V. DISEASES OF FOREST AND SHADE TREES

ARBUTUS (A. Menziesii)

Leaf spot (Mycosphaerella arbuticola Pk.) was serious on a few trees on Vancouver Island, B.C.

Rust (Pucciniastrum sparsum (Wint.) Fischer) was present on a few trees near Saanichton, B.C.

Tar spot (Rhytisma Arbuti Phill.) was fairly general in the Nanaimo district, B.C.

BALSAM FIR (Abies balsamea)

Witches' broom (Melampsorella Caryophyllacearum Schroet.) heavily infects balsam fir in all 3 counties of Prince Edward Island.

CANKER - Aleurodiscus amorphus (Pers.) Reb.

Que.- Cankers caused by Aleurodiscus amorphus were found on a few suppressed but living trees at Mount Burnet. This fairly common saprophyte has been shown by Hansborough (Jour. Forestry 32:452-458, 1934) to be slightly parasitic.

Dasyscypha Agassizii (B.& C.) Sacc. was collected at Mount Burnet (3685, 3733).

Specimens on balsam collected at Mount Burnet, Que., by Dr. H. T. Güssow were identified as Pleonectria calonectroides Woll. (Zeitschr. f. Parasitenk. 3:493-494, 1931) by Dr. Wollenweber. He states that this species differs from Calonectria balsamea (Cke. & Pk. Sacc. (Scoleconectria b. Seav.) by its more minute sporidia which are formed in a trisporous ascus. (I.L Conners)

BEECH (Fagus)

CANKER - Nectria coccinea (Pers.) Fr.

The Nectria following the attack of Cryptococcus fagi on beech (F. grandifolia) in Nova Scotia and probably elsewhere in eastern Canada has been identified as N. coccinea through the courtesy of Dr. Wollenweber from material collected in 1932, thus confirming his earlier identification of material collected in Nova Scotia in 1925 (H.T. Güssow).

Hypoxylon cohaerens (Pers.) Fr. was collected on beech at Chelsea, Que. (2119, 3135); it appears to be mildly parasitic. (I. L. Conners)

BIRCH (Betula)

Hypoxylon multiforme Fr. was collected on yellow birch in Prince Edward Island.

Drought injury was fairly common this year on birch and maple and conspicuous on some trees in zone 9, Saskatchewan. The leaves turn yellow between the veins and subsequently dry up. (T.C. Vanterpool)

CHESTNUT (Castanea)

BLIGHT - Endothia parasitica (Murr.) A.& A.
Ont.- Diseased specimens were received from West Lorne.

ELM (Ulmus)

A specimen affected with Sphaeropsis ulmicola Ell. & Ev. was received from St. John, N.B. (D.J. MacLeod)

Black spot (Gnomonia ulmea (Schw.) Thüm) was found on two trees at Harvey, N.B.

HORSE CHESTNUT (Aesculus)

Leaf blight (Guignardia Aesculi (Pk.) Stewart (Phyllosticta Paviae Desm.) caused slight to severe damage in all 3 counties of Prince Edward Island.

CANKER - Creonectria purpurea (L.) Seav.
Ont.- Horse chestnut trees affected by this canker were found on the Experimental Farm, Ottawa (2277).
Que.- Ttree trees were so severely affected that they will probably die and one other showed traces at Grande Ligne. (H.N. Racicot)

MAPLE (Acer)

TAR SPOT - Rhytisma acerinum (Pers.) Fr.
B.C.- Tar spot moderately infected the leaves of maple on Vancouver island.
Que.- The leaves of red maple (A. rubrum) were light to moderately affected at Lac Vert and Frelighsburg; young trees of silver leaf maple were affected in a nursery at Abord à Plouffe.
N.B.- The leaves of a group of 6 trees were severely infected in Sunbury county.
P.E.I.- Tar spot slight to severely infected the leaves of A. saccharinum in all 3 counties.

Acer pennsylvanicum was moderately infected by leaf spot

(Septoria acerina Pk.) in Queens county, P.E.I., while the leaves of A. spicatum were slightly to severely spotted by Phyllosticta acericola Cke. & Ell. in all 3 counties.

Sphaeropsis albescens Ell. & Ev. was collected on box elder (A. Negundo) in zone 9, Saskatchewan.

A collection of Nectria on maple from Timberlea, N.S., was identified as N. coccinea (Pers.) Fr. (2284).

MOUNTAIN ASH (Sorbus)

Fire blight (Bacillus amylovorus (Burr.) Trev.) was severe on 3 trees and was present on about 6 others at Macdonald College, Que. It also caused slight to severe damage throughout Prince Edward Island. A number of trees have apparently been destroyed, but strong clean sprouts are rapidly growing up from the crowns that have survived an attack.

A trace of rust (Gymnosporangium clavipes Cke. & Pk.) was collected on mountain ash in the Arboretum, Ottawa, Ont. (3701).

Cytospora leucostoma was found apparently causing die-back to mountain ash branches in a garden at Winnipeg, Man.

OAK (Quercus)

Powdery mildew (Microsphaera Alni (DC.) Wint. var. extensa (C.& P.) Salm.) was heavy on the leaves of an oak tree (probably Q. alba) in a very old wood lot near Charlottetown, P.E.I.

Rust (Cronartium Quercuum Miyabe) heavily infected the leaves of red oak (Q. rubra) especially the fresh dense growth from old crowns at Constance Bay, Ont., in July (2053). Galls of this rust are abundant on jack pine (Pinus Banksiana) in the vicinity. The aecia were beginning to open on May 7. No rust could be found on the few white oaks in this area.

PINE (Pinus)

WHITE PINE BLISTER RUST - Cronartium ribicola Fischer

Que.- White pine blister rust is reaching additional white pine stands each year, but nearly everywhere the damage is still slight. It was observed in six new places as follows: Covey Hill in Huntingdon Co.; Cowansville in Brome Co.; Abbotsford in Rouville Co.; Brownsburg and Lost River in Argenteuil Co., and Lake Guindon in Terrebonne Co. Frequently the cankers have been eaten by

chipmunks or squirrels. (F. Godbout)

N.B.- Four trees were found heavily infected at Oromocto.

N.S.- About half the trees in a small group of young pines have died at the Experimental Station, Kentville.

P.E.I.- Rust caused slight to severe damage to white pine in Queens and Prince counties.

Three blister rusts occur on jack pine (P. Banksiana) at Constance Bay, Ont.: C. Quercuum Miyabe is common on both jack pine and red oak, C. Comandrae Pk. is prevalent in restricted areas on both the pine and Comandra, and C. Comptoniae is general but much less abundant than the other two. Uredinia of the latter have been collected on Comptonia asplenifolia. (I.L. Conners and C.G. Riley)

C. Comptoniae has been collected on both Comptonia asplenifolia and jack pine at Eagle Depot, Que., while aecia of C. Comandrae were also collected there on jack pine last July. Galls resembling those of C. Quercuum were found in fruit at Coo-Coo Depot, about 40 miles south of Clova. However, the rust has not been tested experimentally and the nearest oaks are another 50 miles farther south. These rusts are apparently widely distributed in the areas, where jack pine grows. (C.G. Riley)

Cronartium Comandrae was collected once on P. contorta in the Salmon Arm area, B.C., and was prevalent on the same host at Jasper Park, Alta., while C. coleosporioides (D.& H.) Arth. was found on P. contorta at Cowichan and Salmon Arm, B.C.

The needle rust (Coleosporium Solidaginis (Schw.) Thüm) was collected at Coo-Coo Depot on jack pine (3668) and on red pine (P. resinosa) in nurseries at Grand'Mère and Montreal, Que. (3610, 3611).

Hypodermella ampla (Davis) Dearn. was collected on jack pine at Eagle Depot (3620) and Phoma acicola (Lév.) Sacc. on stone pine (P. Cembra) planted at the Experimental Farm, Ottawa, Ont. (2276).

Sycamore (Platanus sp.)

LEAF SPOT and TWIG BLIGHT - Gnomonia veneta (Sacc.& Speg.) Kleb.

B.C.- The leaves were heavily infected by this leaf spot and cankers were also produced on the younger twigs and leaf petioles at the Experimental Station, Saanichton; the damage was slight. This is the first time the disease has been observed here. (W. Jones)

POPLAR (Populus)

LEAF BLIGHT - Fusicladium radiosum (Lib.) Lindr.

B.C.- Leaves of P. balsamifera L. affected with F. radiosum

var. balsamifera J.J. Davis were collected at Fort St. James in 1933 (3601).

Sask.- Diseased leaves of P. tremuloides were collected at Lanigan (3637).

Man.- Leaf blight was commonly found throughout the province and it frequently caused at least partial defoliation of young trees.

Ont.- The disease was found on P. grandidentata at Constance Bay (3704).

Que.- This disease was moderate to severe on one young tree at Lennoxville.

Another leaf spot (Cladosporium subsessile Ell. & Barth.) was found at Constance Bay, Ont., (2195) on P. grandidentata.

POWDERY MILDEW - Uncinula Salicis (DC.) Wint.

Powdery mildew was found at Emma Lake, Sask., on P. balsamifera and was reported as heavy on P. tremuloides at Kenora, Ont.

HYPOXYLON CANKER - Hypoxylon pruinatum (Klotzsch) Cke.

Sask.- From 5 to 10% of the trees of P. tremuloides were moderately infected in a bluff at Rosthern (3627).

Rust (Melampsora Abietis-canadensis (Farl.) Ludwig) was found on a small tree of P. tremuloides at Lennoxville, Que.

CANKER - Cytospora sp.

Ont.- Cytospora cankers were abundant on a small tree of P. Wilsoni in the Arboretum, Ottawa (3672). C. chrysosperma was collected on P. tremuloides at Constance Bay (3695).

Que.- Cytospora canker was apparently killing from 3 to 6 of the lower limbs in a group of Carolina poplars in Quebec county.

SPRUCE (Picea)

RUST - Chrysomyxa ledicola Lagerh.

Many spruce trees were more or less defoliated by this rust between The Pas and Churchill, Man., according to Dr. P.H. Gregory. (G.R. Bisby)

Specimens on white spruce (P. canadensis) were received from Tingoosh Lake, Man. (3660); Anticosti Island, Que. (2120); and St. Peters, P.E.I. (2290) and on black spruce (P. mariana) from Smokey Falls, Ont. (2071).

WINTER INJURY

One blue spruce tree was severely injured at the Experimental Station, Fredericton, N.B.

ENGLISH WALNUT (Juglans)

BACTERIAL BLIGHT - Pseudomonas Juglandis Pierce

B.C.- Bacterial blight caused 20% damage at the Experimental Station, Saanichton.

WILLOW (Salix)

TAR SPOT - Rhytisma Salicinum (Pers.) Fr.

Sask.- Affected leaves were collected at Emma Lake.

Que.- A slight infection was reported from Laval Station.

P.E.I.- Traces of tar spot were found in Queens county.

SCAB - Fusicladium saliciperdum (All. & Tub.) Tub.

Que.- Diseased specimens were received from the Experimental Station, Cap Rouge. The twigs were affected by Diplodina Salicis West., following the scab.

N.B.- Scab was general and severe in the province.

N.S.- About 20% of the young twigs of S. vitellina were affected at Grand Pré.

Rust (Melampsora Bigelowii Thüm.) was fairly general in the Saanichton district, B.C.

Powdery mildew (Uncinula Salicis (DC.) Wint.) was abundant along the river bank at Winnipeg, Man.

WINTER INJURY TO SHADE TREES

Mr. M.B. Davis, Dominion Horticulturist, supplied the following report on winter injury sustained by shade trees at the Central Experimental Farm, Ottawa, Ontario in 1934.

Deciduous Trees

		% Injury
Acer rubrum	Red Maple	none
" saccharum	Sugar Maple	"
" saccharinum Wieri	Weir's Maple	"
" ginnala	Ginnalian Maple	"
" Negundo	Manitoba Maple	"
" platanoides	Norway Maple	10%
" platanoides Schwedleri	Red Norway Maple	none
" pseudo-platinus	Sycamore Maple	75%
Aeculus Hippocastanum	Horse Chestnut	none
Some hybrid horse chestnuts showed 10 to 50% injury.		
Betula	Birch	none
All species of birch wintered well.		
Carya ovata	Shagbark Hickory	none

		% Injury
Cercidiphyllum japonicum	Katsura Tree	75%
Cladastris lutea	Yellow Wood	25%
Catalpa speciosa		10%
" Bungei		10%
" Kaempferi		10%
Fraxinus excelsior	European Ash	50%
Ginkgo biloba	Maiden Hair Tree	none
Gymnocladus dioeca	Kentucky Coffee Tree	"
Juglans cinerea	Butternut	none
" nigra	Black Walnut	"
" Sieboldiana	Japanese Walnut	"
Liriodendron Tulipifera	Tulip Tree	75%
Magnolia acuminata	Cucumber Tree	40%
Populus (all varieties)	Poplar	none
Quercus pedunculata	European Oak	90%
" alba	White Oak	none
" rubra	Red Oak	"
Salix Niobe	Weeping Willow	none
" pentandra	Laurel Willow	"
Sorbus Aucuparia	European Mountain Ash	"
" americana	American " "	"
Tilia americana	American Basswood	none
Ulmus americana	American Elm	none
" racemosa	Rock or Cork Elm	10%

Conifers

Abies concolor	Silver Fir	95%
" lasiocarpa	Alpine Fir	35%
" balsamea	Balsam Fir	35%
Chamaecyparis pisifera		80%
" " filifera		30%
" " " plumosa		85%
" " " " aurea		90%

		% Injury
Juniperus Sabina	Savin	30%
" " humilis		none
" hibernica	Irish Juniper	90%
" virginiana	Red Cedar	90%
Larix europea	European Larch	5%
Picea pungens glauca	Colorado Spruce	none
" " Kosteriana	Koster's Blue Spruce	"
" excelsa	Norway Spruce	50%
" " pyramidalis		35%
" mariana	Black Spruce	25%
" canadensis	White Spruce	10%
Pinus Strobus	White Pine	35%
" resinosa	Red Pine	10%
" sylvestris	Scotch Pine	20%
" austriaca	Austrian Pine	20%
" Cembra	Swiss Stone Pine	none
" contorta latifolia	Lodgepole Pine	5%
" montana mughus	Dwarf Mountain Pine	10%
" Banksiana	Jack Pine	10%
Pseudotsuga Douglasii	Douglas Fir	20%
Thuja occidentalis	Common Cedar	20%
Thuja (garden varieties)		10-40%
Tsuga canadensis	Hemlock	90%