

Not for publication

ANNUAL REPORT
OPERATION OF THE FOREST INSECT LABORATORY
SAULT STE. MARIE, ONTARIO
FISCAL YEARS 1956-1957 and 1957-1958

by
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CANADA
DEPARTMENT OF AGRICULTURE
SCIENCE SERVICE
FOREST BIOLOGY DIVISION
June, 1958

TABLE OF CONTENTS

	<u>Page</u>
1. INTRODUCTION.....	1
2. GENERAL.....	1
3. LABORATORY AND FIELD ACCOMMODATION.....	2
4. STAFF.....	2
5. CONFERENCES, ANNUAL MEETINGS, SPECIAL TRIPS AND ASSIGNMENTS.....	13
6. PUBLICATIONS AND REPORTS.....	16
7. FINANCIAL STATEMENT.....	20

ANNUAL REPORT
OPERATION OF THE FOREST INSECT LABORATORY
SAULT STE. MARIE, ONTARIO
FISCAL YEARS 1956-57, 1957-58

1. INTRODUCTION

No report was issued for the operation of the Forest Insect Laboratory for fiscal year 1956-57. This report, therefore, records the highlights of the laboratory operation for two years.

2. GENERAL

Major insect problems in Ontario were essentially the same in 1956 and 1957. During both years the spruce budworm infestation in the northwestern part of the province continued unabated and moved farther to the eastward in the southcentral part of the Sioux Lookout District and in the Kenora and Fort Frances Districts. During 1957 the infestation reached the extreme southwestern corner of the Port Arthur District. In the area to the south of Lake Nipigon the separate infestation on Sibley and Black Bay peninsulas moved to the eastward into the southwestern corner of the Geraldton District. During the two years limited studies of the natural control by parasites of the budworm were continued at the Cedar Lake and Black Sturgeon Lake Field Stations.

The province-wide outbreak of the forest tent caterpillar of the late forties and early fifties, that had declined in 1955 to about 3,600 acres, continued to decline in 1956, and in 1957 the few remaining remnants disappeared. An area of infestation south of Lake St. Joseph in the northern part of the Sioux Lookout District, suspected in 1956 to be new infestation rather than a remnant of the old, did not develop as expected in 1957, largely as a result of failure of eggs to hatch in the spring. A further decline in 1958 is forecast in this area.

Larch sawfly continued in 1956 and 1957 to infest in varying intensity most larch stands throughout the province. Infestations continued generally light-to-medium in the northwestern and northcentral parts of the province, and medium-to-heavy in the eastcentral and southern parts.

In southern Ontario the European pine shoot moth, European pine sawfly, red-headed pine sawfly, and the pine root collar weevil continued to be serious problems. Field investigations of the pine shoot moth continued at the Elmira Field Establishment, and of the pine root collar weevil at the Angus Field Establishment. Although the red-headed pine sawfly remained a serious threat to many young hard pine plantations in the southern half of the province, chemical control measures were successfully applied by the Department of Lands and Forests and private owners in many areas.

During 1956 considerable mortality of jack pine resulting from attacks by the pine tortoise scale were discovered in the Sioux Lookout, Port Arthur, and Sault Ste. Marie Districts. Tree mortality occurred most commonly in narrow bands or pockets along rivers and lakes. No infestations of the scale were found in 1956 or 1957.

In the spring of 1957 a spectacular outbreak of the black army cutworm was discovered in the Sault Ste. Marie District in an area that had been burned in 1955 and planted to red pine in 1956. Practically all succulent vegetation in the infestation area was consumed by the larvae and up to 40% of the planted trees were killed.

The field and laboratory research programs of the Laboratory continued during 1956 and 1957 very much as in 1955. At the Cedar Lake Field Station, however, a study of insects infesting aspen was started in 1957, while at the Black Sturgeon Lake Field Station a study of insects infesting the growing tips of jack pine which was started in a modest way in 1956 was expanded in 1957.

3. LABORATORY AND FIELD ACCOMMODATION

During 1956 and 1957 few changes or alterations were made to existing laboratory and field accommodation in the Province. In 1957 a cottage was constructed on property of the Seed Extraction Plant, Angus, in association with the existing Forest Biology Ranger establishment, to provide family accommodation for a research officer assigned to work in that area. Research working space is provided in a small laboratory building that has been available for forest insect work for some years.

In October 1957 the Forest Biology Ranger cottage at Swastika was moved, with the assistance of Department of Lands and Forests staff, to a new location on Kenogami Lake in association with the Air Service base located there. This move was made at the request of the Department of Lands and Forests, and results in a better location for the cottage.

By the end of fiscal year 1957-58 plans were completed for the addition to be built to the Forest Insect Laboratory by the Provincial Government. Construction is to be started in mid-1958.

4. STAFF

In August, 1956, Dr. N.E. Virkki completed his one-year term as Science Service Postdoctorate Fellow working under Dr. S.G. Smith, Head, Section of Cytology and Genetics, and returned to Finland. In December 1956 he was replaced as a Science Service Postdoctorate Fellow by Dr. G.K. Manna from India, also working under Dr. Smith. In 1957 Dr. Manna's Fellowship was renewed for one year until December, 1958.

In June, 1957 Mr. H. Herdy joined the research staff of the Laboratory on his graduation from the University of Manitoba.

In July, 1957 Dr. S. G. Smith took up residence in California on a one-year transfer of work to the Department of Biological Control, University of California, Albany, California. While in California Dr. Smith is continuing studies of the cytology and genetics of species of Chilocorus which had been begun earlier in Sault Ste. Marie.

In February 1957 Mr. G. R. Stairs transferred to the Laboratory of Insect Pathology to undertake histological studies in conjunction with Dr. F. T. Bird.

In 1957 authorization was obtained for the setting up of an Administrative Officer for the Sault Ste. Marie Laboratories, to take charge of administration under the two Officers-in-Charge. Mr. K. R. Elliott took over these new duties in November, 1957.

During the academic years 1956-57 and 1957-58, members of the laboratory staff were granted educational leave as follows:

1956-1957

Educational Leave with Half Pay

A. W. Ghent	-	University of Chicago
I. M. Campbell	-	University of Toronto
C. S. Holling	-	University of British Columbia
R. J. Finnegan	-	University of British Columbia
K. J. Griffiths	-	University of British Columbia
L. A. M. Lyons	-	University of Minnesota
E. P. Smereka	-	University of Minnesota

1957-1958

Educational Leave with Half Pay

A. W. Ghent	-	University of Chicago
G. W. Green	-	Johns Hopkins University

During the fiscal years 1956-57 and 1957-58 graduate degrees were granted to laboratory staff members as follows:

C. R. Sullivan	-	Ph. D. Macdonald College, May, 1957
W. L. Sippell	-	Ph. D. University of Michigan, May, 1957
C. S. Holling	-	Ph.D. University of British Columbia, October, 1957
P. J. Pointing	-	Ph. D. University of Toronto, December, 1957

Staff of the Forest Insect Laboratory
and Organization,
Fiscal Year 1956-57

ADMINISTRATION

R. M. Belyea.....R.O.(A)4
B. A. Poupore.....Supervising Clerk
C. F. Linklater.....Clerk 3
D. R. Cartmill.....Storeman 1
J. P. Taylor.....Clerk 4
D. L. Richards.....Stenographer
F. E. A. Gribelli.....Clerk
A. J. Langdon.....Stenographer
F. Newman.....Clerk 3

MAINTENANCE

W. M. Ferguson.....Technical Officer 3, Chief Engineer
D. G. MacGillivray.....Technician 1
E. L. Baxter.....Technician 1
P. E. Daynard.....Technician 2
J. D. Grant.....Technician 2
W. Ross.....Technician 1
F. W. Robinson.....Glassware Washer (Casual Labour)
G. A. King.....Maintenance Craftsman 4

FOREST INSECT SURVEY

W. L. Sippell.....R.O.(A)2
N. W. Watson.....R.O.(A)2
D. R. Wallace.....R.O.(A)1
J. L. Martin.....R.O.(A)1
Vacant.....R.O.(A)1
O. H. Lindquist.....Technician 1
D. M. McNamee.....Assistant Technician 2
M. F. Kelley.....Assistant Technician 2
C. M. Lawko.....Assistant Technician 2
J. S. Stone.....Assistant Technician 1 (Resigned May 15, 1956)
M. A. Thorkilson.....Assistant Technician 1 (Appointed June 18, 1956;
resigned Aug. 27, 1956)
E. R. Thompson.....Assistant Technician 1 (Appointed Nov. 29, 1956)
P. A. Llewellyn.....Student Assistant
A. B. Davies.....Student Assistant
M. J. Horwood.....Student Assistant
S. Cady.....Assistant Technician 1 (seasonal)
R. Harvey.....I.S.R.A.
M. C. Davidson.....I.S.R.A.
R. Nott.....I.S.R.A.
H. Bailey.....I.S.R.A.

FOREST BIOLOGY RANGERS

J. E. MacDonald	.....Chief Ranger.....	F.B.R.	Sup. 2
C. A. Barnes	.....Gogama Dist.....	F.B.R.	1
R. L. Bowser	.....Chapleau Dist.....	F.B.R.	1
F. A. Bricault	.....Cochrane Dist.....	F.B.R.	2
P. E. Buchan	.....Sioux Lookout Dist.....	F.B.R.	1
E. O. Clinton	.....Sudbury Dist.....	F.B.R.	1
M. J. Thompson	.....Rideau and East Tweed Dist.....	F.B.R.	1
W. J. Miller	.....Sault Ste. Marie Dist.....	F.B.R.	2
D. G. Grisdale	.....Parry Sound Dist.....	F.B.R.	1
K. C. Hall	.....Port Arthur Dist.....	F.B.R.	2
A. A. Harnden	.....North Bay Dist.....	F.B.R.	2
M. J. Hildebrand	.....Pembroke Dist.....	F.B.R.	1
L. G. Jago	.....Lake Erie Dist.....	F.B.R.	1
D. F. Lynn	.....Lake Huron Dist.....	F.B.R.	1
L. S. MacLeod	.....Lindsay and West Tweed Dist.....	F.B.R.	2
H. G. McPhee	.....Lake Simcoe Dist.....	F.B.R.	2
J. R. McPhee	.....Fort Frances Dist.....	F.B.R.	1
Vacant	.....Kenora Dist.....	F.B.R.	2
J. F. Robinson	.....Kapuskasing Dist.....	F.B.R.	1
C. J. Vaillancourt	.....Geraldton Dist.....	F.B.R.	1
H. J. Weir	.....White River Dist.....	F.B.R.	1
R. S. Welton	.....Swastika Dist.....	F.B.R.	1

INVESTIGATIONS, SAULT STE. MARIE

FOREST INSECT LABORATORY

Cytogenetic Investigations of Forest Insects

S. G. Smith	.....R.O.(A)5
G. W. Stehr	.....A.R.O. 5
D. J. Kushner	.....R.O.(A)2
I. M. Campbell	.....R.O.(A)1
N. E. Virkki	.....Science Service Post Doctorate Fellow (To Aug.1956.)
G. K. Manna	.....Science Service Post Doctorate Fellow (From Dec.1956)
K. F. Bruce	.....Assistant Technician 2
W. K. Maxwell	.....Student Assistant
N. J. MacQuarrie	.....Student Assistant
R. E. Malloy	.....Student Assistant
E. A. Cameron	.....I.S.R.A.
S. Walton	.....I.S.R.A.

Investigations of the Physiology of Forest Insects

G. T. Harvey	.....R.O.(A)2
A. W. Hadden	.....Assistant Technician 1

Investigations of Regeneration in Stands Devastated
by the Spruce Budworm

A. W. Ghent.....R.O.(A)2

History of Spruce Budworm Infestations, Northwestern Ontario

K. R. Elliott.....R.O.(A)2
E. P. Baic.....Assistant Technician 1

INVESTIGATIONS, CHALK RIVER FIELD STATION

Bioclimatological and Ecological Investigations,
White Pine Weevil

C. R. Sullivan.....R.O.(A)2
L. W. P. Legault.....Assistant Technician 1
D. W. Fleming.....Student Assistant

INVESTIGATIONS, LANIEL FIELD STATION

Studies of Cerambycid Wood Borers

L. M. Gardiner.....R.O.(A)2
R. S. Watson.....Student Assistant

INVESTIGATIONS, BLACK STURGEON LAKE FIELD STATION

Investigations of the Deterioration and Death of
White Spruce, and Studies of Immature Forms of
Eastern Canadian Bark Beetles

J. B. Thomas.....R.O.(A)2

Investigations of Populations and Natural Control
of the Spruce Budworm, Lake Nipigon Area

K. R. Elliott.....R.O.(A)2
G. R. Stairs.....R.O.(A)1

INVESTIGATIONS, CEDAR LAKE FIELD STATION

Phenological Investigations of Forest
Insects and their Host Trees

A. H. Rose.....R.O.(A)2

Investigations of Populations and Natural
Control of the Spruce Budworm

K. R. Elliott.....R.O.(A)2
E. P. Smereka.....R.O.(A)1

INVESTIGATIONS, TEMPORARY FIELD ESTABLISHMENTS

Investigations of the Bionomics and Physical
Ecology of the European Pine Shoot Moth (Elmira)

G. W. Green.....R.O.(A)2
P. J. Pointing.....R.O.(A)1
K. W. Brown.....(temporary assignment)
L. W. P. Legault.....Assistant Technician 1 (resigned Oct.5,1956)
R. E. Pullin.....Student Assistant
A. T. Watt.....Student Assistant

Investigations of the Bionomics and Control
of the Pine Root Collar Weevil (Angus)

R. J. Finnegan.....R.O.(A)1
I. Y. Barr.....Student Assistant

Investigations of the Control of Sawfly Populations by
Small Mammal Predators (Thessalon)

C. S. Holling.....R.O.(A)2
M. T. Lewis.....Student Assistant (part time)

Investigations of the Life History and Parasites of
Sawflies (Thessalon)

K. J. Griffiths.....R.O.(A)1
M. T. Lewis.....Student Assistant (part time)

CO-OPERATIVE INVESTIGATIONS

Investigations of populations of jack pine sawflies

L. A. Lyons.....R.O.(A)2

(Co-operative investigation with Forest Biology
Laboratory, Quebec, at Clova, Quebec)

LABORATORY AND FIELD PHOTOGRAPHY

D. C. Anderson.....Technician 2
L. A. Garniss.....Assistant Technician 1

OPERATION AND MAINTENANCE, FIELD STATIONS

Chalk River Field Station

C. R. Sullivan (in charge).....R.O.(A)2

Laniel Field Station

L. M. Gardiner (in charge).....R.O.(A)2
A. Denis.....Caretaker 2

Black Sturgeon Lake Field Station

J. B. Thomas (in charge).....R.O.(A)2
S. Nowytski.....Clerk (seasonal)
E. Marsh.....Cook (Seasonal Labour)
R. L. Randall.....Student Assistant
G. N. Chant.....Student Assistant
J. J. Hogan.....Student Assistant
H. Storch.....Maintenance (casual labour)
W. A. Fuselli.....Maintenance (casual labour)

Cedar Lake Field Station

A. H. Rose (in charge).....R.O.(A)2
H. E. Black.....Clerk (seasonal)
R. Lafrance.....Cook (Seasonal Labour)
B. A. Nordquist.....Student Assistant
K. J. S. Beanlands.....Student Assistant
A. M. Ward.....Student Assistant
J. D. Shiells.....Maintenance (casual labour)
A. Elliott.....Maintenance (casual labour)

Staff of the Forest Insect Laboratory
and Organization
Fiscal Year 1957-58

ADMINISTRATION

R. M. Belyea.....R.O.(A)4
K. R. Elliott.....Administrative Officer 3
(appointed Feb. 6, 1958)
B. A. Poupore.....Supervising Clerk
C. F. Linklater.....Clerk 3
J. P. Taylor.....Clerk 4 (resigned July 2, 1957)
S. M. Richardson.....Stenographer 3 (appointed Jan. 13, 1958)
D. L. Richards.....Stenographer (resigned July 2, 1957)
J. T. M. Infanti.....Stenographer (appointed Sept. 10, 1957
resigned Feb. 28, 1958)
A. J. Megginson.....Stenographer (resigned Sept. 6, 1957)

E. McKay.....Stenographer (appointed Sept. 9, 1957,
resigned Apr. 30, 1958)
A. D. M. Pick.....Typist (appointed Aug. 27, 1957)
D. R. Cartmill.....Storeman 1
F. E. A. Gribelli.....Clerk
F. Newman.....Clerk 3

MAINTENANCE

W. M. Ferguson.....Technical Officer 3, Chief Engineer
L. Koivisto.....Technician 1
W. A. McDonald.....Technician 1
P. E. Daynard.....Technician 1 (on Sick Leave, S. Porter
Technician 1, temporary replacement)
J. D. Grant.....Technician 2
J. T. MacKenzie.....Technician 1
F. W. Robinson.....Glassware Washer (casual labour)
G. A. King.....Maintenance Craftsman 4

FOREST INSECT SURVEY

W. L. Sippell.....R.O.(A)2
N. W. Watson.....R.O.(A)2
D. R. Wallace.....R.O.(A)1
J. L. Martin.....R.O.(A)2
H. Herdy.....R.O.(A)1 (appointed June 3, 1957)
O. H. Lindquist.....Technician 1
D. M. McNamee.....Assistant Technician 3
M. F. Kelley.....Assistant Technician 2
C. M. Lawko.....Assistant Technician 2
E. R. Thompson.....Assistant Technician 1
E. A. Cameron.....Student Assistant
J. Segond.....Student Assistant
H. MacLeod.....Student Assistant
S. Cady.....Assistant Technician 1 (seasonal)
H. Storch.....I.S.R.A.
S. Cameron.....I.S.R.A.
B. Johnston.....I.S.R.A.
P. Newbigging.....I.S.R.A.

FOREST BIOLOGY RANGERS

J. E. MacDonald.....Chief Ranger.....F.B.R. Sup. 2
P. E. Buchan.....Sioux Lookout Dist.....F.B.R. 2
D. J. Bowen.....Kenora Dist.....F.B.R. 1
M. J. Hildebrand.....Fort Frances Dist.....F.B.R. 1
K. C. Hall.....Port Arthur Dist.....F.B.R. 2
W. M. Horricks.....Geraldton Dist.....F.B.R. 1
K. R. Risk.....Kapusking Dist.....F.B.R. 1

F. A. Bricault.....Cochrane Dist.....F.B.R. 2
W. J. Miller.....Sault Ste. Marie Dist.....F.B.R. 2
R. L. Bowser.....Chapleau Dist.....F.B.R. 1
C. A. Barnes.....Gogama Dist.....F.B.R. 1
J. R. McPhee.....Sudbury Dist.....F.B.R. 1
John Hook.....Swastika Dist.....F.B.R. 1
A. A. Harnden.....North Bay Dist.....F.B.R. 2
D. G. Grisdale.....Parry Sound Dist.....F.B.R. 1
H. J. Weir.....Pembroke Dist.....F.B.R. 1
H. G. McPhee.....Lake Simcoe Dist.....F.B.R. 2
D. F. Lynn.....Lake Huron Dist.....F.B.R. 1
H. R. Foster.....Lake Erie Dist.....F.B.R. 1
L. S. MacLeod.....Lindsay and West Tweed Dist..F.B.R. 2
M. J. Thompson.....Rideau and East Tweed Dist..F.B.R. 1
L. R. Moore.....White River Dist.....F.B.R. 1

INVESTIGATIONS, SAULT STE. MARIE

FOREST INSECT LABORATORY

Cytogenetic Investigations of Forest Insects

S. G. Smith.....R.O.(A)5
G. W. Stehr.....R.O.(A)2
D. J. Kushner.....R.O.(A)2
I. M. Campbell.....R.O.(A)1
G. Manna.....Science Service Postdoctorate Fellow.
T. A. Lisson.....Technician 1 (appointed May 1, 1957)
K. F. Bruce.....Assistant Technician 2
N. J. MacQuarrie.....Student Assistant
B. Douglas.....I.S.R.A.
S. Walton.....I.S.R.A.
N. Ball.....I.S.R.A.

Investigations of the Physiology of Forest Insects

G. T. Harvey.....R.O.(A)2
A. W. Hadden.....Assistant Technician 2

Investigations of Forest Stand Ecology

A. W. Ghent.....R.O.(A)2
E. P. Baic.....Assistant Technician 2 (part time)

History of Spruce Budworm, Infestations, Northwestern Ontario

K. R. Elliott.....R.O.(A)2
E. P. Baic.....Assistant Technician 2 (part time)

INVESTIGATIONS, CHALK RIVER FIELD STATION

Bioclimatological and Ecological Investigations,
White Pine Weevil

C. R. Sullivan.....R.O.(A)2
A. Hautala.....Assistant Technician 1 (appointed Feb. 4,
1957; transferred L.I.P. Nov. 1, 1957)
W. Glaser.....Assistant Technician 1 (appointed Nov.12, 1957)
D. W. Fleming.....Student Assistant

INVESTIGATIONS, LANIET FIELD STATION

Studies of Cerambycid Wood Borers

L. M. Gardiner.....R.O.(A)2
R. S. Watson.....Student Assistant

INVESTIGATIONS, BLACK STURGEON LAKE FIELD STATION

Studies of Immature Forms and Biology of Bark Beetles

J. B. Thomas.....R.O.(A)3

Investigations of Populations and Natural Control
of the Spruce Budworm

K. R. Elliott.....R.O.(A)2
E. P. Smereka.....R.O.(A)1

Investigations of Complex of Insects Affecting
Shoot Growth in Young Jack Pine

J. B. Thomas.....R.O.(A)3
G.R. Stairs.....R.O.(A)1
E. P. Baic.....Assistant Technician 2 (part time)

INVESTIGATIONS, CEDAR LAKE FIELD STATION

Investigations of Insects Infesting Aspen

A. H. Rose.....R.O.(A)2
E. P. Smereka.....R.O.(A)1

Investigations of Populations and Natural Control
of the Spruce Budworm

K. R. Elliott.....R.O.(A)2
E. P. Smereka.....R.O.(A)1

INVESTIGATIONS, TEMPORARY FIELD ESTABLISHMENTS

Investigations of the Bionomics and Physical Ecology
of the European Pine Shoot Moth

G. W. Green.....R.O.(A)2
P. J. Pointing.....R.O.(A)1
P. Graham.....(Temporary assignment in Calgary position
for training)
A. Hautala.....Assistant Technician 1 (appointed Feb. 4,
1957; transferred
to L.I.P. Nov. 1,
1957)
K. R. Shortridge.....Student Assistant
A. T. Watt.....Student Assistant
W. Panagaki.....Maintenance (casual labour)

Investigations of the Bionomics of the
Pine Root Collar Weevil

R. J. Fimegan.....R.O.(A)1
L. Jobin.....Student Assistant

Investigations of Small Mammal Predators of Insects

C.S. Holling.....R.O.(A)2
R. Kisilevsky.....Student Assistant

Investigations of the Biology of Parasites
of the European Pine Sawfly

K. J. Griffiths.....R.O.(A)1
G. N. Chant.....Student Assistant

CO-OPERATIVE INVESTIGATIONS

Investigations of populations of jack pine sawflies

L. A. Lyons.....R.O.(A)2
(Co-operative investigations with Forest Biology Laboratory,
Quebec, at Clova, Quebec)

LABORATORY AND FIELD PHOTOGRAPHY

D. C. Anderson.....Technician 2
L. A. Garniss.....Assistant Technician 1

OPERATION AND MAINTENANCE, FIELD STATIONS

Chalk River Field Station

C. R. Sullivan (in charge).....R.O.(A)2

Laniel Field Station

L. M. Gardiner (in charge).....R.O.(A)2
A. Denis.....Caretaker

Black Sturgeon Lake Field Station

J. B. Thomas (in charge).....R.O.(A)2
G. Farrell.....Clerk (seasonal)
E. Marsh.....Cook (Seasonal Labour)
D. R. Millett.....Student Assistant
R. D. Hamilton.....Student Assistant
K. J. S. Beanlands.....Student Assistant
W. A. Fuselli.....Maintenance (casual labour)
K. Leger.....Maintenance (casual labour)

Cedar Lake Field Station

A. H. Rose (in charge).....R.O.(A)2
H. Black.....Clerk (seasonal)
B. Thornton.....Cook (Seasonal Labour)
B. A. Nordquist.....Student Assistant
A. M. Ward.....Student Assistant
R. Wall.....Student Assistant
J. Nattress.....Maintenance (casual labour)

5. CONFERENCES, ANNUAL MEETINGS, SPECIAL TRIPS AND ASSIGNMENTS

During the period Jan. 28 - Feb. 2, 1957, Dr. J. B. Thomas examined sedytid material in the United States National Museum, Washington, D.C., and discussed his study of this group with Dr. W. H. Anderson.

April 7 - 17, 1957 was spent by Dr. S. G. Smith at the University of California discussing rearing and other problems connected with his study of the cytology of Chilocorus spp.

Jan. 30 - Feb. 11, 1958 was spent by Dr. D. J. Kushner discussing joint co-operative studies with Mr. D. Feldman, Veteran's Administration Hospital, East Orange, N.J.

Following the Tenth International Congress of Entomology in August, 1956, the Laboratory played host to some 25 members in two post-congress tours and private visits.

Staff members of the Laboratory attended conferences and meetings of professional and scientific societies as follows:

Fiscal Year 1956-57

American Institute of Biological Societies
Storrs, Conn. Sept. 4-10, 1956
S.G. Smith

American Society of Mammalogists
Higgins Lake, Mich. June 16-20, 1956
C.S. Holling

Central International Forest Insect and Disease Conference
Maple, Ont. Oct. 9-11, 1956
P.J. Pointing
D.R. Wallace
G.W. Green
W.Y. Watson

Tenth International Congress of Entomology
Montreal, Que. Aug. 17-25, 1956
L.A. Lyons G.W. Green
J.B. Thomas C.R. Sullivan
W.L. Sippell A.W. Ghent
R.M. Belyea W.Y. Watson
G.T. Harvey S.G. Smith
C.S. Holling G.W. Stehr

Canadian Institute of Forestry
Chicoutimi, Que. Oct. 1-4, 1956
K.R. Elliott
J.L. Martin

Canadian Society of Microbiology
Montreal, Que. June 21-23, 1956
D.J. Kushner

Biological Photographic Association
Rochester, N.Y. Aug. 27-31, 1956
D.C. Anderson

Society of American Foresters, Wisconsin-Michigan Branch,
Iron Mountain, Mich. Mar. 15-16, 1957
R.M. Belyea
W.L. Sippell

Northeastern Forest Pest Council, Winter Meeting
Boston, Mass. Mar. 5, 1957
R.M. Belyea

Fiscal Year 1957-58

International Congress of Bioclimatology and ^BBiometerology
Vienna, Austria Sept. 23-27, 1957
C.R. Sullivan
(Following the Congress, Dr. Sullivan visited laboratories
in Germany, The Netherlands, and Great Britain)

- Society of American Bacteriologists
Detroit, Mich. Apr. 28 - May 2, 1957
D.J. Kushner
- Genetics Society of Canada May 16-17, 1957
Macdonald College, Que.
S.G. Smith
I.M. Campbell
G.W. Stehr
- Cold Springs Harbour Symposium on Population Ecology
Cold Springs Harbour, N.J. June 3-12, 1957
A.W. Ghent
P.J. Pointing
- American Society of Mammalogists June 17-20, 1957
Lawrence, Kansas
C.S. Holling
- American Institute of Biological Societies Aug. 26-28, 1957
Stanford, Calif.
S.G. Smith
A.W. Ghent
- Biological Photographic Association Aug. 27-30, 1957
Rochester, Minn.
D.C. Anderson
- Northeastern Forest Pest Council, Winter Meeting Mar. 5, 1958
Boston, Mass.
R.M. Belyea
- (The summer field meeting of the Council was held in Southern Ontario, Sept. 10-13, 1957. R.M. Belyea acted as tour leader, and the following staff members assisted in the operation of the tour:
- | | | |
|--------------|--------------|---------------|
| J.M. Cameron | H.G. McPhee | D.G. Griddale |
| W.L. Sippell | L.S. MacLeod | H.J. Weir) |
- Central International Forest Insect and Disease Conference Oct. 8-10, 1957
Winnipeg, Man.
W.L. Sippell
J.B. Thomas
L.A. Lyons
D.R. Wallace
- Canadian Institute of Forestry Oct. 22-25, 1957
Toronto, Ont.
K.R. Elliott
R.M. Belyea
L.M. Gardiner
J.B. Thomas

- Entomological Society of Canada
Lethbridge, Alta. Oct. 29-31, 1957
G.W. Stehr L.M. Gardiner
A.H. Rose R.M. Belyea
G.T. Harvey W.L. Sippell
- Tree Breeding Committee
Chalk River, Ont. Sept. 18-20, 1957
R.M. Belyea
- Entomological Society of Ontario
Kingston, Ont. Oct. 24-26, 1957
K.J. Griffiths
- Meeting of Canadian Wildlife Biologists
Ottawa, Ont. Jan. 20-21, 1958
C.S. Holling
- Biological Photographic Association, St. Lawrence Valley Chapter
Montreal, Que. Mar. 12, 1958
D.C. Anderson
- Biological Photographic Association, Joint Meeting, New York and
St. Lawrence Valley Chapters
Albany, N.Y. Mar. 29, 1958
D.C. Anderson

6. PUBLICATIONS AND REPORTS

Research Publications

Fiscal Year 1956-57

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- Smith, S.G. Extreme chromosomal polymorphism in a coccinellid beetle. *Experientia* 12(2): 52-55. 1956.
- Stehr, G. Brown female -- a sex-linked and sex-limited character in the spruce budworm. *J. Heredity* 46: 263-266. 1955.
- Finnegan, R.J. Weevils attacking pines in Southern Ontario. *Can. Dept. Agric., Bi-Mon. Prog. Rept.* 12(2): 3. 1956.
- Belyea, R.M. and Sullivan, C.R. The white pine weevil: a review of current knowledge. *For. Chron.* 32: 58-67. 1956.

- Smith, S.G. Spermatogenesis in an elaterid beetle. *J. Heredity* 47: 2-10. 1956.
- Thomas, J.B. Hail damage in Lake Nipigon area. *Can. Dept. Agric. Bi-Mon. Prog. Rept.* 12(3): 2. 1956.
- Martin, J.L. The bionomics of the aspen blotch miner, *Lithocolletis salicifoliella* Cham. *Can. Ent.* 88:155-168. 1956.
- Smith, S.G. Cytotaxonomy of Curculionidae (Coleoptera). *Am. Naturalist* 90:137-138. 1956.
- Watson, W.Y. A description of the immature stages of *Lithocolletis salicifoliella* Cham. *Can. Ent.* 88:168-177. 1956.
- Lindquist, O.H. and Thomas, J.B. Notes on bark beetles and associated insects feeding in pine shoots. *Can. Dept. Agric., Bi-Mon. Prog. Rept.* 12(4): 2. 1956.
- Kushner, D.J. A spectrophotometric microdetermination of choline. *Brochim. Biophys. Acta*, 20:554-555. 1956.
- Smith, S.G. The status of supernumerary chromosomes in *Diabrotica* after a lapse of fifty years. *J. Heredity*, 47:157-164. 1956.
- Sippell, W.L. Damage to Jack Pine by the pine tortoise scale. *Can. Dept. Agric., Bi-Mon. Prog. Rept.* 12(5): 2. 1956.
- Elliott, K.R. The status of spruce budworm infestations in western and mid-western forest regions of Ontario. 1956. *Can. Dept. Agric., Bi-Mon. Prog. Rept.* 12(6): 2. 1956.
- Lyons, L.A. Insects affecting seed production in red pine, Part I *Conophthorus resinosae* Hopk. *Can. Ent.* 88:599-608. 1956.
- Gardiner, L.M. Collecting wood boring beetle adults by turpentine and smoke. *Can. Dept. Agric., Bi-Mon. Prog. Rept.* 13(1): 2. 1957.
- Lindquist, O.H. and Harnden, A.A. A new record of thrips on jack pine in Ontario. *Can. Dept. Agric., Bi-Mon. Prog. Rept.* 13(2): 1. 1957.

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- Lyons, L.A. Insects affecting seed production in red pine. II. *Dioryctria disclusa* Heinrich, *D. abietella* (D. and S.), and *D. cambicola* (Dyar). *Can. Ent.* 89: 70-79, 1957.

- Lyons, L.A. Insects affecting seed production in red pine. III. Eucosma monitorana Heinrich, Laspeyresia toreula Grote, Rubsaamenia sp. and other insects. Can. Ent. 89:150-164. 1957.
- Virkki, N. Structure of the testis follicle in relation to evolution in the Scarabaeidae. Can. J. Zool. 35:265-277. 1957.
- Finnegan, R.J. Elm bark beetles in southwestern Ontario. Can. Ent. 89:275-280. 1957.
- Gardiner, L.M. Deterioration of fire-killed pine in Ontario and the causal wood-boring beetles. Can. Ent. 89:241-263. 1957.
- Kushner, D.J. An evaluation of the egg-yolk reaction as a test for lecithinase activity. J. Bacteriology 73:297-302. 1957.
- Kushner, D.J. and Heimpel, A.M. Lecithinase production by strains of Bacillus cereus Fr. and Fr. pathogenic for the larch sawfly, Pristiphora erichsonii (Htg.). Can. J. Microbiol. 3:547-551. 1957.
- Lyons, L.A. Insects affecting seed production in red pine. IV. Recognition and extent of damage to cones. Can. Ent. 89:264-271. 1957.
- Rose, A.H. A technique for differentiating annual rings in increment cores from diffuse porous woods. For. Chron. 33:139-140. 1957.
- Ghent, A.W. Fraser, D.A. and Thomas, J.B. Studies of regeneration in forest stands devastated by the spruce budworm. I. Evidence of trends in forest succession during the first decade following budworm devastation. Forest Science 3:184-208. 1957.
- Green, G.W. Baldwin, W.F. and Sullivan, C.R. The use of radioactive cobalt in studies of the dispersal of adult females of the European pine shoot moth, Rhyacionia buoliana (Schiff.). Can. Ent. 89:379-383. 1957.
- Harvey, G.T. The occurrence and nature of diapause-free development in the spruce budworm, Choristoneura fumiferana (Clem.). Can. J. Zool. 35:549-572. 1957.
- Thomas, J.B. The use of larval anatomy in the study of bark beetles. Can. Ent. Suppl. 5. 1957.
- Sippell, W.L. and Eidt, D.C. A moth attacking larch shoots in eastern Canada. Can. Dept. Agric., Bi-Mon. Prog. Rept. 14(1): 1. 1958.
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Martin, J.L. Notes on the biology of certain lepidopterous insects on Scots pines. Int. Rept. 1955-1, Feb. 1956.

Thomas, J.B. Notes on bark beetles and associated insects feeding in pine shoots. Int. Rept. 1955-2, March, 1956.

Watson, W.Y. European pine shoot moth parasite survey 1954-1955. Int. Rept. 1955-3, April, 1956.

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Green, G.W. Bioclimatological investigations of the European pine shoot moth, Rhyacionia buoliana (Schiff.). Int. Rept. 1956-2, March, 1957.

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Gardiner, L.M. Studies of wood-boring beetles (Cerambycidae), 1956. Int. Rept. 1956-4, May, 1957.

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Watson, W.Y. European pine shoot moth parasite survey, 1956. Int. Rept. 1956-6, Sept. 1956.

Sippell, W.L. A study of the forest tent caterpillar and its parasite complex in Ontario. Int. Rept. 1956-7, Dec. 1957.

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7. FINANCIAL STATEMENT

The Forest Insect Laboratory and the Laboratory of Insect Pathology operate under a joint accounting administration, and funds for both laboratories are therefore provided in the same estimates. The following statement itemizes expenditures by allotments for the fiscal years 1956-57 and 1957-58.

GENERAL ALLOTMENTS

	<u>1956-57</u>	<u>1957-58</u>
Travelling Expenses.....	34,919.55	38,328.59
Freight, Express and Cartage.....	1,230.44	1,363.14
Postage.....	2,178.29	2,104.66
Telephones and Telegrams.....	2,429.04	2,554.09
Materials and Supplies.....	29,536.91	26,645.63
Repair and Upkeep, Bldgs. and Works	6,769.45	6,773.04
Rental of Lands and Buildings.....	30.00	27.00
Repair and Upkeep of Equipment.....	9,749.01	11,985.42
Rental of Equipment.....	5,780.70	6,418.66
Unemployment Insurance	48.84	54.50
Sundries.....	<u>1,942.32</u>	<u>2,816.27</u>
Sub-Total.....	94,614.57	99,071.00

SPECIFIC ALLOTMENTS

Wages.....	7,645.54	9,608.27
Acquisition of Equipment.....	23,532.46	24,421.35
Acquisition of Bldgs. and Works.....	<u>2,279.07</u>	<u>8,976.56</u>
Sub-Total.....	<u>33,457.07</u>	<u>43,006.18</u>
TOTAL	<u><u>128,071.64</u></u>	<u><u>142,077.18</u></u>