

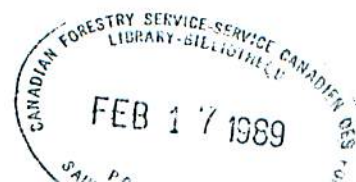
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Status of Insects in the White River
District

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Information Report O-X-100
(Forest Research Laboratory, Ontario Region)



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

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

STATUS OF INSECTS IN THE WHITE RIVER DISTRICT

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Spruce Budworm, Choristoneura fumiferana (Clem.)

Spruce budworm larvae were collected more commonly in the district in 1968 than in 1967. A small pocket of light infestation was reported along Highway 101 in the Kinniwabi River area (Townships 26 and 27, Range 23). Small numbers of larvae were also collected in the Camp 70 area. Aerial surveys of the northeastern section of the district in October failed to reveal any areas of defoliation. No egg masses were found on balsam fir branch samples from Tatnalle, Gibben and Oba Lakes and from Township 28, Range 27 and Township 53. This part of the district is of particular interest because spruce budworm populations increased in 1968 in two adjacent townships in the Chapleau and Kapuskasing districts. Intensive surveys will be carried out in spruce budworm host stands in the eastern part of the district in 1969.

Larch Casebearer, Coleophora laricella (Hbn.)

Larch casebearer populations remained at endemic levels at all sample points in the district in 1968 (Table 4). The highest number was recorded in Township 30, Range 26 where a count of .2 larvae per 18-inch branch tip was obtained.

TABLE 4

Summary of Larch Casebearer Counts in the White River District
from 1966 to 1968

Note: Counts based on 4, 18-inch branch tips from each of 4 trees at each location.

Location	Av. d.b.h. of sample trees in inches	Av. no. larvae per 18-inch branch tip		
		1966	1967	1968
Twp. 29, Rge. 23	5	0	0	0.1
Twp. 30, Rge. 26	4	0	0.5	0.2
Pic Twp.	5	0	0	0.1

Western Tent Caterpillar, Malacosoma californicum pluviale (Dyar)

Western tent caterpillar populations declined at most quantitative sampling points in 1968 (Table 5). A slight increase was noted in Bryant Township where a count of 5 tents per mile of roadside was made in 1968 compared with 3 in 1967. No colonies were found at other sample points. The sharpest decline was noted along the Camp 70 Road where a negative colony count was obtained in 1968 compared with 14 in 1967. Willow, cherry and white birch shrubs were common host species.

TABLE 5

Summary of Western Tent Caterpillar Counts per Measured Mile of Roadside
in the White River District from 1966 to 1968

Location	Number of tents per mile of roadside		
	1966	1967	1968
Manitouwadge	10	10	0
Bryant Twp.	5	3	5
Magone Twp.	7	4	0
Twp. 71	5	8	0
Cp. 70 Road	6	14	0

Red-pine Sawfly, Neodiprion nanulus nanulus Schedl.

Populations of this sawfly increased slightly at two sample points in 1968. Counts made on 10 trees at each location showed that populations increased from 1.0 in 1967 to 2.1 colonies per tree in Hunt Township and from 0.2 to 0.5 in Township 64. Scattered colonies were observed in Township 70.

Larch Sawfly, Pristiphora erichsonii (Htg.)

Defoliation caused by this insect was generally light throughout the district in 1968. Heavy defoliation was noted on small numbers of fringe trees in Township 70 and on understory regeneration in Township 32, Range 27. A medium infestation occurred on a small number of trees near Manitouwadge.

Mountain-ash Sawfly, Pristiphora geniculata Htg.

A heavy infestation of the mountain-ash sawfly persisted between Agawa Bay and Wawa in the Lake Superior Park. No extension in the range of this introduced European pest was observed in this area in 1968.

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

Scattered pockets of heavy infestation of this leaf miner persisted along Highway 17 West of White River but slight population declines were noted at all sample points (Table 6). The most significant decline occurred in Bryant Township where 42 per cent of the leaves were mined in 1968 compared with 83 per cent in 1967.

TABLE 6

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

Note: Counts were based on the examination of 100 leaves from 3 trees at each location.

Location	Av. d.b.h. of sample trees in inches	Per cent of leaves mined	
		1967	1968
Hunt Twp.	3	84	51
Bryant Twp.	3	83	42
Twp. 70	4	83	76
Twp. 71	3	80	72
Cecile Twp.	4	92	88

TABLE 7

Summary of Miscellaneous Insects Collected in White River District in 1968

Insect	Host(s)	Remarks
<i>Argyresthia pygmaella</i> Hbn.	W	Light populations along Manitowadge Road
<i>Coleophora laricella</i> Hbn.	tL	Small numbers in large size hosts, Hawk Lake
<i>Dioryctria reniculella</i> Grt.	wS	Small numbers on mat samples, High Falls Road
<i>Enargia infumata</i> Grt.	wB	Light populations on understory trees, Regan
<i>Lithocolletis salicifoliella</i> Cham.	tA	Light population on open regeneration, Hunt Twp.
<i>Lithocolletis</i> sp.	Al	Common in several areas in Twp. 70
<i>Nymphalis antiopa</i> Linn.	W	Occasional colony along Tukanee Lake Road, Hunt Twp.
<i>Neodiprion</i> sp.	jP	Av. .4 colonies per tree, Twp. 70
<i>Neodiprion virginianus</i> complex	jP	One colony, Pic Twp.

TABLE 7 (concluded)

Insect	Host(s)	Remarks
<i>Pissodes strobi</i> Peck	wS	Small numbers, Barbara L. and Hunt Twp.
<i>Zeiraphera canadensis</i> Mut. & Free	bS	Small numbers, High Falls Road
<i>Zeiraphera destitutana</i> (Walker)	wS	Small numbers recovered on mat samples, Camp 36 road, Marathon
<i>Zeugophora</i> sp.	bPo	Common on regeneration Marion Lake and Twp. 70