Status of Insects in the White River District

Constable, D.C.

Information Report O-X-47
(Forest Research Laboratory, Ontario Region)

Information Report No.	Subject	Author
O-X-34	Forest Insect & Disease Surveys	
	--Lindsay District	W. J. Miller
O-X-35	--Tweed District	F. Livesey
O-X-36	--Kemptville District	J. Hook
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O-X-38	--Lake Simcoe District	A. A. Harnden
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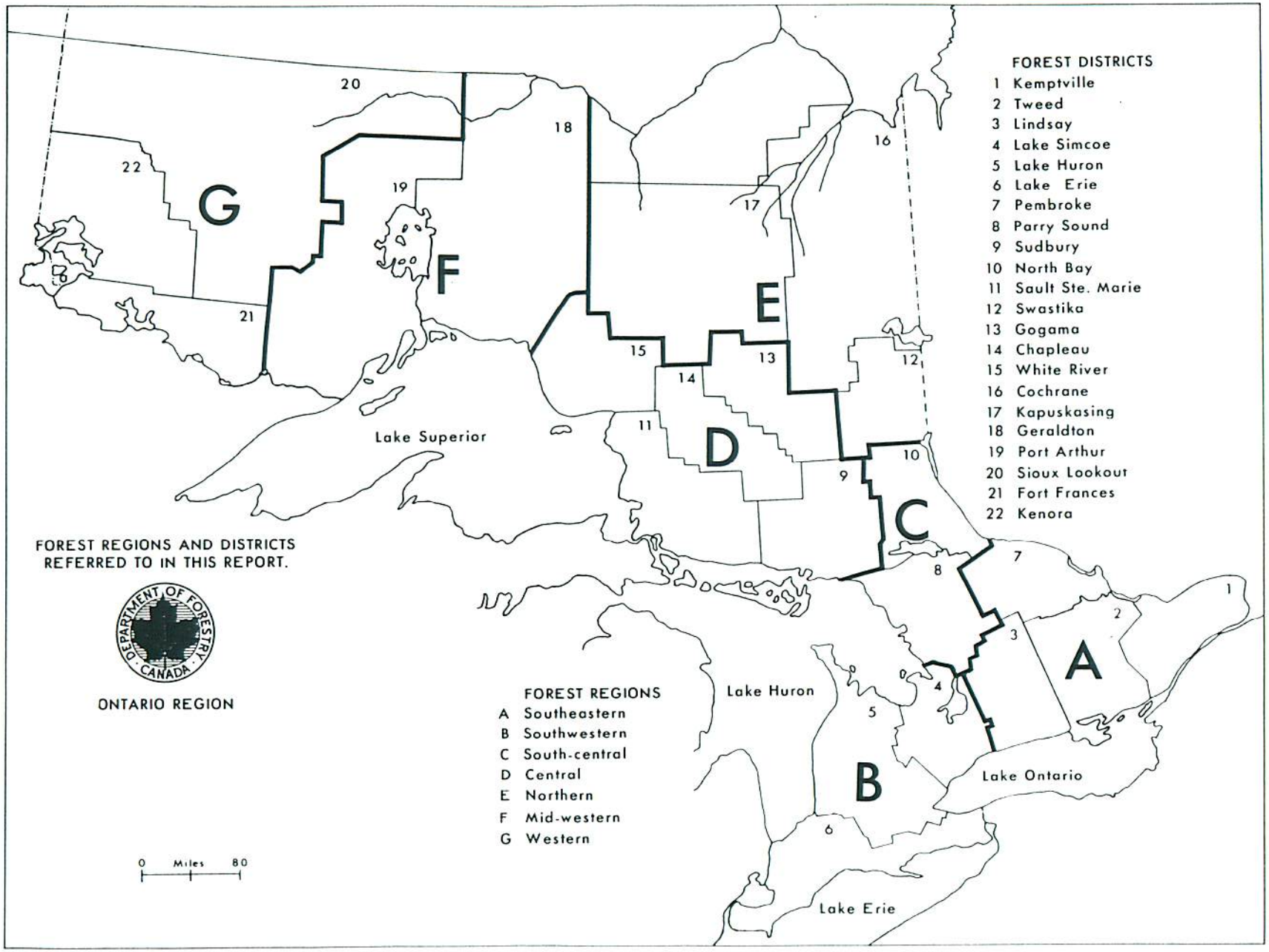

FOREST DISTRICTS
1 Kemptville
2 Tweed
3 Lindsay
4 Lake Simcoe
5 Lake Huron
6 Lake Erie
7 Pembroke
8 Parry Sound
9 Sudbury
10 North Bay
11 Sault Ste. Marie
12 Swastika
13 Gogama
14 Chapleau
15 White River
16 Cochrane
17 Kapuskasing
18 Geraldton
19 Port Arthur
20 Sioux Lookout
21 Fort Frances
22 Kenora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

FOREWORD

J. E. MacDonald

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

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

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

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

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

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

STATUS OF INSECTS IN THE WHITE RIVER DISTRICT

D. C. Constable

Ugly-nest Caterpillar, Archips cerasivoranus (Fitch)

Population levels of this tortricid were comparable to 1965 (Table 5). In Township 30 Range 23 a heavy infestation persisted on immature choke cherry along Highway 17. Small numbers of larval colonies were observed elsewhere in the district.

TABLE 5

Summary of Ugly-nest Caterpillar Colony Counts
in White River District from 1964 to 1966

Location	Sample unit	Number of tents observed		
		1964	1965	1966
Township 29 Range 23	1 square chain	0	0	1
Township 74	1 mile roadside	1	0	0
Township 30 Range 23	1 mile roadside	470	435	461
Township 29 Range 23	1 square chain	45	56	49

Spruce Budworm, Choristoneura fumiferana (Clem.)

An intensive survey of this important forest insect was carried out in the district in areas where severe defoliation and mortality occurred in the late 1940's. Both open-grown balsam fir and white spruce trees were sampled at numerous locations throughout the district but all larvae obtained were from white spruce. Little defoliation was observed at sample points (Table 6).

TABLE 6

Summary of the Spruce Budworm Counts
in White River District in 1966

Location	Average d.b.h. of trees in inches	No. tray samples	Total no. of larvae obtained
Pearkes Twp.	5	20	3
Mi. 6 O.P.C.	3	5	1
Township 74	5	10	3
Barbara Lake	3	10	6
Township 71	3	7	4
Township 29 Range 23	10	10	0

Larch Casebearer, Coleophora laricella Hbn.

This pest of tamarack and larch was first collected in the White River District in 1948. In 1961 intensive surveys were undertaken to determine the distribution and abundance of this insect. During the period from 1961 to 1964 larval populations had gradually increased. However, in 1965 the population trend showed a decrease and in 1966 a complete collapse occurred as indicated by quantitative sampling at five points in the district (Table 7).

W. River District

TABLE 7

Summary of Larch Casebearer Larval Counts
in White River District from 1964 to 1966

NOTE: Counts were based on the number of larvae from four 18-inch branch tips from each of four trees at each location.

Location	Average d.b.h. of trees in inches	Average no. of larvae per branch tip		
		1964	1965	1966
Leslie Township	4	1.0	0.2	0
Township 71	4	7.1	1.8	0
Township 29 Range 23	5	1.1	0.3	0
Township 30 Range 26	4	12.5	8.8	0
Pic Township	5	14.5	0.6	0

Wandering Sawfly, Dimorphopteryx pinguis (Nort.)

Prior to 1965, this insect was rarely found in the district. A light infestation was observed in Pic Township in 1965, but only scattered trees were defoliated. In 1966, a small pocket of white birch in the same area was severely defoliated (see photograph). Elsewhere in the district damage was insignificant.

European Spruce Sawfly, Diprion hercyniae (Htg.)

This introduced pest has gradually extended its range in the district since 1961 when five larvae were collected in Glasgow Township. Small numbers were found at four locations in 1964 and 1966. The insect was more abundant in Township 71 in 1966 than previously recorded in the district. Its known distribution now extends from Township 31 west to Township 74. White spruce was the preferred host.

TABLE 8

Summary of European Spruce Sawfly Larval Counts
in White River District in 1966

Location	Average d.b.h. of trees in inches	Total no. of larvae per 15-tray sample
Township 71	5	20
Hunt Township	3	1
Township 74	4	1
Township 29 Range 23	4	1

American Aspen Beetle, Gonioctena americana (Schaeff.)

Populations of this aspen defoliator were generally higher throughout the district than in 1965. Pockets of heavy defoliation occurred to open-grown aspen reproduction along roadsides and lakeshores in Townships of Hunt, Cecile

and 64 (Table 9). Light to medium damage was observed at various locations elsewhere in the district.

TABLE 9

Degrees of Defoliation and Infestation of the American Poplar Leaf Beetle in White River District in 1966

Location	Per cent defoliation	Degree of infestation
Hunt Township	40	M
Township 64	60	H
Mikano Township	60	H
Cecile Township	60	H
Pearkes Township	10	L
Gertrude Township	10	L
Township 30 Range 23	20	M
Knowles Township	20	M

Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

Population levels of this leaf miner increased sharply compared with 1965. Counts of mined leaves were considerably higher than those reported since 1964 (Table 10).

Trembling aspen reproduction along Dubreuil's and Tukanee Lake roads was heavily infested. Light to medium leaf mining of aspen, balsam poplar, and willow were observed at numerous locations throughout the district.

TABLE 10

Summary of Aspen Blotch Miner Counts at Five Locations in White River District from 1964 to 1966

NOTE: Counts were based on examination of 100 leaves from three aspen trees at each location.

Location	Average d.b.h. of trees in inches	Per cent of leaves mined 1964	1965	1966
Mikano Township	4	1	1	28
Hunt Township	2	0	1	18
Barbara Lake	4	0	1	14
Mi. 2 Cp. 70 rd.	3	0	1	10
Township 30 Range 23	3	2	2	40
Hunt Township	2	0	15	14

Western Tent Caterpillar, Malacosoma pluviale (Dyar)

A slight increase in numbers of larval tents per mile of roadside occurred in the district. The insect has been consistently more abundant along the Manitouwadge road than at other sample points (Table 11).

TABLE 11

Summary of Western Tent Caterpillar Counts per Measured Mile of Roadside in White River District

Location	Number of tents per mile or roadside 1964	1965	1966
Mi. 18 Manitouwadge Rd.	16	8	10
Bryant Township	6	5	5
Magone Township	6	0	7
Mi. 7 Cp. 70 Rd.	8	4	6
Township 71	8	5	5

Red-pine Sawfly, Neodiprion nanulus nanulus Schedl.

This sawfly was found more frequently than in 1965 particularly in the northeastern portion of the district (Table 12). Jack pine trees on rocky slopes, shorelines and sandy hillsides were the preferred hosts.

TABLE 12

Summary of Larval Colony Counts of the Red-pine Sawfly in White River District

Location	Average d.b.h. of trees in inches	No. of trees examined	Average no. of colonies per tree
Township 70	5	10	0.1
Township 27	3	10	1.2
Challener Twp.	4	10	0.4
Hunt Township	3	10	0.4
Pearkes Township	3	10	0.2

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

This pine sawfly virtually disappeared from the district in 1966. Negative counts were recorded at all quantitative sample points (Table 13). Single larval colonies were found only in Hunt Township and Township 64. Population levels at sample points were comparable to 1962.

TABLE 13

Summary of Larval Colony Counts of Red-headed Jack-pine Sawfly in White River District in Alternate Years 1962 - 1966

Location	Average d.b.h. of trees in inches	No. of trees examined	Average no. of colonies per tree		
			1962	1964	1966
Hunt Township	5	20	0	0.8	0
Hunt Township	2	20	0	1.2	0
Township 70	4	20	0	2.2	0
Township 64	5	20	0	2.3	0
Township 71	3	10	.04	1.4	0
Pearkes Township	5	10	0	0.4	0

Pitch Nodule Maker, Petrova albicapitana Busck.

Unusually large numbers of this nodule maker occurred for the second consecutive year in the Ontario Paper Company limits. Infested trees ranged from 3 to 7 feet in height. On July 8, a total of 188 nodules was counted on 100 trees 10 miles south of Camp 70. Twenty sample trees were tagged and the location of terminal and lateral nodules was marked with metal tags to carry out survival studies in the spring of 1967 (Table 14).

A light infestation occurred on natural jack pine regeneration along the Dump Lake road where 12 nodules were counted on 55 trees. Elsewhere in the district, the insect occurred sporadically.

TABLE 14

Number of Terminal and Lateral Shoots Infested by the Pitch Nodule Maker on Twenty Sample Trees in White River District in 1966

Location	Average height of trees in feet	No. of terminal shoots infested	No. of lateral shoots infested
Camp 70 O.P.C.	5	12	29

Leaf Folding Sawflies, Phyllocolpa spp.

Population levels of these sawflies increased considerably in 1966. Light to severe leaf damage occurred at numerous locations in the district. The principal host was trembling aspen but balsam poplar and willow were also attacked to a lesser degree. The number of folds containing larvae was relatively low compared with the number of folds present at sample points (Table 15).

TABLE 15

Summary of Leaf Folding Sawfly Counts
in White River District in 1966

NOTE: Counts were based on examination of 100 leaves from three trees at each location.

Location	Average d.b.h. of trees in inches	Per cent of leaves folded	No. of folds containing larvae
Franz	2	30	5
Dubreuilville	2	40	8
Hawk Junction	2	20	5
Lochalsh	2	14	5
Bryant Township	2	40	11
Township 70	2	31	6
Pic Township	2	33	5

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

Population levels of this sawfly were higher than in 1965. Small pockets of black and white spruce regeneration were heavily defoliated in Township 71, Pic Township and at Franz. This insect was a problem on ornamental trees in Wawa and White River.

Green-headed Spruce Sawfly, Pikonema dimmockii (Cress.)

This sawfly occurred more commonly on white spruce than in 1965. The highest larval counts were obtained in Pearkes Township and in Township 28 Range 23 where 2.4 larvae per tray sample occurred (Table 16).

TABLE 16

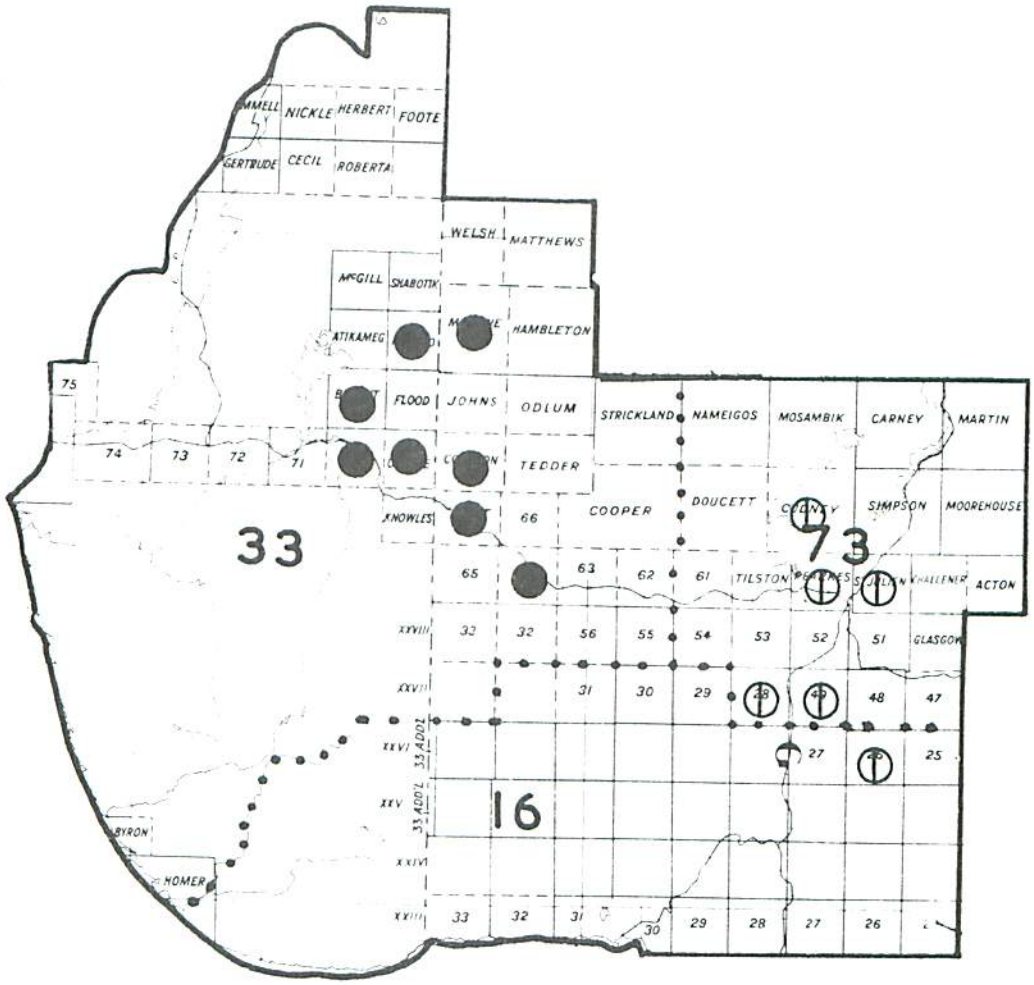
Summary of the Green-headed Spruce Sawfly Larval Counts
on White Spruce in White River District in 1966

Location	Average d.b.h. of trees in inches	No. of trees sampled	Average no. larvae per tray sample
Pic Township	3	10	0.6
Township 28 Range 23	4	7	2.4
Pearkes Township	2	10	2.4
Township 28 Range 27	3	15	0.6
Gertrude Township	2	4	1.0
Township 29 Range 23	4	10	0.4
Township 74	3	10	1.0

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

A significant increase in population levels of this birch leaf miner was observed in the district (Table 17). Pockets of heavy infestation were more numerous on white birch than in 1965. Severe leaf mining was observed in Hunt

WHITE RIVER DISTRICT



AMBER-MARKED BIRCH LEAF MINER

Locations where pockets of infestation were observed in 1966

Legend

Light infestation . . . . . ◐

Heavy infestation . . . . . ●

Township west to lower White Lake where conspicuous discolouration was evident from aerial surveys (see map). In areas east of Township 28 damage was very light.

TABLE 17

Summary of Damage by the Amber-marked Birch Leaf Miner in White River District

NOTE: Counts were based on examination of 100 leaves from three trees at each location.

Location	Average d.b.h. of trees in inches	Per cent of leaves mined	
		1965	1966
Esnagi Lake	3	83	85
Township 32 Range 28	3	80	80
Township 31 Range 27	4	71	80
Pearkes Township	3	33	30
Hunt Township	3	15-30	75
Township 28 Range 28	3	32	60
Township 28 Range 24	3	3-8	65
Bryant Township	3	No counts	80
Magone Township	3	No counts	80

Spruce Bud Midge, Rhabdophaga swainei Felt

Bud damage caused by this miner increased slightly. Representative population levels were recorded at four points (Table 18).

TABLE 18

Summary of Spruce Bud Midge Counts in White River District in 1965 and 1966

NOTE: Counts were based on examination of 50 branch tips, five from each of ten trees at each location.

Location	Host	Average d.b.h. in inches	No. of shoots examined		Per cent of terminal buds infested	
			1965	1966	1965	1966
Township 74	wS	4	140	176	3.5	7.9
Township 70	bS	4	156	162	7.0	4.9
Twp. 32 Range 27	bS	2	153	161	3.9	4.9
Twp. 29 Range 23	wS	4	142	182	2.0	0.0

TABLE 19

Summary of Miscellaneous Insects Collected
in White River District in 1966

Insect	Host(s)	Remarks
Acleris variana (Fern.)	wS, bS	Light throughout the district.
Altica tombacina shoemakeri Schaeffer.	wildrose	Heavy infestation along Dump Lake road.
Anoplonyx luteipes Cress.	tL	Small numbers found on beating tray samples in Cecile Township.
Argyresthia pygmaella Hbn.	W	Common on fringe willow in district.
Badebecia urticana Hbn.	wB, bPo	Low numbers.
Bucculatrix canadensisella (Cham.)	wB	Very light populations throughout the district.
Campaea perlata Gn.	W, wB	Total of six larvae found at two locations.
Compsolechia niveopulvella Chamb.	tA	Found commonly on immature trees along Dubreuil's road.
Coleophora betulivora McD.	wB	Large numbers of larvae found at Mile 22 Manitouwadge road.
Conophthorus sp.	jP	Light damage to new shoots in Gertrude Township and along Bleep Lake road.
Dioryctria reniculella Grt.	wS	Small numbers.
Epinotia corylana McD.	Al	Light at several locations.
Epinotia cruciana Linn.	tA, wB	Light to medium infestations at scattered locations in district.
Euura resinicola (Marlatt)	W	Galls common throughout the district.
Feralia jocosa Gn.	jP	Small numbers found in Township 28 and Cecile Township.
Gracillaria invariabilis Braun.	pCh	Found in small numbers.
Neodiprion abietis complex	bF	Few larvae recovered on beating tray samples.
Neodiprion maurus Rohwer	jP	One colony in Cecile Township.
Neodiprion pratti banksianae Roh.	jP	One colony found south of Camp 53, OPC limits.
Nyctobia limitaria Wlk.	bF	Few loopers recovered in Township 28 Range 23 and Township 73.
Nycteola frigidana Wlk.	W	Light infestations on willow at scattered locations.

TABLE 19 (concluded)

Insect	Host(s)	Remarks
Phlyctaenia tertialis Gn.	El	Small numbers found throughout the district.
Phyllocnistis populiella Cham.	tA	Serpentine miners found on understory aspen at Hawk Junction.
Phyllocolpa agama (Roh.)	W	Light damage observed at scattered locations.
Phratora purpurea purpurea Brown	tA	Light infestations found in Pearkes Twp. and on shoreline trees at Quebec Harbour on Michipicoten Island.
Pyrrhia umbra experimens Wlk.	bPo	Light to medium infestation on new terminal shoots in the district.
Pissodes approximatus Hopk.	rP	Low mortality in Rumsey's plantation.
Pleroneura borealis Felt.	bF	Few larvae obtained on tray samples in Township 70.
Pseudexentera oregonana Wlshm.	tA	Commonly found in district.
Rhabdophaga brassicoides (Walsh)	W	Cabbage galls common on immature willow.
Semiothisa bicolorate Fabr.	jP	Frequently recovered on beating tray samples.
Semiothisa dispuncta (Group)	bF, wS, bS	Found frequently on beating tray samples.
Zeiraphera diniana Gn.	tL	Small numbers.
Xylomyges dolosa Grt.	tA, bPo	Light damage at three locations.