Status of Insects in the Kenora District

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(Forest Research Laboratory, Ontario Region)

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Ontario, 1968

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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

STATUS OF INSECTS IN THE KENORA DISTRICT

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Fall Cankerworm, Alsophila pometaria Harr.

A heavy infestation of the fall cankerworm persisted in the town of Dryden for the second year. All deciduous hosts were attacked to some extent, but the main host was Manitoba maple. Numerous inquiries were received from property owners during July and August, when defoliation was occurring.

Jack-pine Budworm, Choristoneura pinus pinus Free.

High population levels of this insect recurred throughout most of the district. The overall area of moderate to severe defoliation, however, decreased slightly. Population levels increased between Vermilion Bay and Kenora, and near Camp Robinson on Hwy. 105 (see map). Population levels were low in the southeastern and southwestern parts of the district, and north of a line from Snowshoe Lake on the Manitoba border southeasterly to Rowell Township.

Beating tray samples taken at twelve sample locations revealed an increase in numbers of larvae compared with 1967 (Table 5). Egg mass counts are shown in Table 6.

A chemical control operation was carried out in Rushing River and Blue Lake parks in June. The spraying was done before the needles had broken their sheaths and seemed to have little effect on the second and third instar larvae.

TABLE 5

Summary of Jack-pine Budworm Larval Counts in Kenora District in 1968

Note: Counts were based on the total number of larvae on 15 tray samples from the lower branches of five jack-pine trees at each location.

Location	Av. d.b.h. of sample trees in inches	Total no. of larvae 1966	1967	1968
Coyle Twp.	5	32	151	112
Desmond Twp.	6	21	97	113
Docker Twp.	5	7	39	180
Hawk Lake	4	62	51	137
Pellatt Twp.	6	51	63	6
Kirkup Twp.	8	63	92	246
Mutrie Twp.	6	4	45	111
Sakwite Lake	6	22	—	9
Sanford Twp.	7	3	17	10
Tustin Twp.	4	73	81	176
Zealand Twp.	5	1	3	8
Pelican Twp.	6			4

TABLE 6

Summary of Egg Mass, Pupae Emergence, and Defoliation of the Jack-pine Budworm in the Kenora District in 1968

Note: Counts were based on one 24" branch from each of six trees at each location.

Location	% defoliation	Total no. of egg masses	Total no. emerged pupae
Phillips Twp.	5	0	2
Keewatin	2	0	1
Rushing River Park	5	2	0
Docker Twp.	45	6	9
Hawk Lake	24	2	8
Zealand Twp.	22	0	0
Wainwright Twp.	10	0	0
Hartman Twp.	4	0	0
Blue Lake Park	8	0	2
Mutrie Twp.	34	4	24

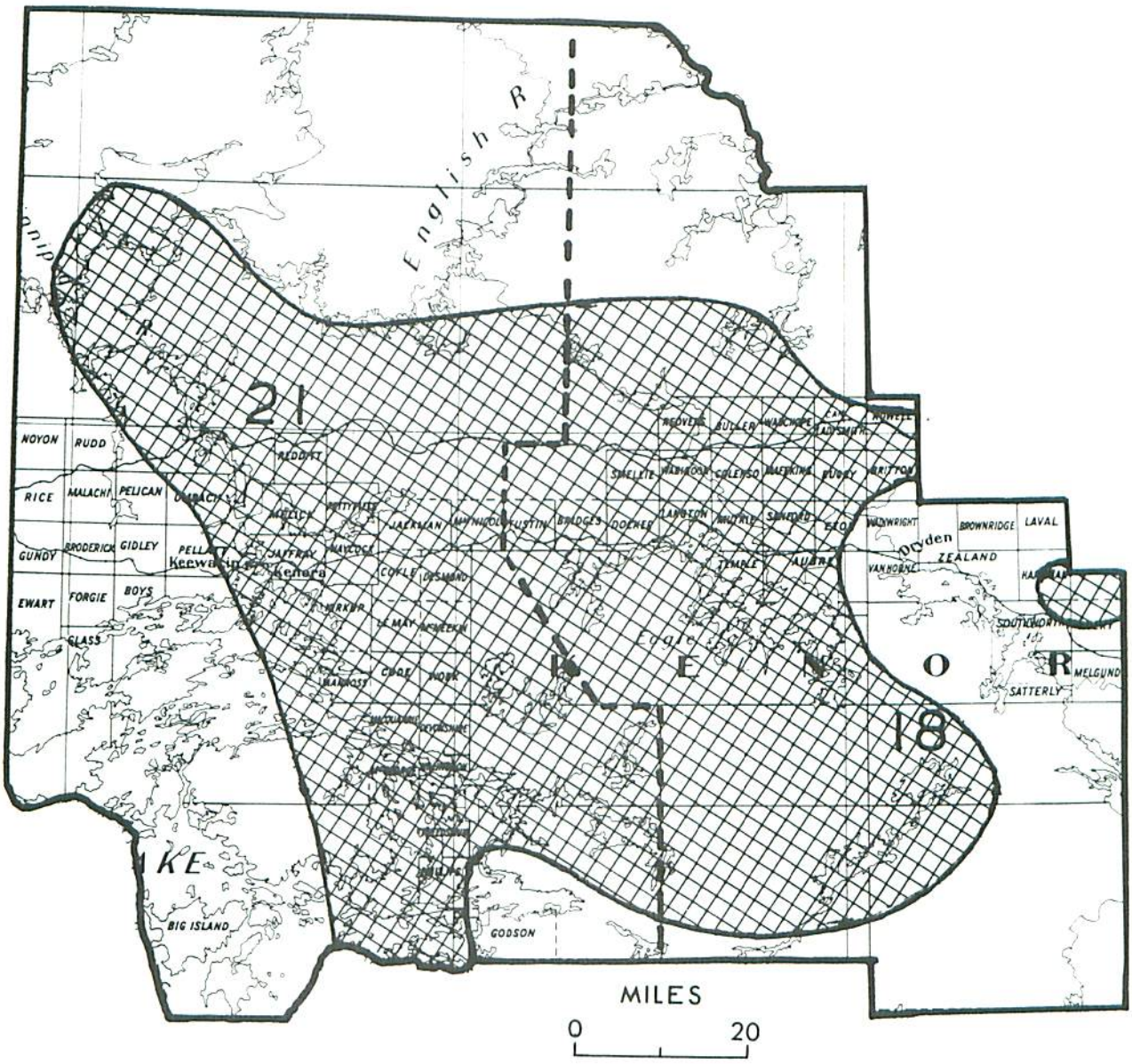
Aspen Blotch Miner, Lithocolletis salicifoliella Cham.

High population levels of this miner of poplar were observed throughout the district wherever small trembling aspen occurred. Larvae were found on willow at Rushing River Park, and on balsam poplar in Kirkup Township (see photograph).

Balsam-fir Sawfly, Neodiprion abietis complex

Population levels of this insect varied throughout the district. Increases in numbers of colonies were noted in Devonshire and Zealand townships, and decreases occurred in Forgie, Langton, and Willingdon townships (Table 7).

KENORA DISTRICT



JACK PINE BUDWORM

Areas where defoliation occurred in 1968

Legend

Moderate to severe defoliation -----

TABLE 7

Summary of Balsam-fir Sawfly Larval Colony Counts on Ten Balsam-fir Trees in the Kenora District in 1966, 1967 and 1968

Location (township)	Av. d.b.h. of sample trees in inches	Av. no. of colonies per tree (10 tree sample)		
		1966	1967	1968
Devonshire	3	1.3	0.7	5.0
Forgie	3	0.7	1.0	0.0
Langton	4	3.0	1.0	0.0
Tweedsmuir	4	2.2	1.3	1.3
Willingdon	4	6.1	3.9	2.5
Zealand	4			0.4

Red-pine Sawfly, Neodiprion nanulus nanulus Schedl.

The red pine sawfly decreased appreciably in numbers in 1968. Two colonies were observed in McMeekin Township and three in Phillips and Tweedsmuir townships. Elsewhere in the district negative counts were obtained.

Red-headed Jack-pine Sawfly, Neodiprion virginianus complex

A marked decrease was noted in population levels of this insect. Larvae were collected at two locations. Six and three colonies per tree were counted at sample points in Temple and Tweedsmuir townships respectively.

Yellow-headed Spruce Sawfly, Pikonema alaskensis Roh.

Light to medium infestations of this insect occurred in Langton, Willingdon, Aubrey, Kirkup, Pellatt, Temple, and Van Horne townships. Moderate defoliation was observed at numerous locations elsewhere in the district. In mid-September one larva was collected west of Eagle River. This was possibly a second generation larva.

White-pine Weevil, Pissodes strobi Peck.

Counts of this insect in August showed that population levels remained relatively constant in most areas (Table 8). However, a decline was noted at the Dryden Nursery plot. The trees in this plot have been attacked severely for a number of years and are in very poor condition. Hail damage at the Dryden High School plot prevented an evaluation in 1968.

TABLE 8

Summary of Leader Damage by the White-pine Weevil in the Kenora District in 1966, 1967 and 1968

Note: All counts are based on a 100 tree sample at each location.

Location	Host	Av. d.b.h. of sample trees in inches	No. of infested leaders 1966	1967	1968
Dryden Nursery	wP	1	120	82	26
McMeekin Twp.	jP	1	13	4	3
Mutrie Twp.	jP	1	2	5	7
Van Horne Twp.	wP	1	22	16	-
Wabigoon Twp.	jP	2	27	5	8
Zealand Twp.	jP	1	10	3	2

Larch Sawfly, Pristiphora erichsonii Htg.

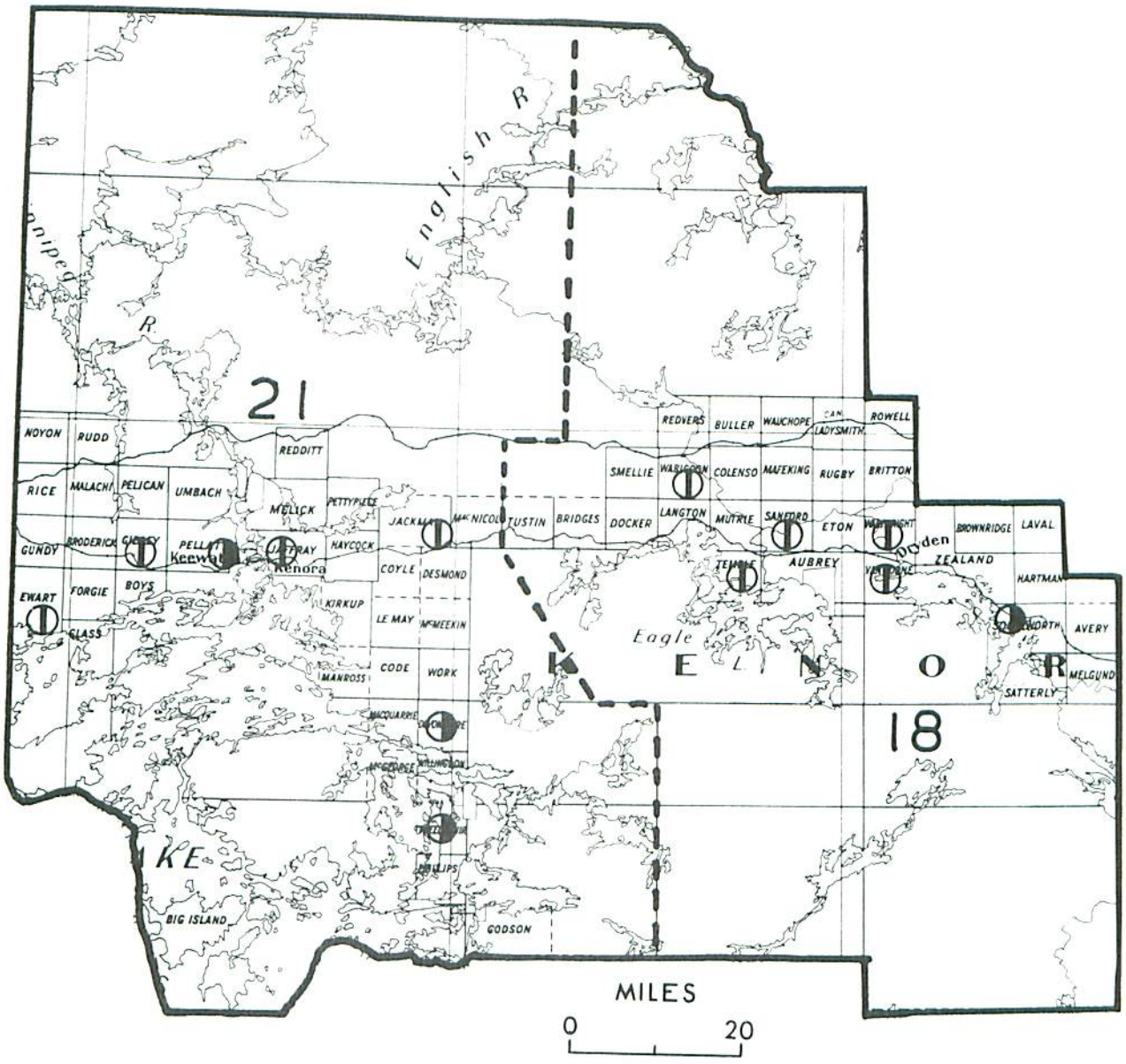
A general decline in infestation intensity was noted in 1968. Defoliation was light to moderate throughout the district (see map). A collection from Wabigoon Township was infected with the disease Entomaphthora.

TABLE 9

Summary of Miscellaneous Insects Collected in the Kenora District

Insect	Host(s)	Remarks
Anisota virginiensis (Drury)	O	One colony in Pellatt Twp.
Aphrophora parallela (Say.)	jP	One collection, Wabigoon Twp. trace throughout district
Archips cerasivoranus (Fitch)	Cch	One collection, several nests observed in the district
Caripeta divisata (Wlk.)	bS	Three larvae collected in Temple Twp.
Chrysomela crotchi (Brown)	tA	A few beetles found in Kirkup, Docker, Langton, Pellatt, and Melick twps.
Choristoneura fumiferana (Clem)	bF, wS	6 locations, few larvae on beating trays

KENORA DISTRICT



LARCH SAWFLY

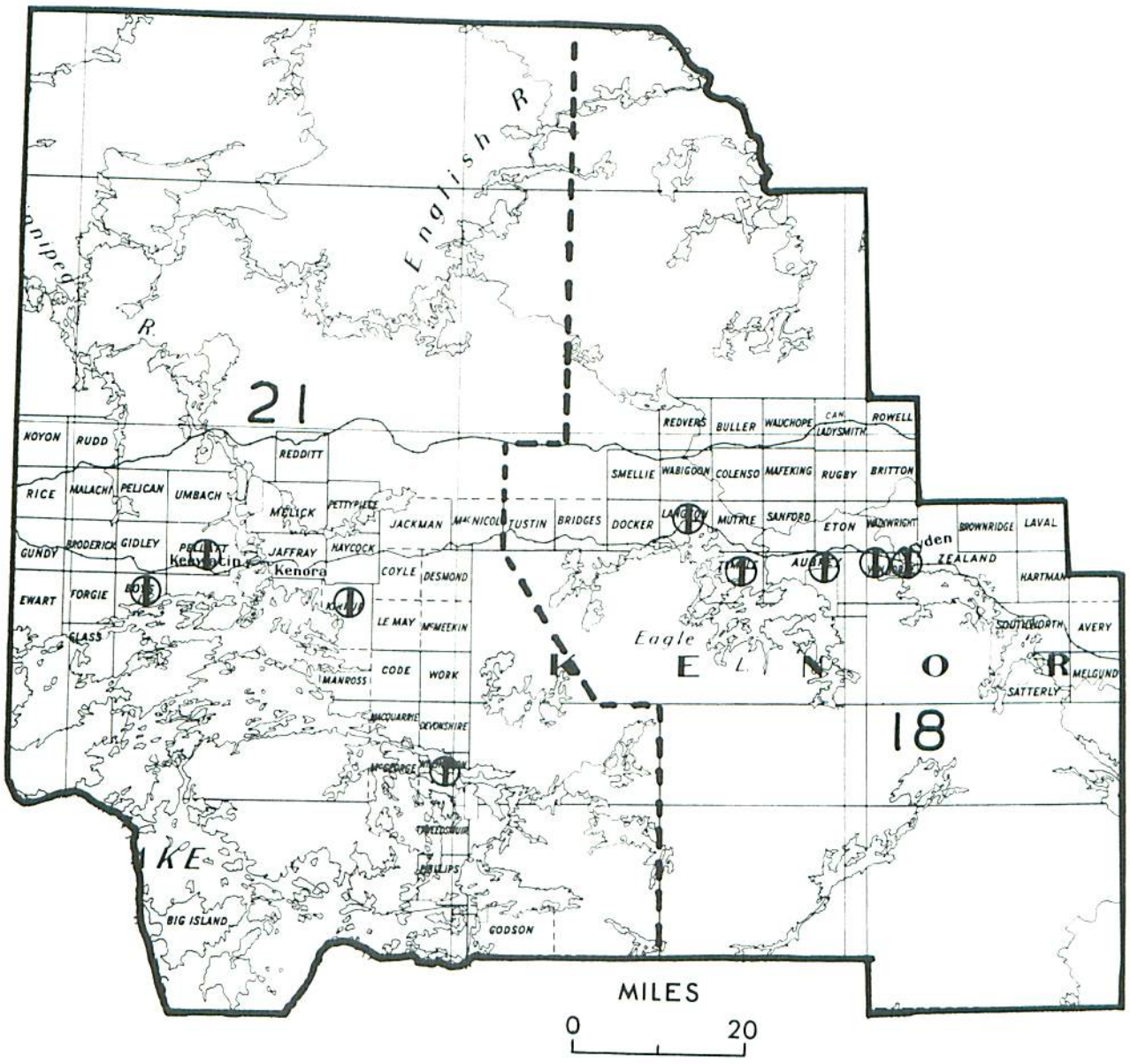
Locations where infestations occurred in 1968

Legend

Light infestation ----------

Medium infestation ----------

KENORA DISTRICT



YELLOW-HEADED SPRUCE SAWFLY

Locations where defoliation occurred in 1968

Legend

Light defoliation ----------◐

TABLE 9 (continued)

Insect	Host(s)	Remarks
Cimbex americana (Leach)	Hazel	One larva, Docker Twp.
Clepsis persicana (Fitch)	wS	One larva, Southworth Twp.
Coleophora betulivora (McD)	wB	Collected once near Blue Lake Park
Ctenucha virginiana (Charp)	wS	One adult, Mutrie Twp.
Dicrodiplosis populi (Felt)	tA	Four larvae, Melgund Twp.
Dioryctria zimmermani (Grote)	jP	One collection, Wabigoon Twp.
Diprion hercyniae (Htg.)	wS	Both first and second generation larvae were collected in Van Horne and Temple twps.
Ecpantheria deflorata (Fabr.)	W	One larva, Smellie Twp.
Elasmostethus cruciatus (Say.)	Hazel	Near McIntosh, three adults were collected
Epinotia criddleana (Kft.)	tA	Single larva was found in Southworth Twp.
Eupithecia palpata (Pack)	jP	Found at one location on Jones Rd.
Eupithecia transcanadata (Mack)	wS	Beating tray sample in Aubrey Twp.
Filatima betullae (Clarke)	wB	A collection of one larva from Forgie Twp.
Framinghamia helvalis (Walker)	tA	Single larva on beating tray, Melick Twp.
Graullaria sp.	Hazel	One colony, Redvers Twp.
Gracillair cuculipenarlla (Hbn.)	Ash	Three pupae, Kenricia Road west of Kenora
Hypagyrtis piniata (Pack.)	bF	A single larva in a collection on Hwy. 105
Hyphantria cunea (Drury)	Hazel	One colony of very small larvae were found late in September

TABLE 9 (continued)

Insect	Host(s)	Remarks
Lithocolletis hamadryadella (Clem.)	O	Two larvae and one pupa were collected in Pellatt Twp.
Malacosoma disstria (Hbn.)	Ash, tA	Insect at a very low ebb; one small colony in Dryden, single larva in Redvers and Aubrey twps.
Meroptera pravella (Grt.)	tA	Two larvae, Melick Twp.
Mindarus abietinus (Koch)	bF	Very low in Willingdon Twp.
Nematus fulvicrus (Prov.)	W	A few larvae have persisted in Dryden Nursery for the past few years
Nematus ventralis (Say.)	W	Closely associated with the above
Neodiprion pratti banksianae (Roh.)	jP	Numbers remain very low; one colony in Aubrey Twp.
Nepytia canosaria (Wlm.)	jP	One larva north of Kenora on Jones Rd.
Neurotoma inconspicua (Nort.)	Cch	Four nests were observed in Pellatt Twp., but only three larvae were collected
Nycteola cinereana (N & D)	bPo	Found at several locations in low numbers throughout the district
Nyctobia limitaria (Wlk.)	bF	A beating tray sample in McMeekin Twp. revealed one larva
Nymphalis antiopa (L.)	W	Defoliation on Jones Road, but only one colony found
Papilio glaucus (L.)	bPo	On Kendall Inlet Road, one larva was collected.
Petrova albacapitana (Busck.)	jP	Collected in Mutrie Twp; observed in very low numbers in several locations
Phyllocnistis populiella (Cham.)	bPo, tA	Light to moderate on reproduction bPo and tA throughout the district

TABLE 9 (concluded)

Insect	Host(s)	Remarks
Pikonema dimmockii (Cress.)	wS	Sampled in low numbers on beating trays throughout district
Pineus pinifoliae (Fitch)	bS	Eight larvae obtained at Sunshine Lake
Pontania salicispisum (Thomas)	W	Two larvae on open-grown willow in Wabigoon Twp.
Pristiphora lena (Kincaid)	wS	Beating samples in Langton and Pellatt twps. and two colonies in Aubrey Twp.
Profenusa lucifex (Ross)	O	Rare in this district, one larva from Pellatt Twp.
Profenusa thomsoni (Konow.)	wB	Collected at trace level in Smellie Twp. and south of Minaki
Protoboarmia porcelaria indicataria (Wlk.)	bF, wS	Collected in very low numbers in Aubrey and McMeekin twps.
Pyrrhia exprimens (Wlk.)	wS	One larva Kendall Inlet Road
Rhabdophaga swainei (Felt.)	wS	Galls only found
Schizura concinna (J.E. Smith)	Hawthorn	A small collection of four larvae came from Pellatt Twp.
Sciaphila duplex (Wlshm.)	tA	In Southworth Twp. one larva and one pupa were found
Semiothisa signaria dispuncta (Wlk.)	wS, bS	Few larvae were collected in Temple Twp.
Swammerhamia cuprescens (Braun)	wS	Very low in district, one collection from Forgie Twp.
Trisetacus grosmanni (Keifer)	bF	Nine adults at Luther Village Rd.
Zeiraphera destitutana (Walker)	bF	One larva near Luther Village