clergue, Clute, and Robb. In the Kapuskasing District, heavy infections were recorded in Casselman, Ecclestone, Fauquier, and Teetzel townships. In the Swastika District, the disease was widespread and usually occurred at the light-to-medium infection level. However, heavy infections occurred in Sheba, Grenfell, and Evantural townships (Table 3).

TABLE 3

Severity of Pollaccia radiosa Infections on Trembling Aspen
Trees in the Swastika District in 1965

Location (township)	Number of shoots in sample	Per cent of shoots infected	Severity of infection
Sheba	50	38	Heavy
Grenfell	100	27	Heavy
Evantural	50	64	Heavy
Lee	50	16	Medium
Garrison	50	24	Medium

A Rust on Alderleaf Buckthorn, Puccinia coronata Cda.

Infections of a foliar rust on alderleaf buckthorn increased in both incidence and severity in the Cochrane District. Heavy infections occurred in cutover areas in black spruce swamps in Mann, Hanna, Little, and Tully townships. Light infections occurred elsewhere in the Cochrane District, and in Skead Township in the Swastika District.

A Rust on Balsam Fir, Pucciniastrum epilobii Otth

An increase in the incidence and severity of this rust occurred in the Kapuskasing District and in the Smooth Rock Falls area in the Cochrane District. The highest infection levels in the Cochrane District were found along the Abitibi Road south of Smooth Rock Falls where more than 50 per cent of the needles of host trees were infected in 1965 compared with one per cent in 1964. Severe infections occurred throughout the Kapuskasing District. At one location in Rodgers Township 70 per cent of the needles were infected. Conspicuous discoloration of the foliage occurred in areas of heavy infection. All age classes of balsam fir trees were attacked.

Dieback of Red Pine, Scleroderris lagerbergii Gremmen

Severe infections of this disease organism occurred on 2-2 and 3-0 red pine planting stock in the Swastika Nursery. Heavy mortality of trees occurred in three compartments.

The disease first becomes apparent in early spring when buds fail to burst and

the foliage turns a dull grayish green colour. The bark and needles strip off easily leaving a slimy yellowish green stem. Later the foliage turns yellow and finally brown as the tree dies. The fruiting bodies can be most readily detected by the purple sporulation that occurs in early spring.

Further surveys will be carried out during 1966 to determine the distribution and extent of damage in existing plantations and the Swastika Nursery.

Frost Damage

Generally, frost damage was high in the Kapuskasing District but diminished in severity eastward in Cochrane and Swastika districts. Severe frost damage to new shoots of balsam fir and white spruce occurred at four locations in the Kapuskasing District. At one location in Gurney Township total mortality of new shoots was reported on 75 per cent of the balsam fir trees up to 12 feet in height. About five per cent of the new shoots of white spruce trees were damaged at this location. Ferns were damaged in small pockets as late as July 12 along the Gurney Road in the Kapuskasing District.

Winter Drying of Conifers

Damage to conifers by winter drying occurred in varying degrees across the region. In the Kapuskasing District white spruce plantations were damaged at two locations (30 per cent and 20 per cent of the trees at sample locations in Sankey and Studholme townships respectively). Damage in the Cochrane District was confined to a few red and white pine plantations.

TABLE 4

Other Noteworthy Diseases Collected in the Northern Region
in 1965

Organism	Host(s)	Remarks
<i>Apiosporina collinsii</i> (Schw.) Hoehn.	Se	Common in Cochrane and Swastika districts.
<i>Armillaria mellea</i> (Fr.) Kummer	bS, wS, pCh	Light tree mortality occurred at several points in all districts.
<i>Bifusella crepidiformis</i> Darker	bS	Light-to-heavy infections at numerous locations in the Swastika District.
<i>Ceratosystis minor</i> (Hedge.) Hunt.	jP	Blue stain in ambrosia beetle tunnels, Frost Township, Kapuskasing District.
<i>Chrysomyxa arctostaphyli</i> Diet	bS	Light in Thomas Township, Cochrane District.
<i>Chrysomyxa ledi</i> deBary	wS, bS	Heavy infection in Gurney Township. Light-to-medium in McMillan and Fenton townships of Kapuskasing District, in the Smooth Rock Falls area of Cochrane District, and in Milner Township, Swastika District.

TABLE 4 (continued)

Organism	Host(s)	Remarks
<i>Chrysomyxa ledicola</i> Lagerh.	wS, bS	Heavy at points north of Smooth Rock Falls, Cochrane District and in Rodgers Township, Kapuskasing District.
<i>Chrysomyxa pirolata</i> Wint.	wS	Collected in Mabee Township, Cochrane District.
<i>Coccomyces hiemalis</i> Higgins	pCh, ecCh	Light-to-heavy throughout the region.
<i>Coccomyces tumidus</i> (Fr.) DeN.	Se	Light at several points in the Cochrane District and in Studholme Township, Kapuskasing District.
<i>Coleosporium asterum</i> (Deit.) Syd.	jP	Heavy at several points in Cochrane and Kapuskasing districts.
<i>Coryneum negundinis</i> Berk. & Curt.	mM	Collected at South Porcupine (possible first Canadian record).
<i>Cryptodiaporthe densissima</i> (Ell.) Wehm.	rO	Heavy on ornamentals at Charlton, Swastika District.
<i>Cytospora chrysosperma</i> (Pers.) Fr.	tA, W, sPo, bAs, bPo	Light at many points in the region.
<i>Cytospora friesii</i> Sacc.	bF	Collected from dead host in Studholme Township, Kapuskasing District.
<i>Daldinia concentrica</i> (Bolt.) Ces. & de Not.	wB	Collected in Rodgers Township in the Kapuskasing District.
<i>Dermea balsamea</i> (Pk.) Seav.	bF	Light infection in Whitesides Township, Cochrane District.
<i>Dibotryon morbosum</i> (Schw.) Theiss. & Syd.	pCh, ecCh	Found commonly in the region.
<i>Fomes ignarius</i> (L. ex Fr.) Gill.	tA, wB	Observed on mature and weakened trees in Swastika and Cochrane districts.
<i>Gloeosporium</i> spp.	W, wB	Heavy infections in Lee Township, Swastika District and light in Shearer and Rodgers townships, Kapuskasing District.
<i>Hymenochaete agglutinans</i> Ell.	Ha, moM, wB	Common in understory and cutover areas in the Cochrane District.
<i>Hypodermella ampla</i> (J. J. Davis) Dearn.	jP	Heavy in Morrisette and Bannockburn townships, Swastika District and light in Freele and Tisdale townships of Cochrane District.
<i>Hypoxydon pruinaum</i> (Klotsche) Cke.	tA	Common throughout the region.
<i>Lachnella agassizii</i> (Berk. & Curt.) Seav.	bF	Light in Tisdale Township, Cochrane District.
<i>Lachnellula suecica</i> (de By. ex Fuchel) Nannf.	scP	Collected in Kettle Lakes Park.
<i>Lophodermium nitens</i> Darker	wP	Light in Whitesides Township in the Cochrane District.

TABLE 4 (continued)

Organism	Host(s)	Remarks
<i>Lophodermium pinastri</i> (Schrad. ex Fr.) Chev.	jP	Heavy on a few trees in the Cochrane District.
<i>Marssonina populi</i> (Lib.) Sacc.	tA	Heavy on trees growing on poor sites in Shaw and Whitesides townships of Cochrane District.
<i>Melampsoridium betulinum</i> (Fr.) Kleb.	wB	Light in Speight Township, Swastika District. First Ontario record on white birch.
<i>Melampsora</i> spp.	W, tA	Light-to-heavy infections throughout the region.
<i>Melampsorella caryophyllacearum</i> Schroet.	bF	Yellow witches' broom damage common in the region.
<i>Monolinia amelanchieris</i> (Reade) Hony.	Se	Light infections in Fauquier Township, Kapuskasing District.
<i>Mycosphaerella colorata</i> (Pk.) Earle.	Sheep laurel	Medium at several points in the Cochrane District.
<i>Mycosphaerella gaultheriae</i> (Cke. & Ell.) House	Winter- green	Light at several points in the Cochrane District.
<i>Nectria galligena</i> Bres.	stM	Medium infection in Hinks Township, Swastika District.
<i>Nothophacidium abietinellum</i> (Dearn.) Reid & Cain	bF	Common in the Swastika District.
<i>Nyssopsora clavellosa</i> (Berk.) Arth.	<i>Aralia</i> sp. <i>Clintonia</i> sp.	Medium in Gurney Township, Kapuskasing District, and light in Thomas Township, Cochrane District.
<i>Peridermium</i> sp.	jP	Light at points in Divisions 43 and 45 in the Cochrane District, and in Kimberly Township, Swastika District.
<i>Phragmidium</i> sp.	Wild rose	Heavy in Clavet and Wickstead townships, Kapuskasing District, and light at many points in the Cochrane District.
<i>Phoma</i> sp.	bF	Heavy at single locations in the Swastika and Kapuskasing districts.
<i>Pollaccia saliciperda</i> (All. & Tub.) v. Arx	W	Symptoms prevalent in Teck and Lee townships, Swastika District.
<i>Poria obliqua</i> (Pers. ex Fr.)	wB	Noted at several locations in the Cochrane District.
<i>Puccinia asteris</i> Duby	Aster	Common in the region.
<i>Puccinia bolleyana</i> Sacc.	Elderberry	Noted at several points in the Cochrane and Swastika districts.
<i>Puccinia caricina</i> (Schum.) Schroet.	Ribes sp.	Heavy in Garrison Township and light at several points else- where in the region.
<i>Puccinia dioicae</i> P. Magn.	Goldenrod	Collected in Teetzil Township, Kapuskasing District and in Terry Township, Swastika District.

TABLE 4 (continued)

Organism	Host(s)	Remarks
<i>Puccinia malvacearum</i> Bert. ex Mont.	Hollyhock	Collected in South Porcupine.
<i>Puccinia mesomajalis</i> Berk. & Curt. ex Pk.	Clintonia sp.	Heavy infections in Teetzel Town- ship, Kapuskasing District and light in the Cochrane District.
<i>Puccinia porphyrogenita</i> Curt. ex Thum.	bF	Single collection from Cochrane District.
<i>Puccinia recondita</i> Rob. ex Desm.	Thali- ctrum sp.	Heavy infection in Hilliard Town- ship, Swastika District.
<i>Pucciniastrum</i> sp.	bF	Single collections of infected cones from each district.
<i>Rehmiellopsis balsamea</i> Waterman	bF	Light damage in Division 43, Cochrane District.
<i>Rhytisma acerinum</i> Pers. ex Fr.	rM, moM	Heavy in Knight Township, Swastika District and light else- where in the region.
<i>Rhytisma punctatum</i> Pers. ex Fr.	moM	Found commonly in the region.
<i>Rhytisma salicinum</i> Pers. ex Fr.	W	Medium-to-heavy infections at many points in the region.
<i>Sarcotrochila balsameae</i> (Davis) Korf	bF	Heavy at one location in Otto Township, Swastika District.
<i>Septotinia populiperda</i> Water. & Cash.	tA	Light in Macklem Township, Coch- rane District.
<i>Thyronectria balsamea</i> (Cke. & Pk.) Seav.	bF	Light on a few trees in Whitesides Township, Cochrane District.
<i>Tranzchelia pruni-spinosae</i> (Pers.) Diet.	pCh	Light on one tree in Godfrey Township, Cochrane District.
<i>Tubercularia vulgaris</i> Tode. ex Fr.	scP	Medium in the Spruce Falls Nursery.
<i>Uncinula salicis</i> (DC. ex Merat) Wint.	bPo, W	Heavy in Gauthier Township, Swastika District and light at points in the Cochrane District.
Fume Injury	All species	Considerable damage to all tree species near Virginiatown, Swastika District.
White pine needle blight	wP	Heavy on a few small trees in McArthur Township, Cochrane District.

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Summary of Miscellaneous Insects Collected.....		E 18

H. R. Foster

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100

STATUS OF INSECTS

Gall Aphids on Spruce, Adelges spp.

Several gall aphids on spruce increased considerably in numbers in the district in 1965. The pineapple gall aphid, Adelges lariciatus (Patch), which occurred only in small numbers in the past, was abundant in 1965 on open-grown white spruce trees in Division 44. The number of galls was particularly high on a few ornamental trees in the Town of Cochrane. Population levels of the eastern spruce gall aphid, Adelges abietis L., were high on Norway spruce near Iroquois Falls. An introduced species, Adelges strobilobius Kalt., occurred in appreciable numbers on black spruce trees in the southern part of Division 43.

Birch Skeletonizer, Bucculatrix canadensisella Cham.

Infestations of the birch skeletonizer that occurred in the district in 1964 declined generally to light intensity. Light infestations persisted in most of the district south of a line from Abitibi Lake to Homuth Township. Within this area pockets of medium infestation were observed along lakeshores and in a few farm woodlots.

Sharp declines in larval numbers were observed at several points in Division 43 following the leaf-mining stage of the insect. Larval development was retarded by the cold wet summer and some were found in the second moult on September 10. Larval counts at sample points were lower than in 1964 (Table 5.)

Table 5

Summary of Larval Counts of the Birch Skeletonizer on White Birch Foliage in the Cochrane District in 1964 and 1965.

Note: Based on the examination of four leaves taken at cardinal points from each of five trees at each location.

Location (township)	Date checked in 1965.	Total no. of larvae		Average number of larvae per leaf	
		1964	1965	1964	1965
Mortimer	Sept. 1	211	128	11	6
Calder	Sept. 3	156	108	8	5
Glackmeyer	Sept. 3	91	52	5	3
Ogden	Sept. 8	113	102	6	5
Hillary	Sept. 8	57	46	3	2
Macklem	Sept. 9	106	22	5	1

A Pitch Midge, Cecidomyia reeksi Vock.

Populations of this insect have remained at a low level since 1962. No infested shoots were found in sample plots in Denton, Stimson, and Hepburn townships and minor increases in numbers of infested shoots occurred at four other sample points (Table 6).

Table 6

Summary of Pitch Midge Larval Counts on Jack Pine in the Cochrane District from 1963 to 1965.

Location (township)	Av. Ht. of sample trees in feet	No. of shoots examined in 1965	Per cent of shoots infested		
			1963	1964	1965
Robb	30	181	1.3	0.0	2.2
Murphy	23	193	4.0	0.6	11.0
German	17	211	1.6	0.0	0.9
Calvert	17	188	2.3	0.0	1.1

Spruce Budworm, Choristoneura fumiferana (Clem.)

Low populations of the spruce budworm occurred on open-grown white spruce trees at Departure Lake in Haggart Township, in a small area in Timmins Township and on balsam fir trees in Kendrey and Haggart townships. Collections of a few larvae were made at six other locations in the district.

Jack-pine Budworm, Choristoneura pinus Free.

Small numbers of larvae were collected from Iroquois Falls to Lipsett Lake in the eastern part of Division 43. Appreciable numbers occurred on open-grown jack pine trees in Calvert and Timmins townships. A total of eight collections was made in 1965 compared with one collection during the three previous years.

Larch Casebearer, Coleophora laricella Hbn.

This insect was first collected in the Cochrane District in 1960. Surveys between 1961 and 1964 failed to extend its distribution beyond the South Porcupine area. In 1965 small numbers of larvae were found in Calvert, Lamarche, and Fournier townships representing a considerable extension in the known range of the insect in the district.

A Twig Borer on Jack Pine, Conophthorus sp.

Light infestations of this insect occurred commonly on open-grown jack pine trees in Division 43. Except in Homuth Township, the insect was observed less frequently in Division 44 than in 1964. Counts of damaged twigs increased appreciably in Robb and Tisdale townships and decreased in Murphy and McKeown townships (Table 7).

Table 7

Summary of Damage by a Twig Borer on Twenty Jack-pine Trees in the Cochrane District in 1964 and 1965.

Location (township)	Av. d.b.h. of sample trees in inches.	Total number of damaged shoots		Number of infested leaders
		1964	1965	
Sheraton	4	8	9	0
Tisdale	5	28	41	0
Murphy	4	8	0	0
Robb	3	15	58	0
McKeown	3	21	10	0

European Spruce Sawfly, Diprion hercyniae (Htg.)

This sawfly has occurred commonly in small numbers on black and white spruce in the district since 1960. The insect occurred frequently in beating mat samples during the first generation in 1965, particularly in the Cochrane-Smooth Rock Falls area. Quantitative samples produced lower numbers of larvae in 1964 than in 1963 and 1965 (Table 8).

Table 8

Summary of European Spruce Sawfly Larval Counts Made in Cochrane District from 1963 to 1965.

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

Location (township)	Tree species sampled	Av. d.b.h. of sample trees in inches.	Total number of larvae per sample point		
			1963	1964	1965
Leitch	wS	5	9	4	4
Hanna	bS	3	3	0	1
Teefy	wS	5	2	0	1
Tisdale	wS	6	5	0	17
Calder	wS	8	25	1	4

Birch Leaf Miner, Fenusa pusilla Lep.

This European insect has slowly spread across the settled areas of Swastika District since it was first collected in 1961. It was collected for the first time in Cochrane District in 1965 when a heavy infestation was found on two ornamental white birch trees in the Town of Timmins. This leaf miner generally infests open-grown white birch and does little damage in forest stands.

American Aspen Bettle, Gonioctena americana (Schaefer.)

Pockets of medium infestation occurred in the townships of Hillary, Keefer, and Whitesides in the southwestern corner of Division 43. Light infestations were observed elsewhere in Division 43 and at a few points in Division 44. Regeneration and pole-size trembling aspen trees were the favoured hosts but a light infestation was observed on large aspen trees near Smooth Rock Falls.

A Weevil on Scots Pine, Hylobius sp.

A species of root collar weevil killed 23 Scots pine trees in a 1956 provenance test plot in the Kettle Lake Park area and two trees in a nearby 1954 plantation. Larvae of the weevil were tentatively identified as Hylobius warreni Wood. The weevil showed little preference for any of the five strains of Scots pine in the test plot (Table 9).

Table 9

Summary of Weevil Attack on Five Strains of Scots Pine in a 1956 Provenance Test in the Kettle Lakes Park in 1965.

Scots pine strain	Total number of trees examined	Number of trees infested by weevil	Per cent of trees infested
Adirondacks	138	4	3.0
Norfolk	175	5	3.0
Austria	261	1	0.3
Belgium	269	3	1.0
Denmark	326	10	3.3

Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

High populations of this insect recurred in Denton and Hillary townships in the southern part of Division 43 and north of Smooth Rock Falls in Homuth Township. Low populations were observed on young trembling aspen at many points in the district and at a few locations on balsam poplar (Table 10). Several collections were made from willow.

Table 10

Summary of Aspen Blotch Miner Counts in the Cochrane District from 1963 to 1965.

Note: Based on the examination of 100 leaves taken at random from the mid point of three 15-foot trees at each point.

Location (township)	Tree species	Number of mines per 100 leaves		
		1963	1964	1965
Dempsey	tA	9	0	5
Mountjoy	tA	5	2	1
Haggart	tA	49	4	11
Brower	tA	8	0	3
	bPo	1	0	3
Murphy	tA	8	0	4
	bPo	6	0	1
Clute	tA	6	1	2
	bPo	8	5	12

Forest Tent Caterpillar, Malacosoma disstria Hbn.

A decline in numbers of the forest tent caterpillar occurred in the district. Light infestations in German, Whitney, and Tisdale townships in 1964 subsided in 1965. Single larva were collected at five locations in the district. Severe frosts during the larval period in both 1963 and 1964, and parasitism in 1964 were important control factors. No egg bands were found in the district in the fall.

Egg bands of the forest tent caterpillar were collected on May sixth and set up for hatching tests at the South Porcupine Headquarters. Suitable hatching weather prevailed until May 13 when severe frost occurred. Hatching was sporadic and only five per cent of the eggs hatched by the end of May. Records of day-to-day hatching of 10 egg bands are shown in Table 11.

Table 11

Summary of Forest Tent Caterpillar Hatch from Ten Egg Bands in the Cochrane District in 1965.

Date of hatch	Number of larvae hatched from egg bands									
	1	2	3	4	5	6	7	8	9	10
May 12	-	-	-	-	-	24	-	-	-	-
May 13	-	1	1	-	-	2	-	-	-	-
May 14	-	15	4	-	-	4	-	-	-	-
May 15	-	7	3	-	-	-	-	-	-	-
May 16	-	-	1	-	-	-	-	-	-	-
May 17	-	1	18	-	-	-	2	-	-	-
May 18	2	-	-	-	-	-	4	-	-	-
May 19	1	-	1	-	-	-	1	-	-	-
May 20	1	-	1	-	-	-	2	-	-	-
May 21	-	-	-	-	-	-	-	-	-	-
May 22	2	-	-	-	-	-	-	-	-	-
Total hatch	6	24	29	0	0	30	9	0	0	0
Per cent hatch	4	11	14	0	0	14	4	0	0	0

Western Tent Caterpillar, Malacosoma pluviale (Dyar)

Population levels of the western tent caterpillar increased in the south half of the district in 1965. Pockets of medium infestation occurred in German, Deloro, and Whitney townships. Light infestations were observed at many points in Division 43 and at a few locations in divisions 44 and 45. Minor increases were recorded at six quantitative sample points (Table 12).

Field observations showed fair hatch in the above areas and healthy late instar larvae completed development in most colonies. This contrasted with the very poor hatch and the slow larval development of the forest tent caterpillar.

Table 12

Summary of Western Tent Caterpillar Larval Colony Counts in Square Chain Sample Plots in the Cochrane District in 1964 and 1965.

Location (township)	Number of colonies counted	
	1964	1965
Calvert	2	3
Godfrey	2	3
German	0	3
Ogden	1	3
Thorneloe	2	6
Deloro	2	7

Balsam-fir Sawfly, Neodiprion abietis complex

Heavy infestations of this insect occurred on a few balsam fir trees in Adanac Township and light infestations were observed in the adjoining townships of Webster and Homuth. Light infestations occurred on white spruce and balsam fir trees at the western outskirts of South Porcupine. Elsewhere in the district only scattered colonies of this sawfly were collected from balsam fir, white and black spruce trees.

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

This insect occurred more commonly in Division 43 than in recent years. Population levels increased at sample locations in Tisdale Township, and decreased in Fournier Township (Table 13). Heavy rainfall and cold weather delayed development of the insect and mid-instar larvae were collected as late as September.

Table 13

Summary of Red-headed Jack-pine Sawfly Counts on Ten Jack-pine Trees in the Cochrane District from 1963 to 1965.

Location (township)	Av. d.b.h. of sample trees in inches.	No. of trees infested in 1965	Total number of colonies on ten trees		
			1963	1964	1965
Robb	3	8	6	9	12
Tisdale	5	4	16	6	16
Fournier	2	2	2	16	2
Calvert	5	4	-	-	5

Leaf-folding Sawflies, Phyllocolpa spp.

Several species of leaf-folding sawflies formerly identified as Nematus spp. were regrouped in 1965 into the genus Phyllocolpa. High populations occurred on trembling aspen understory in Bartlett and Keefer townships. Elsewhere in the district population levels were low. Larval counts were negative at six locations in 1964 but averaged two larvae per 100 leaves in 1963 and 1965 (Table 14).

Table 14

Summary of Leaf-folding Sawfly Counts on Trembling Aspen in the Cochrane District from 1963 to 1965

Note: Based on the examination of 100 leaves taken at random from three trees at each point.

Location (township)	Av. d.b.h. of sample trees in feet	Number of folds on one hundred leaves		
		1963	1964	1965
Brower	2	2	0	2
Murphy	2	2	0	3

TABLE 14 (continued)

Location (township)	Av. d.b.h. of sample trees in feet	Number of folds on one hundred leaves		
		1963	1964	1965
Haggart	2	1	0	5
Dempsay	2	3	0	0
Clute	2	1	0	2
Mountjoy	3	0	0	1

Medium to heavy infestations of a leaf-folding sawfly on balsam poplar persisted in farm areas around Cochrane and in cutover areas in Division 43. Light to medium infestations occurred at many other points in the district.

High populations of a third species, Phyllocolpa sp. near agamus occurred on narrow-leaved willow in Hanna Township.

White-pine Weevil, Pissodes strobi (Peck)

A heavy infestation of the white-pine weevil persisted on white spruce trees on an abandoned farm in Whitney Township. A medium infestation occurred on second growth jack pine trees in Sheraton Township. Light infestations were observed on white spruce, black spruce, jack pine, and Scots pine at many other points in the district. Minor increases in numbers of weevilled leaders occurred at six sample points (Table 15).

TABLE 15

Summary of Trees Weevilled at Sample Points in the Cochrane District
in 1964 and 1965

Location (township)	Tree species	Av. height of sample trees in feet	Per cent of trees weevilled	
			1964	1965
Sheraton	bS	12	1	4
	jP	12	1	12
Calder	wS	7	4	7
Whitney	wS	10	18	27
Hanna	bS	10	0	2
Homuth	bS	14	3	5
Dempsay	bS	11	0	3

Tallies of white-pine weevil attacks were made in eleven strains of Scots pine in a provenance test plot in German Township (Table 16). Several interesting findings resulted from the survey. Susceptibility to weevil attack varied from no attack on the Adirondack strain to 39 per cent on the West Baltic and Cevennes strains. Equally interesting was the ability of some strains to recover from severe adult weevil feeding and by smothering the young larvae with pitch. The highest percentage of successful weevil attack occurred in the slow-growing strains in most instances. Further studies will be carried out in 1966.

Table 16

Summary of White-pine Weevil Attack on Eleven Strains of Scots Pine in German Township

Note: Growth rate based on the average length of 10 representative leaders for each strain.

Origin of seed	No. of trees examined in 1965	Average leader growth in inches	Per cent of trees attacked	Per cent of infested leaders	
				Killed	Survived
Auvergne	60	6	23	78	22
Haute Loire	77	5	17	77	23
Finland	83	5	11	11	89
South Finland	63	5	19	75	25
Cevennes	126	5	39	61	39
Adirondack	92	7	0	0	0
East Baltic	172	9	25	23	77
Sweden	102	9	15	7	93
West Europe	162	10	15	58	42
Lower Austria	93	11	27	32	68
West Baltic	144	12	39	16	84

Balsam Shoot-boring Sawfly, Pleroneura borealis Felt

Population levels of this primitive sawfly were considerably reduced, however, small numbers of trees were heavily infested at several points in the district (Table 17).

Table 17

Summary of Balsam Shoot-boring Sawfly Counts in the Cochrane District from 1963 to 1965

Note: Based on the examination of all buds on four branch tips from each of five trees at each point.

Location (township)	Av. ht. of sample trees in feet	No. of shoots examined in 1965	Per cent of shoots infested		
			1963	1964	1965
Haggart	26	379	1.5	4.4	0.0
Thorneloe	12	386	0.0	12.0	0.0
Calder	28	385	3.9	7.3	4.6
Timmins	26	389	1.3	4.2	3.7
Pharand	21	376	4.8	11.1	2.8

Larch Sawfly, Pristiphora erichsonii (Htg.)

Infestations declined to low intensity in the southern part of the district. However, a heavy infestation occurred in a cutover area in Heightington Township and medium infestations persisted along the Ontario Northland Railway from Moose River Crossing to Moosonee. Elsewhere in the district infestations were light and generally restricted to single or groups of tamarack trees. Tree mortality was light in a few scattered stands in the district. Few trees were infested by the eastern larch beetle.

Mountain-ash Sawfly, Pristiphora geniculata (Htg.)

The distribution of this introduced sawfly increased in the district occurring at 17 locations in 1965 compared with five in 1964 (see map). The most northerly records of the insect were in Adanac and Heightington townships in Divisions 44 and 45 respectively. Population levels were low.

Amber-marked Birch Leaf Miner, Profenusa thomsoni (Konow)

Population levels of this leaf miner were considerably lower than in 1964, in older areas of infestation in the district. Infestations in Frederickhouse, Night Hawk, Ice Chest, Waddington, Porcupine, and Abitibi lake areas declined from medium in 1964 to low intensity in 1965 (Table 18). Light to medium populations persisted in more recently infested areas northwest of Cochrane and Smooth Rock Falls.

Table 18

Summary of Damage by Profenusa thomsoni on White Birch Foliage in the Cochrane District in 1964 and 1965.

Location (township)	Av. ht. of sample trees in feet	Per cent of leaves mined		Total number of mines	
		1964	1965	1964	1965
Tisdale	12	33	9	145	12
Glackmeyer	22	12	10	24	14
Timmins	20	23	8	75	11
Hillary	18	10	5	22	5
Evelyn	22	34	5	98	5
Mortimer	25	40	11	103	17

A Poplar Leaf Roller, Pseudexentera oregonana Wlshm.

A heavy infestation of this leaf roller recurred in the Jowett Lake area in Clute Township where trembling aspen trees in all size classes were attacked. A medium infestation occurred on understory trembling aspen in the Calder Township. Light infestations were observed at many points in Division 44 and at a few locations in Division 43 and 45.

Spruce Bud Midge, Rhabdophaga swainei Felt

Population levels of this insect were extremely low in 1964 and 1965. Quantitative samples at six locations produced negative results and the insect was difficult to find at plots in Hanna and Matheson townships. High parasitism was observed in the field and a collection of infested buds from Calder showed 41 per cent parasitism.

Pine Tip Moth, Rhyacionia adana Heinrich

A light infestation of the pine tip moth has persisted on red pine regeneration in Kirkland Township since 1960. In 1965 the insect was found for the first time on small jack pine trees in the district. Light infestations occurred along bush roads in Dempsay, Stimson, and Freele townships. Population levels were high in Freele Township where 10 larvae were collected from one 12-inch jack pine tree. Small numbers of larvae were observed in a jack pine plantation in Sheraton Township. Cocoons of this insect are formed in niches cut into the tree root just below the surface of the soil (see photograph).

Wood Wasps, Siricidae

Population levels of wood wasps were low in the Cochrane District in 1965. However, material containing siricids was collected from balsam fir trees in Evelyn Township and from white spruce and jack pine trees in Keefer Township. Blue horntail adults, Sirex juvencus (L.), emerged from the jack pine logs. Subsequent collections were made to obtain parasites for M. A. Stillwell of the Fredericton Insect Laboratory. As many as nine wood wasp adults emerged per square foot of bark surface but no parasites were recovered.

Pine Tortoise Scale, Toumeyella numismaticum (Pettit and McD.)

Heavy infestations of this insect occurred on several strains of Scots pine in provenance test plots at Kettle Lakes Park. Light infestations were observed on scattered jack pine trees in the vicinity of the Kamiskotia Mine in Robb Township and along roadsides in Shaw and Denton townships.

Poplar Leaf-mining Beetles, Zeugophora spp.

Populations of these minute beetles declined to trace levels in 1964. Although adults and mines were scarce during the first generation in 1965 appreciable numbers of mines were observed in late summer during the second generation. Light infestations occurred on trembling aspen in the vicinity of Schumacher and at Gibson Lake in Macklem Township and on balsam poplar in Homuth Township.

Bark Beetles

Collections of bark beetles were made to determine their distribution in the district and to build up reference collections. Seven species of bark beetles were collected from various host trees and identified by Dr. J. B. Thomas of the Forest Insect Laboratory at Sault Ste. Marie (Table 19).

COCHRANE DISTRICT

MOUNTAIN-ASH SAWFLY
Locations where infestations
occurred in 1965

Legend

Light infestation.....

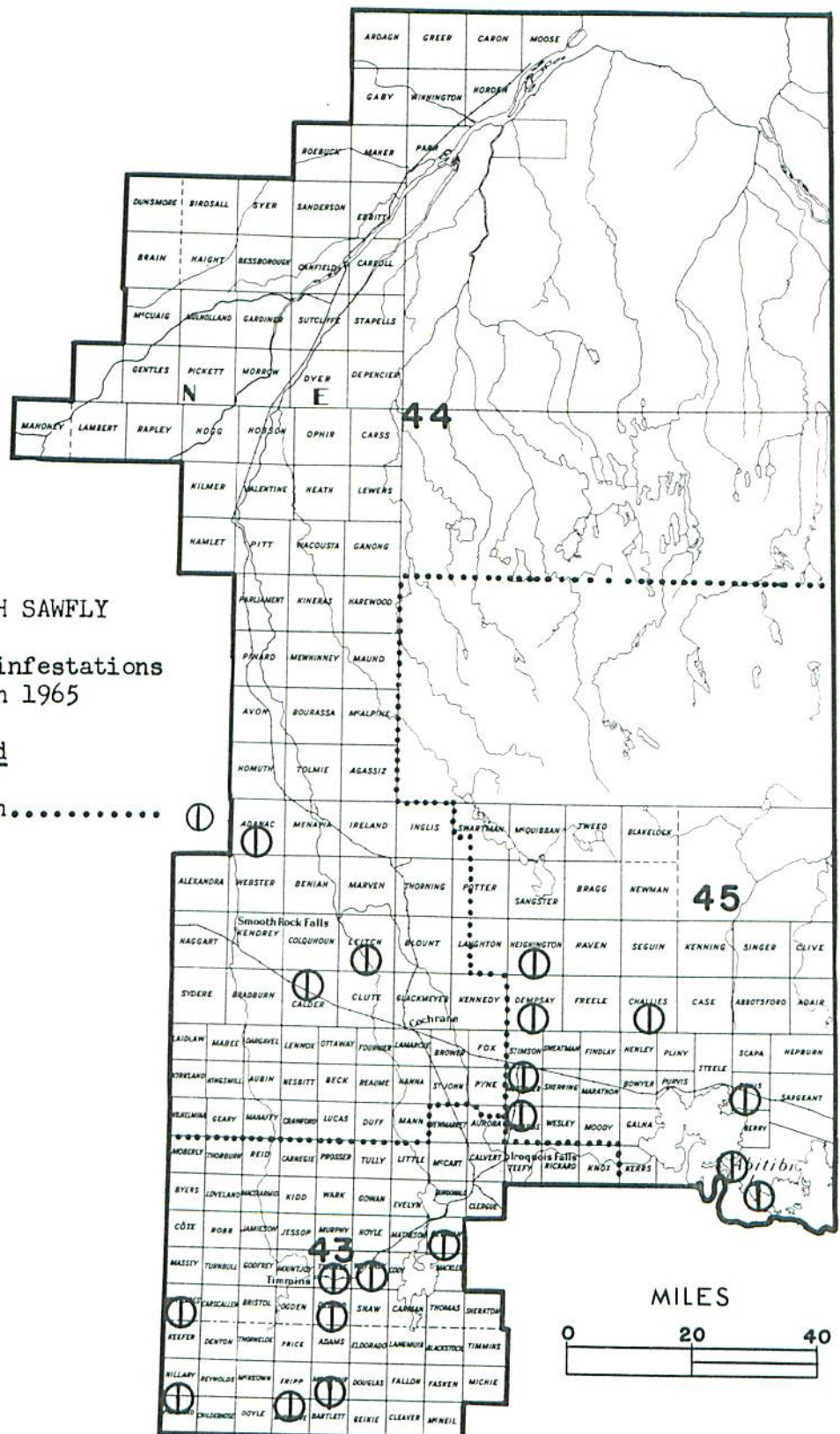


TABLE 19

Summary of Bark Beetle Collections in the Cochrane District
in 1965

Insect Species	Host(s)	Location collected (township)
<i>Dendroctonus piceaperda</i> Hopk.	wS	Tully
<i>Dryocoetes autographus</i> (Ratz.)	wS	Tully
<i>Ips borealis</i> Sw.	wS	Tully
<i>Pityogenes hopkinsi</i> Sw.	wP	Whitesides
<i>Pityokteines sparsus</i> Lec.	bF	Evelyn
<i>Pityophthorus</i> sp.	jP	Pharand
<i>Polygraphus rufipennis</i> Kby.	wS	Tully

TABLE 20

Summary of Miscellaneous Insects Collected in the Cochrane District
in 1965

Insect	Host(s)	Remarks
<i>Acleris variana</i> Fern.	wS, bF	Light in a small stand in Pyne Township.
<i>Acrobasis betulella</i> Hlst.	wS	Light in the Laughton and Heightington townships.
Aleyrodidae (white flies)	bPo, W	Light in German Township.
<i>Altica corni</i> Woods	Do	Light wherever dogwood found in the district.
<i>Anchylopera burgessiana</i> Zell.	pCh	Light at many points.
<i>Anoplonyx canadensis</i> Htgn.	tL	Light at points in Division 44.
<i>Aphrophora parallela</i> (Say)	jP	Light at points along eastern border of Division 43.
<i>Archips cerasivoranus</i> (Fitch)	ecCh	Light in the Clute and Leitch townships.
<i>Argyresthia laricella</i> Kft.	tL	Light on a few trees in Clute Township.
<i>Arge</i> sp. (formerly <i>pectoralis</i>)	wB	Few colonies in Macklem Township, poor hatch observed in Godfrey Township.
<i>Corythucha</i> sp.	wB	Heavy at points in Division 43.
<i>Dasyneura balsamicola</i> Lintn.	bF	Medium in Dundonald and light at several other points.
<i>Dimorphopteryx pinguis</i> (Nort.)	wB	Low numbers at many points.
<i>Dioryctria reniculella</i> Grt.	wS	Light in Tisdale Township.
<i>Disonycha alternata</i> Ill.	W	Light in the Denton Township.
<i>Epinotia</i> sp.	AL	Heavy in alder catkins at several points in the district.
<i>Epinotia cruciana</i> Linn.	W	Light at a few points west of Cochrane.
<i>Euura hospes</i> (Walsh)	W	Heavy on a few trees in the Timmins and South Porcupine areas.
<i>Fenusa dohrnii</i> (Tischb.)	AL	Light in Bradburn Township.

TABLE 20 (continued)

Insect	Host(s)	Remarks
<i>Galerucella cavicollis</i> Lec.	pCh	Medium in the Fournier and Dumpsay townships and light at many other points.
<i>Galerucella decora</i> Say	W	Population levels reduced from heavy in 1964 to light in areas south of Smooth Rock Falls.
<i>Galerucella</i> sp. near <i>tuberculata</i>	tA	Light in Fournier Twp.
<i>Gracillaria syringella</i> F.	Lilac	Heavy on ornamentals in Timmins.
<i>Hemichroa crocea</i> (Four.)	Al	Increased to light at a few points.
<i>Lambdina fiscellaria fiscellaria</i> (Gn.)	bF	Trace populations in the Abitibi Lake area.
<i>Lepidosaphes ulmi</i> (Linn.)	Al, moM	Generally light in Division 43.
<i>Melangromyza schineri</i> (Gir.)	tA	Light at several points.
<i>Monoctenus fulvus</i> Nort.	eC	Light in the Tisdale Township.
<i>Nematus limbatus</i> Cress.	W	Medium on a few trees in McArthur Township and light at several other points in Division 43.
<i>Neodiprion pratti banksianae</i> Roh.	jP	A few colonies in Dundonald and Mountjoy townships.
<i>Neodiprion nanulus nanulus</i> Schedl.	jP, rP	Light on a few trees in Dundonald Township.
<i>Petrova albicapitana</i> Busck.	jP	Light at many points in the district.
<i>Phratura purpurea purpurea</i> Brown	tA	Light in Dundonald Township.
<i>Phyllocnistis populiella</i> Cham.	tA	Low populations at many points.
<i>Pikonema alaskensis</i> (Roh.)	wS	Light in Colquhoun Township, a few larvae found at several locations in the second generation.
<i>Pineus floccus</i> Patch	bS	Light in Geikie Township.
<i>Pineus similis</i> Gill.	wS	Light in Evelyn Township.
<i>Rhynchaenus rufipes</i> Lec.	W	Heavy on shiny willow at South Porcupine.
<i>Sarrothripus cinereana</i> (N. and D.)	bPo	Light on small open-grown trees.
<i>Syneta extorris borealis</i> Brown	bF	Decreased to low numbers in 1965.
<i>Tenthredinidae</i> # S 37	tA	Light in the Tisdale, Mortimer, Fournier, and Homuth townships.
<i>Trisetacus grosmani</i> Keifer	bF	Collected in Haggart Township.