



# JACK PINE

In Southeastern Manitoba

A COMPENDIUM OF RESEARCH 1967-1970  
INSECTS, MITES, AND PATHOGENS COLLECTED  
BY THE FOREST INSECT AND DISEASE SURVEY  
BY H. R. WONG, G. N. STILL, & W. G. H. IVES



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OF RESEARCH, 1967-1970

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by

H. R. Wong, G. N. Still, and W. G. H. Ives

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FOREWORD

In 1967, research on problems related to the establishment and management of jack pine (Pinus divaricata (Ait.) Dumont = P. banksiana Lamb.) was intensified at the Forest Research Laboratory, Winnipeg, Manitoba, with the formation of an interdisciplinary Jack Pine Problem Area group. The group's attention was first turned to southeastern Manitoba where several new field studies were added to those already under way.

In 1970, the Jack Pine Problem Area group was dissolved as a consequence of a government decision to close the Winnipeg Lab. Some of the group's studies were terminated and others have since been brought to conclusion.

This series of Information Reports provides a "co-ordinated" means of reporting the results of Jack Pine Problem Area studies consistent with the group's aim: "To direct co-ordinated research to those problems which pertain to (1) the management of jack pine sites and (2) the establishment, management and use of jack pine".

We dedicate these reports to Mr. C. C. Thomson, former Director of the Winnipeg Forestry Laboratory, who promoted the interdisciplinary research concept, encouraged group participation and individual criticism, and generally provided the milieu which allowed researchers of varied discipline and background to pool their talents and work together on forest research problems in Manitoba and Saskatchewan.

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INSECTS, MITES, AND PATHOGENS COLLECTED BY THE  
FOREST INSECT AND DISEASE SURVEY

by

H. R. Wong\*, G. N. Still\*\*, and W. G. H. Ives\*

ABSTRACT

The report lists the insects, mites and diseases collected by the Forest Insect and Disease Survey from jack pine (Pinus divaricata (Ait.) Dumont) in southeastern Manitoba. These are tabulated according to class, order and family, species, common name, and prevalence and type of damage. The insects and mites are grouped into those causing moderate to severe damage, potentially capable of causing moderate to severe damage, and those causing negligible to light damage. Predacious insects found on jack pine are also listed.

INTRODUCTION

Insect pest species that occur in outbreak numbers exert a great influence on the quality of a forest stand, especially if the outbreak occurs at a critical time in the stand's development. This

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report lists the insects, mites and diseases collected by the Forest Insect and Disease Survey from jack pine (Pinus divaricata (Ait.) Dumont) in southeastern Manitoba. Some of the insect species listed probably occur on hosts, which they normally do not attack, but they are listed to complete the picture of the insects found on this host.

Most of the insects were collected by dislodging them from the foliage and collecting them from a sheet laid beneath. Diseases, mites, and some insects were hand-picked. The specimens collected were shipped to the laboratory with an enclosure slip, on which was recorded date, collector, location, and other pertinent information. In the laboratory the specimens were identified and the life stages studied by rearing or culturing.

The species collected are tabulated to class, order and family, species, common name, and prevalence and type of damage. The average number of collections for each species over the last twenty years was used to derive the prevalence of that species. Species averaging between <1 to 3 collections were considered rare, those between 3 to 5 occasional, and over 5 are indicated as common. In the case of gregarious insects and mites and pathogens, personal observations were used to derive the prevalence. The insects and mites are grouped into those causing moderate to severe damage, potentially capable of causing moderate to severe damage, and those causing negligible to light damage. Predacious insects found on jack pine are also listed. Because of the limited number of pathogens collected they are not grouped into the above categories and are just listed.

The importance of each species in southeastern Manitoba can usually be derived by their prevalence. Most of those that are common have been known to cause some serious damage in the past, and those listed as occasional have caused generally light to moderate damage. Most of the rare insects have not been known to cause appreciable damage in this area or elsewhere.

Additional information on ants, aphids, spiders and predators of aphids on jack pine in southeastern Manitoba is contained in a paper by Bradley and Hinks (Can. Ent. 100:40-50, 1968).

INSECTS CAUSING MODERATE TO SEVERE DAMAGE

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
INSECTA				
Homoptera Coccidae	<u>Toumeyella numismaticum</u> Pettit and McDaniel	pine tortoise scale	common	sapsucking
Commonly found in young stands, the insect has caused widespread infestations in the southern part of the Sandilands Provincial Forest from 1937 to 1939. Small patches of moderate to severe infestations have been periodically reported since then, but damage has not been as extensive in recent years.				
Lepidoptera Tortricidae	<u>Choristoneura pinus pinus</u> Freeman	jack pine budworm	common	solitary defoliator
This insect is probably the greatest threat to jack pine in the area, because of the type of injury and frequency of attack. Since records have been available there have been five recorded outbreaks in the Sandilands Provincial Forest: 1935 to 1940; 1942 to 1950; 1955 to 1958; 1964 to 1967; and 1970 to present. These outbreaks, causing top-killing and some mortality, have necessitated considerable salvage cutting. The effects of prolonged defoliation are particularly devastating if the outbreak occurs during a period of dry years.				
	<u>Eucosma gloriola</u> Heinrich	eastern pineshoot borer	common	shoot borer
Populations of eastern pineshoot moth increased in southeastern Manitoba in 1962, seven years after a wildfire destroyed 12,000 acres of jack pine. The insect attacks the current year's growth of the leaders and laterals, and seems to prefer trees of the intermediate height class, causing light to moderate damage in some areas.				



Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
	<u>Petrova albicapitana</u> Busck	northern pitch twig moth	common	nodule maker feeding on bark and wood of lateral shoots and leaders
	Common throughout the area with moderate variations in annual numbers. Trees between one and five feet in height are most susceptible to attack. Some moderate damage to individual trees have been observed in the Sandilands Provincial Forest.			
Coleoptera Curculionidae	<u>Pissodes strobi</u> Peck	white pine weevil	common	shoot borer
	The white pine weevil infests and destroys jack pine leaders. Infestations of moderate intensity have been observed in young stands and plantations in 1949, 1953-54, 1956, 1958, 1960 and 1966 at scattered locations in the Sandilands Provincial Forest.			

INSECTS POTENTIALLY CAPABLE OF CAUSING MODERATE  
TO SEVERE DAMAGE

<u>Class, Order and Family</u>	<u>Species</u>	<u>Common Name</u>	<u>Prevalence</u>	<u>Type of Damage</u>
INSECTA				
Homoptera Cercopidae	<u>Aphrophora parallela</u> Say	pine spittlebug	rare	sapsucking
	<u>Aphrophora saratogensis</u> Fitch	Saratoga spittlebug	rare	sapsucking
Lepidoptera Pyralidae	<u>Dioryctria zimmermani</u> Grote	Zimmerman pine moth	rare	shoot borer
	<u>Tetralopha robustella</u> Zeller	pine webworm	occasional	web-making defoliator
Tortricidae	<u>Argyrotaenia tabulana</u> Freeman	tube moth	rare	feeds within webbed needles
	<u>Rhyacionia frustrana</u> Comstock	Nantucket pine-tip moth	rare	shoot borer
Coleoptera Cerambycidae	<u>Monochamus scutellatus</u> Say	white spotted sawyer	occasional	wood borer
Curculionidae	<u>Pissodes approximatus</u> Hopkins	northern pine weevil	rare	wood borer
	<u>Pissodes terminalis</u> Hopping	weevil	rare	shoot borer
Scolytidae	<u>Ips pini</u> Say	pine engraver	occasional	inner bark borer
Hymenoptera Diprionidae	<u>Neodiprion pratti</u> <u>banksianae</u> Rohwer	jack pine sawfly	rare	colonial defoliator
	<u>Neodiprion nanulus</u> <u>nanulus</u> Schedl	red pine sawfly	occasional	colonial defoliator
	<u>Neodiprion swainei</u> Middleton	Swain jack pine sawfly	rare	colonial defoliator

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
	<u>Neodiprion virginianus</u> complex	sawfly	occasional	colonial defoliator
Diptera Cecidomyiidae	<u>Cecidomyia reeksi</u> Vockeroth	resin midge	rare	cambium of current shoots

INSECTS AND MITES CAUSING NEGLIGIBLE  
TO LIGHT DAMAGE

<u>Class, Order and Family</u>	<u>Species</u>	<u>Common Name</u>	<u>Prevalence</u>	<u>Type of Damage</u>
ARACHNIDA				
Acarina Tetranychidae	<u>Oligonychus ununguis</u> Jacobi	spruce spider mite	rare	sapsucking
INSECTA				
Hemiptera Scutelleridae	<u>Homaemus aenifrons</u> Say	shield-backed bug	rare	sapsucking
Pentatomidae	<u>Chlorochroa uhleri</u> Stal	stink bug	rare	sapsucking
	<u>Elasmostethus cruciatus</u> Say	stink bug	rare	sapsucking
	<u>Euschistus tristigmus</u> Say	dusky stink bug	rare	sapsucking
Homoptera Aphididae	<u>Cinara banksiana</u> Pepper & Tissot	aphid	rare	sapsucking
	<u>Cinara pergandei</u> Wilson	aphid	rare	sapsucking
	<u>Cinara canatra</u> Hottes & Bradley	aphid	rare	sapsucking
Cercopidae	<u>Aphrophora permutata</u> Uhler	brown spittlebug	rare	sapsucking
Coccidae	<u>Phenacaspis pinifoliae</u> Fitch	pine needle scale	rare	sapsucking
Lepidoptera Aegeriidae	<u>Vespamina pini</u> Kellcott	pitch mass borer	rare	trunk borer
Arctiidae	<u>Hypoprepia miniata</u> Kirby	striped footman moth	rare	solitary defoliator
	<u>Lexis bicolor</u> Grote	northern smoky moth	rare	solitary defoliator

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
Gelechiidae	<u>Eucordylea canusella</u> Freeman	needle miner	rare	needle miner
Geometridae	<u>Anacamptodes vellivolata</u> Hulst	looper	rare	solitary defoliator
	<u>Campaea perlata</u> Guenée	fringer looper	rare	solitary defoliator
	<u>Caripeta angustiorata</u> Walker	grey pine looper	rare	solitary defoliator
	<u>Caripeta divisata</u> Walker	grey forest looper	rare	solitary defoliator
	<u>Carpieta piniata</u> Packard	looper	rare	solitary defoliator
	<u>Ectropis crepuscularia</u> Schiffermuller	saddle-backed looper	rare	solitary defoliator
	<u>Eufidonia notataria</u> Walker	looper	occasional	solitary defoliator
	<u>Eupithecia palpata</u> Packard	looper	rare	solitary defoliator
	<u>Hypagyrtis piniata</u> Packard	looper	rare	solitary defoliator
	<u>Lambdina fiscellaria</u> <u>fiscellaria</u> Guenée	hemlock looper	rare	solitary defoliator
	<u>Nepytia canosaria</u> Walker	false hemlock looper	rare	solitary defoliator
	<u>Protoarmia porcelaria</u> <u>indicatoria</u> Walker	dotted line looper	occasional	solitary defoliator
	<u>Semiothisa bicolorata</u> Fabricius	looper	common	solitary defoliator
Lasiocampidae	<u>Tolyte laricis</u> Fitch	caterpillar	rare	solitary defoliator
Lycaenidae	<u>Incisalia nippon clarki</u> Freeman	jack pine hair streak	rare	solitary defoliator

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
Lymantriidae	<u>Orgyia antiqua</u> Linnaeus	rusty tussock moth	rare	solitary defoliator
	<u>Parorgyia plagiata</u> Walker	tussock moth	occasional	solitary defoliator
Noctuidae	<u>Anomogyna elimata</u> Guenée	owlet moth	occasional	solitary defoliator
	<u>Feralia jocosa</u> Guenée	owlet moth	rare	solitary defoliator
	<u>Palthis angulalis</u> Hübner	spruce harlequin	rare	solitary defoliator
	<u>Panthea acronyctoides</u> Walker	owlet moth	rare	solitary defoliator
	<u>Panthea furcilla</u> Packard	owlet moth	rare	solitary defoliator
	<u>Syngrapha alias</u> Ottolengui	owlet moth	rare	solitary defoliator
	<u>Zale duplicata largera</u> Smith	owlet moth	occasional	solitary defoliator
	<u>Zale metatoides</u> McDunnough	owlet moth	rare	solitary defoliator
Pyralidae	<u>Dioryctria abietivorella</u> Grote	fir coneworm	rare	cone feeder
	<u>Dioryctria disclusia</u> Heinrich	pine coneworm	rare	cone feeder
Sphingidae	<u>Lapara bombycoides</u> Walker	pine sphinx moth	rare	solitary defoliator
Tortricidae	<u>Amorbia humerosana</u> Clemens	leaf roller	rare	solitary defoliator
	<u>Argyrotaenia pinatubana</u> Kearfott	pine tube moth	rare	tube making needle feede
	<u>Rhyacionia adana</u> Heinrich	pine-tip moth	rare	shoot borer

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
	<u>Sparganothis tristriata</u> Kearfott	needle tier	rare	solitary defoliator
Yponomeutidae	<u>Zellaria haimbachi</u> Busck	pine needle- sheath miner	rare	needle miner
Coleoptera Buprestidae	<u>Buprestis</u> sp.	flatheaded wood borer	rare	wood borer
	<u>Chalcophora liberta</u> Germar	flatheaded wood borer	rare	wood borer
	<u>Chalcophora virginiensis</u> Drury	flatheaded wood borer	rare	wood borer
	<u>Chrysobothris</u> sp.	flatheaded wood borer	rare	wood borer
	<u>Chrysobothris floricola</u> Gory	flatheaded wood borer	rare	wood borer
	<u>Dicerca</u> sp.	flatheaded wood borer	rare	wood borer
	<u>Dicerca tenebrosa</u> Kirby	flatheaded wood borer	rare	wood borer
	<u>Melanophila acuminata</u> De Geer	flatheaded wood borer	rare	wood borer
Cerambycidae	<u>Acmaeops pratensis</u> Laicharteg	longhorned beetle	rare	wood borer
	<u>Anoplodera canadensis</u> Olivier	longhorned beetle	rare	wood borer
	<u>Anoplodera carbonata</u> LeConte	longhorned beetle	rare	wood borer
	<u>Monochamus</u> sp.	longhorned beetle	rare	wood borer
	<u>Rhagium</u> sp.	longhorned beetle	rare	wood borer

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
Curculionidae	<u>Brachyrhinus ovatus</u> Linnaeus	strawberry root weevil	rare	root feeder
	<u>Hylobius</u> sp.	weevil	rare	roots and root collar feeder
	<u>Hylobius pinicola</u> Couper	weevil	rare	root collar feeder
	<u>Lepyrus palustris</u> Scopoli	weevil	rare	wood borer
	<u>Magdalis gentilis</u> LeConte	weevil	rare	wood borer
	<u>Pissodes affinis</u> Randall	weevil	rare	wood borer
	<u>Podapion gallicola</u> Riley	pine gall weevil	rare	wood borer
	<u>Rhynchites</u> sp.	weevil	rare	wood borer
Helodidae	<u>Cyphon variabilis</u> Thunberg	false flower beetle	rare	no damage, larvae aquatic
Elateridae	<u>Agriotes limosus</u> LeConte	click beetle	rare	no damage, larvae in- habit soil
	<u>Ampedus evansi</u> Brown	click beetle	rare	no damage, larvae probably feeding in rotting wood
	<u>Ampedus pullus</u> Germar	click beetle	rare	no damage, larvae probably feeding in rotting wood
	<u>Ctenicera hieroglyphica</u> Say	click beetle	rare	no damage, larvae in decomposing litter



Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
	<u>Ctenicera mediana</u> Germar	click beetle	rare	no damage, larvae in decomposing litter
	<u>Ctenicera nitidula</u> LeConte	click beetle	rare	no damage, larvae in decomposing litter
	<u>Ctenicera ocheipennis</u> LeConte	click beetle	rare	no damage, larvae probably in decomposing litter
	<u>Ctenicera propola</u> <u>propola</u> LeConte	click beetle	rare	no damage, larvae in decomposing litter
	<u>Ctenicera triundulata</u> Randall	click beetle	rare	no damage, larvae in decomposing litter
Scolytidae	<u>Dendroctonus valens</u> LeConte	red turpentine beetle	rare	inner bark borer
	<u>Hylastes nigrinus</u> Mannerheim	bark beetle	rare	inner bark borer
	<u>Hylurgops pinifex</u> Fitch	bark beetle	rare	inner bark borer
	<u>Ips chagnoni</u> Swaine	bark beetle	rare	inner bark borer
	<u>Orthotomicus caelatus</u> Eichhoff	bark beetle	rare	inner bark borer
	<u>Pityophthorus</u> sp.	bark beetle	rare	inner bark borer
	<u>Pityophthorus pulicarius</u> Zimmermann	bark beetle	rare	bark and pith borer

<u>Class, Order and Family</u>	<u>Species</u>	<u>Common Name</u>	<u>Prevalence</u>	<u>Type of Damage</u>
Hymenoptera Diprionidae	<u>Neodiprion compar</u> Leach	sawfly	rare	colonial defoliator
Pamphiliidae	<u>Acantholyda</u> spp.	false webworm	rare	web-making defoliator
	<u>Cephalcia</u> spp.	false webworm	rare	web-making defoliator
Siricidae	<u>Sirex nigricornis</u> Fabricius	horntail	rare	wood borer
Diptera Cecidomyiidae	<u>Cecidomyia banksianae</u> Vockeroth	resin midge	rare	meristematic tissue near base of bud or developed shoot
Lonchaeidae	<u>Lonchaea corticis</u> Taylor	fly	rare	secondary invaders associated with white pine weevil

INSECT PREDATORS

Class, Order and Family	Species	Common Name	Prevalence
Hemiptera Pentatomidae	<u>Meadorus</u> <u>lateralis</u> Say	stink bug	rare
	<u>Podisus</u> <u>placidus</u> Uhler	stink bug	rare
	<u>Podisus</u> <u>serieventris</u> Uhler	stink bug	rare
Coleoptera Cantharidae	<u>Podabrus</u> sp.	soldier beetle	rare
	<u>Podabrus</u> <u>brevicollis</u> Fall	soldier beetle	rare
Carabidae	<u>Agonum</u> <u>quadripunctatum</u> De Geer	ground beetle	rare
Cleridae	<u>Enoclerus</u> sp.	checkered beetle	rare
	<u>Thanasimus</u> <u>dubius</u> Fabricius	checkered beetle	rare
	<u>Thanasimus</u> <u>undulatus</u> Say	checkered beetle	rare
Coccinellidae	<u>Adalia</u> sp.	lady beetle	rare
	<u>Anatis</u> <u>mali</u> Say	lady beetle	rare
	<u>Chilocorus</u> sp.	lady beetle	rare
	<u>Chilocorus</u> <u>stigma</u> Say	twice stabbed lady beetle	rare
	<u>Coccinella</u> sp.	lady beetle	rare
	<u>Coccinella</u> <u>monticola</u> Mulsant	lady beetle	rare
	<u>Coccinella</u> <u>transversoguttata</u> <u>richardsoni</u> Brown	transverse lady beetle	rare

Class, Order and Family	Species	Common Name	Prevalence
	<u>Coccinella trifasciata</u> <u>perplexa</u> Mulsant	lady beetle	rare
	<u>Exochomus</u> sp.	lady beetle	rare
	<u>Exochomus davisii</u> Leng	lady beetle	rare
	<u>Exochomus septentrionis</u> Weise	lady beetle	rare
	<u>Hippodamia convergens</u> Guerin-Meneville	convergent lady beetle	rare
	<u>Hyperaspis</u> sp.	lady beetle	rare
	<u>Hyperaspis binotata</u> Say	lady beetle	occasional
	<u>Mulsantina hudsonica</u> Casey	lady beetle	rare
	<u>Mulsantina picta</u> Randall	lady beetle	rare
	<u>Neomysia subvittata</u> Mulsant	lady beetle	rare
Elateridae	<u>Alaus</u> sp.	click beetle	rare
	<u>Ctenicera hieroglyphica</u> Say	click beetle	rare
	<u>Ctenicera mediana</u> Germar	click beetle	rare
	<u>Ctenicera triundulata</u> Randall	click beetle	rare
Lampyridae	<u>Lucidota corrusca</u> Linnaeus	firefly	rare
	<u>Pyractomena borealis</u> Randall	firefly	rare

PATHOGENS CAUSING LIGHT TO SEVERE DAMAGE

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
<b>ASCOMYCETES</b>				
Helotiales Herotiaceae	<u>Typanis hypopodia</u> Nylander	dieback	rare	branch and twig dieback
Hypocreales Nectriaceae	<u>Scolecconectria</u> <u>cucurbitula</u> (Tode ex Fries) Booth	stem fungus	rare	branch and twig dieback
Phacidiales Hypodermataceae	<u>Davisomycella ampla</u> (Davis) Darker	needle cast	common <sup>1</sup>	needle cast and necrosis
	<u>Lophodermium pinastri</u> (Schrader ex Fries) Chevallier	needle cast	occasional <sup>2</sup>	needle cast and necrosis
<b>BASIDIOMYCETES</b>				
Agaricales Agaricaceae	<u>Armillaria mellea</u> (Vahl. ex Fries) Kummer	shoestring root rot	common <sup>1</sup>	root rot
Polyporaceae	<u>Polyporus pargamenus</u> Fries	slash fungus	rare	rot
	<u>Fomes pini</u> (Thore ex Fries) Karsten	red ring rot	rare	trunk rot
Uredinales Melampsor- aceae	<u>Coleosporium asterum</u> (Dietrich) Sydow	needle rust	occasional <sup>2</sup>	needle necrosis
	<u>Cronartium comandrae</u> Peck	comandra blister rust	rare	stem canker
	<u>Endocronartium harknessii</u> (J.P. Moore) Y. Hiratsuka	western gall rust	common	globose galls

<sup>1</sup> Caused some moderate to severe damage in the past.

<sup>2</sup> Caused some light to moderate damage in the past.

Class, Order and Family	Species	Common Name	Prevalence	Type of Damage
DEUTEROMYCETES				
Sphaeropsidales Sphaerioidaceae	<u>Sclerophoma pithyophila</u> (Cda.) Hohn.	needle fungus	rare	needle necrosis
Sphaeropsidaceae	<u>Coniothyrium olivaceum</u> var. <u>salsolae</u> Fairman	dieback	rare	associated with dieback of branches and twigs
DICOTYLEDONEAE				
Santalales Loranthaceae	<u>Arceuthobium pusillum</u> Peck	dwarf mistletoe	rare	witches broom

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We wish to express our appreciation of the officers of the Entomology Research Institute, Ottawa and officers of the former Winnipeg Canadian Forestry Laboratory for identifying many of the insects and diseases in this report.