

ANNUAL DISTRICT REPORTS  
FOREST INSECT AND DISEASE SURVEY

MARITIMES REGION

1967

by

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1.0 INTRODUCTION

(G. V. Moran)

The long cold spring experienced throughout the region delayed seasonal work schedules two weeks in many areas. However, the record-breaking high temperatures that occurred in early June, and a warm humid summer brought the accumulated day degrees above base 42°F up to near normal by early September.

The change made in Survey district assignments in 1966 and mentioned in the report for that year was made late in the season and did not become fully effective until the beginning of the 1967 field season when C. L. Burlock became responsible for northeastern New Brunswick. Mr. Burlock was assigned to the Aerial Spray Project as an observer for a period of one week during spruce budworm defoliation surveys, and district technicians assisted in egg-mass and defoliation surveys throughout New Brunswick. Much of the information on spruce budworm in the district reports was obtained from the Aerial Spray Project and D. R. Macdonald supplied the maps used as Figures 1 and 2. Major changes were made in light-trapping arrangements in 1967. In the past many of the traps were operated during July and August at forest fire observation towers by personnel of the New Brunswick Forest Service and industries. Some were in operation 20 seasons or more at the same sites and most required pressure lanterns as a light source.

In 1967 the number of traps was reduced to 19 in New Brunswick, those at towers being moved to more convenient sites at provincial forest ranger headquarters where incandescent or black light attractants could be used. In addition, the traps were operated during the month of June as well as July and August.

In Nova Scotia light traps were operated by personnel of the Department of Lands and Forests at Lawrencetown and near Chester, and by Survey staff at a location near Debert.

There was a further decline in the size of areas defoliated by the spruce budworm, Choristoneura fumiferana Clem., in New Brunswick, although loss of foliage was more extensive in Fundy National Park (Figures 1 and 2). Defoliation, mainly of white spruce, occurred over wider areas in Inverness County, Nova Scotia. Infestations of the larch sawfly, Pristiphora erichsonii (Htg.), continued to spread north and east in New Brunswick, increased in size in Cumberland County, Nova Scotia, but declined elsewhere in that province (Figure 3). Extensive defoliation of natural stands of poplars by the satin moth, Stilpnotia salicis (L.) occurred for the first time in New Brunswick since the inception of the Survey. The fall cankerworm, Alsophila pomataria, Harr. caused severe but patchy defoliation, mainly of red oak, in

western Nova Scotia and of a variety of hardwoods in small areas near Fredericton. Population levels of the winter moth, Operophtera brumata L., remained low in Nova Scotia except in widely separated areas where it predominated in mixed populations with the fall cankerworm. There was little change in the intensity of attacks by the balsam gall midge, Dasineura balsamicola (Lint.) except in eastern Nova Scotia where galled needles were less common than in 1966 (Figure 4). The Dutch elm disease, Ceratocystis ulmi (Buism.) C. Moreau, continued to extend its range into areas not previously known to contain infected elm (Figure 5). Anthracnose of maple, Gloeosporium apocryptum Ell. & Ev. was prevalent throughout most of the Annapolis Valley and at scattered locations elsewhere in western and in central Nova Scotia. Also in western Nova Scotia, sooty mold was very noticeable on a variety of hosts, especially shade trees.

The Survey, in 1967, experienced the usual excellent co-operation of provincial forest services, woods industries and National Parks. Our thanks are extended to these organizations which in many ways help to increase the effectiveness of Survey operations. Instructions on the new sampling form and on major forest insects and tree diseases were given early in the season to most of the 87 provincial forest service personnel appointed to take collections for the Survey. Meetings were held at three centres in New Brunswick and two in Nova Scotia.

There was a small reduction in the number of beating stations maintained in 1967 and the number of forest tent caterpillar egg-mass sampling locations was reduced by one-third (Table 1).

All insects and tree diseases collected in 1967 are listed by districts in Tables 2 and 3 respectively.

Section 1, Table 1

Plots and Sampling Stations Maintained in Maritimes Region in 1967

(Changes from 1966 in brackets)

District	Sampling Stations				Plots			
	Beating	Larch case-bearer	Forest tent (egg)	Winter moth	Beech scale	Balsam woolly aphid	Birch	Forest tent (defol)
N.B. (W.)	26	21	29 (-14)	-	2	1	1	3
N.B. (N.E.)	21 (-4)	14	7	-	1	1	-	-
N.B. (S.) & P.E.I.	10	13	4	-	-	2	-	-
N.S. (W.)	20	15		9	2	2	-	-
N.S. (C.)	44 (-3)	13		3	2	3	1	-
N.S. (E.)	41 (-1)	13		-	-	3	-	-
Totals	162 (-8)	89	40 (-14)	12	7	12	2	3

Section 1, Table 2.

Insects Collected in the Maritimes Region in 1967

(By Districts) -

Species	Collected from	Collected in District					
		1	2	3	4	5	6
Abbottana clemataria A. & S.	wB		*				
Acleris variana Fern.	wS,bF,tL,rS	T	T	T	*	*	*
Acrobasis betulella Hlst.	wB,wiB	*		*		*	*
Acrobasis sp.	sweet fern				*		
Acronicta americanum Harr.	wiB,sM,bF,rM,cCh		*		*		*
	wB						
Acronicta dactylina Grote	Al		*				
Acronicta grisca Wlk.	Ch			*			
Acronicta innotata Guen.	wB	*					
Acronicta interrupta Gn.	Ch			*			
Acronicta radcleffi Harv.	aMo					*	
Acronicta retardata Wlk.	pCh				*		
Acronicta sp.	wB,Al,Be,lM,wS	*	*	*	*	*	*
	cCh,aMo,tA						*
Adalia bipunctata Linn.	rO,siM	*					*
Adelges abietis Linn.	wS,rS	*	*	*	**	**	*
Adelges piceae (Ratz.)	bF	T		T	T	T	T
Agriotes limosus Lec	bF	*	*				
Agromyza aristata Malloch	wS,wE			*		*	*
Agromyza ulmi (Frost)	wE				*		
Alsophila pomentaria Harr.	mM,Ap,wE,rO,Ba	T		T	T		T
	Be,Che,wiB,wB						
	Al,Wi,rm,cCh						
Altica ambiens alni Harr.	Al,wE	T	*	*	*	*	
Altica corni Woods	Do	*					
Altica populi Brown	tA	*					
Amorbia humerosana Clem.	wS,rS,bF,tL			*	*	*	*
Ampedus sp.	bF			*			
Anacampsis innocuella Zell.	tA,	*	*				
Anacamptodes larvaria Gn.	rM,tL,wB	*				*	
Anacamptodes vellivolata Hulst.	tL	*					
Anacamptodes sp.	tL,wB	*			*		
Anatis mali Say.	yB,wS	*				*	
Anatis sp.	wS						*
Anavitrinella pampinaria Gn.	bF,wB	*			*	*	
Andricus palustris O.S.	rO				*	*	*
Andricus sp.	rO		*				
Anisoclavia quatuordecimguttata Linn.	wB	*					
Anomogyna elimata Gn.	wS,tL,wP,bF	*	*		*	*	
Anoplonyx canadensis Hgtn.	tL	*		*	*	*	*
Anoplonyx luteipes (Cress.)	tL	*		*	*	*	*
Anoplonyx sp.	tL						*
Anthocoridae	jP,bF	*	*				
Aphidae	bP,tA,wB,bf,pCh,rO,**	**	**		**		
	wE,wS,wP,rS,tL,cPo						
	Do,W,Be,lA,Al						
	Thistle						

## Section 1, Table 2 (Cont'd.)

## Insects #2

Species	Collected from	Collected in district					
		1.	2.	3.	4.	5.	6.
Aphrophora quadrinotata Say	bF			*			
Aphrophora parallela Say	wS		*				
Aphrophora sp.	wS		*	*			
Archips argyrospilus Wlk.	Ap,rO wE,cCh,mM, Ba,tA,Al	*	*	**			*
Archips cerasivoranus Fitch	cCh,pCh	T	T	T	*	T	T
Archips purpuranus Clem.	Ap			*			
Archips rosanus Linn.	Ba,sM,wiB,lA,tA	*		*			
Archips sp.	oCh,rO,wB,wiB,wE	*	*				*
Archippus packardianus Fern.	wS,wP,rS	*	*		*	*	*
Arctiidae	wS,bF		*	*			
Arge pectoralis (Leach)	wB,yB,Al,wiB	*		*		*	T
Arge sp.	wB,tA,Al,wiB	*	*	*			*
Argyresthia freyella Wlshu.	eC			*			
Argyresthia pygmacella Hbn.	W	*					
Argyresthia thuiella Pack.	eC	*	*	*			
Argyrotaenia occultana Free.	wS,rS,bF,tL,	*	*		*	**	*
Argyrotaenia quadrifasciana Fern.	Ch,wS		*	*			
Argyrotaenia pinatubana Kft.	wP				*		
Argyrotaenia sp.	eH,tL,sweet fern Ch	*		*	*	*	
Badebecia urticana Hbn.	Ap,tA,wB,	*		**	*	*	*
Belostomatidae	lawn		*				
Biston cognataria Cuen.	wR W,Al,Ap,wE	*	*		*		*
Bomolocha abalienalis Wlk.	Ap			*			
Brachyrhinus ovatus Linn	wS,Be,				*	*	
Braconidae	Al,Honeysuckle	*		*			
Bucculatrix ainliella Murt.	Irish oak					*	
Bucculatrix canadensisella Cham.	wiB,wB,yB	*			T	*	T
Caliroa cerasi Linn.	Haw					*	
Calocalpe undulata Linn.	pCh				*		
Campeae perlata Gn.	wB,tA	*					
Cantharidae	Po,bF,	*					
Caripeta divisata Wlk.	wE,eH,wS,bF,tL, rS,wP	**	*	*	**	**	**
Caripeta piniata Pack.	rP,wP				*		
Caripeta sp.	rP,wP	*	*		*		
Catocala crataegi Sound	Ap,	*		*			
Catocala sp.	tA,rO,Ap,rM	*				*	*
Cecidomyia ocellaris O.S.	rM				*	*	
Cecidomyia sp.	wS,Po,wA,rO,tA	*	*		*		
Cenopsis pettitana Rob	rM,sM,mM,Ba	*	*	*			T
Ceratonia amyntor Hbn.	wE			*			
Cercopidae	bF,wS	*		*			
Chalcididae	wS	*					
Chilocorus stigma (Say)	Be,wS				*		*
Chionaspis furfura (Fitch)	wB,		*				
Choristoneura conflictana Wlk.	tA,wB,lA	*		*			
Choristoneura fumiferana Clem.	wS,rS,bF,tL	T	**	T	*	T	T

Section 1, Table 2 (Cont'd)

Insects #3

Species	Collected from	Collected in district					
		1.	2.	3.	4.	5.	6.
Choristoneura rosaceana Harr.	Al,rM,bP,Ap,cCh wE,Se	-	*	*	*		*
Chrysomela sp.	wB,tA			*			
Chrysomelidae	wB,Ap,mM	*					
Cicadellidae	jP,wS,bF	*	*				
Cicadidae	bF	*					
Cicindelidae	jP		*				
Cimbex americana Leach	tA,Al			*	*		
Cimbex sp.	wB						*
Cinara curvipes (Patch)	bF				*		
Cinara sp.	bF		*				
Cingilia catenaria Dru.	bF,eH				*	*	
Clepsia persicana Fitch	wS,bF	*	*			*	
Coccinellidae	wE,bF,wS	**	*				
Coleophora fuscadinella Zell.	wB,tL,Al	T	T	T	*	T	T
Coleophora innotabilis Braun.	lA,tA	*		*	*		
Coleophora laricella Hbn.	tL	T	T	T	T	T	T
Coleophora limosipenella Dup.	wE			*			*
Coleophora malivorella Riley	Ap,Be			*	*		T
Coleophora pruniella Clem.	pCh,Ap	*		*			
Coleophora sp.	Ap,wB,Haw,tA	*	**		*		*
Coleoptera sp.	wS,jP,wP,E,	*					
Compsolechia niveopulvella Chamb.	tA	*		*			
Contarinia canadensis Felt.	wA				*		*
Coryphista meadi Pack.	Mahonia	*					
Corythucha peroandei Heid.	Al				*		
Cosymbia pendulinaria Gn.	wiB,wB,Al	*	*	*	*		
Cressonia juglandis (J.E.Smith)	wiB	*					
Croesia semipurpurana Kft.	rO	*		*			
Croesus latitarsus Nort.	wiB,wB				*		
Cryptococcus fagi Baer.	Be			*	*	*	*
Ctenicera spp.	wS,bF,tA,cCh	*	*			*	
Curculionidae	wS,Po,wP,tA	*	*	*			
Cynips sp.	rO	*			*		
Dasyneura balsamicola Lint.	bF	T	T	T	T	T	T
Dasyneura communis Felt.	rM,	*	*		*		
Datana ministra Drury	Shadebush					*	
Dendroctonus sp.	wP				*		
Dendroctonus cessus Mann.	wS						T
Depressaria betulella Busck.	wiB,wB,	*	*	*	*	*	
Depressaria sp.	Po	*					
Dichelonyx sp.	wS,wB,tA,W,rO	*			*		*
Dimorphopteryx pinquis (Nort.)	Haw,wB,A,	*	*	*	*		
Dimorphopteryx sp.	Mo		*				
Dioryctria abietivorella (D.& S.)	wS,rS	*				*	*
Dioryctria reniculella Grote	wS,rS,bF	**	**	*	*	*	**
Dioryctria sp.	wP,AusP,wS,rS	*	*	*	*		
Diprion hercyniae (Htg.)	wS,rS	T	T	T	*	T	T
Diprionidae	bF	*					

Section 1, Table 2 (Cont'd)

Insects #4

Species	Collected from	Collected in district					
		1.	2.	3.	4.	5.	6.
Diptera	bF, wB, tA	*	*				
Ectropis crepuscularia Schiff	wS, rS, bF, eH, tL	*	*	*	*	**	*
Ectoedemia populella Busck.	wS		*				
Elaphria versicolor Grote	bF, rS, wS, wP, tL	**	**	*	**	**	**
Elateridae	wS, tA	*	*				
Empria multicolor (Nort.)	yB, wB, wiB, tA	*	*		*		
Empria sp.	tA			*			
Epicnaptera americana (Harr.)	wB, tA	*					
Epinotia aceriella Clem	rM				*		
Epinotia cruciana Linn.	W	*					
Epinotia sp.	sM, W, tA	*	*		*		
Epirrita autumnata henshawii Swett.	rS, wS, bF, tL, eH, wP	*	*		*	**	*
Epizeuxis sp.	bF	*					
Eriophyes padi Nali	pCh				*		
Eriophyes ulmi	wE				*		
Eriophyes sp.	sM, Be, wE, rO, rM, tA siM, Po, Mo	*	**	*	*		
Eriosoma americanum (Riley)	wE		*				
Eriosoma lanigerum (Hausm.)	wE				*		
Estigmene acrea Dru.	Al				*		
Euchlaena sp.	wB, yB				*		*
Eucleidae	wB	*					
Eucordylea atrupictella Dietz.	wS	*	*	*		*	*
Eufidonia discospilata Wlk.	tL					*	
Eufidonia notataria Wlk.	bF						*
Eupithecia castigata Hbn.	wS, rS				*	*	
Eupithecia filmata Pears.	bF, wS, tL, eH, rS	**	*	*	**	**	**
Eupithecia fletcherata Tayl.	bF, tL, rS					*	
Eupithecia gelidata Moesch.	wB, wiB, tA	*		*			
Eupithecia gibsonata Tayl.	C	*					
Eupithecia luteata Pack.	bF, rS, wS, wP, tL	*	*		*	**	*
Eupithecia palpata Pack	rS, wP, wS, tL				*	*	*
Eupithecia transcanadana (MacKay)	rS, wS, bF, tL	**	**	*	**	**	**
Eupithecia sp.	rS, wP, bF, tL	*	*	*		*	*
Euschistus tristigmus Say	wP				*		
Euura atra Jur.	W		*	*	*	*	*
Fenusa dohrinii (Tischb.)	Al		*	*			*
Fenusa pusilla (Lep.)	wB, yB, wiB,	T	T	T	T	T	T
Fenusa ulmi Sund.	wE, E, English Elm				T	T	
Feralia jocosa Gn.	wS, bF, eH, wP, rS	**	*	*	*	**	**
Formicidae	Mugho Pine		*				
Geclechiidae	rP	*					
Gossyparia spuria (Mod.)	E	*					
Gracillariidae	yB, Ap			*			*
Gracillaria syringella F.	lilac					*	
Gracillaria sp	lilac		*				
Griselda radicana Wlshu	wS, bF	*	**	*	*	*	**



## Section 1, Table 2 (Cont'd)

## Insects #5

Species	Collected from	Collected in district					
		1.	2.	3.	4.	5.	6.
Halisidota caryae (Harr.)	Be				*		
Halisidota maculata (Harr.)	tA,W,wB,Al	*	*	*	*		
Hamamelistes spineous Shim.	Hazel		*				
Hemerobiidae	rS,rP,wB,bF,wS	*	*	*			
Hemerocampa leucostigma (J.E.Smith)	wS,wB,bF		*	*			*
Herculia thymetusalis Wlk.	rS,bS,tL		*	*	*	*	*
Heterocampa biundata Wlk.	rM,yB,wB	*				*	*
Heterocampa guttivitta (Wlk.)	wB,wiB,			*			
Heterocampa manteo (Dblidy.)	Be,					*	*
Heterocampa sp.	wB,Be		*		*	*	*
Homoptera	wB			*			
Hormaphis hamamelidis (Fitch)	W				*		
Hyalophora cecropia L.	Ap. Bilberry				*		*
Hydriomena divisaria Wlk.	rS,bF,wS	**	*	*	*	**	**
Hydriomena furcata Thun.	yB,wS	*					*
Hylobius sp.	wS,scP,wP	**	*		*		
Hypagyrtis piniata Pack.	bF,rS,jP,wS,tL,eH	*	*	*	*	**	*
Hyperaeschra stragula Grt.	tA	*					
Hyperetis amicaria H. S.	yB		*				
Hyphantria cunea Drury.	Ap,Al,W,Ch,sPo, wB,cPo,	T	*	T	*	T	T
Hyppa xylinoides Gn.	wB,tA	*	*				
Ichneumonidae	pCh		*				
Ichthyura sp.	tA		*				
Incisalia lanoraieensis Shep.	rS,wP				*		
Ipimorpha plecnectusa Manitobae Stand.	tA			*			
Ips thomasi G.Hopp.	wS						*
Isia isabella (J.E.Smith)	grasses	*					
Itame anataria Swett.	tA		*				
Itame sp.	tA,wB,wiB	*	*				
Janus abbreviatus (Say.)	W				*		
Lambdina fiscellaria fiscellaria Gn.	rS,bF,etl,wP,wS,tL rM,yB,Irish Oak E,Ap	**	*	**	**	**	**
Lapara bombycoides Wlk.	wP			*			
Lasioptera selidoginis Osten Sacken	Golden rod				*		
Lecanium corni Bouche	Ap,E,rM.	**	*	*			
Lepidosaphes ulmi (L.)	Haw, Ap				*		
Limenitis archippus (Cram.)	yB,tA	*					
Limonius aeger Lec.	tA,wS,bF	*				*	
Limonius sp.	wS	*					
Lithocolletis aceriella Clem.	rM,			*			
Lithocolletis hamadryadella Clem.	rO	*					
Lithocolletis sp.	sM,Rhodora,wB	*	*				
Lithophane antennata (Wlk.)	Ap	*		*	*		
Lithophane sp.	Ba,rO,tA,wE,wB	*			*		*

Section 1, Table 2 (Cont'd).

Insects #6

Species	Collected from	Collected in District					
		1.	2.	3.	4.	5.	6.
Lobophora nivigerata Wlk.	tA	*	*				
Lobophora sp.	tA		*				
Lucidota sp.	rP, jP, wB, bF	*	*				*
Machimia tentoriferella Clem.	Be, Ap			*	*		
Macremphytus sp.	Do	*					
Malacosoma americanum F.	Ap, bCh, eCh, tA, pCh	*	*	*	*	*	*
Malacosoma disstria Hbn.	rO, eCh, Ap, tA, wB, cPoT	*		T	T	T	T
Malacosoma sp.	cCh				*		
Marmara fasciella Busck	wP, bF	*	*				
Marmara sp.	bF,	*					
Megacyllene robiniae Forst.	Locust	*					
Melanolophia canadaria Gn.	rM					*	
Melanolophia signataria Wlk.	bF, rM, rS			*		*	
Melanolophia sp.	bF, wS, wB	*	*	*	*		
Meloidae	wB	*					
Meroptera provella Grt.	tA			*			
Messa populifoliella Townsend	tA	*	*	*	*		
Mindarus abietinus Koch.	bF, tA, wS,	*	*	*	*	*	*
Miridae	wS, tA, bF, wP, rP, jP	*	*				
Monochamus sp.	wP, rS		*				
Mordwilkoja vagabunda (Walsh)	tA, Po	*			*		
Moodna ostrinella Clem.	Su			*			
Mulsantina hudsonica Csy.	wS, bF, wB, scP, rS, wE	**	*	*	*	**	**
Mycodiplosis cerasifolia Felt	cCh	*					
Nabidae	tL, wS, bF	*	*				
Nabis	wS, bF						*
Nadata gibbosa J.E. Smith	tA, wB, sM, Irish Oak	*	*		*	*	
Nematocampa filamentaria Gn.	bF, wS, Ap	*				*	*
Nematus limbatus (Cress)	W		*		*	*	
Nematus pisum Walsh	W		*				
Nematus robustus (Marl.)	tA		*		*		
Nematus unicolor (Marl.)	WB,				*		
Nematus sp.	tA, W, wB, wiB	*	*	*	*		
Nemoria mimosaria Guen.	bF, eH, tA, wS, tL, aMo		*	*	*	*	
Neodiprion abietis (Harr.)	rS, bS, wS, bF	**			T	T	*
Neodiprion nanulus Schedl.	rP	*					
Neodiprion pinetum (Nort.)	wP						*
Neodiprion swaini Midd.	jP					*	
Neodiprion virginianus complex	jP		*			*	
Neodiprion sp.	rS		*				
Neomysia sp.	bF, wS	*					
Nepytia canosaria Wlk.	bF, wP			*	*		
Noctuidae	wB, wE, wS, bF, tA, Al	*		*			
	sM, rP						
Notodonta sp.	tA			*			
Notodontidae	bF, wB	*	*				

Section 1, Table 2 (Cont'd)

Insects #7

Species	Collected from	Collected in District					
		1.	2.	3.	4.	5.	6.
Nyceteola sp.	W				*		
Nyctobia limitaria Wlk.	tL, wS, bF,	*			*	*	*
Nymphalis antiopa (L.)	W, tA, wE,	*		*	*		*
Oecophoridae	cCh, rO, wS, wiB, W, Al	*			*		*
Olethreutidae	wiB,	*	*				*
Oncopsis sp.	wB, Al	*	*		*		*
Operophtera bruceata (Hulst.)	wE, Ap, Ba	*		T			
Operophtera brumata L.	wE, cCh, Ba, Ap, sM, W, sIM, rO, nM, rM, wB, wiB, Al, wAs			T	T	T	T
Operophtera sp.	Ap, wE, nM, Ba, tA, sM						
Orgyia antiqua L.	wB, bF, Ap, wS	*				*	*
Orthosia hibisci Guen.	mM, Ap.			*			
Orthosia revicta (Morr.)	Ap, rO, As, wS, wB	*	*	*	*		
Orthosia sp.	rS				*		
Orthosis sp.	wS		*				
Osmoderma eremicola Knoch	sM	*					
Paonias myops J.E. Smith	tA	*					
Paleacrita vernata Peck	wE, cCh, Ap	*			*	T	
Palthis angulalis Hbn.	wS, tL, bF, rS, pCh	*	**	*	*	*	
Pamphiliidae	wS, bF, wP, Amelanchier* rS, cH	*	*	*	*	*	*
Pandemis canadana (Kft.)	rO, Ap, wB, Be, wE, Po	*		*		*	*
Panthea acronyctoides Wlk.	wP, wS, bF, tL			*	*	*	
Panthea sp.	wP		*				
Paonias sp.	wB,				*		
Papilio ajax L.	Carrott, Parsley				*	*	
Papilio glaucus canadensis R.&.J.	cCh, aMo, pCh, W, lA, Al, Ba, tA	*	*		*	*	
Papilio sp.	wB, cCh,	*			*		
Parorgyia plagiata (Wlk.)	wS, tA, rO, Al, bF, wB	*	*	*	*	*	*
Parorgyia sp.	bF						*
Pegohylemyia anthracina Mall.	wS				*		
Pentatomidae	tA, bF, wS, rS, W, rP, wE* bF, wB, tA, Al		*	*			
Periclista diluta (Cress)	rO	*			*	*	
Periclista sp.	rO				*	*	
Periplaneta americana L.	O	*					
Pero morrisonarius Hy. Edw.	bS, rS, bF, wS, tL		*		*	*	
Pero sp.	W, wB, tL	*					*
Petrova albicapitana Busck.	jP, scP, mugho P,		*	*	*	*	
Petrova sp.	scP					*	
Phenacaspis pinifoliae Fitch	rS, wS, bS		*	*			*
Pheosia rimoso Pack.	W			*			
Phigalia titea Cram.	wE, Ap, rO, wAs	*		*	*	*	*
Phyllocnistis populiella Cham.	tA, Po, bP	*	*	*	*		*
Phyllocoptes minutissimus Hodgk.	rM		*				
Phyllocoptes quadripes Shimer.	rM	*				*	
Physokermes piceae Schr.	wS,			*			
Phytophaga rigidae (O.S.)	W,		*				

Section 1, Table 2 (Cont'd.)

Insects #8

Species	Collected from	Collected in District					
		1.	2.	3.	4.	5.	6.
Pikonema alaskensis (Roh.)	rS,wS,bF,bS	T	*	*	**	**	**
Pikonema dimmockii (Cress.)	rS,wS,blueS,bF	**	*	*	**	**	**
Pineus floccus Patch.	wS			*	*	*	
Pineus pinifoliae (Fitch)	wS,rS,blueS,wP			*	*	*	**
Pineus similis (Gill.)	rS,wS,bS	*	*	*	**	*	*
Pineus strobi (Htg.)	wP		*		*		
Pineus sp.	rS,wS			*			*
Pissodes strobi (Peck)	wP,rS,Austrian P	*	T	*	*		
Pissodes sp.	wS				*		
Pityogenes hopkinsi Sw.	wP				*		
Plagiotrochus sp.	rO				*		
Plemyria georgii Hlst.	wB,Be		*				*
Pleroneura borealis Felt.	bF	*				*	
Podosesia sp.	aMo	*					
Polia assimilis Morr.	tL					*	
Polia sp.	wB,rM,rO	*	*		*		*
Polygonia faunus Edw.	wB	*					
Pontania ponnum (Euura hospes Walsh)	W		*				
Pontania sp.	W	*					
Priocycla sp.	rM	*	*				
Pristiphora erichsonii (Htg.)	tL,rS,bF	T	T	T	T	T	T
Pristiphora geniculata (Htg.)	Mo	*	T	*		*	
Pristiphora sp.	bF	*					
Prochipilus tessellatus (Fitch)	Al			*	*		
Prochoerodes transversata Drury	wB,eH,B	*			*		*
Profenusa alumna (MacG.)	wB		*				
Profenusa tompsonii (Konow.)	wB,yB,wiB,	*	*	*	*	*	*
Protoboarmia porcelaria indicataria Wlk.	wS,rS,bF,tL,wP,rP	**	**	*	**	**	**
Psilocorsis faginella (Cham.)	wB,Be,wB,wiB	*			*		
Psilocorsis fletcherella (Gibs.)	yB,tA				*		
Psilocorsis quercicella (Clem.)	rO,Irish Oak				*	*	
Psilocorsis sp.	yB,W,Be,rO,Hon wB,wiB				*		*
Psychidae	O	*					
Ptinus villiger (Reit.)	--	*					
Pulicalvaria apicitripunctella Clem.	eH	*					
Pulicalvaria macleodi Free	eH	*					
Pyralidae	wB,tA,wS,W	*	*	*			
Recurvaria thujaella Kft.	C	T	*	*			
Recurvaria sp.	wS,	*	*		*		*
Retinodiplosis resinicola (O.S.)	jP			*			
Rhabdophoga swainei Felt.	wS,rS	*		T	*	*	T
Rhagonidae	wS	*					
Rheumaptera sp.	wB	*					
Rhyacionia bouliana (Schiff.)	Mugho P,rP,scP	*		*	T	*	T
Schizura concinna (J.E.Smith)	Ap,tA,W,Al		*		*	*	
Schizura ipomoeae Dbldy.	MoM,rM,Po	*	*	*	*		
Schizura unicornis J.E.Smith	A, aMo					*	
Schizura sp.	wB	*					

Section 1, Table 2 (Cont'd.)

Insects #9

Species	Collected from	Collected in District					
		1.	2.	3.	4.	5.	6.
Sciaphila duplex Wlshn.	tA,Ap	*	*	*	*		*
Scolytidae	wiB,bS,wP,rP,wS,rS		*		**		
Scythropus elegans Couper	wP				*		
Semiothisa bicolorata Fabr.	wP		*				
Semiothisa bisignota Wlk.	jP,wP,rP,wS		*		*		
Semiothisa dispuncta complex	wS,bF,rS,eH,wP,tL	**	**	**	*	**	**
Semiothisa minorata Pack.	wP,wS,jP		*	*	*		
Semiothisa oweni Swett	wP,wS,tL	*	*	*	*	*	*
Semiothisa sexmaculata Pack.	tL,wS	*	*	*	*	**	*
Semiothisa sp.	wP,bF,tL,wS,bS	*	*	*	**	*	*
Serica tristis Lec.	rP,jP,rS						
Sialidae	Ap,wiB,W	*					
	bF			*			
Smerinthus jamaicensis Dru.	tA		*				
Solenobia salicis L	rS,wS,bF				*	*	*
Spilonota ocellana D.& S.	Haw,Ap,aMo		*				*
Stenoma algidella Wlk.	pCh.				*		
Sternochetis lapathi Linn.	W		*				
Stilpnotia salicis Linn.	tA,cPo,siP,W,sPo	*	T	T	T	*	T
	wS,bF						
Strophosoma melanogrammum Forst.	wS,bF,rM,rS					*	*
Syneta sp.	bF,wS,bF	*			*		
Syngrapha retangula Kby.	bF,wS	*					
Syngrapha sp.	wS,rS,bF	*	*				*
Syrphidae	wS,rS,bF,wB,rP	**	*				
Taniva albolineana Kft.	wS,rS,bF	*	*		*	**	
Telea polyphemus	tA		*				
Tenebrionidae	bP,bF,Do		*				
Tenthredinidae	wB,tA,wS,bF,Do	**	*		*		*
	Al,wE,Be,Holly						
Tetralopha asperatella Clem	tA,wB,rO			*	*		
Tetralopha maritimalis McD	rS				*		
Tetralopha sp.	Po,tA	*		*	*		
Tetranychus sp.	wS	*					
Tortricidae	wB,wE,wP,tA,W	*	**	*			*
	sM,wS,wiB						
Trichiocampus irregularis (Dyar)	W	*		*		*	
Trichiocampus triangulum Kby.	W	*					
Trichiocampus viminalis (Fall.)	cPo				*		
Vasates quadripes (Shim.)	siM,rM	*			*		
Winnertzia hudsonii	Haw		*				
Xglococculus betulae Pergande	Be,yB,			*		*	*
Zale	wP,rP,rS,bF,eH,jP	*	*		*		
Zanclognatha minoralis Sm	wS,bF,rS	*	*		*		
Zeiraphera diniana Gn.	tL,wS	*				*	*
Zeiraphera ratzeburgiana Ratz.	wS,rS	*	*	*	*	*	T
Zeirapheira sp.	wS	*	*		*		
Zenobia pleonectusa Grote.	tA, lA	*		*	*		

Section 1, Table 3

Tree Diseases Collected in Maritimes Region in 1967

Species	Host	Collected in district (1)					
		1.	2.	3.	4.	5.	6.
Adelopus balsamicola (Peck) Theiss	bF		*	*	T		
Arceuthobium pusillum Peck	bS, wS		*	T		T	
Armillaria mellea (Vahl. ex Fr.) Kummer	wP, rP, wS, rS, bF, tL	T		*			
Caliciopsis pinea Peck	wP				* †		
Ceratocystis ulmi (Buism.) C. Moreau	wE	T	T	T	T	T	
Chemical Injury	wS, wE				*	*	
Cherry Blight	pCh	*	*	*		T	
Chrysomyxa arctostaphyli Diet.	bS, rS			*	T	T	
Chrysomyxa ledi D.By.	wS, rS, bS, blue S					*	T
Chrysomyxa ledicola Lagh.	wS, rS, bS				T	*	T
Ciborinia whetzeli (Seav.) Seav.	tA	T	T	T		T	T
Cladosporium herbarium (Pers.) Lk.	W, lA				*		
Coccomyces heimalis Higgins	pCh	*	*	*	*	*	
Coccomyces strobil Reid & Cain	wP				*		
Coleosporium asterum (Diet.) Syd.	scP, rP, golden rod				*	*	*
Cronartium coleosporioides Arth.	lP, jP, short leaf pine	*			T	T	
Cronartium comptoniae Arth.	Sweet fern				*	T	
Cronartium ribicola J.C. Fischer	wP, Ribes	T	T	T	T	T	T
Cryptodiaporthe salicina (Curr.) Wehm.	W			*		*	
Cytospora chrysosperma (Pers.) Fr.	lPo, tA	*	*		*		
Cytospora friesii Sacc.	Al				*		
Cytospora sp.	sM						*
Dasyscypha agassizii (Berk. & Curt.) Sacc.	bF	*			*	*	*
Dasyscypha sp.	wP				*		
Davisomycella ampla (Davis) Darker	jP		*				
Dermea balsamea (Peck) Seaver	bF	*		*			
Dibotryon morbosum Theiss & Syd.	pCh, bCh, plum	*	*		T	T	
Didymascella thujiانا (Durand) Maire	eC		*				
Dothichiza populea Sacc. & Briard	lPo, Po	*				*	
Erysiphe aggregata (Peck) Farl.	Al		*	*	*	*	
Frost Damage	bF, wS	T		T		*	T
Fume Damage	A, Mo, wS, W		*				
Fusicoccum abietinum (Hartig) Prill & Delacr.	bF	*		T		*	T

Section 1, Table 3 (Cont'd.)

Species	Host	Collected in district (1)					
		1.	2.	3.	4.	5.	6.
Gloeosporium apocryptum Ell. & Ev.	moM, sM, rM	T	T	T	T		T
Gloeosporium aridum Ell. & Holw.	wA	*		T	T	*	T
Gloeosporium fagicola Pass.	Be		*	T	T		*
Gloeosporium quercinum Westend	rO			T			
Gnomonia ulmea (Schw.) Thum.	wE					*	
Gnomoniella coryli (Batsch ex Fr.)	Hazelnut		*	*		*	
Gnomoniella sp.	Al				*		
Godronia conferta Hone	Ch			*			
Guignardia aesculi (Peck.) V.B. Stewart	hChe			T	T		
Gymnoconia peckiana (Howe) Trotter	Raspberry, Briar				*	*	
Gymnosporangium clavipes (Cke. & Pk.)	Haw, Serviceberry				*		
Gymnosporangium cornutum (Arth. ex Kern.)	Amalanchier, Mo				*	*	*
Hymenochaete agglutinans Ellis	wiB				*		
Hymenochaete corrugota (Fr. ex Fr.) Lev.	wiB			*			
Hymenochaete tabacina (Sow. ex Fr.) Lev.	Al, Be			*	*		
Hypoxyylon mammatum (Wahl.) Miller	tA, lA	*	T	T	T	T	T
Isthmiella faullii (Darker) Darker	bF	*	*	T	T		
Lirula mirabilis (Darker) Darker	bF		T				
Lirula nervata (Darker) Darker	bF		T	T	T		*
Lophodermium juniperi (Grev.) Darker	Ground hemlock, Juniper				*	*	
Lophodermium pinastri (Schradi ex Hook.) Chev.	jP, scP	*				*	
Lophodermium sp.	wS, rS				T		
Marssonina brunnea (Ell. & Ev.) Magn.	tA		*				
Melampsora epitea Thuem	W				*	*	
Melampsora sp.	tL			*			*
Melampsorella caryophyllacearum Schroet.	bF	*	*	T		**	**
Mycosphaerella populorum Thompson	tA				*		

Section 1, Table 3 (Cont'd.)

Species	Host	Collected in district <sup>(1)</sup>					
		1.	2.	3.	4.	5.	6.
Nectria cinnabarina (Tode ex Fr.) Fr.	hChe		*	*			
Nectria coccinea var. faginata Lohm., Wats. and Ayers	Be	T	*	T	T	T	T
Nectria fuckeliana Booth	bF						*
Nectria sp.	bF				*	*	
Peridermium harknessii J. P. Moore	scP, jP	*	*		*	T	
Pestalotia funera Desm.	eC			*			
Pestalotia sp.	rM				*		
Phaeostoma sphaerophila (Peck.) Barr.	cCh, pCh	*	*		*	*	
Phleospora aceris (Lib.) Sacc.	rM		*				
Phragmidium speciosum (Fr.) Cke.	Wild rose					*	
Phyllosticta minima (Berk. & Curt.) Underw. & Earle	rM		*	*			
Physalospora miyabeana Fukushi	W		T	*	*	*	
Pollaccia elegans Serv.	bPo						T
Pollaccia radiosa (Lib.) Bald. & Cif.	tA, lA	*	T	T	T	*	T
Pollaccia saliciperda (All. & Tub.) Arx.	W	T	T	*	T	*	T
Polyporus abietinus Dicks. ex Fr.	bF, wS	*	*	*	*		*
Poria ferrea (Pers.) Bourd. & Galz	Al				*		
Puccinia dioicea P. Magn.	Goldenrod					*	
Puccinia sparganioides Ell. & Barth	wA, cordgrass				T	*	T
Pucciniastrum epilobii Otth.	bF, fireweed	*	T	T	T	*	T
Pucciniastrum goeppertianum (Kuhn) Kleb.	Blueberry		T		T		
Pucciniastrum vaccinii (Wint.) Jorst.	eH		*				
Rehmiellopsis balsameae Waterm.	bF	*	T	T		*	T
Rhizosphaera abietis Mang. & Hariot	bF					*	
Rhytisma acerinum (Pers. ex St. Amans) Fr.	rM				*	*	*
Rhytisma illicis canadensis Schw.	Holly				*	*	
Rhytisma punctatum Pers. ex Fr.	moM					*	
Rhytisma salicinum Pers. ex Fr.	W	*	*	*	*	*	*



Section 1, Table 3 (Cont'd.)

Species	Host	Collected in district (1)					
		1.	2.	3.	4.	5.	6.
<i>Scolecconectria cucurbitula</i> (Tode ex Fr.)	wP, bF	*	*		*		*
<i>Septobasidium pinicola</i> Snell	wP			*	*	*	*
<i>Septomyxa tulasnei</i> Hoehn.	mM			*			
<i>Septoria corylina</i> Peck.	Beaked hazel					*	
<i>Stegonosporium ovatum</i> (Pers. ex Merat) Hughes	sM						*
<i>Taphrina carnea</i> Johanson	yB				*		
<i>Taphrina dearnessii</i> Jenkins	sM, rM				*		
<i>Taphrina robinsoniana</i> Gies.	Al		*	*	*	*	
<i>Taphrina tosquetii</i> (Westend) Magn.	Al				*		
<i>Taphrina wiesnerii</i> Rathay Mix	pCh		*	*			*
<i>Uredinales</i> sp.	Bracken fern				*		
<i>Uredinopsis</i> sp.	bF				*		*
<i>Valsa abietis</i> Fr.	bF	*					
White Pine Needle Blight	wP	T	T	T	*		*
Winter Drying	bF, J, jP, rP, eC	T	*	T		*	*

(1)

- 1 - Western New Brunswick
- 2 - Northeastern New Brunswick
- 3 - Southern New Brunswick  
and Prince Edward Island
- 4 - Western Nova Scotia
- 5 - Central Nova Scotia
- 6 - Eastern Nova Scotia

- \* - Less than 10 collections
- \*\* - 10 collections or more
- T - Discussed in text

Section 1, Appendix A

Classifications of Trees Used on Plots

Balsam Woolly Aphid Plots

1. Uninfested.
- 2A. New stem attack, light.
- 2B. New stem attack, medium.
- 2C. New stem attack, severe.
- 3A. Dead from stem attack, red foliage.
- 3B. Dead from stem attack, bare branches.
- 4A. Twig attack, distinct but light.
- 4B. Twig attack, some dying branches.
- 4C. Twig attack, many dead branches.
5. Dead from twig attack.

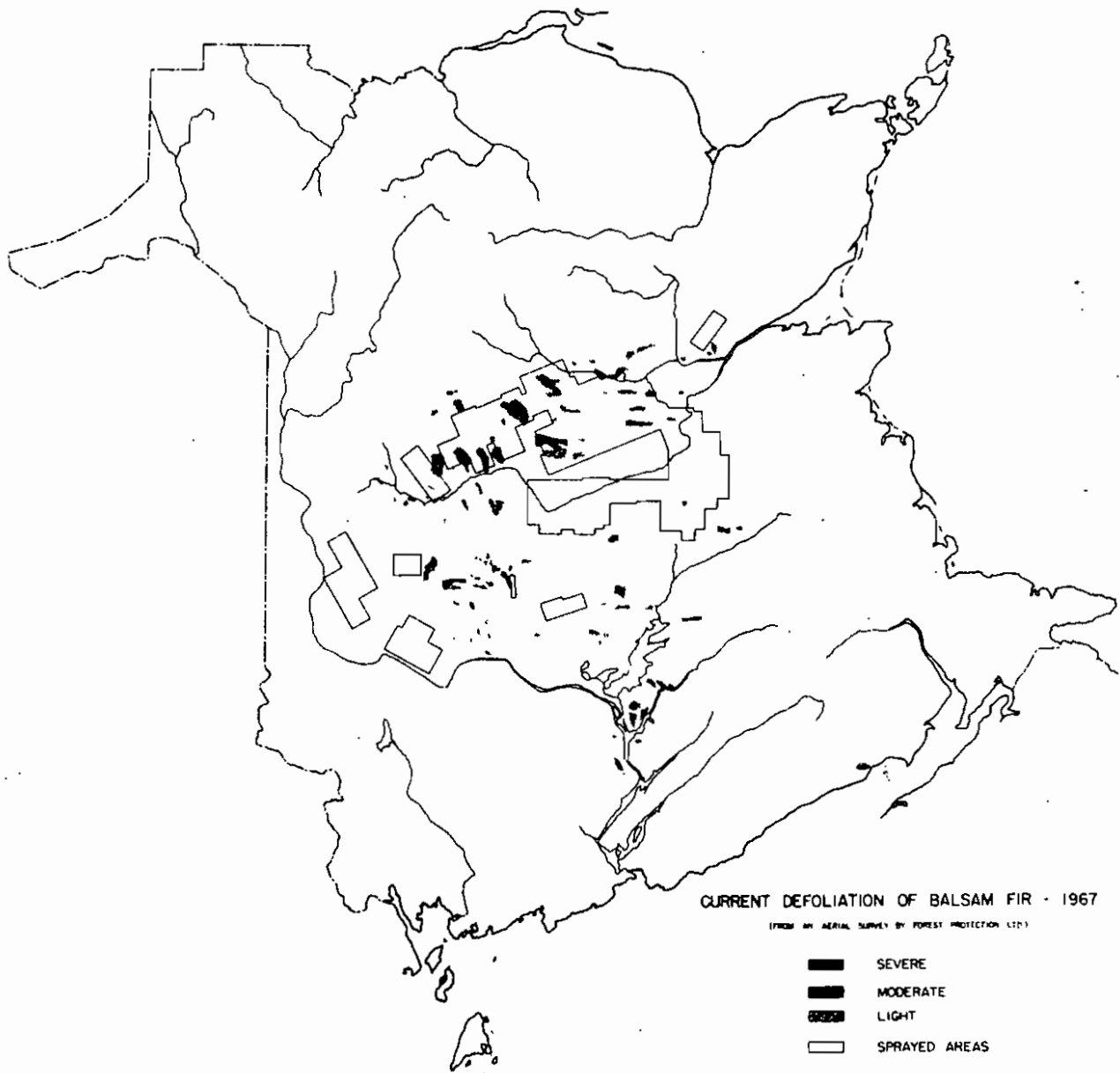
Beech Scale Plots

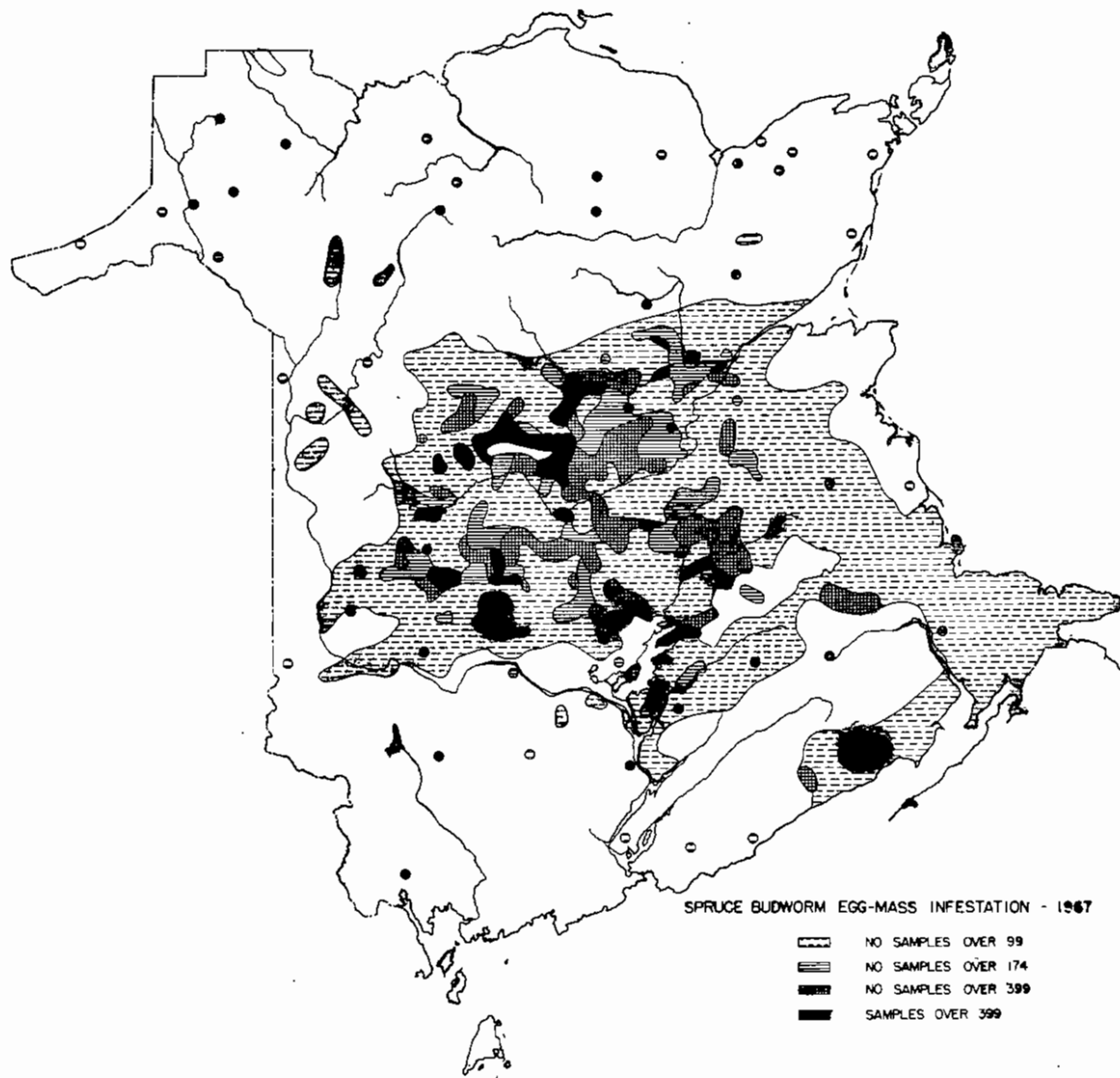
1. Uninfested.
2. Trees with dots or streaks of white wool only.
3. Trees with most of bark streaked or covered with wool but not dying.
4. Trees apparently dying (considerable patches of dead bark and yellowish foliage).
- 5A. Living trees with cankers, uninfested.
- 5B. Living trees with cankers, lightly infested.
- 5C. Living trees with cankers, heavily infested.
6. Trees dead.

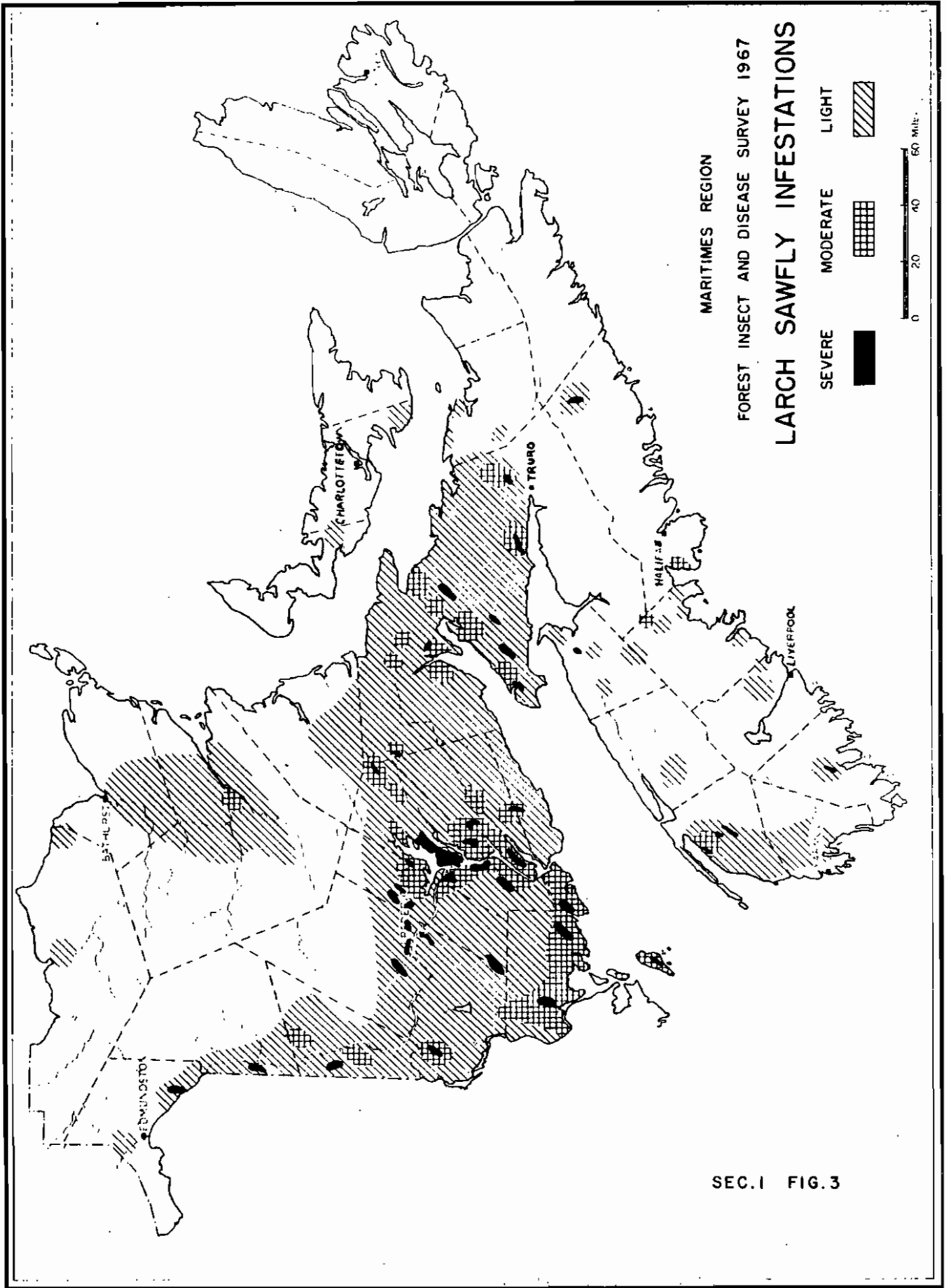
Expression of Degrees of Infestation and Defoliation

and of Intensity and Incidence of Tree Diseases

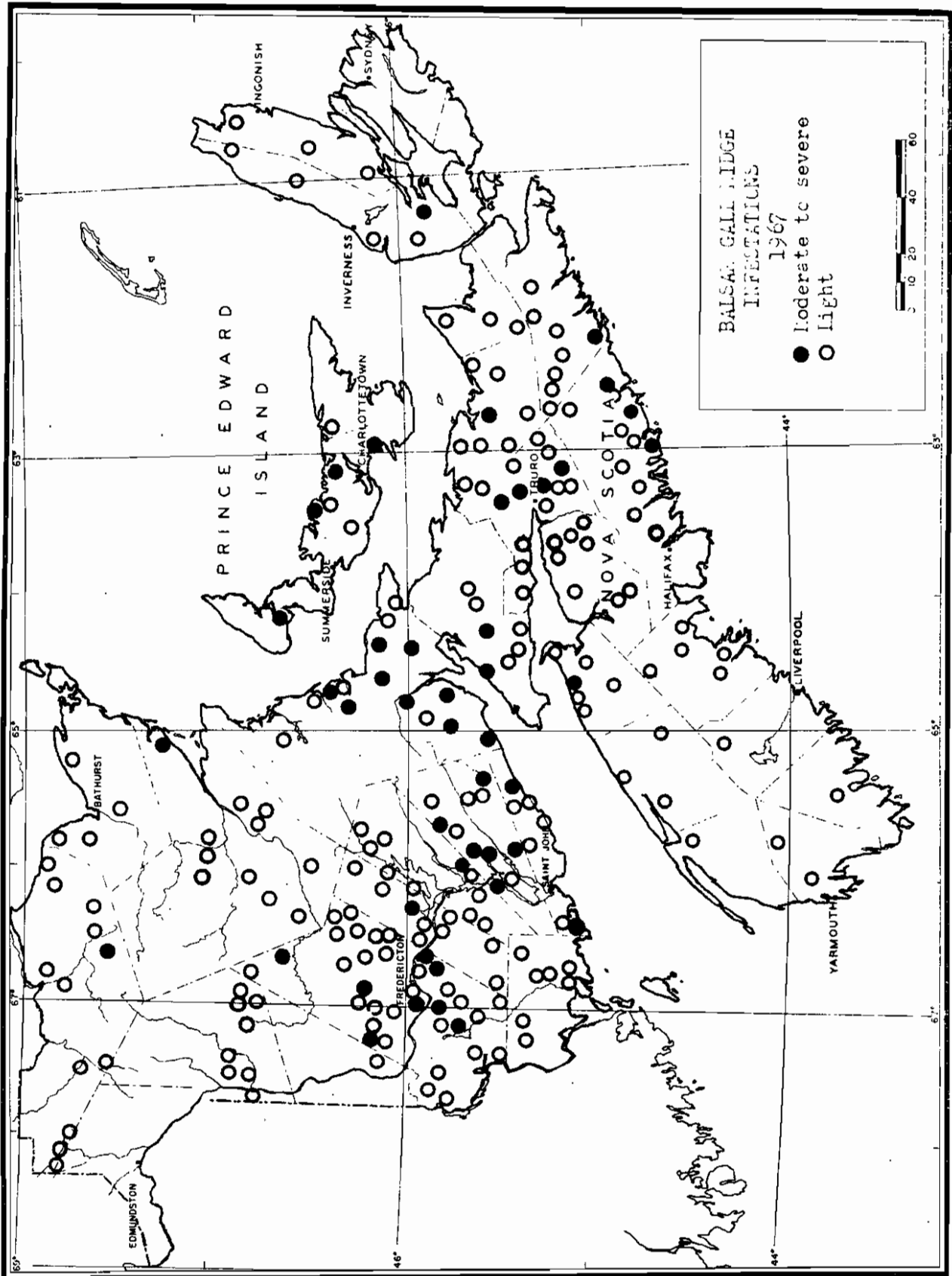
Trace	- up to 5%
Light	- 10 to 20%
Moderate	- 30 to 60%
Severe	- 70 to 100%

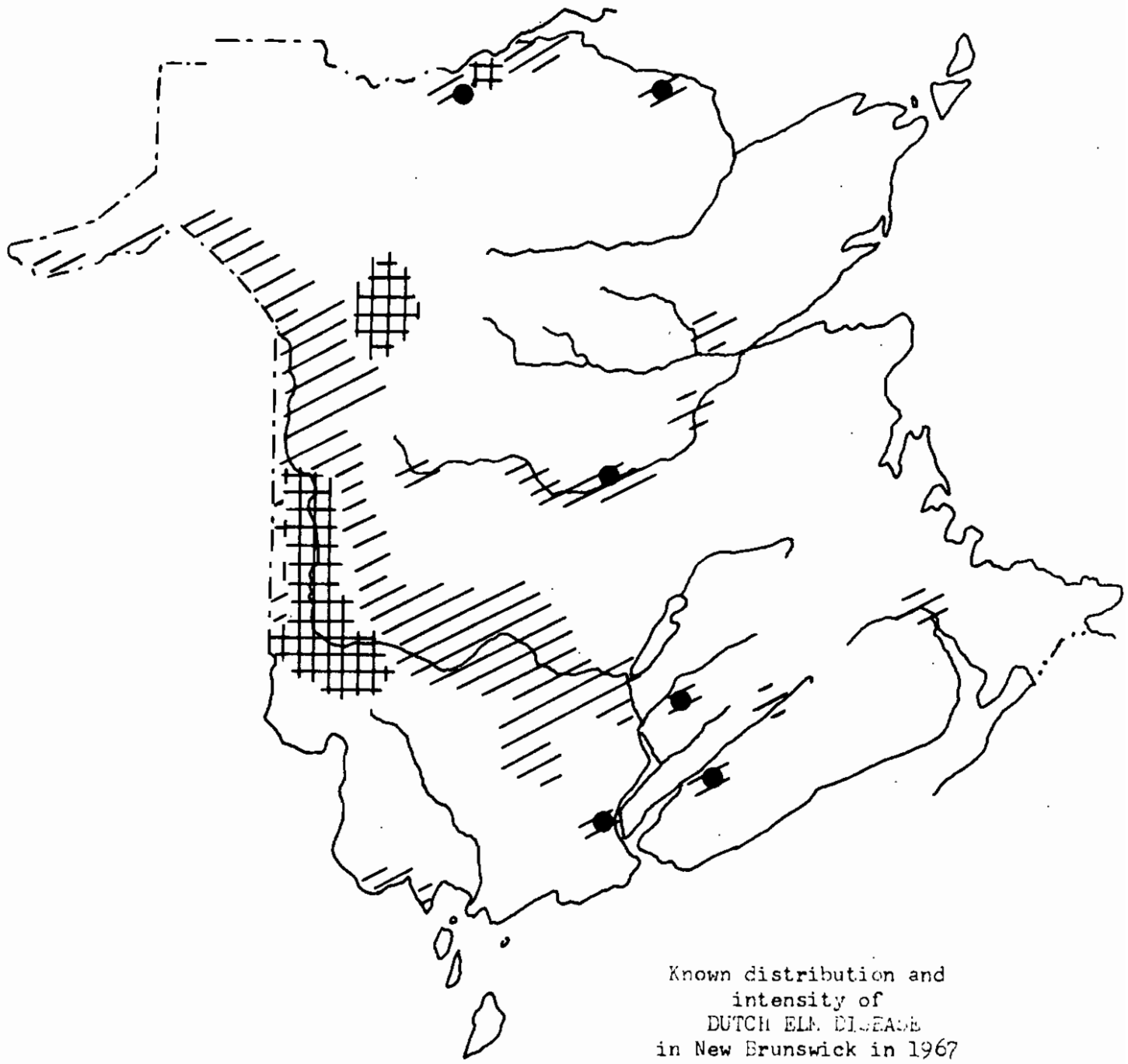








SEC. I FIG. 3





Known distribution and intensity of DUTCH ELM DISEASE in New Brunswick in 1967

 Moderate

 Light

● New locations 1967

Scale: 1 inch = 34 miles (approx.)

ANNUAL DISTRICT REPORT

WESTERN NEW BRUNSWICK

1967

by

C.M.B. Dobson



## 2.0 WESTERN NEW BRUNSWICK

(C. Dobson)

### Introduction

This district, extending from the Bay of Fundy up the west side of New Brunswick to the Quebec boundary, was affected by most of the major insect infestations of 1967 and includes a great portion of the area in which the Dutch elm disease occurs. To the usual list of major perennial pests of recent years was added the satin moth, which, in 1967, occurred in outbreak proportions in natural stands of poplars in several areas, caused a considerable degree of confusion during aerial surveys for forest tent caterpillar defoliation and necessitated ground checks on all spot infestations.

A total of 978 samples was collected in the district. Of these, 356 insect and 87 disease collections were taken by the district technician.

### Insect Conditions

#### Spruce Budworm, *Choristoneura fumiferana* Clem.

Larval numbers were slightly higher than in 1966 at seven sample stations and lower at five. The greatest increases occurred on balsam fir at Juniper, Carleton County, and on white spruce at Zealand, York County, up 7.7 and 5.5 larvae per tree sampled respectively. The greatest decrease occurred on balsam fir at Zealand, down 19.6 larvae per tree sampled from 1966. The average number of larvae per tree sampled for all sampling stations was 2.8 in 1967 compared to 2.88 in 1966 (Section 2, Table 1).

Severe defoliation of balsam fir occurred in York County on the Nashwaak River watershed above Napadogan Brook, between Stanley and Cross Creek, and near Nashwaak Lake, and in Sunbury County in small patches near Hurley Brook. Large areas of light defoliation with patches of moderate were common elsewhere in northern York and Sunbury counties and in the Juniper area of Carleton County.

Egg masses were found on foliage from 236 of the 484 locations sampled.

In York County egg-mass numbers were high in patches in the Rocky Brook - Clearwater Brook area, along Burnthill Brook, near McKiel Lake, between Nashwaak and Miramichi lakes, around Stanley, and on the Grand John Brook and the headwaters of Nashwaaksis Stream. Large areas of less heavily infested forests occur throughout the northern half of the County,

Elsewhere in the district egg-masses were numerous between the North Burnthill Brook and the Renous road in Victoria County, west of Woodstock, on the headwaters of the South Burnthill Brook and at Cloverdale, Carleton County, and in two areas west and north of Minto in Sunbury County.

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Larch sawfly infestations were common in the district in 1967 (Section 1, Figure 3). Summaries of the results of defoliation surveys by counties follow:

<u>County</u>	<u>Defoliation summary</u>
<u>Madawaska</u>	Severe over 200 acres at Siegas. Light north of St. Jacques.
<u>Victoria</u>	Severe over 250 acres west of California Settlement. Light at Gillespie Settlement.
<u>Carleton</u>	Severe at Centreville and First Eel Lake. Moderate in patches southwest of Holmesville. Light on small groups of trees and individual trees throughout remainder of County.
<u>York</u>	Severe at Mouth of Keswick, Keswick Ridge, Douglas, Nashwaaksis and Fredericton. Light and trace at scattered locations throughout the County.
<u>Sunbury</u>	Severe to the west and northwest of Acadia Forest Experiment Station and in small patches near Peltoma Lake. Moderate in patches between Little River and Minto and between Ripples and the Queen's County line.
<u>Queen's</u>	Severe at Lower Gagetown, Hampstead and Champlain Mountain. Moderate at Clarks Corner.
<u>St. John</u>	Severe in patches in the Lepreau area.
<u>Charlotte</u>	Severe in a large area north of New River Beech, near junction of Route 1 and Route 41 and in patches on Grand Manan, and at Elmville. Moderate on Campobello Island.

European Spruce Sawfly, *Diprion hercyniae* (Htg.)

Small numbers of sawfly larvae were collected in all counties in the district in 1967 but were slightly higher than in 1966 (Section 2, Table 3).

Numbers of larvae per tree sample were highest at Riley Brook, Victoria County (3.8), and at Thomaston Corner (3.5) and Hanwell Road (5.3), York County.

Collections submitted by co-operators from red and white spruce contained a total of 101 larvae (Section 2, Table 4).

Balsam Woolly Aphid, *Adelges piceae* (Ratz.)

The low incidence of stem attacks on balsam fir trees continued in 1967 and no changes were noted in the boundaries of distribution.

Classification of balsam fir trees on plot 3-5 at Fredericton showed an increase in the number of uninfested trees up from 19.8% in 1966 to 31.4% in 1967 (Section 2, Table 5). This difference was accounted for by a number of trees which, in 1966, supported only very light stem attacks and which, in 1967, showed no evidence of infestation.

Balsam Gall Midge, *Dasineura balsamicola* (Lint.)

A severe infestation of this gall-maker on balsam fir needles occurred in a small area of co-dominant, intermediate and reproduction sized trees on the University of New Brunswick woodlot at Fredericton.

Moderate infestations occurred: at Upper Magaguadavic, east of Lake George, at Scotch Lake, Stanley, Tay Creek and Mapleton, York County; at Hibernia and Otnabog, Queen's County; at Ripples, Sunbury County; Oak Point, Kings County; and Chance Harbour, St. John County. Light infestations were recorded at numerous locations in all counties except Madawaska and Carleton (Section 1, Figure 4).

Balsam Shoot-boring Sawfly, *Pleroneura borealis* Felt.

This sawfly was less common than in 1966 and very little damage was observed on the new shoots of balsam fir. A light infestation occurred at Summit Depot, Restigouche County and a trace of damage was observed at Maple Grove, York County.

Larch Casebearer, *Coleophora laricella* Hbn.

Overwintering population levels of larch casebearers were higher at all stations except two, one of which was negative, the other down slightly from 1966 (Section 2, Table 6). The greatest increases occurred at Neville's Field, (Fredericton), and Waasis, Sunbury County, up from 0.85 and 1.62 per 100 fascicles in 1966 to 8.57 and 7.25 respectively in 1967. Defoliation in stands examined after the feeding period did not exceed trace.

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

This sawfly again caused severe defoliation of small, open-growing white spruce trees at Blaney Ridge, York County. Small numbers of larvae were collected from white spruce at West Saint John, and at Salmonhurst, Victoria County, and Connors, Madawaska County. Small numbers of larvae occurred in nine collections submitted by co-operators.

Black-headed Budworm, *Acleris variana* Fern.

Population levels were low again in 1967, the average number of larvae per tree sampled being 0.75, the same as in 1966.

Balsam Twig Aphid, *Mindarus abietinus* Koch.

Trace to light infestations on the new shoots of balsam fir were widespread in the district in 1967. A small area near Nasonworth, York County, sustained a moderate to severe infestation. One collection was taken from white spruce at L'Eglise, Madawaska County.

Spruce Bud Midge, *Rhabdophaga swainei* Felt

Buds damaged by this midge were common on white and red spruce in 1967. Counts of galled buds per 100 square feet of foliage were taken at three locations. The results follow:

<u>Location</u>	<u>No. of galled buds/100 sq. ft.</u>
Maple Grove, York County	89
Otnabog, Queen's County	79
Welsford, Queen's County	184

Fall Cankerworm, *Alsophila pomataria* Harr.

Severe defoliation of elm, wire birch and a few alders occurred near the Church Road at Maugerville, Sunbury County, and of approximately two-thirds of the apple trees in a 5-acre orchard off the Golf Club Road at Fredericton. Severe defoliation occurred also on about eight elm trees on the Isle of Pines, in the St. John River near Oak Point. This is in sharp contrast to 1966 when all hardwoods in an 8-to 10-acre area were severely defoliated.

Moderate defoliation of a few white elm trees occurred at Lakeville Corner and light defoliation of elms occurred at Fredericton.

Small numbers of larvae were collected in beating samples from oak, apple and elm in Queen's and Sunbury counties. One larva of the spring cankerworm, (*Paleacrita vernata* Peck), was found in association with fall cankerworm on an apple tree at Fredericton.

Birch Leaf Miner, *Fenusa pusilla* (Lep.)

Browning of the foliage of wire birch and to a lesser extent white birch occurred in patches throughout the southern half of the district. Severe browning occurred at Fredericton, Douglas, Nackawic, Smithfield, Hartfield, Oromocto, Oromocto Lake, Upper Gagetown, Acadia Forest Experiment Station, McAdam and St. Stephen.

Moderate browning occurred at Richmond Corner, Carleton County and along the Nevers Road, Sunbury County.

Browning was generally light with patches of moderate or severe from St. Croix to St. Stephen and from Oak Bay to Lawrence Station.

Foliage browning was rare in Victoria and Madawaska counties.

Birch Casebearer, Coleophora fuscadinella Zell.

Severe defoliation of white birches occurred near the southwest side of South Oromocto Lake, Charlotte County. Numerous white birches were severely defoliated at Edmundston, Baker Brook and St. Jacques, Madawaska County and at Upper Southampton, York County.

Moderate browning of white birch was general over a 30- to 40-square-mile area in the McDougall Lake - Mount Pleasant area of Charlotte County.

Generally light defoliation with a few small white birch trees moderately defoliated occurred along the old Woodstock Road between Canterbury and St. Croix, and at Plaster Rock. Light defoliation of white birch occurred at Iroquois, Madawaska County.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Population levels of forest tent caterpillar remained low in 1967. Small numbers of larvae were collected from apple trees at Fredericton, from a white birch tree at Porten Settlement (near Benton) and from trembling aspen trees at Edmundston, Lac Unique, Porten Settlement and Fredericton. Defoliation was negligible.

No egg masses were found at any of the numerous locations sampled indicating that larval numbers will be low again in 1968.

Satin Moth, Stilpnotia salicis L.

Severe defoliation of poplars occurred in stands in York, Carleton and Victoria counties. In York County 30 to 40 acres of balsam poplar were severely defoliated. In Carleton County, severe defoliation of trembling aspen occurred over approximately 200 acres at Tracy Mills, 75 acres at Lindsay and of approximately 250 acres of trembling aspen and largetooth aspen in two infestations at Cloverdale. In Victoria County severe defoliation of trembling aspen and largetooth aspen occurred in a 10-acre area near Perth.

The numbers of adults caught in light traps in the district in 1967 follow:

<u>Location</u>	<u>No. adults</u>
Oak Bay, Charlotte Co.	17
Lancaster, St. John Co.	1
Canterbury, York Co.	51
Perth, Victoria Co.	169
St. Leonard, Madawaska Co.	137

Ugly-nest Caterpillar, Archips cerasivoranus Fitch

Few nests were seen on roadside cherry bushes in 1967. A count taken at Caron Brook, Madawaska County, showed 17 nests in 200 square feet.

Fall Webworm, Hyphantria cunea Drury

Population levels were again low in the district. Two collections containing 101 and 81 larvae respectively were taken at Porten Settlement, Carleton County and Arcostock Junction, Victoria County.

Alder Flea Beetle, Altica ambiens alni Harris

Patches of foliage browning of alders, common in all counties except Madawaska, were severe at Waweig, Rolling Dam, Dumbarton Station, Lawrence Station, St. Stephen and Milltown, Charlotte County, McAdam, Thomaston Corner, Harvey and Longs Creek, York County and Beechwood, Carleton County.

Cedar Leaf Miners, Recurvaria thujaella Kft., Argyroresthia thuiella (Pack)

These leaf miners caused moderate browning of the foliage of cedars in stands west of Woodstock and between Jacksonville and Waterville, Carleton County.

Tree Diseases

Frost Damage

An early frost killed approximately half the new shoots of young white spruce and balsam fir trees in a 2-acre area at Wild Goose Lake, Restigouche County.

Animal Damage

Porcupines and squirrels broke and chewed twigs and branches off the occasional aspen. Porcupine feeding damaged numerous spruce and balsam fir trees at Acadia Forest Experiment Station. Elsewhere in the district various conifers were similarly damaged.

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau

Sixteen diseased elm trees were found in Fredericton compared to 18 in 1966. A diseased tree at Welsford was a new distribution record being approximately 15 miles south of the previously known limits of the disease.

Number of suspect trees sampled - 32

Number of positive cultures - 26

Diseased elm incidence counts were taken at a number of locations as follows:

<u>Location</u>	<u>Number of trees</u>		<u>Per cent infected</u>
	<u>Uninfected</u>	<u>Living infected</u>	
<u>Carleton County</u>			
Stickney	24	23	49
Woodstock	26	17	40
<u>Victoria County</u>			
Andover	59	20	34
Aroostook	15	11	42
Riley Brook	17	11	39
<u>York County</u>			
Meductic	21	18	46

As part of a study of possible resistance to Dutch elm disease, 27 apparently healthy elm trees were selected for future observations in six areas where the disease has killed numerous trees.

Beech Bark Disease, *Cryptococcus fagi* (Baer.) and *Nectria coccinea* var. *faginata* Lohm., Wats. & Ayers

Trees with stems cankered and with light scale attacks, represented the most common class of beech tree in the southern half of the District. The fungus was collected at Nashwaak Narrows, York County, and on the Trousers Lake Road, Victoria County.

The trees remaining on plot 3-5 at Fredericton showed little change from 1966 although it was difficult to make meaningful comparisons because many of the trees were removed in a lumbering operation.

Trees remaining on plot 1-16, Nashwaak Narrows, continue to deteriorate. The percentages of trees in each infestation class on the two plots for 1967 are compared with the three previous years in the following table.

Location	Year	Per cent of trees in class *								Dead other causes & cut
		1	2	3	4	5A	5B	5C	6	
Fredericton (U.N.B. woodlot)	1964	9.0	0.0	0	3.4	1.1	79.8	0	1.1	5.6
	1965	9.0	2.2	0	4.5	0.0	76.5	0	2.2	5.6
	1966	9.0	1.0	0	11.3	0.0	70.6	0	2.3	5.7
	1967	8.7	1.1	0	1.1	0.0	46.0	0	2.2	41.5**
Nashwaak Narrows	1964	0.0	7.7	5.8	17.3	0.0	55.7	0	13.5	0.0
	1965	0.0	7.7	0	9.7	0.0	63.4	0	19.2	0.0
	1966	0.0	1.9	0	0.0	7.7	38.4	0	19.2	32.7**
	1967	1.9	3.8	0	11.5	9.6	23.1	0	19.2	34.6

\* See Appendix A, Section 1, for explanation of classes.  
 \*\* Trees cut.

White Pine Needle Blight

Approximately 25% of the needles of occasional white pine trees were blighted in an area west of Minto. Between Fredericton and Acadia Forest Experiment Station some blighted trees had by October dropped more than 60% of their needles.

Shoestring Root Rot, *Armillaria mella* (Vahl. ex Fr.) Krummer

*Armillaria* root rot was found in 14 of 25 plantations of young softwoods on former hardwood or mixedwood sites at the Acadia Forest Experiment Station. Mycelial fans were found on one or more trees in each of the 14 plantations but less than one tree per acre was affected.



Examinations during September in 4- to 10-year old plantations in cut-over areas near Black Brook, Victoria County, revealed A. mella fruiting bodies on most of the old stumps of the original stand. Less than 1% of the trees in each plantation were dead or dying.

Fomes annosus (Fr.) Cke.

Special sampling was carried out to detect air-borne spores of this fungus. Foliage samples (30) were collected, and 40 mobile and 60 static muslin traps were exposed during September and October in the five New Brunswick counties bordering the State of Maine. Fomes annosus spores were identified from a foliage sample collected near St. Andrews in September.

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

Cankered poplar trees were common but of light incidence. A count taken at Eel River, Carleton County, showed 5 trees living but cankered, 7 dead cankered and 88 healthy.

Ink Spot of Aspen, Ciborinia whetzellii (Seav.) Seav.

Ink spot infections caused severe foliage browning of less than 10% of the aspen trees near Burtts Corner, York County. Browning of moderate intensity and incidence occurred at Cloverdale, Gordonsville and south of Porten Settlement (near Benton), Carleton County, and at Kingsley, York County. Moderate leaf damage occurred also on widely scattered aspens at Glazier Lake and Pelletier Mills, Madawaska County. At Ashland, Carleton County, light browning occurred on about 20% of the trees.

Other Diseases Collected

The names of all tree diseases collected in Western New Brunswick in 1967 are included in Table 3 of Section 1.

Section 2, Table 1

Spruce Budworm Larval Sampling Records at Permanent  
Sampling Stations in Western New Brunswick in 1967

Location	Tree* sp.	No. specimens	Av. per tree sample	Deviation from 1966
<u>Carleton County</u>				
Glassville	wS	0	0.0	-0.3
Biggar Ridge	bF	2	0.7	0
Juniper	bF	23	7.7	+7.7
	wS	23	7.6	+6.0
Ashland	bF	24	8.0	**
	wS	16	5.3	+4.7
Kirkland	wS	6	2.0	**
<u>Charlotte County</u>				
Waweig	wS	0	0	**
<u>Madawaska County</u>				
Connors	wS	0	0	0
Glazier Lake	bF	0	0	0
	wS	0	0	0
Upper Siegas	wS	0	0	0
L'Eglise	wS	0	0	0
<u>Restigouche County</u>				
Mamozekel Road	bF	0	0	0
	wS	1	0.3	+0.3
<u>Sunbury County</u>				
Ripples	bF	25	8.3	-33.0
	wS	3	1.0	-9.3
<u>Victoria County</u>				
Salmonhurst	wS	0	0	-1.0
South Tilley	wS	0	0	0
Riley Brook	wS	0	0	0
Three Brooks	bF	1	0.3	+0.3
	wS	0	0	0
Jardine Brook	bF	0	0	0
	wS	0	0	0
<u>York County</u>				
Hainesville	bF	12	4.0	-19.6
	wS	124	41.3	+5.0
Hanwell Road	bF	0	0	0
	wS	0	0	0

Section 2, Table 1 (cont'd)

Location	Tree* sp.	No. specimens	Av. per tree sample	Deviation from 1966
<u>York County (cont'd)</u>				
Maplewood	bF	1	0.3	**
	wS	8	2.7	+2.7
Upper Brockway	wS	0	0	0
Thomaston Corner	wS	0	0	0
<u>Random Samples</u>				
Sunbury County	6 bF	209	34.8	-
	4 rS	155	38.7	-
York County	10 bF	382	38.2	-
	6 wS	15	2.5	-

\* Each station consisted of three trees and was sampled once

\*\* Not sampled in 1966

Section 2, Table 2

Spruce Budworm Larval Sampling Records at Co-operators'  
Sampling Stations in Western New Brunswick in 1967

Location	No. trees	Tree sp.	No. specimens	Av. per tree sample
<u>Carleton County</u>				
Lindsay Spring (Glassville)	6	bF	2	0.3
	6	wS	2	0.3
<u>Charlotte County</u>				
Clarence Ridge	9	bF	0	0
	9	wS	0	0
Utopia Woodlot	9	bF	0	0
	9	rS	0	0
<u>Madawaska County</u>				
Baker Brook	6	bF	0	0
	6	wS	0	0
St. Joseph	6	bF	0	0
	6	wS	0	0
Flat Mountain (Green River)	6	bF	0	0
	6	wS	0	0
<u>Queen's County</u>				
Welsford	3	bF	0	0
	3	wS	0	0
	3	rS	0	0
<u>Sunbury County</u>				
2 mi. West of Minto	6	bF	174	29.0
	3	rS	50	16.6
<u>Victoria County</u>				
Sisson Ridge	9	bF	0	
	9	wS	3	0.3
Tilley	12	bF	0	0
	12	wS	1	0.1
<u>York County</u>				
Limekiln, Stanley	12	bF	12	1.0
	6	wS	8	1.3
O'Leary Road, Beaver Dam	9	bF	45	5.0
	12	wS	43	3.6

Section 2, Table 3

Numbers of European Spruce Sawfly Collected in Random Samples and from Permanent Sample Stations in Western New Brunswick in 1967

Location	No.* trees	No. of sawfly larvae**	
		June 29-July 10 1st sample	Sept. 12-14 2nd sample
<u>Random Samples</u>			
Carleton County	3	-	6
<u>Permanent Sample Stations</u>			
<u>Carleton County</u>			
Glassville	6	2 (1)	7 (2)
Juniper	3	0 (0)	- (0)
Ashland	6	0 (2)	1 (0)
Kirkland	6	1 (3)	4 (0)
<u>Charlotte County</u>			
Waweig	3	1 (-)	- (11)
<u>Madawaska County</u>			
Baker Brook	6	1 (0)	1 (4)
Connors	6	0 (0)	4 (1)
Glazier Lake	6	0 (0)	5 (1)
Upper Siegas	6	0 (-)	5 (2)
L'Eglise	6	4 (0)	12 (17)
<u>Restigouche County</u>			
Mamozekel Road	6	0 (0)	7 (1)
<u>Sunbury County</u>			
Ripples	6	1 (1)	7 (0)
<u>Victoria County</u>			
Salmonhurst	6	1 (0)	3 (4)
South Tilley	6	2 (0)	4 (0)
Riley Brook	6	5 (3)	18 (2)
Three Brooks	6	2 (1)	2 (1)
Jardine Brook	6	0 (0)	2 (0)

Section 2, Table 3 (cont'd)

Location	No.* trees	No. of sawfly larvae**	
		June 29-July 10 1st sample	Sept. 12-14 2nd sample
<u>York County</u>			
Maplewood	6	0 (-)	6 (0)
Hainesville	6	0 (2)	0 (2)
Hanwell Road	6	0 (2)	32 (0)
Thomaston Corner	6	0 (2)	21 (11)
Upper Brockway	6	1 (0)	4 (13)

\* All collections from white spruce  
\*\* 1966 numbers in brackets  
Dash (-) indicates no. samples taken

Section 2, Table 4

European Spruce Sawfly Larval Sampling Records at Co-operators  
Sampling Stations in Western New Brunswick in 1967

<u>Location</u>	<u>No. trees</u>	<u>Tree sp.</u>	<u>No. specimens</u>	<u>Av. per tree sample</u>
<u>Carleton County</u>				
Glassville	6	wS	12	2.0
<u>Charlotte County</u>				
Clarence Ridge	12	wS	14	1.2
Utopia Woodlot	6	rS	11	1.8
<u>Madawaska County</u>				
Flat Mountain	3	wS	3	1.0
St. Joseph	3	wS	1	0.3
<u>Queens County</u>				
Welsford	6	rS	3	0.5
	3	wS	5	1.7
<u>Sunbury County</u>				
2 mi. West of Minto	3	rS	1	0.3
<u>Victoria County</u>				
Sisson Ridge	2	wS	3	1.5
<u>York County</u>				
O'Leary Road (Beaver Dam)	9	wS	48	5.3

Section 2, Table 5

Condition of Trees on Balsam Woolly Aphid Plot No. 3-5  
O'Dell Park, Fredericton, in 1961, 1962, 1963, 1965, 1966 and 1967

Year	Per cent of trees in class*										Dead other causes & cut
	1	2A	2B	2C	3A	3B	4A	4B	4C	5	
1961	17.8	26.9	0	0	0	4.8	10.9	10.2	0.7	3.4	25.3
1962	24.7	7.5	0	0	0	4.1	15.9	8.9	2.1	4.1	30.1
1963	35.6	10.9	0	0	0	4.1	8.2	6.2	0	4.1	30.9
1965	32.9	10.2	0	0	0	4.1	4.8	5.5	0.7	4.8	37.0
1966	19.8	14.2	0	0	0	4.1	8.2	2.1	0	4.8	45.9
1967	31.4	2.7	0	0	0	4.1	6.8	1.3	0	4.8	47.9

\* See Appendix A, Section 1, for explanation of classes

Number of trees on plot - 146



Section 2, Table 6

Larch Casebearer Numbers and Defoliation Estimates at Sampling Stations in Western New Brunswick in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Carleton County</u>				
Carlisle	0	0.70	T	-
Holmesville	0.33	0.69	T	T
<u>Charlotte County</u>				
Oak Bay	1.49	2.33	T	T
<u>Madawaska County</u>				
Green River	0	0.44	0	-
St. Jacques	0	0.97	0	0
Stewart Highway	0	0	0	-
<u>Queens County</u>				
Welsford	0.24	1.31	T	T
<u>Sunbury County</u>				
Acadia Station	0.86	0.98	-	-
Blissville	0.57	2.05	T	T
Waasis	1.62	7.25	T	T
<u>Victoria County</u>				
Burntland Brook	0.29	0.25	T	-
Dover Hill	0.48	3.25	-	-
Gillespie Settlement	0	0.29	T	-
Three Brooks	0.33	0.92	-	-
<u>York County</u>				
Canterbury	0	1.09	-	T
Hanwell	0	1.14	-	T
McGivney	0.22	0.96	T	-
Neville's Field, Fredericton	0.85	8.57	-	-
Pinder	0.23	2.78	-	-
St. Croix	0.58	6.68	T	T
Woodlands	0	4.55	T	-

\* T = Trace  
 - = No record

Section 2, Table 7

Numbers of Common Insects Collected from Permanent  
Sampling Stations in Western New Brunswick in 1967

Species	No. and type of stations producing larvae	Av. no. larvae per tree sample	Deviation from 1966
<i>Acleris variana</i> Fern.	10 wS	0.7	-0.3
<i>Caripeta divisata</i> Wlk.	7 wS	0.5 )	-0.2
	2 bF	0.5 )	
<i>Choristoneura fumiferana</i> Clem.	7 bF	4.2 )	-8.9
	8 wS	7.5 )	
<i>Diprion hercyniae</i> (Htg.)	22 wS	1.3	+0.7
<i>Eupithecia filmata</i> Pears.	3 wS	0.5 )	-0.2
	2 bF	0.3 )	
<i>Eupithecia transcanadata</i> MacKay	6 wS	0.8	-
	2 bF	0.6	-
<i>Griselda radicana</i> Wlsh.	3 wS	1.2	-
<i>Hydriomena divisaria</i> (Wlk.)	8 wS	0.4	-
	1 bF	0.3	-
<i>Lambdina fiscellaria fiscellaria</i> Gn.	1 wS	0.3	-
	1 bF	0.3	-
<i>Neodiprion abietis</i> (Harr.)	2 bF	0.5	-
<i>Palthis angulalis</i> Kft.	5 wS	0.3	-
<i>Pikonema alaskensis</i> (Roh.)	2 wS	0.8	-
<i>Pikonema dimmockii</i> (Cress.)	9 wS	0.7	-0.2
<i>Protoboarmia porcelaria</i> <i>indictaria</i> Guen.	16 wS	1.1	-
	2 bF	1.0	-
<i>Semiothisa dispuncta</i> complex	21 wS	1.2 )	+1.2
	2 bF	2.8 )	

ANNUAL DISTRICT REPORT

NORTHEASTERN NEW BRUNSWICK

1967

by

C. L. Burlock

### 3.0 NORTHEASTERN NEW BRUNSWICK

(C. L. Burlock)

#### Introduction

A large part of the area in New Brunswick infested with spruce budworm falls within this district but severe defoliation was much less extensive than in recent previous years. The larch sawfly, where found, was generally light except near Derby where severe defoliation occurred. The distribution of the balsam woolly aphid remained relatively unchanged and the balsam gall midge could be found on a few 1967 needles in most balsam fir stands. Dutch elm disease occurred for the first time at Robinsonville, Jacquet River and Doaktown.

Totals of 256 insect and 193 tree disease samples were submitted by the district technician and 247, mostly of insects, by co-operators.

#### Insect Conditions

##### Spruce Budworm, *Choristoneura fumiferana* Clem.

Larval numbers decreased from 1966 at all beating stations except Glenlivet, Restigouche County, Bathurst, Gloucester County, and McGivney, York County, where small increases occurred (Section 3, Table 1). Average numbers of budworm larvae per tree sampled at co-operators sampling stations are shown in Table 2.

Severe defoliation of balsam fir occurred in Northumberland County on the Little Dungaroon River watershed and at Strathadam. Extensive light together with small areas of moderate defoliation were observed on the Little Southwest Miramichi and on the headwaters of the Dungaroon and North Renous rivers. Large areas of light defoliation occurred along the Little Sevogle, the lower Dungaroon and Renous rivers.

Egg masses, collected at 265 of the 418 locations sampled, were high in number in large widely scattered patches within the area extending over much of the Southwest Miramichi River drainage from the Plaster Rock - Renous road on the north to the Kent County Line on the south, and from the York County line east towards Carrolls. Most of the remainder of southern Northumberland County supported light egg-mass counts with patches of moderate.

Elsewhere in northeastern New Brunswick defoliation was negligible and egg-masses were found in low numbers at widely scattered locations.

##### Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Larch sawfly larvae were collected at widely separated locations

throughout the district. Severe defoliation occurred at The Enclosure Picnic Site, (Derby) Northumberland County. Elsewhere defoliation was trace to light (See Map, Section 1, Figure 3).

European Spruce Sawfly, *Diprion hercyniae* (Htg.)

Population levels of this sawfly continued to decrease. Numbers of larvae taken from white spruce at 18 beating stations averaged 0.7 per tree sampled compared with 1.4 in 1966 and 2.3 in 1965. The results of sampling at stations by Survey staff and by co-operators are shown in Section 3 Tables 2 and 3.

Balsam Gall Midge, *Dasineura balsamicola* (Lint.)

Light infestations of balsam gall midge could be found on the new needles of most young balsam fir trees throughout the district. Moderate infestations occurred near Fall Brook, York County, and on pruned trees approximately one mile north of Village St. Laurent in Northumberland County (See Map, Section 1, Figure 4).

Larch Casebearer, *Coleophora laricella* Hbn.

Counts of overwintering larch casebearer larvae indicated a considerable increase from 1966 at all sampling stations except Little Bartibog and Derby Jct. in Northumberland County, where populations remained about the same, (Section 3, Table 5).

White-pine Weevil, *Pissodes strobi* (Peck)

Collections of infested shoots of young white pine trees together with random observations indicated that this insect was common throughout the district. Collections from 25 trees averaged eight specimens per tree.

Black-headed Budworm, *Acleris variana* Fern.

Larval numbers of this budworm were low, averaging 0.4 specimens per tree for white spruce at beating stations, compared with an average of 0.6 for 1966.

Birch Casebearer, *Coleophora fuscedinella* Zell.

Casebearers caused light to moderate browning of white birch foliage throughout the district. A few trees north of the Belledune smelter in Gloucester County were severely browned late in the season.

Birch Leaf Miner, *Fenusa pusilla* (Lep.)

Light to moderate browning of white birch and wire birch foliage occurred in patches throughout most of the district. White birch foliage near Union Brook, Restigouche County, was moderately to severely

browned. Infestations on wire birch along Route #8 in Northumberland County, moderate in 1966, were generally light to moderate with occasional patches of severe in 1967.

Ugly-nest Caterpillar, *Archips cerasivoranus* Fitch

Population levels of this insect were low on roadside cherry bushes, only four nests being observed at widely separated locations in Gloucester and Northumberland counties.

Satin Moth, *Stilpnotia salicis* L.

This insect caused severe defoliation of 11 Carolina poplar trees at Lower Derby, Northumberland County, of four balsam poplars at Salmon Beach, Gloucester County, and three at Blacklands, Restigouche County. Light defoliation was observed on individual poplars at Rogersville, McNamee and McGraw Brook, Northumberland County. All trees re-foliated at the end of the feeding period. Light trap counts showed an increase in the number of adults at Ashton Hill, Northumberland County.

Mountain Ash Sawfly, *Pristiphora geniculata* (Htg.)

Infestations of this sawfly occurred on mountain-ash trees growing singly or in small groups at widely separated locations. Defoliation was generally moderate except at Dalhousie and Campbellton where severe infestations occurred.

Additional Species Collected

Common insects collected at permanent sampling stations in 1967 are listed in Section 3, Table 6. The names of all insect species collected in the district in 1967 are included in Section 1, Table 2.

Tree Diseases

Dutch Elm Disease, Ceratocystis ulmi (Buism.) C. Moreau

Elm trees affected by this disease were found for the first time at Jacquet River and Robinsonville, Restigouche County, and Doaktown, Northumberland County. Diseased trees have not been found in Bathurst, Newcastle or Chatham. A count of elm trees in the Sevogle - Wayerton area show 13 living infected and 65 living uninfected.

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

Cankers were observed on trembling aspen in most stands throughout the district. Counts to determine the percentage of trees affected follow:

Location	No. trees examined	Per cent of trees		
		Not cankered	Living but cankered	Dead cankered
<u>Restigouche County</u>				
Kedgwick Fire Tower Rd.	100	87	9	4
<u>Gloucester County</u>				
Caraquet River	160	89	4	7
<u>Northumberland County</u>				
Ashton Hill	100	94	5	1
Doaktown	60	90	8	2
Rosaireville	100	83	15	2

Anthracnose of Hardwood, Gloeosporium apocryptum Ell. & Ev.

Foliage spotting and discoloration was very light on a few Norway maple trees in Campbellton; on red maple at St. Arthur, Restigouche County and Redmondville, Northumberland County; and on a sugar maple tree in the village of Rogersville.

Willow Blight, Pollaccia saliciperda (All. & Tub.) v. Arx  
and Physalospora miyabeana Fukushi

Leaf browning, observed on small numbers of willows scattered throughout the district, was light on a few trees in Chatham.

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

Black, curled shoots were common but of light intensity on trembling aspen throughout the district. At Dalhousie Junction approximately half of the new shoots were infected on 90% of the aspen regeneration, and half on several trees at Rogersville, Northumberland County. Additional collections were made near Goodwin Mill and Caraquet, Gloucester County.

Ink Spot of Aspen, *Giborina whetzellii* (Seav.) Seav.

Spotted and discolored trembling aspen foliage was observed at many locations in the district. Approximately 25% of the aspen trees were infected in a 1-acre area 2 miles west of Rosaireville, Northumberland County.

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

Blister rust cankers were observed on pine trees at Teta-gouche Falls and East Allardville, Gloucester County, and on old field regeneration (up to 10 feet in height) along the Bredalbane road, Northumberland County. A collection of the alternate host, *Ribes* sp. was made at Mile 28, Consolidated Bathurst Limited road, Gloucester County.

White Pine Needle Blight

Orange-brown tips were observed on the new needles of several white pine trees at Rossireville, Upper Blackville, Kennan Siding and Barnettville, Northumberland County, and near the Greystone Picnic Site, Route #8, Gloucester County.

Balsam Fir Tip Blight, *Rehmiellopsis balsameae* (Waterm.)

Damaged branch tips were observed on scattered balsam fir trees throughout the district. Collections were taken at Dalhousie Junction, Restigouche County, Belledune, Gloucester County, and McGraw Brook and Weaver, Northumberland County.

Needle Casts

*Lirula nervata* (Darker) Darker and *L. mirabilis* (Darker) Darker infections caused a moderate amount of browning of 2- and 3-year old needles on a few understory balsam fir at Gin Creek and 5 miles southeast of Upsalquitch Station, Restigouche County.



Needle Rusts of Balsam Fir, Pucciniastrum epilobii Otth.  
and P. goeppertianum (Kühn) Kleb.

Infections of moderate intensity were found on balsam fir trees near Blackville, Carrolls Crossing and Tabu airstrip, Northumberland County. Collections of infected fireweed were submitted from Tetagouche, Gloucester County and Simpson's Field, Restigouche County.

Other Diseases Collected

The names of other tree diseases collected in 1967 are included in Section 1, Table 3.

Section 3, Table 1

Spruce Budworm Larval Sampling Records at Permanent Sampling Stations in Northeastern New Brunswick in 1967.

Location	Tree* sp.	No. specimens	Av. per tree sample	Deviation from 1966
<u>Gloucester County</u>				
Bass River Road	WS	0	0	0
Bathurst	WS	1	0.3	+0.3
<u>Northumberland County</u>				
Elm Tree Brook (Park)		Discarded in 1967		
Blackville	WS	19	6.3	-37.0
Parker (Parker Station)	WS	1	0.3	-36.7
Renous	WS	110	36.7	-11.0
Little Bartibog	WS	0	0	-1.0
Carrolls	WS	34	11.3	-35.0
Trout Brook		Not sampled		
Redmondville	WS	0	0	-10.7
<u>Restigouche County</u>				
Blackland	WS	0	0	0
Glenlevitt (Flatlands)	WS	1	0.3	+0.3
Simpson Field	WS	0	0	0
5 mi. SE Upsalquitch Road	WS	0	0	0
Kedgwick Forks	WS	0	0	0
Kedgwick River	WS	0	0	0
Union Brook	WS	0	0	0
<u>York County</u>				
Norrad Bridge	WS	19	6.3	-25.0
McGivney	WS	16	8.7	+3.7

\* Each station consisted of three trees and was sampled once

Section 3, Table 2

Spruce Budworm Larval Sampling Records at Co-operators' Sampling Stations in Northeastern New Brunswick in 1967

<u>Location</u>	<u>No. trees</u>	<u>Tree sp.</u>	<u>No. specimens</u>	<u>Av. per tree sample</u>
<u>Restigouche County</u>				
Balmoral	3	wS	1	0.3
<u>Gloucester County</u>				
East Allardville	6	rS	2	0.3
	6	bF	8	1.3
St. Louise Road	3	wS	7	2.3
Tetagouche Falls	3	wS	2	0.7
Lower Val Doucet	3	bF	2	0.7
<u>Northumberland County</u>				
Breadalbane Road	3	bF	32	10.7
	3	wS	150	50.0
Boiestown	3	bF	1	0.3
Forty-mile Brook	1	rS	1	1.0
Gregan	3	rS	1	0.3
Mathews Settlement	3	tL	2	0.7
	6	bF	10	1.7
	6	wS	13	2.2
McGraw Brook	9	wS	125	13.9
	6	bF	18	3.0
	3	wP	1	0.3
McKinleyville	3	wS	1	0.3
Mill Brook	6	bF	5	0.8
	9	wS	63	7.0
	3	tL	2	0.7
Nelson Hollow	3	wS	6	2.0
	3	bF	5	2.0
Priceville	4	wS	1	0.3
St. Paul Road	3	bF	4	1.3
	3	wS	1	0.3
Wayerton	3	wS	1	0.3
	3	bF	4	1.3

Section 3, Table 3

Numbers of European Spruce Sawfly Collected from Permanent  
Sample Stations in Northeastern New Brunswick in 1967

Location	Numbers of sawfly larvae*	
	July 4-Aug. 8 1st sample	Sept. 11-Sept. 20 2nd sample
<u>Gloucester County</u>		
Bass River Road	8	3
Bathurst	1	2
<u>Northumberland County</u>		
Elm Tree Brook (Park)	Discarded in 1967	
Blackville	0	0
Parker (Parker Station)	1	1
Little Bartibog	1	2
Carrolls	0	0
Trout Brook	Not sampled	
Redmondville	-	0
Renous	0	0
<u>Restigouche County</u>		
Blacklands	0	1
Glenlevitt (Flatlands)	0	2
Simpson Field	1	2
Dalhousie Jct.	1	9
5 mi. SE Upsalquitch Road	4	1
Union Brook	0	0
Kedgwick River	1	2
Kedgwick Forks	3	2
<u>York County</u>		
Norrad Bridge	0	0
McGivney	0	0

\* Three white spruce trees sampled each time

Section 3, Table 4

European Spruce Sawfly Larval Sampling Records at Co-operators  
Sampling Stations in Northeastern New Brunswick in 1967

<u>Location</u>	<u>No. trees</u>	<u>Tree sp.</u>	<u>No. specimens</u>	<u>Av. per tree sample</u>
<u>Restigouche County</u>				
Balmoral	3	WS	1	0.3
Richie Brook	3	WS	1	0.3
Juniper Road	6	WS	6	1.0
<u>Gloucester County</u>				
Lower Val Doucet	18	WS	21	1.2
St. Louise Road	15	WS	21	1.4
Tetagouche Falls	3	WS	1	0.3
<u>Northumberland County</u>				
Breadalbane Road	3	WS	1	0.3
Forty-mile Brook	3	BS	1	0.3
Gregan	3	WS	1	0.3
Gregan	6	RS	2	0.3
McKinleyville	3	WS	3	1.0
Mill Road	6	WS	5	0.8
Murchie Settlement	6	WS	2	0.3
St. Paul Road	2	WS	1	0.5

Section 3, Table 5

Larch Casebearer Numbers and Defoliation Estimates at Sampling Stations in Northeastern New Brunswick in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Gloucester County</u>				
Six Roads	1.72	1.89	T	T
Tracadie	1.22	17.09	T	L
Pokeshaw	0	0.63	T	T
7 mi. S. of Bathurst	0.33	2.92	T	T
<u>Northumberland County</u>				
Bartibog Bridge	0	4.22	T	L
Redmondville	0.31	6.36	T	T
Little Bartibog	0.99	0.93	T	T
Weaver Station	0	0.93	0	L
Derby Junction	0.99	0.94	T	T
Carrolls	0.27	0.33	0	T
<u>Restigouche County</u>				
Glenlevitt	0	0.32	0	L
Little Belledune Point	0	4.67	T	L
St. Quentin	0	2.06	T	T
Blackland	-	2.28	-	T

\* T = Trace  
L = Light

Section 3, Table 6

Numbers of Common Insects Collected from Permanent  
Sampling Stations in Northeastern New Brunswick in 1967

Species	No. and type of stations producing larvae	Av. no. larvae per tree sample	Deviation from 1966
<i>Acleris variana</i> Fern.	4 wS	0.3	-1.3
<i>Caripeta divisata</i> Wlk.	11 wS 1 bF	0.6 1.0	-0.1 +1.0
<i>Choristoneura fumiferana</i> Clem.	12 wS 1 bF	10.1 ) 0.0 )	-17.9
<i>Dioryctria reniculella</i> Grt.	8 wB	3.1	+1.3
<i>Diprion hercyniae</i> (Htg.)	12 wS	0.9	-0.4
<i>Eupithecia filmata</i> Pears.	3 wS	0.9	+0.3
<i>Feralia jocosa</i> Gn.	1 bF	0.3	0.0
<i>Griselda radicana</i> Wlsh.	6 wS	0.9	-0.7
<i>Hydriomena divisaria</i> Wlk.	4 wS	0.5	+0.5
<i>Lambdina fiscellaria fiscellaria</i> Gn.	1 bF	0.3	0.0
<i>Pikonema alaskensis</i> (Roh.)	6 wS	0.6	-0.3
<i>Pikonema dimmockii</i> (Cress.)	6 wS	2.0	+1.3
<i>Protoboarmia porcelaria indicataria</i> Wlk.	12 wS	1.3	+1.3
<i>Semiothisa dispunctata</i> complex	12 wS 1 bF	2.2	+0.8

ANNUAL DISTRICT REPORT

SOUTHEASTERN NEW BRUNSWICK

AND

PRINCE EDWARD ISLAND

1967

by

C. D. MacCall



#### 4.0 SOUTHEASTERN NEW BRUNSWICK AND PRINCE EDWARD ISLAND

(C. D. MacCall)

##### Introduction

The most noteworthy insects in the district in 1967 were the spruce budworm which increased considerably in numbers in Fundy National Park; the larch sawfly, found in most tamarack stands in the district; and balsam woolly aphid, which has changed little in status during recent years. Dutch elm disease continued to increase in incidence having been found for the first time at Hampton and Big Cove, and infected additional trees in Moncton and Sussex.

A total of 627 insect and disease samples were submitted by the district technician and 171 by New Brunswick Forest Service co-operators.

##### Insect Conditions

###### Spruce Budworm, Choristoneura fumiferana Clem.

Eighteen larval collections were taken in the district, including seven from Prince Edward Island. Larval numbers increased at three of ten permanent sample stations and decreased at seven (Section 4, Table 1). Average numbers of budworm larvae per tree sampled in co-operators collections are listed in Table 2.

Severe defoliation of balsam fir occurred in a small area in Fundy National Park and in scattered patches between Grand and Washade-moak lakes. Light defoliation with patches of moderate was observed in western Kent County and in Queen's County.

Spruce budworm egg masses were collected at 158 of the 224 locations sampled in southeastern New Brunswick and in low numbers at 13 of 30 points in Prince Edward Island.

In Kent County egg-mass infestations were severe between Forks and Trout brooks and south to the County line and in small patches near Meadow Brook and Little Forks cache. Numbers were low elsewhere.

In Westmorland County egg-masses were numerous from west of Berry Mills to North Branch and near Smith Lake. Smaller numbers occurred north and east of Moncton.

In Albert County a large part of Fundy National Park and immediate area are heavily infested. In St. John and Kings counties numbers were high in parts of the Salmon River drainage and near Gibbon.

In Queen's County egg masses were numerous between Gaspereau Forks and Castaway Brook and from Lower Jemseg to Waterboro, and near Pangburn. Smaller areas were severely infested near Douglas Harbour, Young Cove, Hampstead and Narrows. Light infestations were common in that portion of the County east of the St. John River.

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Moderate and severe larch sawfly infestations persisted in the southern part of the district and continued to spread north and east in 1967. Severe defoliation occurred in most larch stands between Grand and Washademoak lakes and in patches south of the Washademoak and in the Kingston peninsula. Moderate to severe infestations occurred between Moncton and Sackville, near Albert, north of Wood Lake in St. John County and near Markhamville, Kings County. Small patches of defoliation in excess of 30% were common elsewhere in all counties of the district except in Kent. In Prince Edward Island infestations were light and sporadic.

Balsam Woolly Aphid, *Adelges piceae* (Ratz.)

The 1965, 1966 and 1967 growth on balsam fir branches collected during spruce budworm egg-mass surveys were examined for this aphid. Infestations were light or moderate at 15 of the 224 locations examined. Infested areas were as follows:

<u>Moderate</u>	<u>Light</u>
Notre Dame, Kent Co.	Salem, Albert Co.
Buctouche, Kent Co.	Breau Sett., Kent Co.
Mt. Pisgah, Kings Co.	Buctouche, 5 mi. W., Kent Co.
Roachville, Kings Co.	Mill Cove, Queen's Co.
Near Cassidy Lake, Kings Co.	Hunter Home, West, Queen's Co.
Lower Jemseg, Queen's Co.	Scoudouc, Westmorland Co.
Salmon River Rd., St. John Co.	Shemogue, Westmorland Co.
Mount View, Westmorland Co.	

The trees on two plots in Fundy National Park were uninfested in 1967.

European Spruce Sawfly, *Diprion hercyniae* (Htg.)

Spruce sawfly numbers have been low in recent years. Average numbers of larvae per tree sample for beating stations in the district from 1965 to 1967 are listed below. The largest collection in 1967 contained 20.7 larvae per tree sample and was taken from white spruce at Schoales Dam, Kings County (Section 4, Table 3). Co-operators collected larvae in small numbers at seven locations (Section 4, Table 4).

<u>Year</u>	<u>No. collections</u>	<u>No. trees</u>	<u>No. larvae</u>	<u>Av. no. larvae per tree sample</u>
1965	17	48	176	3.7
1966	12	35	57	1.6
1967	12	36	131	3.6

Spruce Bud Midge, Rhabdophaga swainei Felt

The status of this midge remained much the same as in 1966. Counts of infested buds on white spruce branches at six locations from 1963 to 1966 showed that less than 5% of the annual buds were infested.

Balsam Gall Midge, Dasineura balsamicola (Lint.)

Infestations of this midge on the new needles of balsam fir continued in 1967 (See map, Section 1, Figure 4). Degrees of attack varied considerably from stand to stand and within stands. Locations where gall midge infestations were most noticeable follow:

Severe

Moderate

New Brunswick

Erbs Cove, Kings Co.  
Point Wolfe, Albert Co.  
Goose River Trail, Albert Co.  
Crooked Creek, Albert Co.  
Scoudouc, Westmorland Co.  
Mount View, Westmorland Co.

Big Cove, Queen's Co.  
Goshen, Queen's Co.  
Springfield Rd., Kings Co.  
Waterford, Kings Co.  
McKees Mills, Kent Co.  
Ward Corner, Kent Co.  
St. Anthony, Kent Co.  
Salmon River, St. John Co.  
Drisdelle, Westmorland Co.  
Bayside, Westmorland Co.  
Garland, Albert Co.  
Crossman, Albert Co.

Prince Edward Island

West Devon, Prince Co.  
Covehead, Queens Co.  
Cavendish, Queens Co.  
Mount Albion, Queens Co.

Black-headed Budworm, Acleris variana Fern.

The following table shows that numbers of this budworm have remained low at white spruce and balsam fir beating stations in the district from 1965 to 1967 inclusive.

<u>Year</u>	<u>No. collections</u>	<u>No. trees</u>	<u>No. larvae</u>	<u>Av. no. larvae per tree sample</u>
1965	13	33	122	3.7
1966	9	24	57	2.3
1967	11	31	50	1.6

Larch Casebearer, Coleophora laricella Hbn.

Larch casebearer numbers increased from 1966 at seven of the nine sampling stations in southeastern New Brunswick and at all of the four in Prince Edward Island. The number of overwintering larvae per 100 fascicles were highest at Coles Island, Folkins, Goshen and New Canaan (Section 4, Tables 5 and 6). Defoliation did not exceed light.

Fall Cankerworm, Alsophila pometaria Harr.

A total of 58 larval collections was submitted, 27 of which were from Prince Edward Island. Numbers of collections by counties were: Albert (5), Kent (4), Kings (4), Queen's (7), and Westmorland (11) in New Brunswick and in Kings (8), Prince (11), Queens (8) in Prince Edward Island. Defoliation was light on several white elm trees at Gaspereau Forks, Queen's County. Elsewhere defoliation was only trace.

Bruce Spanworm, Operophtera bruceata Hulst.

A further decline in population levels of this looper on hardwoods occurred in Albert County in 1967. Numerous deciduous stands were examined but no infestations were found. Larval collections were submitted from Bloomfield Station, Kings County, N.B., and from Charlottetown, P.E.I. Hosts were apple and basswood.

Winter Moth, Operophtera brumata L.

Despite intensive larval sampling, this insect was collected at two locations only, on Manitoba maple at Upper Point de Butte and on red oak at Edgetts Landing, N.B. Winter moth was found in New Brunswick and Prince Edward Island for the first time in 1963. Since then larvae have been collected in small numbers in eastern Albert and Westmorland counties in New Brunswick and in Queens and Kings counties in Prince Edward Island.

Fall Webworm, Hyphantria cunea Drury

Numbers of fall webworm nests remained low in 1967. Larval colonies were submitted from Shemogue, Havelock, and Springfield, N.B., and from Elmsdale, Wood Island and St. Peters, P.E.I.

The following table showing counts of webs along roadsides in two areas indicates a further decline in numbers from 1965 and 1966 in the Sussex area and a slight increase from 1966 in western Prince Edward Island:

<u>Location</u>	<u>Distance in miles</u>	<u>Average no. of nests per mile</u>		
		<u>1965</u>	<u>1966</u>	<u>1967</u>
Sussex By-Pass, N.B.	4.8	0.8	0.2	0.0
Tignish to Elmsdale, P.E.I.	11.0	4.5	1.0	2.4

Birch Leaf Miner, Fenusa pusilla (Lep.)

Light and moderate leaf browning and numerous small patches of severe defoliation occurred in most wire birch and white birch stands in central southeastern New Brunswick. Leaf mining was common but light elsewhere in the district.

Birch Casebearer, Coleophora fuscedinella Zell.

Birch casebearer population levels remained much the same as in 1966. Infestations were light to moderate in Kings and Queen's counties, N.B., and in Queens County, P.E.I. Light defoliation was widespread on wire birch and white birch.

A Leaf Roller on Maple, Cenopsis pettitana Rob.

Infestations of this leaf roller continued in central Kent County in 1967 with leaf rolling light to moderate on red maple and sugar maple trees. Elsewhere in New Brunswick larvae were common but few in number. In Prince Edward Island a few rolled leaves occurred at scattered points in Prince and Queens counties.

Ugly-nest Caterpillar, Archips cerasivoranus Fitch

Population levels of this caterpillar remained much the same as in 1966, single colonies or small groups of nests being found on roadside cherry branches at Charlottetown and Wellington, P.E.I., and at Rexton and Passekeag, N. B.

Satin Moth, Stilpnotia salicis L.

Early instar larvae of the satin moth caused severe skeletonizing of trembling aspen foliage in a 15-acre stand near Anagance, N.B. in late August. No defoliation was observed in this area during aerial surveys in mid-July. Defoliation was light on silver poplar shade trees at St. Peters Bay and severe on several Carolina poplars at Cascumpeque, P.E.I.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

Severe defoliation of several red oak shade trees occurred at Riverview, Albert County. A few larvae were found in aspen stands at Shediac and near McLeans, N.B. but defoliation was negligible. Four sample stations were examined for egg-masses; one mass was found at

Laketon, Kent County. The numbers of adults taken in light traps in the district in 1967 are listed below:

<u>Location</u>	<u>No. adults</u>
Fundy Park, Albert Co.	76
Sussex, Kings Co.	2
Buctouche, Kent Co.	1
Chipman, Queen's Co.	107
Port Elgin, Westmorland Co.	184

Additional Species Collected

Numbers of common insects collected at permanent sample stations are listed in Section 4, Table 7.

The names of all insect species collected in the district in 1967 are included in Section 1, Table 2.

### Tree Diseases

#### Storm Damage

A heavy, wet snowfall in December, 1967, broke stems and tree tops in many areas of southeastern New Brunswick. Damage was most extensive in coniferous stands north of Magnetic Hill to Canaan Station, Westmorland County, and at Anagance, Kings County.

#### Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau

Diseased elm trees were found for the first time at Hampton, Kings County, and near Big Cove, Queen's County, an extension of the known area of infection of about 20 miles (Section 1, Figure 5). Several additional infected trees were found in the Centennial Park, Moncton, and one at Sussex. No diseased trees were found elsewhere in the district or in Prince Edward Island where scouting was carried out in co-operation with personnel of Plant Protection Division, Canada Department of Agriculture.

#### Hypoxyylon Canker of Poplar, *Hypoxyylon mammatum* (Wahl.) Miller

Trembling aspen stands examined for evidence of Hypoxyylon canker were as follows:

<u>Location</u>	<u>Number of trees</u>		
	<u>Not cankered</u>	<u>Living cankered</u>	<u>Dead cankered</u>
Upper Main River, Kent Co., N.B.	97	3	0
Cocagne, Kent Co., N.B.	96	3	1
Laketon, Kent Co., N.B.	94	6	-
Elgin, Kings Co., N.B.	95	6	4
Murray River, Kings Co., P.E.I.	98	2	0

#### Ink Spot of Aspen, *Ciborinia whetzellii* (Seav.) Seav.

Leaf spotting and browning was light in aspen stands near Hebert Siding, N.B., and east of Wellington, P.E.I. Infections of trace intensity occurred at scattered points elsewhere in the district.

#### Leaf and Twig Blight of Poplar, *Pollaccia radiosa* (Lib.) Bald. & Cif.

Dead, blackened new shoots occurred on up to 20% of the young trees in trembling aspen stands at Weldon, Albert County, Havelock, Kings County, and Harcourt, Kent County, N. B.

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

Counts to determine the percentages of trees with rust cankers were made at four locations. The results of these counts follow:

<u>Location</u>	<u>No. trees examined</u>	<u>Per cent of trees cankered</u>
Jemseg, 1 mi. E, Queen's Co., N.B.	100	2
Hillsborough, Albert Co., N.B.	100	3
Newport, Kings Co., P.E.I.	100	2
Point Pleasant, Kings Co., P.E.I.	30	0

White Pine Needle Blight

Approximately 20% of the new foliage turned brown on several white pine trees at Cumberland Bay and Springfield, N.B.

Eastern Dwarf Mistletoe, Arceuthobium pusillum Peck

At Cross Roads, P.E.I., at least 10% of the black spruce trees in a stand less than an acre in size supported brooms and approximately 20% of the trees were dead, probably from old infections.

Less than 5% of the white spruce at Tignish, P.E.I. and black spruce trees at Boundary Creek, N.B. were infected.

Yellow Witches' Broom on Balsam Fir, Melampsorella Caryophyllacearum  
Schroet.

Brooming was observed on balsam fir trees at scattered locations in the district. Infections were of light intensity and incidence except at Dunstaffnage and Newport, P.E.I., and at Lewis Mountain, N.B., where multiple brooming occurred on individual trees.

Needle Casts

Isthmiella faullii (Darker) Darker. Needle browning was light on 10% of the young balsam fir trees at Germantown and Harcourt, N.B., and near Charlottetown, P.E.I.

Lirula nervata (Darker) Darker. Light browning of the old foliage of several balsam fir trees occurred at Waterborough, Garland, Mt. Pisgah, Salmon River Road and Harcourt, N.B., and at Pooles Corner and Appin Road, P.E.I.

Tip Blight of Balsam Fir, Rehmiellopsis balsameae (Waterm.)

Ten to 20% of the new shoots of balsam fir were killed at two points on the Point Wolfe road, at West River and 5 miles north of Riverside in Albert County, N.B.

Additional Organisms Collected

The diseases collected in 1967 in addition to those mentioned in the text are listed in Section 1, Table 3.



Other Noteworthy Diseases

<u>Organism</u>	<u>Host(s)</u>	<u>Locality</u>	<u>Remarks</u>
Winter Drying	Fir, balsam Cedar, eastern white	Church Hill, Albert Co., Rothesay, St. John Co.	Foliage browning light on new growth of balsam fir at Church Hill and on a few ornamental cedars at Rothesay.
<u>Cryptococcus fagi</u> (Baer.) and <u>Nectria coccinea</u> var. <u>faginata</u> Lohm., Wats. & Ayers.	Beech.	Southeastern N.B. & P.E.I.	Little change in status of this disease in recent years.
<u>Gloeosporium</u> spp.	Maple red	Stoney Creek, Harcourt, Canaan Station, N.B.	Less than 30% of the leaves discolored on scattered trees at each location.
	Ash, white	Loch Lomond, N.B.	
	Beech	Midland South, N.B.	
	Oak, red	New Canaan, N.B.	
<u>Guignardia aesculi</u> (Peck) V.B. Stewart	Chestnut	Baie Verte, N.B. Souris, P.E.I.	Light infections on occasional trees.
<u>Pucciniastrum</u> <u>epilobii</u> Orth.	Fir, balsam	Breau Village Molus River, N.B.	Moderate infections on several trees.

Section 4, Table 1

Spruce Budworm Larval Sampling Records at Permanent Sampling  
Stations in Southeastern New Brunswick in 1967

Location	Tree* sp.	No. specimens	Av. per tree sample	Deviation from 1966
<u>Albert County</u>				
Bennett Lake	wS	116	38.7	+27.0
Shale Hill	wS	0	0	-3.0
Hillside	wS	3	1.0	-13.0
<u>Kent County</u>				
Little Forks Cache	bF	4	1.3	-2.4
<u>Kings County</u>				
Berwick	wS	0	0	-4.3
Schoales Dam	wS	22	7.3	-9.4
<u>Queen's County</u>				
Gaspereau Forks	wS	23	7.7	+4.0
Robertson Point	wS	0	0	-1.7
Narrows	wS	4	1.3	+0.6
<u>Sunbury County</u>				
Salmon Creek	wS	28	9.3	-26.7

\* Each station consisted of three trees and was sampled once

Section 4, Table 2

Spruce Budworm Larval Sampling Records at Co-operators'  
Sampling Stations in Southeastern New Brunswick in 1967

<u>Location</u>	<u>No. trees</u>	<u>Tree sp.</u>	<u>Av. no. larvae per tree sample</u>
<u>Kent County</u>			
St. Louis de Kent	3	wS	8.7
	6	rS	1.3
	6	bF	3.7
	3	jP	1.0
Buctouche	3	wS	1.7
	3	bF	0.7
<u>Westmorland County</u>			
Fawcett	6	wS	1.8
	9	bF	0.5
Steeves Mountain	3	wS	8.0
	3	bF	11.0
<u>Albert County</u>			
Salem Station	6	wS	2.7
	6	bF	0.7
<u>Kings County</u>			
Schoales Dam	9	wS	2.8
	9	bF	2.2
<u>Queen's County</u>			
Cherryvale	3	wS	9.3
	3	bF	3.0
Upper Gaspereau	3	wS	9.7
	6	bF	53.3

Section 4, Table 3

Numbers of European Spruce Sawfly Collected from Permanent  
Sample Stations in Southeastern New Brunswick in 1967

Location	No.* trees	Numbers of sawfly larvae	
		June 23-July 5 1st sample	Sept. 6-18 2nd sample
<u>Albert County</u>			
Bennett Lake	3	0	2
Shale Hill	6	1	10
Hillside	3	2	0
<u>Kings County</u>			
Berwick	3	0	2
Schools Dam	3	0	62
<u>Queen's County</u>			
Gaspereau Forks	6	2	2
Robertson Point	3	0	22
Narrows	3		20
<u>Sunbury County</u>			
Salmon Creek	3	1	0

\* All collections from white spruce

Section 4, Table 4

European Spruce Sawfly Larval Sampling Records at Co-operators  
Sampling Stations in Southeastern New Brunswick in 1967

Location	No. trees	Tree sp.	Av. no. larvae per tree sample
St. Louis de Kent, Kent Co.	6	wS	1.0
Fawcett, West. Co.	3	wS	0.3
Steeves Mountain, West. Co.	9	wS	0.5
Salem Station, Albert Co.	6	wS	1.0
Schoales Dam, Kings Co.	3	wS	0.7
Cherryvale, Queen's Co.	3	wS	0.7
Near Otter Lake, St. John Co.	3 6	wS rS	0.3 0.3

Section 4, Table 5

Larch Casebearer Numbers and Defoliation Estimates at Sampling  
Stations in Southeastern New Brunswick in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Kent County</u>				
Cocagne	0.98	2.84	T	T
<u>Kings County</u>				
Folkins	9.10	12.30	T	T
Hatfield Point	1.87	1.82	T	T
<u>Queen's County</u>				
Coles Island	5.24	23.74	T	L
Goshen	6.56	10.55	T	T
New Canaan	6.90	24.23	T	L
Robertson Point	0.92	1.54	T	T
<u>St. John County</u>				
Garnet Settlement	0	0	0	0
<u>Westmorland County</u>				
Frosty Hollow	0.60	5.40	0	0

\* T - Trace  
L = Light

Section 4, Table 6

Larch Casebearer Numbers and Defoliation Estimates at Sampling  
Stations in Prince Edward Island in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Kings County</u>				
Pooles Corner	1.59	7.52	0	T
<u>Prince County</u>				
Miscouche	3.52	9.57	0	0
O'Leary	1.46	2.90	0	0
<u>Queens County</u>				
Milton	1.88	4.43	T	T

\* T = Trace

Section 4, Table 7

Numbers of Common Insects Collected from Permanent  
Sampling Stations in Southeastern New Brunswick in 1967  
(Co-operators Stations Included)

Species	Tree sp.	No. specimens	Av. no. larvae per tree sample
Acleris variana Fern.	wS	15	0.7
	bF	4	3.3
Caripeta divisata Wlk.	wS	28	1.2
	bF	5	0.5
	wP	2	0.3
Choristoneura fumiferana Clem.	wS	336	7.0
	bF	447	9.5
	rS	8	1.3
Dioryctria reniculella Grote	wS	16	0.7
	rS	2	0.3
Diprion hercyniae (Htg.)	wS	151	2.2
	rS	2	0.3
Elaphria versicolor Grote	wS	2	0.3
	bF	10	8.3
	wP	2	0.7
Eupithecia filmata Pears.	wS	5	0.4
	bF	1	0.3
Griselda radicana Wlshh.	wS	3	0.3
Hydriomena divisaria Wlk.	wS	11	4.4
Lambdina fiscellaria fiscellaria Gn.	wS	15	0.5



ANNUAL DISTRICT REPORT

CENTRAL NOVA SCOTIA

1967

by

W. Harrington

5.0 CENTRAL NOVA SCOTIA

(W. Harrington)

Introduction

Population levels of the larch sawfly and balsam fir sawfly continued to increase in central Nova Scotia. Infestations of the fall cankerworm, Bruce spanworm and birch skeletonizer subsided. Little change occurred in the status of other insects or diseases of major importance including the balsam woolly aphid, birch leaf miner, birch casebearer, larch casebearer, and beech bark disease. Insect collections by survey staff totaled 387 and tree disease samples 190.

Insect Conditions

Balsam Woolly Aphid, Adelges piceae (Ratz.)

The trees on three balsam woolly aphid plots were reclassified. The results are compared with those for 1966 in the following table. Recovery from twig attacks, although minor, was evident at all three locations. Mortality attributed to twig attacks, and death from other causes, increased slightly at Riversdale and Sheet Harbour, but remained unchanged at McCallum Settlement.

Location	Year	Per cent of trees in class*									Dead ** other causes	
		1	2a	2b	2c	3a	3b	4a	4b	4c		5
<u>Colchester County</u>												
McCallum's Settlement	1966	28.6	1.4					32.9	7.1	4.3	10.0	15.7
	1967	31.4						32.9	5.7	4.3	10.0	15.7
Riversdale	1966	2.9	7.4					4.4	5.9	10.3	45.6	23.5
	1967	4.4	7.2					4.4	2.9	8.7	46.3	26.1
<u>Halifax County</u>												
Sheet Harbour	1966	3.2	1.9				0.6	4.4	7.6	10.6	25.4	46.2
	1967	5.1	1.3				0.6	7.0	5.1	7.5	26.6	46.8

\*See Section 1, Appendix A, for explanation of classes.

\*\*Includes trees which were cut, windblown, suppressed, etc.

Spruce Budworm, Choristoneura fumiferana Clem.

Larvae of this budworm were collected only at North Springhill, Cumberland County, and Otter Brook, Colchester County. One pupa was collected at Tatamagouche Mountain, Colchester County.

Egg masses were found at five of the 16 locations where sequential counts were made (Section 5, Table 1). In 1966 egg masses were found at only two of 51 locations sampled.

Balsam-fir Sawfly, Neodiprion abietis complex

Ground and aerial surveys showed that the outbreak north of Tangier, first noted in 1965, extended from  $4\frac{1}{2}$  miles north of Third Lake, south to the edge of the high ground just north of Tangier, and from the Tangier River east to  $\frac{1}{2}$  mile east of the Tangier-Mooseland road. The main area of severe defoliation of balsam fir extended from 2 miles south of Third Lake to  $2\frac{1}{2}$  miles north of Third Lake.

A new outbreak occurred in the vicinity of Hart Lake and Folly Lake near the Cumberland-Colchester county line. This infestation extended from Hart Lake, west to Higgins Mountain, and south of Folly Lake along the Trans Canada Highway for a distance of approximately 2 miles. Defoliation in this area was generally light, but localized patches of severe and moderate feeding also occurred.

European Spruce Sawfly, Diprion hercyniae (Htg.)

Endemic numbers of this sawfly were collected in all counties of central Nova Scotia. Average numbers of larvae per tree at permanent sampling stations are shown in Section 5, Table 2. An additional 30 samples containing a total of 162 sawfly larvae were submitted by co-operators.

Larch Casebearer, Coleophora laricella Hbn.

The results of sampling overwintering casebearers indicate only a slight increase in numbers at seven stations, and a small decrease at four (Section 5, Table 3). The greatest change was at Fort Ellis, Colchester County, where numbers increased from 0.7 casebearers per 100 fascicles in 1966 to 9.0 in 1967. No noticeable defoliation by this insect was found in central Nova Scotia.

Larch Sawfly, Pristiphora erichsonii (Htg.)

Ground and aerial surveys showed that population levels continued to increase in Cumberland and Colchester counties, and decreased along the coast from Halifax to Ecum Secum. One new area of defoliation was noted at Lower Selmah, Hants County. Little change occurred in the intensity or extent of defoliation in other areas (Section 1, Figure 3, and Section 5, Table 4). Conditions by counties were as follows:

Colchester County.--Defoliation ranging from light to severe occurred in patches between Bass River and Highland Village, and in areas to the north and west of Kempton. Severe defoliation in the Kempton area was mainly between the old #4 Highway and the two roads to Riversdale. Feeding to the north of Kempton extended approximately 2 miles along the road to Earltown, and was generally light to moderate. Scattered colonies of larvae were present in tamarack stands throughout the remainder of the County.

Cumberland County.--High population levels occurred: between Shulie Lake, Kelly River and the Chignecto Game Sanctuary road west of Harrison Settlement; south of Apple River between the Allen Hill road and the road from Apple River to West Advocate; in areas adjacent to Hastings and Truemanville, and in one localized area northeast of Halfway River.

Moderate defoliation occurred at Lower Maccan, and for approximately 1 mile along the river south of River Hebert. A trace to light feeding was noticeable in most other tamarack stands.

Halifax County.--The area of severe attack north of Beaver Lakes, between Pat Lake and Grassy Lake, remained about the same as in 1966, extending along Highway #24 from 4.2 miles north to 4.7 miles north of Beaver Lakes. Moderate defoliation of one tamarack tree was noted at Hacketts Cove.

Larval numbers continued to decrease in coastal areas and only a few scattered colonies were present in most tamarack stands.

Hants County.--Moderate numbers of larvae were noted in one tamarack stand at Lower Selmah. A few colonies of larvae were present throughout the remainder of the district.

Spruce Bud Midge, *Rhabdophaga swainei* Felt

Damage to spruce buds by this insect was generally light but occurred throughout central Nova Scotia. Counts of infested buds per 100 square feet of foliage were carried out on three trees at each of four locations as follows:

<u>Location</u>	<u>No. sq. ft. of foliage examined</u>	<u>No. galled buds per 100 sq. ft. of foliage</u>
<u>Colchester County</u>		
Murray	3.1	583
Earltown	6.3	9
Londonderry Stn.	4.8	4
<u>Cumberland County</u>		
Harrison Settlement	2.2	222

Balsam Gall Midge, *Dasineura balsamicola* (Lint.)

This insect, which attacks the new needles of balsam fir, was present throughout the district. Little change from 1966 was observed in the intensity of infestations. Moderate and severe attacks were patchy and were generally confined to scattered trees or groups of trees (Section 1, Figure 4 and Section 5, Table 5).

Condition of Birch

Changes in the condition of yellow birch trees on Plot #17 at East Folly Mountain, Colchester County, have been minor in the six years up to and including 1967.

Year	Per cent of trees in class*							
	1	2	3a	3b	4	5a	5b	6
1962	33.3	33.3	11.2	5.5	0	0	0	16.7
1963	27.8	44.4	11.1	0	0	0	0	16.7
1964	27.8	38.8	16.7	0	0	0	0	16.7
1965	35.3	29.5	17.6	0	0	0	0	17.6
1966	33.3	33.3	10.6	5.3	0	0	0	16.7
1967	44.4	16.7	16.7	0	0	0	0	22.2

\* See Section 1, Appendix A for explanation of classes

Winter Moth, *Operophtera brumata* L. and  
Fall Cankerworm, *Alsophila pometaria* Harr.

Feeding on red oak foliage by a combination of these two species caused moderate defoliation 2 miles south of Hantsport, Hants County. Winter moth larvae caused moderate defoliation of white elm and choke cherry trees at North River, Colchester County. The fall cankerworm outbreaks in the Windsor Forks area and near Walkerville have subsided. No larvae of these two species were collected in Cumberland County. No noticeable defoliation occurred in the remainder of the district (see map).

Sequential sampling of winter moth and fall cankerworm larvae was carried out on red oak trees at three sampling stations. The stations at Head of St. Margarets Bay and Timberlea produced one larva each and no larvae were found at Waverley.

Fall cankerworm egg masses were collected at Walkerville, Hants County.

Spring Cankerworm, *Paleacrita vernata* Peck

Large numbers of larvae were present on white elm trees in areas adjacent to the Nova Scotia Lands and Forests picnic area at Smileys Intervale. Moderate defoliation of a few white elm trees occurred at Summerville and near the Windsor graveyard. Light feeding was noted at St. Croix, Brooklyn and Hantsport. All larvae collected were from Hants County.

Ugly-nest Caterpillar, *Archips cerasivoranus* Fitch

Nests of this insect were present in most areas where choke cherry bushes were common. Nest counts per 1000 square feet were made at Eastville (28 nests), Maccan (11), and at Shubenacadie and Harrison Settlement where nests had merged to form continuous web. Nests were also noted at Central North River, Upper North River, Nuttby, Tatamagouche Mountain, Tatamagouche, Wallace Ridge, Amherst and Brookdale.

Fall Webworm, *Hyphantria cunea* Drury

Nests of this web-maker were observed on alder, apple, willow or elm along roadsides in the four counties of central Nova Scotia. The results of nest census taken in a number of areas are shown in Table 6. Average numbers of nests per mile are based on counts made on one side of road times two.

Birch Leaf Miner, *Fenusa pusilla* (Lep.)

This species of leaf miner was abundant throughout most of central Nova Scotia. Leaf browning was lightest in central and eastern Halifax County.

Estimates of degrees of browning of wire birch foliage at random locations are shown in Section 5, Table 7.

Birch Casebearer, *Coleophora fuscedinella* Zell.

Damage to white birch leaves by this casebearer was generally light but increased in incidence from 1966. Locations where defoliation was recorded in central Nova Scotia follow:

Severe.—North River, Colchester County and Tidnish, Cumberland County.

Moderate.—Armdale, Halifax County, Tidnish Bridge and Salem, Cumberland County.

Trace to Light.—Tatamagouche Mountain, Colchester County; Lower River Hebert, Fraserville, Lakelands and Malagash, Cumberland County; Jollimore, Timberlea, Rocky Lake and Dartmouth, Halifax County; Noel and Stirling Brook, Hants County.

Forest Tent Caterpillar, *Malacosoma disstria* Hbn.

Larvae were less numerous than in 1966 at the Nappan Experimental Station, and only a trace of feeding was noticeable. Larvae of this caterpillar were numerous on apple and trembling aspen trees at Stirling Brook, Hants County, but only light defoliation of a few trees resulted, and later examinations for egg masses produced negative results. A few larvae were also present at Hantsport and Smileys Intervale, Hants County.

Trembling aspen branches were examined at Little Forks, Springhill Junction, the junction of Trans Canada and Thomson roads and at Oxford, Cumberland County; at Brentwood, Colchester County, and Lower Selmah, Hants County. Red oak was examined at Hantsport, Hants County. No egg masses were found at any of these locations.

Elm Leaf Miner, Fenusa ulmi Sund.

Severe browning of the foliage of English elm trees was conspicuous in the town of Windsor in the vicinities of the Haliburton Museum, the hospital and the Edgehill Girls School. Several English elm trees were severely defoliated at Upper Rawdon and Lakelands.

Additional Species Collected

The names of all insects collected during 1967 are listed in Table 2 of Section 1.

Tree Diseases

Dutch Elm Disease, Ceratocystis ulmi (Buism.) C. Moreau

A survey of elm trees was made in all towns in central Nova Scotia but no trees infected by this disease were found.

Beech Bark Disease, Cryptococcus fagi (Baer.)  
and Nectria coccinea var. faginata Lohm., Wats. & Ayers

Changes in the condition of beech trees in central Nova Scotia during the last several years have been slight. Trees lightly attacked by beech scale and severely cankered were the most common class of tree on plots in 1967.

To obtain distribution records of the Nectria fungus, samples were collected in the following areas:

Colchester County.—Greenfield, 5 mi. S. of Riversdale, Nuttby Mtn., Earltown, Sutherlands Lake, Economy, Castlereigh, Lynn Road, Five Islands, East Folly Mtn., and West St. Andrews.

Cumberland County.—Collingwood Corner, Sugar Loaf Mtn., Hart Lake, Higgins Mtn., Folly Lake, Gilbert Mtn., Valley Road and Little Forks.

Halifax County.—Hammonds Plains and Miller Lake.

Hants County.—Gore, South Maitland and Vaughan.

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

A survey was made to determine the distribution and impact of this disease. At each of 14 locations 100 aspen trees were classified as follows:

Location	Number of trees		
	Not cankered	Living but cankered	Dead cankered
<u>Colchester County</u>			
Brentwood	57	11	32
<u>Cumberland County</u>			
Westchester Stn.	98	0	2
South Brook	86	3	11
Little Forks	80	10	10
Springhill Jct.	95	1	4



Location	Number of trees		
	Not cankered	Living but cankered	Dead cankered
<u>Cumberland County</u> (cont'd.)			
Valley Road	98	0	2
Oxford	89	6	5
Jct. Trans Canada and Thompson roads	91	2	7
West Wentworth	92	4	4
<u>Hants County</u>			
McDonald Road	97	2	1
Admiral Rock	99	1	0
Lower Selmah	37	53	10
North Noel	96	1	3
Kennetcook	100	0	0

Ink Spot of Aspen, *Ciborinia whetzellii* (Seav.) Seav.

This ink spot was again common on trembling aspen leaves near Debert, Colchester County in the same area where severe damage occurred in 1966. Ten to 20% of the leaves were infected at Wittenburg and Stewiacke East, Colchester County, and Lantz and Admiral Rock, Hants County.

Black Knot of Cherry, *Dibotryon morbosum* Theiss. & Syd.

This disease was common on cherry bushes in all counties of central Nova Scotia. Infections occurred on one or more branches of most of the cherry bushes at Ship Harbour, Halifax County, and on 20% or less of the bushes at Central North River and Greenfield, Colchester County, Lower River Hebert, Truemanville and Lakelands, Cumberland County, and Gore, Hants County.

Eastern Dwarf Mistletoe, *Arceuthobium pusillum* Peck

Mistletoe brooms were common on black spruce trees in most swamps between Musquodoboit Harbour and Ecum Secum, Halifax County.

Shoestring Root Rot, *Armillaria mellea* (Vahl. ex Fr.) Quel.

Coniferous plantations at Earltown, Debert, Kemptown and West St. Andrews, Colchester County, and Wentworth, Cumberland County, were examined for evidence of this organism. All samples were negative.

Cherry Blight

Wilting of pin cherry foliage increased in incidence and intensity in Colchester, Cumberland and Halifax counties. Observations and/or collections were made at the following locations:

Colchester County.---Portapique Mountain and West Earltown, severe foliage browning on several clumps; Central North River, moderate browning on several trees.

Cumberland County.---Lower River Hebert, Moose River, and Parrsboro, most foliage brown; Fraserville, light; Lakelands, trace.

Halifax County.--- Greenwood, light browning.

Yellow Witches' Broom, *Chrysomyxa arctostaphyli* Diet.

The occurrence of yellow witches' brooms on red spruce and black spruce trees appears to be gradually increasing in central Nova Scotia. Collections were made at Peggys Cove, Head of St. Margarets Bay, Lucasville, French Village, Mackerel Cove and Hammonds Plains, Halifax County, and Tennycape, Hants County.

Stem and Gall Rusts on Pine

A survey of most jack pine, Scots pine and Mugho pine stands in central Nova Scotia to determine the incidence and intensity of stem and/or gall rusts resulted in the following observations:

Cronartium sp.---Tatamagouche - seven out of 40 Mugho pine infected with stem and/or gall rust; Nappan Station - eight galls on one Scots pine; Chignecto Game Sanctuary - stem rust on 96% of Scots pine; Thompson - forty-one living and two dead jack pine attacked of 100 trees examined; Ship Harbour, Debert and Harrison Settlement - no rust found; four miles N.E. of Stanley, Hants County - stem rust on 1% of jack pine.

Cronartium comptoniae Arth.---Sweet fern growing in or near pine stands at Debert and Chignecto Game Sanctuary were infected with this rust.

Peridermium harknessii J.P. Moore.---The occasional globose gall occurred on two Scots pine at Hubbards Beach, and one tree at Gays River, Halifax County. Infections occurred on 10% of the jack pine at Thompson and on 70% at Oxford, Cumberland County, and on one Scots pine at Lantz, Hants County.

Cronartium ribicola J.C. Fisher. Blister rust cankers occurred on 2% of the living white pine at Centre Rawdon and killed five trees at Georgefield, Hants County. One small white pine tree at Glenholme, Colchester County, was living but cankered.

Other Tree Diseases Collected

All tree diseases collected in 1967 are included in Table 3 of Section 1.

Section 5, Table 1

Spruce Budworm Egg-Mass Counts per 100 Square Feet  
of White Spruce and Balsam Fir Foliage  
in Central Nova Scotia in 1967

Location	Tree sp.	No. sq. ft. foliage examined	Sound egg masses per 100 sq.ft.
<u>Colchester County</u>			
Greenfield	bF	6.7	0
Nuttby	wS	5.9	0
Stewiacke	wS	6.2	0
Tatamagouche Mtn.	wS	6.4	0
<u>Cumberland County</u>			
Apple River	bF	14.1	0
Harrison Sett.	wS	8.5	0
Lr. River Hebert	wS	10.7	8
Salem	wS	5.5	18
Tidnish Bridge	wS	4.8	0
Truemanville	wS	4.2	36
Wallace Ridge	wS	4.6	0
<u>Halifax County</u>			
Musquodoboit Hbr.	bF	10.0	8
Port Dufferin	bF	7.3	0
Sheet Harbour	bF	5.1	0
<u>Hants County</u>			
Admiral Rock	wS	10.9	90
Noel	wS	5.3	0

Section 5, Table 2

Numbers of European Spruce Sawfly Collected from Permanent  
Sampling Stations in Central Nova Scotia in 1967

Location	Tree sp.	Av. no. larvae per tree sampled	
		July 5-21 1st sample	Sept. 3-13 2nd sample
<u>Colchester County</u>			
Masstown	rS	0	0.8
Great Village	wS	0	0.7
Greenfield	rS	1.0	0.3
Portapique Mtn.	wS	0.3	3.0
Lr. Five Islands	wS	0.3	0.7
Tatamagouche Mtn.	wS	0.7	3.6
Nuttby	wS	1.0	5.0
Kemptown	wS	3.3	2.6
Up. Stewiacke	wS	0	0
Portapique	wS	0.3	0.7
<u>Cumberland County</u>			
Allen Hill Rd.	rS	0	0.7
Harrison Sett.	wS	1.0	6.6
Truemanville	wS	0.7	10.0
Moose River	rS	0	0.3
Mapleton	wS	0.3	0.3
Lr. River Hebert	wS	1.3	0.3
Salem	wS	0.7	2.6
Fraserville	rS	1.0	1.6
Tidnish Bridge	wS	0	0.7
Lakelands	rS	0.7	6.3
Lakelands	wS	1.0	1.3
Wallace Ridge	wS	0	0.3
<u>Halifax County</u>			
Myers Point	wS	0.7	0.3
Necum Teuch	wS	0.7	0.7
West Newdy Quoddy	wS	0	1.0
Tangier	wS	0	1.7
Spry Bay	wS	2.3	0.3
Clam Harbour	wS	0	0
Chezzetcook	rS	0	0.3
Moose River	rS	0.7	1.0
<u>Hants County</u>			
Admiral Rock	wS	0.7	0
Ardoise	wS	0.3	2.7
Gore	wS	0	0
Noel	wS	0.3	0

Section 5, Table 3

Larch Casebearer Numbers and Defoliation Estimates at Sampling Stations in Central Nova Scotia in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Colchester County</u>				
Greenfield	0	0.3	Nil	T
Kemptown	0	1.1	Nil	T
Great Village	0.3	0	T	Nil
Upper Stewiacke	0	2.1	Nil	T
Belmont	1.7	0.3	T	T
Debert	0.6	1.5	T	T
Beaverbrook	1.9	1.7	L	T
Bass River	0.3	0.3	T	T
Five Islands	0.6	4.8	Nil	T
Fort Ellis	0.7	9.0	T	L
<u>Cumberland County</u>				
East Branch	0	0.3	Nil	T
<u>Halifax County</u>				
Hubley	0.6	0	Nil	Nil
2 mi. E. of Hubbards	-	0	-	Nil

\* T = Trace, up to 5%  
L = Light, 10% - 20%

Section 5, Table 4

Larch Sawfly Defoliation Records based on Ocular  
Estimates in Central Nova Scotia in 1967

Location	Defoliation*
<u>Colchester County</u>	
Kempton to $\frac{1}{2}$ mi. west	S
1 mi. east of Bass River	S
Debert	L
Cloverdale	L
Greenfield	L
Riversdale	L
Portapique	L
East Mountain	L
Kempton (New River Rd.)	L
East Mines	L
East Folly Mountain	L
East Village	L
Truro (Victoria Park)	L
Lynn	L
Masstown	L
Valley	L
Economy	T
<u>Cumberland County</u>	
$\frac{1}{2}$ mi. east of 15 mi. bridge on Kelly River	S
Warren	S
4 mi. S.E. of Apple River	S
2 mi. south of Apple River	S
6 mi. S.W. of Sand River	Moderate but severe on a few trees
Tignish Point	M
5 mi. south of Tidnish Bridge	M
Halfway River East	L
2 mi. north of Head of Amherst	L
2 mi. south of River Hebert East	L
Tidnish Bridge	L
3 mi. S.W. of Sand River	L
Kirkhill	L
Parrsboro	L
Mapleton	L
Birchwood	L
Sutherlands Lake	L
West Wentworth	L
North Springhill Rd.	L
Spencers Cove	T

Section 5, Table 4 (cont'd)

<u>Location</u>	<u>Defoliation*</u>
<u>Halifax County</u>	
Little Salmon River	L
Minasville	T
Fall River	T
Lindsay Lake	T
1.5 mi. north of Beaver Lakes	L
4.5 mi. north of Beaver Lakes	S
Chezzetcook	T
3 mi. east of Lake Charlotte	T
Meaghers Grant	T
<u>Hants County</u>	
Lower Selmah	M
Falmouth	L
Walton	L
Urbania	T
Martock	T
Minasville	L

\* T = Trace, up to 5%  
L = Light, 10% - 20%  
M = Moderate, 30% - 60%  
S = Severe, 70% - 100%



Section 5, Table 5

Intensities of Balsam Gall Midge Attacks  
in Central Nova Scotia in 1967

<u>Location</u>	<u>Intensity*</u>
<u>Colchester County</u>	
Nuttby	M
5 mi. south of Camden	L
Balmoral Mills	L
Stewiacke Cross Roads	S
Truro (Victoria Park)	L
Camden	M
Eastville	L
5 mi. N.E. of Eastville	L
Middle Stewiacke	L
Economy Cove	L
Five Islands	L
Denmark	L
Kempton	L
Greenfield	M
<u>Cumberland County</u>	
Shulie	M
Moose River	L
Parrsboro	L
Springhill	L
East Southampton	M
River Philip	L
<u>Halifax County</u>	
Moose River Gold Mines	L
Mooseland	L
Tangier	M
Ship Harbour	L
Salmon River Bridge	L
Porter Lake	L
West Newdy Quoddy	S
Clam Harbour	M
<u>Hants County</u>	
McPhee Corner	L
Ardoise	L
Pentz Lake	L
Georgefield	L
Kennetcook	L
Stanley	L
North Salem	L
Latties Brook	L

\* L = Light; M = Moderate; S = Severe

Section 5, Table 6

Fall Webworm Nest Census in Central Nova Scotia  
in 1967

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<u>Location</u>	<u>No. miles</u>	<u>Average number of nests per mile</u>
<u>Colchester County</u>		
Central North River to Upper North River	3.0	2.7
Hilden to Alton	7.0	2.7
Stewiacke to 2 mi. N.	2.0	3.0
Shubenacadie to 3 mi. N.	3.0	10.7
Upper Stewiacke	0.5	8.0
Mid. Stewiacke Cnr. E.	5.5	4.0
Stewiacke Cnr., 3.5 to 6 mi. W.	2.5	8.8
<u>Cumberland County</u>		
Wallace Bridge	1.0	2.0
Amherst, 4 to 4.5 mi. E.	0.5	24.0
<u>Hants County</u>		
Admiral Rock	0.8	0.0

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Section 5, Table 7

Classification of Browning of Wire Birch Foliage by  
the Birch Leaf Miner in Central Nova Scotia in 1967

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<u>Location</u>	<u>Infestation class*</u>
<u>Colchester County</u>	
Newton Mills	M
Tatamagouche Mtn.	S
Earltown to Tatamagouche	S
<u>Cumberland County</u>	
Lower River Hebert	S
Salem	M
Truemanville	M
Harrison Settlement	M
Wallace Ridge	L
Malagash	L
Fraserville	L
Lakelands	L
<u>Halifax County</u>	
Rocky Lake	M
Greenwood	M
Waverley	L
Jollimore	L
<u>Hants County</u>	
Stirling Brook	L
Admiral Rock	S
Stanley	M

---

\* L = Light, 10% - 20%  
M = Moderate, 30% - 60%  
S = Severe, 70% - 100%

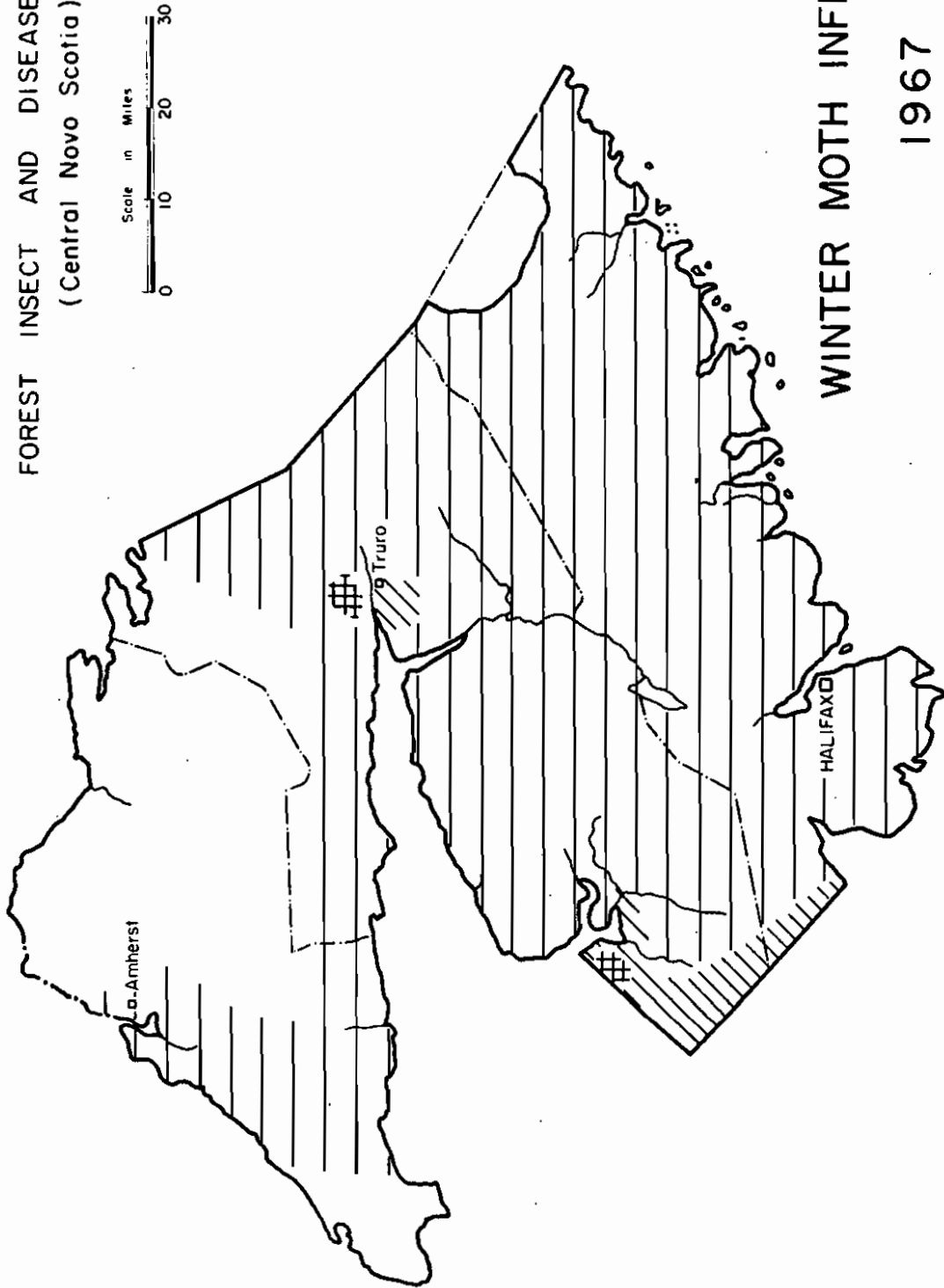
Section 5, Table 8

Condition of Trees on Beech Bark Disease Plots  
in Central Nova Scotia, 1962 to 1967 Inclusive

Location	Year	1	2	3	4	5a	5b	5c	6	Dead other causes
<u>Colchester County</u>										
East Folly Mtn.	1962	0	4.2	0	4.2	0	69.3	8.6	10.5	3.2
	1963	0	4.2	0	5.3	0	69.5	5.3	12.6	3.1
	1964	0	4.2	0	5.3	0	65.3	4.2	17.9	3.1
	1965	0	3.2	0	7.4	0	61.0	4.2	21.1	3.1
	1966	0	2.0	0	7.3	0	57.3	7.3	22.9	3.2
	1967	0	2.1	0	7.4	0	53.7	7.4	26.3	3.1
Greenfield	1962	0	0	0	9.1	0	71.6	8.0	4.5	6.8
	1963	0	0	0	1.1	0	77.3	9.1	5.7	6.8
	1964	0	0	0	4.5	6.8	68.2	2.3	10.2	8.0
	1965	0	0	0	5.7	6.8	65.9	2.3	11.3	8.0
	1966	0	0	0	10.2	0	69.3	1.1	11.5	7.9
	1967	0	0	0	14.8	0	62.5	0	14.8	7.9

\* See Appendix A, Section 1, for explanation of classes

FOREST INSECT AND DISEASE SURVEY  
(Central Novo Scotia)



WINTER MOTH INFESTATIONS  
1967



SEC. 5 FIG. 1

ANNUAL DISTRICT REPORT

WESTERN NOVA SCOTIA

1967

by

D. B. Marks

6.0 WESTERN NOVA SCOTIA

(D. B. Marks)

Introduction

The larch sawfly, balsam woolly aphid, beech bark disease, winter moth and fall cankerworm continued as major tree pests in the district in 1967 but there was a marked decrease from 1966 in defoliation by larch sawfly and winter moth. Forest tent caterpillar populations increased to epidemic levels with outbreaks occurring in the towns of Bridgewater and Kingston. Insect collections by Survey Staff totaled 432 and tree disease samples 221. Co-operators submitted 180 collections, mostly of insects.

Insect Conditions

Balsam Woolly Aphid, *Adelges piceae* (Ratz.)

Severe stem attacks occurred again on balsam fir in the Islands Park at Shelburne. Elsewhere in the district stem and twig attacks were light. The results of the reclassification of trees on balsam plots at Medway River and Rossignol Lake are compared with the results for 1965 and 1966 in the following table. The numbers of uninfested trees were lower on both plots in 1967, otherwise changes in the condition of the trees were slight.

Location	Year	Per cent of trees in class *								Dead other causes		
		1	2a	2b	2c	3a	3b	4a	4b		4c	5
<u>Annapolis County</u>												
Medway River	1965	53.1						4.5	4.5	10.6	9.1	18.2
	1966	53.1						4.5	4.5	10.6	9.1	18.2
	1967	48.5						4.6	3.0	9.1	12.1	22.7
<u>Queens County</u>												
Rossignol Lake	1965	41.8					11.2	4.1	6.1	9.2		27.6
	1966	43.3					8.3	4.1	4.1	10.3		28.9
	1967	37.5	4.2				8.3	2.1	5.2	10.4		32.3

\* See Appendix A, Section 1, for explanation of classes.

European Spruce Sawfly, *Diprion hercyniae* (Htg.)

Population levels of this sawfly, low in recent years, showed little change in 1967 (Section 6, Tables 1 and 2). The highest average numbers of sawfly larvae per tree sample occurred at Pleasant River, Queens County (4.7), Round Hill, Annapolis County (3.7), Landsdowne, Digby County (3.3) and Windsor Road, Lunenburg County (3.3).

Larch Casebearer, *Coleophora laricella* Hbn.

Larch casebearer numbers were low in those areas of Yarmouth and Shelburne counties which were severely infested in 1966 and remained low elsewhere in the district. Results of sampling overwintering populations at fifteen sampling stations and defoliation estimates taken in June are shown in Section 6, Table 3.

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Population levels of this sawfly were generally lower than in 1966. Aerial observations confirmed ground survey estimates of moderate to severe infestations persisting only in small scattered areas of Digby, Lunenburg and Shelburne counties (Section 1, Figure 3, and Section 6, Table 4). Severe defoliation of ornamental European larch trees occurred again at the Kentville Research Station. Conditions by counties were as follows:

Annapolis County.—Very light defoliation occurred in two small areas near Perott Settlement.

Digby County.—Areas of moderate to severe defoliation were less extensive than in 1966 and were confined to scattered patches at Doyle Lake Brook, 4.5 miles southeast of Weymouth on Mills Road, Weymouth North, North Range and 4 miles east of Riversdale on the New France road. Elsewhere in the County infestations were generally light.

Kings County.—Severe infestations occurred on ornamental larch trees at Kentville Research Station. Defoliation of tamarack was no more than trace through the remainder of the County.

Lunenburg County.—Moderate defoliation of tamarack in mixed coniferous stands occurred in areas near the Hants County line on #14 Highway and at New Russel. Small numbers of sawfly colonies occurred throughout the remainder of the County but only trace defoliation resulted.



Queens County.---Trace defoliation occurred at Danesville and 1 mile west of the Labelle road junction on the Buckfield road.

Shelburne County.---The infestation reported in 1966 near Birchtown Lake on the Upper Clyde road was again moderate. Elsewhere in the County defoliation was observed only at Allendale where a trace of feeding occurred.

Yarmouth County.---Sawfly larvae were common but as in 1966 defoliation was generally trace to light.

Spruce Budworm, *Choristoneura fumiferana* Clem.

Spruce budworm populations in western Nova Scotia remained at very low levels. Small numbers of larvae were taken in collections from five widely separated locations, and egg-mass counts taken at ten locations produced positive results at one only, near Middleton where four masses were found.

Balsam Gall Midge, *Dasineura balsamicola* (Lint.)

Infestations of this midge were less common than in 1966, but a few galled needles could be found in most balsam fir stands. Population levels were generally low except near Huntington Point, Kings County, where galled needles were numerous (see Map, Section 1, Figure 4).

European Pine Shoot Moth, *Rhyacionia buoliana* Schiff.

This shoot moth occurred in large numbers on practically all Scots pine trees in the Annapolis Valley from Kentville to Digby. Mugho pine foundation plantings and a Scots pine windbreak were severely damaged at Maders Cove, near Mahone Bay, Lunenburg County. Light infestations occurred on Scots pine at the East Kemptville Forest Nursery in Yarmouth County and at Chester, Lunenburg County.

Winter Moth, *Operophtera brumata* L. and  
Fall Cankerworm, *Alsophila pomataria* Harr.

Combined data from aerial and ground surveys were used in determining distribution, per cent by species and population levels of the cankerworm and winter moth. The percentage of each species found on red oak during sequential sampling of stations is shown in Section 6, Table 5, and at random locations in Table 6.

Areas severely infested in 1966 again sustained severe defoliation but increased in size and a few new moderate and severe outbreaks occurred. Larval counts indicated that feeding was mainly by the fall

cankerworm which was more widespread and numerous than in 1966. Winter moth populations remained at low levels except in the few widely separated locations where winter moth larvae outnumbered cankerworms. These locations are indicated in the summary of conditions by counties which follows (see maps at end of Section):

Annapolis County.—Severe defoliation of red oak, probably by fall cankerworm, occurred in small areas on the north shore of Lake Mulgrave and northwest of Mud Lake. Defoliation by fall cankerworm, severe in 1966, decreased to moderate in 1967 in an infestation 2.8 miles south of Munroe Lake on #8 Highway. Near the Lake La Rose road junction at Lequille a small stand of red oak trees was severely defoliated for the first time.

Both species were present in endemic numbers elsewhere in the County.

Digby County.—Both species occurred throughout the County in low numbers.

Kings County.—Fall cankerworm larvae stripped the foliage from a stand of red oak trees on the north shore of Gaspeaux Lake. A mixed population with 89% winter moth caused severe defoliation of a few ornamental hardwoods at the Kentville Research Station. Winter moth was principally responsible for light defoliation of deciduous shade trees in Wolfville, Blomidon Look-Off and Habitant. Evenly mixed populations caused light defoliation of white elm shade trees elsewhere in Kentville. Both species were found in small numbers throughout the remainder of the County.

Lunenburg County.—Severe infestations of fall cankerworm occurred in four major sectors of the County. Aerial surveys indicated mottled patches of moderate and severe defoliation clustered in the general areas of the Gold River Watershed, Seffernville, New Elm and Bridgewater. Red oak was usually the most severely defoliated tree species. Throughout the remainder of the County population levels of winter moth and fall cankerworm, alone or in mixed numbers, were low.

Queens County.—Fall cankerworm infestations ranged from moderate to severe in six major sectors of the County, defoliation occurring in numerous patches in the general vicinities of Molega Lake, McGowan Lake, Tobeatic Road, Pleasantfield, Liverpool and Granite Village. These infestations were generally located in areas where red oak, the preferred host, was abundant. Other hardwoods were less severely defoliated. Moderate defoliation of elm shade

trees occurred at Fort Point Park in Liverpool where winter moth larvae outnumbered fall cankerworm. Elsewhere in the County population levels of both species were low.

Shelburne County.—Eleven major infestations of moderate to severe intensity were mapped from the air, each infestation consisted of numerous smaller patches of various sizes and degrees of defoliation. These infestations occurred at or near: Roseway Lake, McAfee Lake, Pug Lake, Veitch Lake, Green Harbour Lake, Sable River Watershed, Wilkin Lake, Haley Lake, Port Hebert Harbour, Lake George and the Shelburne peninsula. Many of the numerous patches of defoliation were not readily accessible for checking the proportions of insect species involved but collections from nearby locations contained mainly fall cankerworm. A mixed infestation composed principally of winter moth caused moderate defoliation of most hardwood shade trees along the main street of Shelburne. Small numbers of fall cankerworm, occasionally associated with smaller numbers of winter moth, were common throughout the remainder of the County.

Yarmouth County.—Severe defoliation of red oak occurred in a patch forming part of the infestation extending across the County line from Roseway Lake in Shelburne County. Severe defoliation occurred also near the shore of Clam Lake. This infestation was not examined on the ground but small numbers of larvae feeding nearby indicated that fall cankerworm was the defoliator. Winter moth predominated in mixed populations that caused light defoliation of scattered apple trees at Tusket. Elsewhere in the County endemic numbers of both species were found at widely separated locations.

Elm Leaf Miner, Fenusa ulmi Sund.

Severe infestations of elm leaf miner occurred for the fourth successive year at Wolfville, Port Williams and Church Street in Kings County. A new outbreak occurred at West Paradise, Annapolis County, where the foliage of several elm trees was completely browned. Moderate browning occurred at Upper Canoe Lake, Lunenburg County. Small numbers of this sawfly were found throughout the remainder of the Annapolis Valley.

Birch Skeletonizer, Bucculatrix canadensisella Cham.

All major infestations collapsed and a sharp decline was noted in the incidence of this skeletonizer throughout the district. Light skeletonizing of white birch foliage occurred at Blue Mountain, Kings County.

Birch Leaf Miner, Fenusa pusilla (Lep.)

Severe browning of wire birch and white birch foliage was as widespread as in 1966 and occurred in numerous patches in all counties. Locations where defoliation estimates were taken and the degree of foliage browning observed are listed in Table 7.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

An outbreak of this caterpillar occurred at Bridgewater, Lunenburg County, where practically all the apple trees on both sides of the LaHave River within the town limits were totally defoliated. Large red oak shade trees within the same limits supported small numbers of larvae. An outbreak occurred also in Kingston, Annapolis County, where several red oak trees were stripped of foliage. Scattered collections of a few larvae each were taken throughout Kings and Lunenburg counties and one collection was taken in each of Queens and Annapolis counties.

Satin Moth, Stilpnotia salicis L.

The satin moth caused moderate to severe defoliation of a few silver poplar trees at Annapolis Royal and Wilmot, Annapolis County. Severe defoliation of silver poplar trees in hedgerows occurred at Hortonville and Upper Canard and light on a few silver poplar trees in Wolfville and at Evangeline Beach, Kings County.

Balsam Twig Aphid, Mindarus abietinus Koch.

Light infestations of this aphid were common on the new foliage of balsam fir in all counties of the western district. Twelve collections were taken at widespread locations where infestations reached moderate to severe proportions (Section 6, Table 8). Aphid attacks were of a sporadic nature with scattered individual trees within a stand severely infested and the remainder either lightly infested or unattacked.

Balsam-fir Sawfly, Neodiprion abietis complex

Defoliation varied from very light to moderate on black spruce along Highway #14 in Lunenburg County near the Hants County line and on red spruce in the Lake Henry area of Chester Grant. Trace defoliation occurred on most black spruce at Danesville and trace to moderate defoliation of red spruce occurred 6 miles north of Liverpool on Highway #8,

Queens County. Moderate defoliation of occasional white spruce occurred in a predominantly white spruce stand 5 miles south of Lake Ellenwood, Yarmouth County. Only a few scattered larvae were collected in other areas.

Additional Species Collected

Numbers of common insects collected at sampling stations are listed in Table 10 of this report. The names of all insects collected in the district in 1967 are included in Table 2 of Section 1.

Tree Diseases

Dutch Elm Disease, *Ceratocystis ulmi* (Buism.) C. Moreau

A survey of elm trees was made in all towns in western Nova Scotia but no symptoms of this disease were observed.

Willow Blight, *Pollaccia saliciperda* (All. & Tub.) Arx.  
and *Physalospora miyabeana* Fukushi

Moderate leaf browning of willows occurred throughout the Annapolis Valley from Hantsport to Digby. Near Bridgetown and Evangeline Beach, browning was severe. A first herbarium specimen from Lunenburg County was collected at Chester where infections caused moderate leaf browning on most host trees.

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

White pine trees in 32 areas were examined in early June to determine the per cent of trees infected and mortality attributable to white pine blister rust, while the aecial or aeciospore stage was present. Active infections occurred in twenty four areas and of the remaining eight stands, seven included trees with inactive cankers and one was uninfected. First herbarium specimens of this disease were collected in Queens, Kings and Shelburne counties. Older infections of this rust on white pine shade trees at the Pines Hotel in Digby have caused some branch and tree mortality of mature trees. Branch infections are common in the younger trees.

Sweetfern Blister Rust, *Cronartium comptoniae* Arth.

This rust was collected from four provincial forest plantations where infections occurred. Twenty lodgepole pine trees in a plantation at Beaver Dam Lake, Shelburne County were infected. A small plantation of young short leaf pine near Silver Lake, Shelburne County was infected with this organism. Many of the infected trees were very unthrifty and it is highly probable that the disease was a major factor causing mortality. A first herbarium specimen from Shelburne County was collected at the above location. Ninety per cent of the trees in a lodgepole pine plantation at Argyle Head, Yarmouth County were dead following chewing by porcupines often attracted to cankers because of higher sugar content in tissues. The living trees were all infected and in an unthrifty condition. This rust also infected 60% of the trees in a lodgepole pine plantation in the Morse Arboretum at Paradise, Annapolis County but was not causing any apparent affect on host thrift, probably because of the older age of the trees. Collections of infected sweet fern, the alternate host, were submitted from all four plantations.

### Needle Rusts

Pucciniastrum epilobii Otth. and P. geoppertianum (Kuhn) Kleb. Light needle discoloration occurred on balsam fir at McGee Lake, Kings County and near Gold River, Lunenburg County. Witches' brooms caused by infections of this rust were of moderate incidence and intensity on blueberry bushes near Gold River.

Chrysomyxa arctostaphyli Diet. Yellow witches' brooms occurred on red and black spruce at widespread locations in the district. Infections of trace intensity and moderate incidence occurred on black spruce in the N.S.L.F. Park at Lake Ellenwood, Yarmouth County.

### Ash Rust, Puccinia sparganioides Ell. & Barth.

Ash rust infections severely damaged two to five year old nursery stock at the Provincial Forest Nursery, Lawrencetown. Infections on white ash trees at Wolfville, severe in 1966, were of moderate intensity. Elsewhere in the district trace infections occurred on white ash foliage.

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

A few curled and blackened shoots occurred in most trembling aspen and largetooth aspen stands throughout the district. Between 30 and 60% of the shoot tips on each tree were killed on trembling aspen reproduction at Smith's Cove, Digby County. A first herbarium specimen on largetooth aspen from Shelburne County was collected near Silver Lake.

### Black Knot of Cherry, Dibotryon morbosum Theiss. & Syd.

Symptoms of black knot were prevalent but of trace to moderate intensity on cherry bushes in Western Nova Scotia. Two plum trees at Richfield, Yarmouth County had numerous infected branches. A first herbarium specimen from Prunus pensylvanica in Kings County was collected at the Kentville Research Station.

### Sooty Mold

The extremely humid weather experienced throughout the district in 1967 provided ideal conditions for the formation of sooty mold which occurred on hardwood foliage and on tamarack and white spruce needles. Severely blackened foliage was common and very noticeable on broad leaf ornamentals in Wolfville, Kentville, Liverpool, Weymouth and Shelburne. The infection reported on white spruce at East Kemptville in 1966 was again severe. A few blackened trees occurred at other widely separated locations in the district. Damage to the host is generally negligible as the mold forms on the honeydew excreted by aphids and other sucking insects.

Beech Bark Disease, *Cryptococcus fagi* (Baer.) and  
*Nectria coccinea* var. *faginata* Lohm. Wats. & Ayers

The reclassification of beech trees on two plots indicate little change from 1966 (Section 6, Table 10). The most common class is still those which are cankered as a result of previous infections by the fungus and support light infestations of the scale. Mortality of infected trees has remained relatively low for the past five years in both plots.

Severe attacks of the scale were again common on the stems of beech trees at South Milford, Annapolis County and 10 Mile Lake, Queens County. Elsewhere in the district infestations were light.

First herbarium specimens of nectria were collected in Yarmouth, Annapolis, Kings and Lunenburg counties and specimens were submitted again from Queens and Digby counties.

Anthracnose of Hardwood

*Gloeosporium apocryptum* Ell. & Ev. This disease was again prevalent on maple foliage throughout the Annapolis Valley causing moderate to severe browning. Discolored foliage was particularly noticeable on sugar maple shade trees in or near most towns and villages from Hantsport and Grand Pré, west through Middleton to Digby. In addition, moderate to severe browning was noted at Weymouth, Bridgewater, Mahone Bay and Italy Cross. Browning was common but very light elsewhere in the district.

*Gloeosporium aridum* Ell. & Holw. infections caused a trace of foliage browning on white ash near Weymouth, Digby County and Oakland Lake, Lunenburg County. Browning was of moderate intensity on several white ash shade trees at Wolfville. A first herbarium specimen from Yarmouth County was collected on white ash near Parr Lake.

*Gloeosporium fagicola* Pass. Browning of beech foliage was of moderate intensity and incidence at Croskill Lake, Annapolis County, and of trace intensity near the Bear River railway bridge, Digby County, and at the East Kemptville fire tower, Yarmouth County.

Leaf Blotch of Horse-chestnut, *Guignardia aesculi* (Peck) V.B. Stewart

Varying degrees of foliage browning occurred on practically all horse-chestnut trees in the district. Moderate to severe browning was noted on a few scattered trees at Annapolis Royal, Weymouth, Grand Pré, Brooklyn and Liverpool. Foliage was severely browned on the many roadside trees in the village of South Ohio, Yarmouth County.

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

Trembling aspen trees at Centerville, Kings County and 1 mile



east of Mill Village, Queens County were examined. A similar investigation was conducted in a pure stand of largetooth aspen at Coldbrook, Kings County where 90% of the trees were dead in a 1/10-acre area. The results of the three surveys follow:

Location	Number of trees			
	Examined	Not cankered	Living but cankered	cankered
Centerville, Kings Co.	34	18	16	0
Coldbrook, Kings Co.	120	2	10	108
1 mi. E. of Mill Village, Queens Co.	100	90	8	2

Other Noteworthy Diseases

<u>Organism</u>	<u>Host</u>	<u>Location</u>	<u>Remarks</u>
<u>Adelopus balsamicola</u> (Peck) Theiss.	Fir, balsam	Kings, Lunenburg and Queens counties	New herbarium record from Queens. Needle browning very light.
<u>Isthmiella faulii</u> (Darker) Darker	Fir, balsam	Brooklyn, Queens County	Needle browning severe on one tree. Moder- ate in rest of stand.
<u>Lirula nervata</u> (Darker) Darker	Fir, balsam	Kings and Lunenburg counties	Less than 20% of needles infected on scattered trees.
<u>Lophodermium</u> sp.	Spruce, white	Barton, Digby County, Lake Ellenwood, Yarmouth Co.	Infections light and widely scattered.
	Spruce, red	Brooklyn, Queens Co.	Moderate foliage browning common.

<u>Organism</u>	<u>Host</u>	<u>Location</u>	<u>Remarks</u>
<u>Chrysomya ledicola</u> Lagh.	Spruce, white	Smugglers Cove, Digby County	Not common in area.

Other Tree Diseases Collected

All tree diseases collected in the district in 1967 are listed in Table 3 of Section 1.

Section 6, Table 1

Numbers of European Spruce Sawfly Collected from Permanent  
Sampling Stations in Western Nova Scotia in 1967

Location	Tree sp.	No. of sawfly larvae*	
		July 6-13 1st sample	Sept. 8-13 2nd sample
<u>Annapolis County</u>			
Lequille	wS	1	6
Round Hill	wS	8	11
<u>Digby County</u>			
Barton	rS	3	9
Landsdowne	wS	14	10
Tibideau Road	wS	9	9
<u>Lunenburg County</u>			
East River	wS	1	6
East River	rS	0	0
Windsor Road	wS	3	10
<u>Queens County</u>			
Pleasant River	wS	8	14
Beech Hill	rS	1	6
Brooklyn	rS	0	2
Tobeatic Road	rS	0	2
<u>Yarmouth County</u>			
Bloomfield	wS	14	6
Carleton	rS	17	9

\* Three trees sampled each time

Section 6, Table 2

Numbers of European Spruce Sawfly Collected at Co-operators'  
Sampling Stations in Western Nova Scotia in 1967

Location	Tree sp.	No. of sawfly larvae*			
		June	July	August	September
<u>Annapolis County</u>					
7 mi. N. of Springfield on #10 Highway	wS		1		
7 mi. N. of Dalhousie	wS		3		
Dalhousie on #10 Highway	wS			6	
<u>Digby County</u>					
Smiths Cove Peninsula	wS		4		
2 mi. W. of Lake Jolly	wS		6	2	
4 mi. E. of Riverdale	rS			6	
<u>Kings County</u>					
Lake George Access Road	rS		1		
<u>Lunenburg County</u>					
Upper Northfield	wS	1			
Croft Road, Crescent Beach	wS	2			
Lake Henry Access Road, Chester Grant	rS		2		
West Clifford	rS		1		
<u>Queens County</u>					
6 mi. N. of Liverpool on #8 Highway	rS	1	3		1
Harmony Lake	rS				2
<u>Yarmouth County</u>					
5 mi. S. of Lake Ellenwood	wS		2		
5 mi. N. of Kempville	wS		3		

\* Three trees sampled each time

Section 6, Table 3

Larch Casebearer Numbers and Defoliation Estimates at Sampling Stations in Western Nova Scotia in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Annapolis County</u>				
New Albany	-	0.6	-	T
South Milford	-	0	-	O
<u>Digby County</u>				
Bloomfield	5.1	0.3	L	T
Springdale	14.0	0	L	T
<u>Kings County</u>				
Blue Mountain	-	1.9	-	T
Aylesford	-	0.6	-	L
<u>Lunenburg County</u>				
East River	0.3	0	O	T
Bridgewater	-	0	T	O
Danesville	0.6	0.3	T	T
<u>Queens County</u>				
Greenfield	-	1.8	-	T
<u>Shelburne County</u>				
Barrington	-	0	-	O
Allendale	0	0	T	T
<u>Yarmouth County</u>				
Pleasant Valley	-	64.7	-	L
Chebogue	0	0	T	O
Pubnico	-	1.4	-	T

\* T = Trace L = Light

- New Sampling Stations with the exception of Bridgewater where no count was made in 1966.

Section 6, Table 4

Larch Sawfly Defoliation Records Based on Ocular  
Estimates in Western Nova Scotia in 1967

<u>Location</u>	<u>Defoliation*</u>
<u>Annapolis County</u>	
Lake La Rose - Perotte Sett. area	T
<u>Digby County</u>	
Corberrie Road	T
Sprague Lake Corner	T
Doyle Brook on New France Road	M
4.5 mi. S.E. of Weymouth on W. Mills Road	M
Weymouth North, #1 Highway near Ashmore	S
1 mi. S. of Doucetteville	T
North Range	M
#17 Highway at Rossway	T
1.4 mi. E. on #17 Highway from Little River Wharf Rd.	T
4 mi. E. of Riverdale	S
<u>Kings County</u>	
2 mi. S. of #1 Highway on English Mtn. Road	T
Blomidon, Ross Creek Corner	T
Evangeline Beach	T
Kentville Research Station	S
#12 Highway, 1 mi. N. of County line	T
McGee Lake Bridge	T
Lake George	T
<u>Lunenburg County</u>	
#3 Highway at Goat Lake	T
Hubbards, Mill Lake Road	T
Sherwood Fire Tower	T
#14 Highway at County line	M
New Russel Village	M
Aldersville	T
Crescent Beach	T
<u>Queens County</u>	
Danesville Village	T
Buckfield Road, 1 mi. W. of Labelle Road Junction	T

Section 6, Table 4 (cont'd)

---

<u>Location</u>	<u>Defoliation*</u>
<u>Shelburne County</u>	
Upper Clyde Road, N.E. of Birchtown Lake	M
Allendale Village	T
<u>Yarmouth County</u>	
Mespark Lake Road, W. of Lake Center	T
N.S.L.F. Park, Ellenwood Lake	T
Sloan Lake, North Shore	T
Parr Lake	T

---

- \* T = Trace, up to 5%
- L = Light, 10% - 20%
- M = Moderate, 30% - 60%
- S = Severe, 70% - 100%

Section 6, Table 5

Infestation Intensities of Winter Moth and Fall Cankerworm  
at Red Oak Sampling Stations in Western Nova Scotia  
1961 to 1967 inclusive

Location	Per cent by species 1967		Infestation class*						
	Winter moth	Fall Cankerworm	1961	1962	1963	1964	1965	1966	1967
<u>Lunenburg County</u>									
Cookville	0	100	M	L	Nil	Nil	L	L	L
New Germany	0	0	M	L	L	Nil	L	L	Nil
West Northfield	0	0	M	L	L	Nil	L	L	Nil
Chester Basin	0	100	M	L	L	Nil	L	L	L
Mahone Bay	0	0	M	L	L	Nil	-	L	Nil
<u>Queens County</u>									
Mill Village Rd.	0	0	L	L	L	Nil	L	L	Nil
Mill Village	0	100	M	M	L	Nil	L	L	L
Pleasant River	0	100	M	L	Nil	Nil	L	Nil	L
3 mi. N. of Middledale	16	84	M	L	L	-	L	M	S

\* L = Light, 10% - 20%  
M = Moderate, 30% - 60%  
S = Severe, 70% - 100%



Section 6, Table 6

Proportions of Winter Moth and Fall Cankerworm Larvae Present  
in Random Hand-picked Samples in Western Nova Scotia in 1967

Location	Hosts	Percentage of species present		Defoliation*
		Winter moth	Fall cankerworm	
<u>Annapolis County</u>				
2.8 mi. S. of Munroe Lake	rM	7	93	M
Annapolis Royal	wE	89	11	L
Lawrencetown	wE	72	28	L
Lake La Rose	rO		100	S
<u>Digby County</u>				
Bear River Village	rO		100	T
Smith's Cove	Ap	100		T
Pines Hotel, Digby	Ap	100		T
N.S.L.F. Park at Plympton	wE, Ap	100		T
Richfield	Ap		100	T
<u>Kings County</u>				
Kentville	cCh, wE	44	56	L
Experimental Farm, New Minas	wE	89	11	M
Hantsport at County line	wE	100		T
Grand Pré	wE	100		T
Wolfville	W	100		L
Habitant Village	rO	67	33	L
Blomidon Look-off	Ap	100		L
Lake Paul Rd.	Ap		100	T
<u>Lunenburg County</u>				
Chester	Ap	100		L
Seffernville, S. of Village	rO	3	97	S
Bridgewater, E. side of LaHave R.	cCh	33	67	L
Cookville	rO		100	T
Upper Canoe Lake	Ap		100	T
New Ross, New Russel Rd. Jct.	Ap		100	T
1.4 mi. W. of Forties Sett.	rO		100	T
2.7 mi. W. of Forties Sett.	wB		100	L
New Elm and Bedrock Rd. Jct.	rO	8	92	S
3.7 mi. N. on Beech Hill Rd.	rM, Ap	1	99	S
<u>Queens County</u>				
3 mi. N. of Townsite	rM	5	95	M
Fleasantfield at 16 mi. Rd. Jct.	rO	7	93	S
Granite Village Bridge	wIB	4	96	S
2 mi. W. Liverpool	rO	5	95	S
Middledale	rO	16	84	M
2 mi. W. from Low Landing	rO	11	89	S
Fleasant River	rC		100	L

Section 6, Table 6 (cont'd)

Location	Hosts	Percentage of species present		Defoliation*
		Winter moth	Fall cankerworm	
<u>Queens County (cont'd)</u>				
Molega Lake Road	rO	9	91	S
McGowan Lake Road	rO	14	86	L
South Brookfield Corner	wE	40	60	L
Fort Point Park, Liverpool	wE	58	42	M
Mill Village Bridge	wE		100	L
2 mi. N. of Annis Lake	Wi,Al,rO	1	99	M
<u>Shelburne County</u>				
Barrington Village	Ap, rO	100		T
Clyde River Village	wE	100		T
Shelburne Town	Ap	81	19	M
Lower Ohio Village	Ap		100	T
2 mi. Rd. N. of Green Harbor Lake	rO, rM		100	S
9 mi. Rd., 4.8 mi. E. of Jordan Falls	rM	100		T
<u>Yarmouth County</u>				
Hebron - South Ohio Cross Roads	Ap	100		T
Kemptville	Ap		100	T
N.S.L.F. Park at Tusket	Ap	97	3	L
Argyle	rO		100	T

\* T = Trace, up to 5%  
 L = Light, 10 - 20%  
 M = Moderate, 30 - 60%  
 S = Severe, 70 - 100%

Section 6, Table 7

Classification of Browning of Wire Birch Foliage by  
the Birch Leaf Miner in Western Nova Scotia in 1967

<u>Location</u>	<u>Infestation class*</u>
<u>Annapolis County</u>	
Lawrencetown	S
South Milford	S
New Albany	M
Alpena Siding	L
Nictaux	M
<u>Digby County</u>	
Hassett	M
St. Joseph	L
Smiths Cove	L
New France Road at Riversdale	M
<u>Kings County</u>	
Aylesford	S
Forest Home	S
Kentville	S
Harborville	M
Lake George	M
<u>Lunenburg County</u>	
Meisners	S
Seffernville	M
East River	M
Chester	S
Windsor Road at Hants line	S
Robinson Corner	M
Bezanson Lake	S
Gold River - Mahone Bay By-pass	M
Oakland Lake	M
2.7 mi. W. of Forties Settlement Bridge	M
<u>Queens County</u>	
Pleasant River	M
New Elm	S
Mersey Gate on Kedgie River	S
Buckfield, Labelle Cross Roads	L
Railway Crossing, Brookfield Mines Road	S

Section 6, Table 7 (cont'd)

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<u>Location</u>	<u>Infestation class*</u>
<u>Shelburne County</u>	
Oak Park	L
Shelburne, Islands Park	M
Barrington	L
Lower Ohio	S
Middle Ohio Fire Tower	M
<u>Yarmouth County</u>	
East Kemptville	S
Carleton Corner	L
Lake Ellenwood, Braemar Lodge	S

---

\* L = Light  
M = Moderate  
S = Severe

Section 6, Table 8

Intensities of Balsam Twig Aphid Attacks  
in Western Nova Scotia in 1967

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<u>Location</u>	<u>Intensity*</u>
<u>Annapolis County</u>	
7 miles N. of Springfield on #10 Highway	M
1.4 miles S. of Lequille	M
<u>Digby County</u>	
4 miles E. of Riverdale	S
Tibideau Road Sampling Area	M
<u>Kings County</u>	
3.4 miles N. of E. Dalhousie and Lake Paul Road Jct.	M
<u>Lunenburg County</u>	
Bezanson Lake	M
New Ross and New Russel Road Jct.	S
Aldersville	M
<u>Queens County</u>	
Harmony Lake	S
6 miles N. of Liverpool on #8 Highway	M
<u>Shelburne County</u>	
Upper Clyde Road N.E. of Birchtown Lake	S
<u>Yarmouth County</u>	
Gardner Mills Sampling Area	S

---

\*L = Light  
M = Moderate  
S = Severe

Section 6, Table 9

Numbers of Common Insects Collected from 18 Permanent  
Sampling Stations in Western Nova Scotia in 1967

Species	No. and type of stations producing larvae	Total larvae collected
<u>Lepidoptera</u>		
Amorbia humerosana Clem.	1 eH	1
	1 rS	1
Caripeta divisata Wlk.	2 rS	3
	3 wS	5
	1 eH	1
	1 wP	4
Elaphria versicolor Grote	1 wS	1
Eupithecia filmata Pears.	1 wS	1
Eupithecia transcanadata MacKay	3 rS	4
	2 wS	5
Hydriomena divisaria Wlk.	2 rS	2
Lambdina fiscellaria fiscellaria Guen.	1 eH	4
Protoarmia porcelaria indicataria Wlk.	2 rS	4
	2 wS	4
Semiothisa dispuncta complex	2 rS	4
	5 wS	7
	2 eH	3
<u>Hymenoptera</u>		
Diprion hercyniae (Htg.)	14 wS	112
	10 rS	67
Neodiprion abietis (Harr.)	1 wS	3
Pikonema alaskensis Roh.	1 wS	1
	1 rS	1
Pikonema dimmockii (Cress.)	2 wS	3

Section 6, Table 10

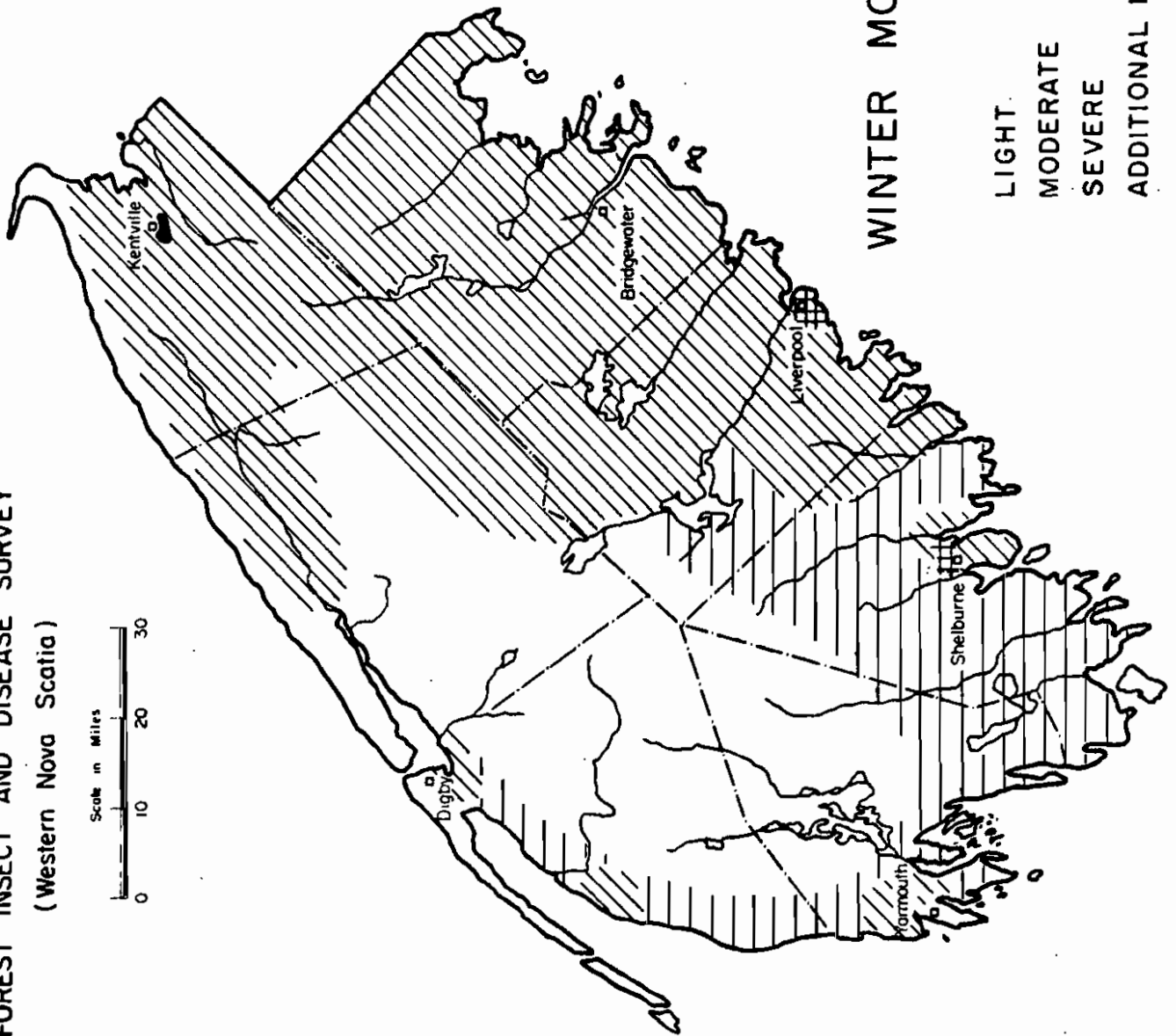
Condition of Trees on Beech Bark Disease Plots  
in Western Nova Scotia, 1963 to 1967 Inclusive

Location	Year	1	2	3	4	5a	5b	5c	6	Dead other causes
<u>Queens County</u>										
Annis Lake	1963	0	0	0	8.6	0	75.0	0	13.8	2.6
	1964	0	0	0	11.2	0	69.8	0.9	15.5	2.6
	1965	0	0	0	12.9	0	63.8	2.6	18.1	2.6
	1966	0	0	0	11.2	0	58.6	6.0	21.6	2.6
	1967	0	0	0	11.2	0	55.2	6.9	24.1	2.6
<u>Digby County</u>										
Bayview	1963	2.5	22.5	0	5.0	0	68.8	0	1.2	0
	1964	1.3	15.0	0	5.0	0	77.5	0	1.3	0
	1965	1.3	13.7	0	6.2	0	77.5	0	1.3	0
	1966	0	6.3	0	6.3	0	61.2	0	3.7	22.5**
	1967	0	3.8	0	6.2	0	61.3	0	6.2	22.5

\* See Appendix A, Section 1 for explanation of classes

\*\* 18 trees cut

FOREST INSECT AND DISEASE SURVEY  
(Western Nova Scotia)

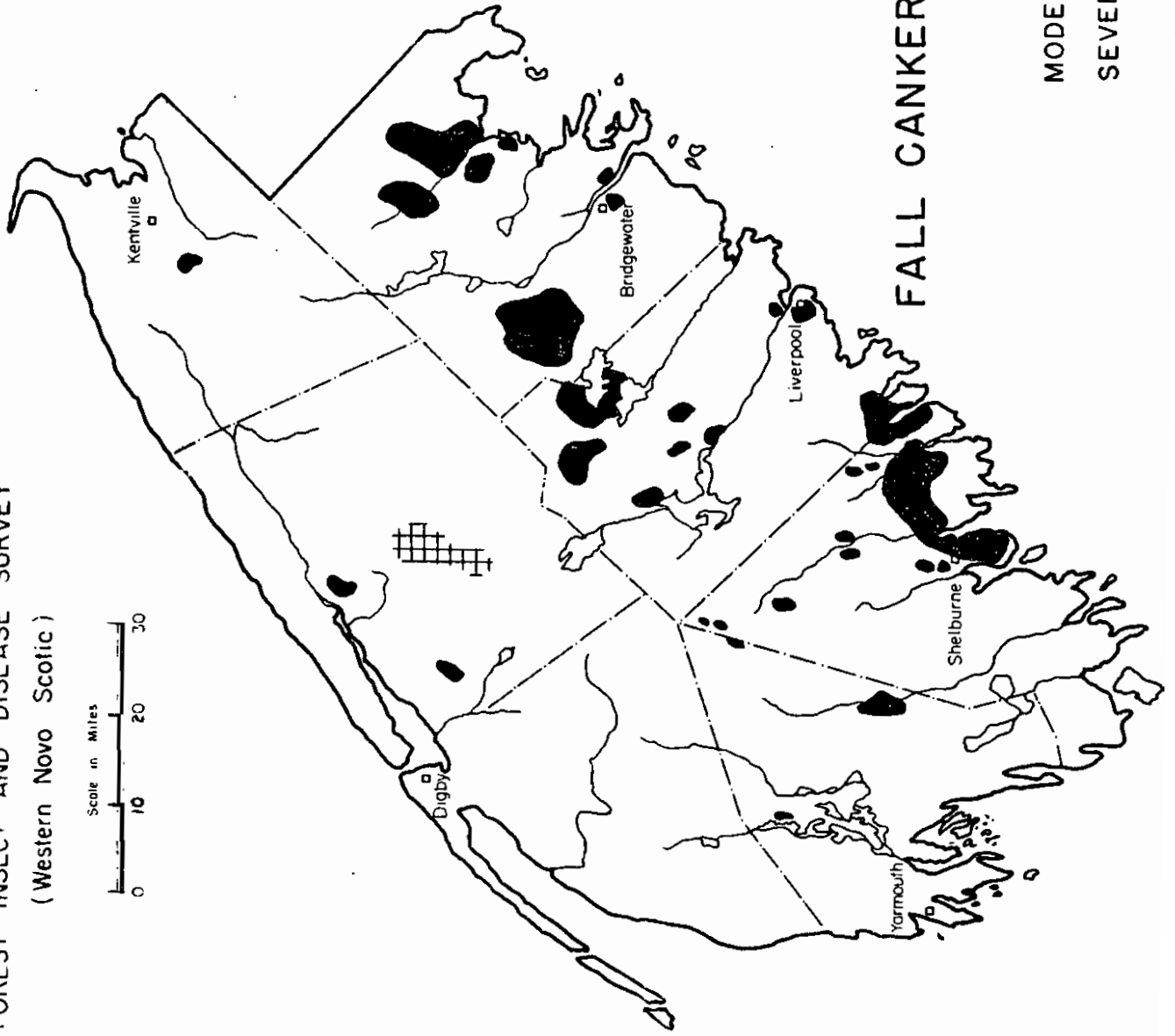
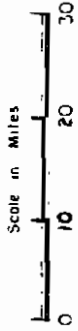


WINTER MOTH INFESTATIONS  
1967





FOREST INSECT AND DISEASE SURVEY  
( Western Novo Scotia )



FALL CANKERWORM INFESTATIONS  
1967



ANNUAL DISTRICT REPORT

EASTERN NOVA SCOTIA

1967

by

L. J. Coady

## 7.0 EASTERN NOVA SCOTIA

(L. J. Coady)

### Introduction

Insects of major concern in eastern Nova Scotia in 1967 were the spruce budworm, birch sawfly, winter moth, and the eastern spruce beetle. Population levels of the spruce budworm increased on white spruce and balsam fir in southwest Inverness County. The birch sawfly infestation increased in extent along the Cabot Trail in northwest Inverness and Victoria counties. The decline in population levels of the winter moth continued in 1967, but numbers were sufficiently high to cause noticeable defoliation in several areas. Populations of the eastern spruce beetle increased noticeably and caused mortality of mature white spruce in stands at Ingonish, Victoria County.

There was no great change in disease conditions in 1967 and no new infections were recorded. Winter drying resulted in loss of needles of balsam fir at several locations in Inverness, Guysborough and Pictou counties. Insect collections by Survey field staff totaled 431 and tree disease samples 130. Provincial forest service co-operators submitted 150 collections, mainly of insects.

### Spruce Budworm, *Choristoneura fumiferana* Clem.

Spruce budworm infestations in 1967 increased in severity and extent in southwest Cape Breton Island but were of minor importance on the northeast mainland. Except for a trace of defoliation of new shoots of white spruce in localized areas at Melford and 4 miles west of Scotsville, Inverness County, noticeable feeding was confined to lowland spruce-fir stands in southwest Inverness County. Damage to new foliage of white spruce occurred over above 100 square miles in a narrow band along Highway #19 from Port Hawkesbury to Inverness town and east from Port Hood and Judique South to Upper Southwest Mabou and Glencoe Mills. Within this outbreak area the intensity of defoliation was variable, usually light to moderate, except at Strathlorne where 70% of the current foliage of white spruce was destroyed over about three square miles. Many of these trees were in a state of decline and failed to produce much new growth in 1967. Consequently they were unable to support high levels of larval populations without showing great loss of foliage. During the 1951 to 1957 outbreak in this area, trees in a similar condition died after one year of moderate and two years of severe attacks. Defoliation was augmented throughout by high numbers of one or both of the budworms, *Zeiraphera ratzeburgiana* and *Zeiraphera* spp. Damage to balsam fir foliage was generally light except between Upper Southwest Mabou and Glencoe Mills where this species was interspersed with white spruce. Here loss of new needles of larger balsam fir and white spruce was 90%.

Contrary to the 1966 egg-mass survey, population levels of the spruce budworm did not increase as expected on the northeast mainland. Although spruce budworm was present on white spruce between Malignant Cove and Cape George, Antigonish County, it was appreciably outnumbered by one or both of the budmoths, responsible for patchy light to moderate damage.

Spruce budworm egg-masses were collected at 28 of 68 locations sampled in 1967, compared with 18 of the 66 locations sampled in 1966 (Section 7, Table 3). On the basis of these counts the outlook for 1968 is a continuation of the infestation on Cape Breton Island with an increase in extent and severity. Moderate to severe defoliation of white spruce is expected at Strathlorne, Judique, Port Hood and Grand Etang, Inverness County. Low budworm numbers are forecast at Ingonish, Victoria County, where no larvae were found in 1967.

A total of 56 larval collections were submitted, representing all counties except Guysborough. Sixteen collections were taken at permanent sampling stations and 40 at random points, 11 of the latter being hand-picked (Section 7, Tables 1 and 2).

Balsam Woolly Aphid, *Adelges piceae* (Ratz.)

The distribution of this insect remained unchanged in eastern Nova Scotia in 1967. For several years twig injury or gout has been the more serious form of injury and stem attacks have been light. Examination of trees on three plots showed a slight reduction in stem attack on two plots and still none on the third. During the past few years, indication of recovery from twig injury has been observed in many areas. Such recovery was noted on each of the plots examined, and ranged from 1.0% at North River and Trafalgar to 3.8% at Gairlock Mountain (Section 7, Table 4).

Larch Sawfly, *Pristiphora erichsonii* (Htg.)

Although this sawfly was widely distributed throughout eastern Nova Scotia, little defoliation was observed. Low populations causing light damage occurred for the first time in 1/2-acre areas at Central West River and Lower Mt. Thom, and between Cole Point and Caribou, and continued in a 1/10-acre area at Seafoam, Pictou County. Outbreaks which occurred in 1966 at Gegogan Brook and near Guysborough completely subsided in 1967.

Spruce Bud Moth, *Zeiraphera ratzeburgiana* Ratz. and other species of *Zeiraphera* on spruce

The distribution and intensity of infestations of these bud moths in 1967 were similar to those reported in 1966. Severe defoliation of current foliage on open-growing white spruce trees occurred

at Aulds Cove, Antigonish County, and at numerous locations on the west coast of Cape Breton Island, between Port Hastings and Southwest Margaree, Inverness County. Light to moderate infestations occurred in white spruce stands between Doctors Brook and Ballantyne Cove, Antigonish County. Elsewhere in the district infested shoots were common but damage negligible.

European Pine Shoot Moth, *Rhyacionia buoliana* Schiff.

Numbers of this shoot moth showed little change from 1966. Light shoot damage to young red pine trees was again found at Blue Mountain, Pictou County, while a trace of shoot damage continued on occasional red pine trees at Dryden Lake and on Scots pine trees at Caribou Harbour and Alma, Pictou County.

European Spruce Sawfly, *Diprion hercyniae* (Htg.)

There was no appreciable change from 1966 in the population level of this sawfly. The largest collection (6.3 larvae per tree sample) was taken near Lynch River, Richmond County (Section 7, Tables 5 and 6).

Larch Casebearer, *Coleophora laricella* Hbn.

The larch casebearer was again low in numbers through eastern Nova Scotia. Defoliation was noticeable only at Big Bras d'Or, Victoria County, and Westville, Pictou County, where moderate browning of a few tamarack trees occurred.

The results of sampling overwintering casebearer showed that numbers were lower at eight sampling stations and higher at five (Section 7, Table 7).

Spruce Bud Midge, *Rhabdophaga swainei* Felt.

This insect was present in most young white spruce stands examined but damage was negligible. Counts of infested buds per 100 square feet of foliage were made on three white spruce trees at each of three locations. The results of these counts follow:

<u>Location</u>	<u>No. sq. ft. foliage examined</u>	<u>No. galled buds per 100 sq. ft. foliage</u>
<u>Pictou County</u>		
Blue Mountain	5.2	7.7
Mount Thom	12.7	5.5
Central West River	5.4	3.7

Balsam Gall Midge, *Dasineura balsamicola* (Lint.)

This insect was common in many parts of eastern Nova Scotia but populations generally were much lower than in 1966. Moderate infestations occurred on occasional young balsam fir trees at Pleasant Valley, Pictou County, River Deny's Mountain, Inverness County, and Marie Joseph, Guysborough County. Elsewhere infested needles were often common but damage very light.

Winter Moth, *Operophtera brumata* L. and  
Fall Cankerworm, *Alsophila pometaria* Harr.

The decline in population levels of the winter moth in eastern Nova Scotia, noted in 1966, continued during 1967. This decline was reflected by the number of specimens submitted during distribution sampling. Forty-seven collections containing 536 specimens were taken, compared with 64 collections and 967 specimens in 1966.

The greatest decrease in population levels of the winter moth was evident in the town of Pictou where defoliation of apple averaged 20% and on occasional trees was 70%. In 1966 defoliation of this tree species averaged 70%. Defoliation of white elm, ash, red oak, linden and cherry trees averaged 10% and occasionally reached 30%. The fall cankerworm was present in small numbers.

At Boylston, Guysborough County, winter moth infestations declined slightly from 1966. Defoliation of apple, linden and ash averaged 10%, compared with light to moderate in 1966.

For the second year the winter moth declined in numbers in a 2-square-mile area between Central West River and Durham, Pictou County. Larvae were most abundant at Durham, where defoliation of a few apple trees was 40%, compared with 80% in 1966. Elsewhere in the outbreak area defoliation of a variety of hosts including elm, white birch, red oak, red maple, willow and cherry averaged 5%. Only a few fall cankerworm were found (Section 7, Table 8).

The winter moth and the fall cankerworm have, for the past few years, been associated in the area between Stellarton and New Glasgow, Pictou County. The winter moth predominated from 1963 to 1966 and was chiefly responsible for the moderate to severe defoliation on apple, white elm, and cherry during this period. In 1967, however, fall cankerworm predominated and was responsible for most of the defoliation. Damage was most severe on apple and willow, particularly in the Stellarton area, where occasional trees lost 80% of their foliage but averaged 30%. Other hosts, including white elm, red oak, and cherry were lightly defoliated.

At Antigonish numbers of winter moth declined for the third year and this insect was less prevalent than the fall cankerworm, which was responsible for moderate defoliation of a few elm trees near the eastern town limits. A trace of defoliation, caused by both species, occurred on miscellaneous hardwood species throughout the remainder of the town.

The fall cankerworm caused 70% defoliation of a few sugar maple and cherry trees in a localized area at Sydney, Cape Breton County.

At Lower South River, Antigonish County, moderate defoliation attributed to the winter moth occurred on a few apple trees. The fall cankerworm was present in small numbers.

The winter moth infestation of West River, Antigonish County, subsided in 1967.

Birch Leaf Miner, Fenusa pusilla (Lep.)

Browning of wire birch foliage was light to moderate throughout Antigonish and Pictou counties except for some stands in the New Glasgow and Stellarton areas, where defoliation reached 90%. Elsewhere in the district attacks were light.

Birch Casebearer, Coleophora fuscedinella Zell.

As in 1966, infestations of this casebearer were widespread on Cape Breton Island, and moderate to severe leaf browning was found in most areas where young white birch occurred. Population levels were low on the eastern mainland and no browning was observed.

Forest Tent Caterpillar, Malacosoma disstria Hbn.

The forest tent caterpillar remained scarce. A few larvae were collected from apple at Antigonish, and from ash at New Glasgow.

Birch Skeletonizer, Bucculatrix canadensisella Cham.

Browning of birch foliage by this insect was less severe than in 1966. Localized severe infestations, mostly of young white birch trees, occurred at Tracadie Lake, Antigonish County, and at Grand Etang and four miles north of Inverness Town, Inverness County. Light leaf skeletonizing occurred along Highway #7 between Antigonish and South Lochaber and along Highway #4 between Antigonish and Monastery, Antigonish County, and between Greignish and Grand Etang, Inverness County.

Satin Moth, *Stilpnotia salicis* L.

Severe defoliation of ornamental silver poplar trees occurred between St. Peters and Cannes, Richmond County, and at Aspen, Guysborough County. Small but moderate outbreaks occurred at Port Hastings and Mabou, Inverness County.

A Leaf Roller on Maple, *Cenopsis pettitana* Rob.

This insect was again found at Northeast Margaree, Inverness County, where light leaf rolling occurred on 35 ornamental sugar maple trees.

Ugly-nest Caterpillar, *Archips cerasivoranus* Fitch

Webs of this insect were common on roadside cherry bushes throughout Pictou, Antigonish, and Inverness counties. The results of nest counts per 1000 square feet made at five locations follow:

Location	No. of nests per 1000 sq. ft.	
	1966	1967
<u>Antigonish County</u>		
Just east of Antigonish town	*	20
Monastery	*	*
<u>Inverness County</u>		
Margaree Valley	0	10
Creignish	53	52
<u>Pictou County</u>		
1 mi. Southwest of Pictou	**	*
Egerton	26	20

\* Too numerous to count, nests merged into continuous web.  
\*\* No count made.

Fall Webworm, *Hyphantria cunea* Drury

Population levels of the fall webworm increased for the second consecutive year. Increases in the number of tents, as determined by roadside counts, were noted in areas of Antigonish, Guysborough and Inverness counties. Tents were most abundant at Seal Island, Victoria County, where a count carried out for the first time, showed 18.4 per roadside mile. The results of roadside nest census are shown in Section 7, Table 9.



Birch Sawfly, *Arge pectoralis* Leach

The birch sawfly infestation in northwest Inverness County increased from 1966 in area and intensity. Severe defoliation of young white birch trees occurred over five to six thousand acres (three thousand acres in 1966) in the MacKenzie Mountain, Pleasant Bay, and Grand Anse River Valley and on occasional trees along the Cabot Trail between Aspy River and Cape North, Victoria County.

Eastern Spruce Beetle, *Dendroctonus obesus* Mann.

Dead and dying white spruce, many infested with this beetle, were common between Ingonish Beach and Warren Lake, Victoria County. At Black Brook, seven miles north of Warren Lake, 43% of the white spruce and 25% of the black spruce trees in a 1/10-acre sample area were currently infested. Mortality at the time of examination was limited to a few trees adjacent to the sample area.

Additional Species Collected

The number of common insects collected from sampling stations is listed in Section 7, Table 10.

The names of all insect species collected in the area in 1967 are included in Table 2 of Section 1.

Tree Diseases

Frost Injury

Below freezing temperatures in late June caused light damage to the new shoots of white spruce trees in a 3-acre area at Kenzieville, Pictou County, and of a few balsam fir near Cameron Settlement, Guysborough County.

Winter Drying of Conifers

Browning of balsam fir foliage occurred at widely separated points in eastern Nova Scotia. It was most conspicuous in the Mabou Highlands, Inverness County, and along Highway #7 between Melrose and a point 2.3 miles southeast. In Guysborough County, scattered trees or groups of trees showed severe discoloration. Browning was sporadic and ranged from a few branches to half the foliage on trees along roadsides and on fringes of recent cut-over areas in the plateau area of Victoria and Inverness counties. Light damage occurred to approximately 25% of the balsam fir trees along roadsides from Sunnybrae, Pictou County, south to the county line.

Beech Bark Disease, *Cryptococcus fagi* (Baer.) and *Nectria coccinea* var. *faginata* Lohm., Wats. & Ayers

No change from 1966 was noted in the intensity of scale attacks in eastern Nova Scotia. The presence of the fungus was confirmed at scattered points in Victoria, Inverness, Cape Breton, Guysborough and Pictou counties.

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

Counts were made in aspen stands to determine the impact of cankers caused by this fungus. The results were as follows:

Location	Tree sp.	No. examined	No. of trees		
			Not cankered	Living but cankered	Dead cankered
<u>Antigonish Co.</u>					
1 mi. S.W. of Tracadie	tA	100	92	3	5
3 mi. N.E. of Malignant Cove	tA	100	93	17	10
<u>Pictou Co.</u>					
2 mi. N.W. of Thorburn	tA	100	96	2	2
	ltA	100	100	0	0

Anthracnose of Hardwood

Gloeosporium apocryptum Ell. & Ev. caused leaf browning on a few sugar maple trees in the Rigwash Valley, Inverness County, and on about 10% of the red maple trees between Ingonish Harbour and Ingonish Ferry, Victoria County.

Gloeosporium fagicola Pass. Foliage browning was moderate on 10% of the beech trees between Ingonish Harbour and Ingonish Ferry, Victoria County.

Leaf Blotch of Horse-chestnut, Guignardia aesculi (Peck) V.B. Stewart

Leaf blotch was severe on horse-chestnut shade trees at Westville, Pictou County and Mabou, Inverness County. Moderate foliage browning occurred at Baddeck and Port Hastings.

Leaf and Twig Blight of Poplar, Pollaccia radiosa (Lib.)  
Bald & Cif. and Pollaccia elegans Serv.

Damage resulting from infections of this disease was common but of light intensity on trembling aspen and largetooth aspen throughout eastern Nova Scotia. At Lower South River, Antigonish County 10 to 20% of the shoots on two balsam poplar trees were blackened.

Willow Blight, Pollaccia saliciperda (All. and Tub.) Arx.  
and Physalospora miyabeana Fukushi

Bent and blackened shoots caused by infections of these fungi were less noticeable than in 1966. Infections of moderate intensity occurred on the leaves of one tree at Mabou, Inverness County, and light browning occurred at Havre Boucher and Antigonish, Antigonish County.

Cherry Blight

Severe browning of pin cherry foliage occurred between Caribou Ferry and Cole Point, and from Sutherland's River to Merigomish, Pictou County, and at Heatherton, Antigonish County. Elsewhere in the district infections were common but light.

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

Cankers caused by this fungus occurred in most young, natural stands of white pine throughout eastern Nova Scotia. The highest level of infection and mortality occurred at Lyons Brook, Pictou County, where in a 1/2-acre immature white pine stand 15% of the stems were cankered and 3% were dead.

Infections on the alternate host, Ribes spp., were observed at Lyons Brook, Pictou County, near Caledonia and Trafalgar, Guysborough County, and at Barachois Brook, Victoria County.

#### Needle Rusts

Chrysomyxa ledi dBy infections were light on white spruce at several locations in Victoria, Inverness, Cape Breton and Antigonish counties and on 15 ornamental blue spruce for the fourth year at Guysborough. Infections were of moderate intensity on red spruce in a 1-acre area near Trafalgar, Guysborough County.

Chrysomyxa ledicola Lagh. caused light to moderate needle discoloration on 60% of the white spruce and black spruce regeneration between Aspen and Goshen, Guysborough County and was common but light between Northeast Margaree and Lake O'Law, Inverness County.

Pucciniastrum epilobii Otth. and P. goeppertianum infections were common but of light intensity on balsam fir between Blue Mountain and Garden of Eden, and over a 2-acre area at Moose River, Pictou County.

#### Red Flag of Balsam Fir, Fusicoccum abietinum (Hartig) Prill. and Delacr.

Occasional dead branches or branch tips, with red foliage, killed by cankers resulting from infection by this fungus, occurred on balsam fir trees near Melford, Inverness County, at Trafalgar, Guysborough County, and from Sunnybrae, Pictou County southeast to the County line.

#### Other Noteworthy Diseases

<u>Organism</u>	<u>Host</u>	<u>Location</u>	<u>Remarks</u>
<u>Ciborinia whetzellii</u> (Seav.) Seav.	Aspen, trembling	Bras d'Or, C.B. County, Thorburn, Pictou County	Light foliage browning on small groups of trees.
<u>Gloeosporium aridum</u> Ell. & Holw.	Ash, white	Pictou and Antigonish counties	Moderate leaf discoloration on individual trees at Lyons Brook and Durham. Very light browning near Crystal Cliffs.
<u>Lophodermium</u> spp.	Spruce, white	Pictou County	Infected needles observed in moderate numbers on individual trees at Brookland and Saltsprings.

<u>Organism</u>	<u>Host</u>	<u>Location</u>	<u>Remarks</u>
<u>Puccinia sporganioides</u> Ell. & Barth.	Ash, white	Lanark, Antigonish County and Durham, Pictou County	One tree infected at each location. Leaf damage very light.
<u>White Pine Needle</u> <u>Blight</u>	Pine, white	Trafalgar and Jordanville, Guysborough County	Half the new needles discoloured on one tree at Trafalgar and less than 25% on two trees at Jordanville

Other Tree Diseases Collected

All tree diseases collected in the district in 1967 are listed in Table 3 of Section 1.

Section 7, Table 1

Spruce Budworm Larval Sampling Records at Permanent  
Sampling Stations in Eastern Nova Scotia in 1967\*

Location	Tree sp.	No. specimens	Av. per tree sample	Deviation from 1966
<u>Antigonish County</u>				
Malignant Cove	wS	15	5.0	-11.3
Monastery	wS	1	0.3	-2.3
Salt Springs	bF	1	0.3	-
<u>Cape Breton County</u>				
George River Sta.	wS	1	0.3	-0.3
<u>Inverness County</u>				
Port Hastings	wS	49	16.3	+12.7
Creignish	wS	25	8.3	-1.0
Ainslie Glen	wS	5	1.6	-
Port Hood	wS	212	70.6	+55.6
Scotsville	wS	247	82.3	+71.6
Strathlorne	wS	386	128.6	+92.6
Margaree Forks	wS	23	7.6	-7.4
Grand Etang	wS	1	0.3	-2.0
Whycocomagh **	bF	2	0.6	-
<u>Pictou County</u>				
Churchville **	wS	19	6.3	-
Scotsburn **	wS	3	1.0	-
<u>Victoria County</u>				
Kelly Mountain	wS	3	1.0	+1.0

\* In addition to these stations, 78 trees at 26 additional stations were sampled, but produced negative results. Each station consisted of three trees and was sampled once.

\*\* Special Co-operators' sampling stations

- Area not sampled in 1966

Section 7, Table 2

Spruce Budworm Larvae Collected by Counties in  
Eastern Nova Scotia by Random Sampling in 1967

County	Tree sp.	No. of colls.	Total trees	No. specimens
Antigonish	wS	12	15	356
Inverness	wS	9	9	263
	bF	4	5	83
Pictou	wS	1	3	2
Victoria	wS	3	3	8

Section 7, Table 3

Spruce Budworm Egg-Mass Counts per 100 Square Feet  
of White Spruce and Balsam Fir Foliage  
in Eastern Nova Scotia in 1967

Location	Tree sp.	No. sq.ft. foliage examined 1967	Sound egg-masses per 100 sq.ft.	
			1966	1967
<u>Antigonish County</u>				
Malignant Cove	wS	5.3	63	0
Aulds Cove	wS	3.4	0	0
Morristown	wS	4.9	0	0
Ballantyne Cove	wS	6.0	42	56
Cape George	wS	3.8	56	0
3 mi. W. of Cape George	wS	4.2	11	30
Doctors Brook	wS	4.7	102	0
<u>Inverness County</u>				
Glencoe Mills	bF	13.0	*	85
5.2 mi. E. of Judique	bF	12.8	*	12
2.3 mi. N. of Frizzleton	bF	7.1	0	0
Northeast Margaree	wS	5.1	0	0
Margaree Forks	wS	4.8	23	15
Southwest Margaree	wS	3.8	0	115
Scotsville	wS	5.2	0	39
Strathlorne	wS	2.3	91	833
Port Hastings	wS	7.7	16	209
Creignish	wS	4.1	0	49
Judique	wS	3.2	0	372
Port Hood	wS	1.6	0	494
Whycocomagh	wS	4.2	20	0
Forest Glen	bF	6.7	0	0
Grand Etang	wS	1.5	0	333
Cheticamp River	wS	3.9	34	76
Presquile	wS	3.3	0	30
French Mountain	bF	5.4	0	0
MacKenzie Mountain	bF	9.0	0	84
McGregor Brook	bF	7.2	7	62
4 mi. E. of Strath- lorne Sta.	bF	7.6	20	27
4 mi. N. of Inverness	wS	5.5	0	68
Margaree Harbour	wS	3.4	0	34
Milford	wS	3.3	*	0
2.5 mi. S. of St.Patrick Channel	wS	9.0	*	162
5 mi. N.E. of Frizzleton	bF	10.0	0	0
2 mi. W. of Melford	bF	11.8	8	0
8.1 mi. E. of Judique	bF	6.2	7	14
2 mi. W. of Melford	wS	5.6	0	18



Section 7, Table 3 (cont'd)

Location	Tree sp.	No. sq.ft. foliage examined 1967	Sound egg-masses per 100 sq.ft.	
			1966	1967
<u>Pictou County</u>				
Lismore	wS	6.0	10	0
<u>Victoria County</u>				
Lobster Ponds	bF	6.4	*	0
Middle River	wS	3.5	0	31
Gairlock Mountain	bF	7.1	0	0
Crowdis Mountain	bF	8.0	0	0
New Campbellton	wS	4.7	0	0
Clyburn Brook	wS	4.1	0	0
Keltic Lodge	wS	4.6	0	0
Ingonish Beach	wS	7.3	0	180
Ingonish Centre	wS	8.1	0	216
Warren Lake	wS	5.4	0	0
Mary Ann Falls	wS	4.3	0	0
	bF	4.6	0	0
South Ingonish	wS	4.3	18	0
North Aspy	wS	2.8	0	0
Cape North	wS	3.0	0	0
0.8 mi. S. of Bay				
St. Lawrence	wS	4.1	0	0
4 mi. N. of Warren Brook	wS	3.3	0	0
Wreck Cove	wS	4.1	0	0
Little River	wS	4.4	0	0
Barachois River	wS	3.9	0	0
Hunters Mountain	wS	5.8	18	20
6 mi. N.W. of North	wS	7.5	0	0
River Bridge				
4 mi. N. of main highway on east side of North River	bF	8.3	0	0
2 mi. E. of North River	bF	3.0	0	0
0.75 mi. E. of Barachois Bk.	bF	6.7	0	0
15 mi. N.W. of North River Bridge	bF	4.9	16	0
12 mi. N.W. of North River Bridge	bF	4.7	0	0

Section 7, Table 3 (cont'd)

Location	Tree sp.	No. sq. ft. foliage examined 1967	Sound egg-masses per 100 sq.ft.	
			1966	1967
<u>Victoria County (cont'd)</u>				
North River	bF	5.9	0	28
3 mi. N. of Middle Branch North River	bF	5.5	0	0
0.6 mi. N. of Middle Branch North River	bF	6.4	0	0
10 mi. E. of Frizzleton	bF	7.2	0	0

\* Area not sampled.

Section 7, Table 4

Condition of Trees on Balsam Woolly Aphid Plots  
in Eastern Nova Scotia in 1966 and 1967

Location	Year	No. trees	Per cent trees in class*										Dead other causes
			1	2a	2b	2c	3a	3b	4a	4b	4c	5	
<u>Pictou County</u>													
Trafalgar	1966	100	32.0	12.0	0	0	0	7.0	16.0	11.0	7.0	3.0	12.0
	1967	100	37.0	7.0	0	0	0	7.0	18.0	11.0	4.0	3.0	13.0
<u>Victoria County</u>													
Gairlock Mtn.	1966	107	13.1	0	0	0	0	0	13.1	18.7	14.0	20.6	20.5
	1967	107	16.8	0	0	0	0	0	14.0	16.8	10.3	21.5	20.6
North River	1966	107	61.7	18.7	0	0	0	0	1.9	0.9	0	0	16.8
	1967	107	63.6	16.8	0	0	0	0	0.9	0.9	0	0	17.8

\* See Appendix A, Section 1, for explanation of classes

Section 7, Table 5

Numbers of European Spruce Sawfly Collected from Permanent  
Sampling Stations in Eastern Nova Scotia in 1967

Location	No. of sawfly larvae*	
	June 26-July 20 1st sample	Sept. 6-15 2nd sample
<u>Antigonish County</u>		
Glen Alpine	1	0
Antigonish	0	3
Monastery	0	4
Malignant Cove	0	1
<u>Cape Breton County</u>		
Beaver Cove	2	8
2 mi. NW of Albert Bridge	6	0
East Bay	1	4
George River Sta.	0	2
<u>Guysborough County</u>		
Aspen	1	2
Trafalgar	1	7
<u>Inverness County</u>		
Port Hastings	2	0
Ainslie Glen	1	12
Port Hood	3	0
Strathlorne	1	3
Margaree Forks	3	11
Grand Etang	1	0
Scotsville	0	2
<u>Pictou County</u>		
Scotsburn	2	1
Pleasant Valley (rS)	4	3
Pleasant Valley	1	0
New Lairg	1	2
Moose River	5	1
French River	4	5
Brookland	0	3
<u>Richmond County</u>		
Grand River	2	0
Lynch River	3	8

Section 7, Table 5 (cont'd)

Location	No. of sawfly larvae*	
	June 26-July 20 1st sample	Sept. 6-15 2nd sample
<u>Victoria County</u>		
Ingonish Centre	1	0
Little River	1	1
Kelly Mountain	1	2

\* Three white spruce trees sampled during each period except red spruce where indicated.

Section 7, Table 6

Numbers of European Spruce Sawfly Collected at Co-operators'  
Sampling Stations in Eastern Nova Scotia in 1967

Location	Tree sp.	No. trees	No. of sawfly larvae		
			July	August	September
<u>Guysborough County</u>					
2 mi. NE of Boylston	wS	3	1		
1 mi. NE of Boylston	wS	3	2		
Waternish	rS	3		2	
Waternish	wS	3	1		
7 mi. W. of Glenelg	wS	3		2	
1 mi. E. of Boylston	wS	3	3		
<u>Inverness County</u>					
Whycocomagh	wS	3	2		
<u>Pictou County</u>					
McLellans Mtn.	wS	3	6		
1 mi. E. of Scotsburn	wS	3	4		
<u>Richmond County</u>					
Cannes	wS	3	1		
Sporting Mtn.	wS	3		8	
Lynch River Road	wS	6		19	6

Section 7, Table 7

Larch Casebearer Numbers and Defoliation Estimates at Sampling Stations in Eastern Nova Scotia in 1966 and 1967

Location	Casebearer/100 fascicles		Defoliation*	
	1966	1967	1966	1967
<u>Antigonish County</u>				
Antigonish	1.2	1.4	0	0
Heatherton	0.6	0.7	0	0
<u>Cape Breton County</u>				
East Bay	6.4	4.8	T	0
<u>Guysborough County</u>				
Guysborough	1.6	0.6	0	0
Gegogan	0.3	0.0	0	0
<u>Inverness County</u>				
Northeast Margaree	2.5	0.0	0	0
Port Hawkesbury	2.4	0.3	0	0
Judique	1.7	5.6	0	0
<u>Pictou County</u>				
Mt. Thom	0.3	1.8	0	0
Eden Lake	4.3	7.0	0	0
<u>Richmond County</u>				
Barra Head	98.0	8.1	T	T
<u>Victoria County</u>				
Big Bras d'or	33.3	1.1	L	L
Baddeck	0.6	1.9	0	0

\* T = Trace  
L = Light

Section 7, Table 8

Proportions of Winter Moth and Fall Cankerworm Larvae Present  
in Random Hand-picked Samples in Eastern Nova Scotia in 1967

Location	Host	Percentage of species present		Defoliation*
		Winter moth	Fall cankerworm	
<u>Antigonish</u>				
Antigonish	wE	5.0	95.0	L
Lower South River	Ap	96.1	3.9	M
	cCh	63.1	36.9	L
1 mi. NE of Antigonish	cCh	100	0.0	L
	Ap	94.7	5.3	L
<u>Cape Breton</u>				
Sydney	cCh,			
	sM, wB	0.0	100	L
	Ap	0.0	100	S
<u>Guysborough</u>				
Boylston	Ap	100	0.0	L
	wB	93.7	6.3	L
<u>Inverness</u>				
Mabou	Ap	0.0	100	O
<u>Pictou</u>				
New Glasgow	wE	11.5	88.5	L
	Ap	42.4	57.6	L
	rO	47.9	52.1	L
Stellarton	wE	17.2	82.8	L
	Ap	95.4	4.6	M
	cCh	16.7	83.3	L
Pictou	rO	16.7	83.3	L
	wE	80.0	20.0	L
	Ap	96.6	3.4	M
Durham	cCh	72.7	27.3	L
	Ap	90.0	10.0	T
	cCh	100	0.0	

\* T - Trace, up to 5%  
L - Light, 10 - 20%  
M - Moderate, 30 - 60%  
S - Severe, 70 - 100%



Section 7, Table 9

Fall Webworm Nest Census in Eastern Nova Scotia  
1964 to 1967 inclusive

Location	No. miles	Average number of nests per mile			
		1964	1965	1966	1967
<u>Antigonish County</u>					
Havre Boucher Bridge - Monastery	8.2	0.0	0.0	0.5	0.5
Afton - Monastery	6.5	0.0	0.0	0.6	0.9
Afton - Lower South River	10.3	*	*	0.2	0.2
<u>Cape Breton County</u>					
Little Bras d'or	4.5	0.4	0.8	0.8	0.8
<u>Guysborough County</u>					
Milford Haven Bridge - Guysborough Village	2.5	8.0	0.8	0.0	0.0
Stormont - Country Hbr. Cross Roads	8.5	0.7	0.0	0.2	0.4
Goshen - Country Hbr. Cross Roads	9.6	*	*	*	2.5
<u>Inverness County</u>					
MacKenzie River - Top of MacKenzie Mtn.	2.8	0.0	0.0	0.7	2.1
Margaree Forks - Northeast Margaree	5.6	0.0	0.0	0.0	0.0
Margaree Forks - Cheticamp	23.4	0.0	0.0	0.6	2.3
<u>Pictou County</u>					
Tony River - River John	10.0	0.0	0.0	0.0	0.0
Egerton R.R. overpass - Pictou Antigonish Co. line	14.7	*	*	*	3.8
<u>Victoria County</u>					
North River Bridge - St. Ann	11.5	*	*	0.5	0.0
Seal Island Bridge - point 1.4 miles northeast	1.4	*	*	*	81.4

\* No count made

Section 7, Table 10

Numbers of Common Insects Collected from Permanent  
Sampling Stations in Eastern Nova Scotia in 1967

Species	No. and type of stations producing larvae	Av. no. larvae per tree sample	Deviation from 1966
Acleris variana Fern.	17 wS	0.7	-0.2
	1 bF	0.3	0.0
Amorbia humerosana Clem.	2 wS	0.3	0.0
	1 rS	0.3	+0.3
Archippus packardianus Fern.	2 wS	0.3	-0.4
Caripeta divisata Wlk.	18 wS	0.7	+0.2
	1 rS	0.3	0.0
Choristoneura fumiferana Clem.	12 wS	26.9	+20.9
Diprion hercyniae (Htg.)	29 wS	1.0	-1.4
	1 rS	1.1	+0.1
Epirrita autumnata henshawii Swett.	1 bF	0.6	+0.3
Eupithecia filmata Pears.	4 wS	0.5	+0.1
Eupithecia transcanadata McKay	11 wS	0.5	+0.5
	1 rS	0.3	+0.3
Hydriomena divisaria Wlk.	18 wS	0.8	+0.2
Lambdina fiscellaria fiscellaria Guen.	7 wS	0.9	+0.9
	1 rS	0.3	+0.3
	1 eH	1.6	+1.6
Pikonema alaskensis (Roh.)	12 wS	0.5	+0.1
Pikonema dimmockii (Cress.)	7 wS	0.6	-0.3
Protoboarmia porcelaria	7 wS	0.5	+0.1
indicataria Wlk.	1 rS	0.3	+0.3
Semiothisa dispuncta complex	17 wS	1.2	-0.5
	1 rS	1.0	+1.0