V. DISEASES OF TREES AND SHRUBS

ABIES - Fir

Witches' Broom (Melampsorella cerastii) was seen at L. Ainslie, N.S. (V.J. Nordin).

Timber Rot. Ganoderma lucidum and Polyporus abietinus were collected at Green River, N.B., and Stereum sanguinolentum at Margaree Forks, N.S. (V.J. Nordin).

ACER - Maple

Timber Rot. The following organisms were noted: Daedalea unicolor, in A. rubrum, New Jersey, N.B.; Fomes connatus, in A. rubrum, Penniae; F. igniarius, in A. rubrum, New Jersey; F. fomentarius, in A. saccharum, Whycocomagh, N.S.; Ustulina vulgaris, in A. saccharum, Glendale (V.J. Nordin).

Tar Spot (Rhytisma acerinum) was unusually prevalent in the Montreal district, Que., owing to the cool, wet season (F. Godbout). It was again heavy in a planting of A. rubrum at Ste. Anne de la Pocatiere, but did not cause premature leaf-fall (A. Payette). A. punctatum was seen on A. rubrum at Acadia, N.B. (V.J. Nordin)

Wilt (Verticillium sp.) seriously damaged single trees of A. rubrum and A. saccharum at Charlottetown, P.E.I., in June (R.R. Hurst).

Chemical Injury. Tips of A. negundo became distorted, elongated, and pale green in late June and early July at Saskatoon and elsewhere in Sask. This was reported last year (P.D.S. 29:94) as heat injury, but it is now believed to be due to a fine mist of 2,4-D resulting from the large amounts of this herbicide being used throughout the province (T.C. Vanterpool).

AESCULUS - Horsechestnut

Coral Spot (Nectria cinnabarina) was found on a young tree in a nursery at Berthier, Que. (J.E. Jacques).

Timber Rot (Ustulina vulgaris) attacked A. hippocastanum at Liverpool, N.S. (V.J. Nordin).

ALNUS - Alder

Catkin Deformation (Taphrina robinsoniana) was seen at Penniae, N.B., and St. Peter, N.S. (V.J. Nordin).

AMELANCHIER

Black Leaf Curl (Apiosporina collinsii) was severe in the Edmonton district, Alta., and slight at Alliance and Grande Prairie (T.R. Davidson). It was severe on several clumps of Amelanchier in fence-rows at Aylesford, N.S. (J.F. Hockey).

BETULA - Birch

Timber Rot. The following organisms were identified: Fomes applanatus, in B. lutea, Whycocomagh, N.S., and B. papyrifers, Green River, N.B.; F. fomentarius, in B. lutea, Alma, and B. papyrifera, Green River, N.B.; F. igniarius, in B. lutea, Whycocomagh, N.S., and B. papyrifera, Green River, N.B.; Poria obliqua, in B. lutea, St. Margaret's Bay, and B. papyrifera, Dalhousie, N.S.; Ustulina vulgaris, in B. lutea, Whycocomagh, N.S. (V.J. Nordin).

CARAGANA

Leaf Spot (Septoria caraganae). Infected pods were received from Indian Head, Sask. At Winnipeg, Man., it was heavy on the leaves, but did not cause defoliation (W.E. Sackston).

COTONEASTER

Die-Back (Cytospora sp.) caused moderate damage at Edmonton, Alta. (A.W. Henry).

Dark Berry (Phytophthora cactorum) is found in nearly every planting of C. horizontalis on Vancouver I., B.C. The infected fruits, with abundant oospores, make good class material (W.R. Foster).

EUCALYPTUS

Winter Injury. A single tree at Saanichton, B.C., which had survived the two preceding winters, was killed by frost in Jan. 1950 (W. Jones).

EUONYMUS

Crown Gall (Agrobacterium tumefaciens). Many diseased plants of E. fortunei var. vegetus were found by the Plant Protection Division in a nursery at Sheridan, Ont. The galls ranged up to 4 in. diameter (J. Sibalis).

FAGUS - Beech

Bark Canker (Nectria coccinea (Pers.) Fr. var faginata Lohm., Wats. & Ayres) was seen on F. grandifolia at Penniae, N.B. (V.J. Nordin). See discussion by Wehmeyer (Fungi of New Brunswick, Nova Scotia and Prince Edward Island. Ottawa 1950).

Timber Rot. The following organisms were noted from F. grandifolia: Fomes fomentarius, Big Intervale, and Hericium laciniatum and Ustulina vulgaris, Whycocomagh, N.S. (V.J. Nordin).

FRAXINUS - Ash

Leaf Spot (Cylindrosporium (Piggotia) fraxini) was very heavy on 17 Sept. on small trees of F. pennsylvanica at Shirley Bay, near Ottawa, Ont., causing curling and shedding of leaves. Both spore stages were abundant (D.B.O. Savile).

Rust (Puccinia sparganioides) was prevalent on a tree at Longueuil, Que. (J.E. Jacques).

JUGLANS

Die-Back (Melanconis juglandis). The conidial stage was present on a few affected limbs of butternut, J. cinerea, at Kentville, N.S. Fruit-bodies of Schizophyllum, Trogia, and Polyporus tulipiferae were also present (K.A. Harrison).

Bacterial Blight (Xanthomonas juglandis) was severe on trees of English walnut, J. regia, in a garden at Saltair, and was abundant, but not serious, elsewhere on Vancouver I., B.C. (W. Jones).

LARIX - Larch

Needle Cast (Hypodermella laricis) occurred at Acadia, N.B. (V.J. Nordin).

MALUS - Apple

Timber Rot (Daedalea unicolor) was seen on M. pumila at Fredericton, N.B. (V.J. Nordin).

PICEA - Spruce

Rust (Chrysomyxa spp.). C. empetri was abundant on 4 Sept. at Churchill, Man., on P. glauca and Empetrum nigrum. At this time C. ledi var. rhododendri could be found without difficulty on Rhododendron lapponicum, but in the brief time available it was not found on spruce. It now seems probable that this rust is widespread in the country west of Hudson Bay, but it has not yet been proved to occur on Picea (D.B.O. Savile). Cone rust, C. pyrolae, was found at St. Margaret's Bay, N.S., on P. rubens (V.J. Nordin).

Timber Rot. Fomes pini was recorded in P. rubens from Green River, N.B., and St. Margaret's Bay, N.S.; and F. pinicola from Alma, N.B. (V.J. Nordin).

PINUS - Pine

Mistletoe (Arceuthobium americanum) is abundant on P. banksiana between Primrose L. and Meadow L., in western Sask., and is doing great damage to young trees. In two colonies the mistletoe is heavily parasitised by Wallrothiella arceuthobii, but it is not clear yet whether the fungus is exercising any important control of the mistletoe. Specimens collected in November and January revealed the fungus to be in good fruit (W. MacNeill, I.L. Conners).

Canker (Caliciopsis pinea) was found on P. strobus at Fredericton, N.B. (V.J. Nordin).

Rust (Coleosporium solidaginis) was seen on P. resinosa at Fredericton, N.B. (V.J. Nordin).

Rust (Cronartium spp.). C. harknessii was heavy on 10-15-year-old P. contorta in a peat-sphagnum bog on Lulu Island, B.C.; aecia were present mainly on the lateral branches (H.N.W. Toms). C. comandrae was collected at Gillam, Man., by W.B. Schofield (D.B.O. Savile). At Ste. Anne de la Pocatiere, Que., many trees of P. strobus have degenerated following infection by C. ribicola (A. Payette). Infection of P. contorta by C. cerebrum and C. comptoniae was seen at Acadia, N.B., and of P. banksiana by C. comptoniae at Chatham. C. ribicicola was recorded on P. strobus at Fredericton, Ribes glandulosum at Upsilquitch, R. triste at Bathurst, N.B., and R. nigrum at Kentville, N.S. (V.J. Nordin). C. ribicola was found fruiting on one tree of P. strobus at the Station, Kentville, N.S. (C.O. Gourley).

Twig Blight (Dermatea pinicola). The perfect stage of the fungus was present in May on a 12-foot tree of P. strobus at Kentville, N.S., killed by this disease. The imperfect stage was found on the same tree in September (C.O. Gourley).

Needle Blight (Hypodermella ampla) occurred on P. banksiana at Sussex, N.B. (V.J. Nordin).

Needle Blight (Lophodermium pinastri). The fungus was present on dead needles of P. banksiana sent in from Meadow Lake, Sask. (E.T. Reeder). It was seen on P. strobus at Fredericton, N.B., and P. resinosa at Acadia, N.B., and Bridgetown, N.S. (V.J. Nordin).

Timber Rot. Polyporus schweinitzii was noted at L. Ainslie, N.S., and Stereum sanguinolentum at Fredericton, N.B., both on P. strobus (V.J. Nordin).

POPULUS - Popular

Timber Rot (Daedalea unicolor) occurred on P. balsamifera at Fredericton, N.B. (V.J. Nordin).

Canker (Dothichiza populea) was heavy on 1000/2000 Lombardy poplar, P. nigra var. italica, intercepted at Niagara Falls, Ont., in a shipment from Shenandoah, Iowa (J. Sibalis). Nearly 90% of P. simonii were infected in the city nursery, Montreal, Que. (J.E. Jacques).

Leaf Spot (Marsonina populi) caused 25% defoliation of P. alba at Lunenburg, N.S., at the end of July (J.F. Hockey).

PRUNUS

Black Knot (Dibotryon morbosum). A single knot was found at Barry's Bay, Renfrew Co., Ont., on a small shrub of P. susquehanae. This seems to be the first Canadian record on this host, although there is a specimen on the related P. pumila from Port Franks, Lambton Co. (F. Roll-Hansen, D.B.O. Savile). Traces of black knot occurred at Contrecoeur, Vercheres Co., Que., on Prunus sp. (J.E. Jacques). It was seen on Prunus sp. at New Jersey, N.B. (V.J. Nordin).

Powdery Mildew (Podosphaera oxyacanthae) was heavy on the lower leaves of P. melanocarpa in moist woods along the Saskatchewan R., Saskatoon, Sask. (E.T. Reeder).

Leaf Curl (Taphrina cerasi). Occasional branches of P. pensylvanica were infected and the leaves killed in June. Sometimes only one twig of a tree was affected. Other Prunus spp. were not attacked (A. Payette).

QUERCUS - Oak

Canker (Phomopsis sp.) was seen on Q. borealis at Millford, N.S. (V.J. Nordin).

Leaf Blister (Taphrina coerulescens) was general in September on Q. garryana in the Metchosin district, B.C. (W. Jones).

RHAMNUS - Buckthorn

Rust (Puccinia coronata) was heavy on several plants of R. alnifolia at Lac Disparu, a sphagnum bog at Ste. Anne de la Pocatiere, Que. The first pycnia were seen 2 June on R. cathartica at Ste. Anne. R. frangula was, as usual, free from rust (A. Payette). Only a few pustules were found in the known buckthorn colonies in N.B. Only a trace of P.c. var. agrostis occurred on R. frangula at Fredericton (J.L. Howatt).

SALIX - Willow

Scab (Fusicladium saliciperdum). The old French willows at Grand Pre, N.S., were properly sprayed this year. Consequently very little scab developed and the trees fully recovered from the defoliation that occurred in 1949 (K.A. Harrison).

Blight (Physalospora miyabeana) became very serious in the old French willows at Grand Pre, N.S., in 1949, due to several periods of weather favourable to infection. Thorough spraying in 1950 practically eliminated the disease, however (K.A. Harrison).

SORBUS - Mountain Ash

Fire Blight (Erwinia amylovora). Specimens were received from Montreal West, Que., and $\frac{1}{4}$ of the twigs on 2 trees were said to be blighted (H.N. Racicot). Blight occurred on several isolated trees at Montreal (J.E. Jacques).

TSUGA - Hemlock

Timber Rot. Ganoderma lucidum was found at Fredericton, N.B., and L. Rosignol, N.S., and Polyporus sulphureus at St. Margaret's Bay, N.S. (V.J. Nordin).

ULMUS - Elm

Dutch Elm Disease (Ceratostomella ulmi). In Que. during 1950 the scouting and control work was confined, as in 1949, to the outer counties of the infected area. A considerable increase in the number of diseased trees, as compared with 1949, was found to have occurred in many of the counties scouted but extension of the diseased area was mainly in a southerly direction towards the border of the United States. Here diseased trees, though only a few in number, were found in three counties where the disease had not previously been reported, namely: Brome, Iberville, and Napierville.

In Ontario, a thorough survey for diseased trees was undertaken in the eight counties in the angle of the St. Lawrence and Ottawa Rivers, Prince Edward county, and a belt 15 miles deep along the St. Lawrence River and Bay of Quinte including several large islands near Kingston. A more general survey covering the elms along the main and secondary roads and in the villages, towns, and cities was made in the southern part of the province from Oshawa to Goderich and Windsor with more extensive work being done in Essex and Kent counties. The results of these surveys showed a new outbreak of the disease centering around Windsor in Essex county where 91 trees were found to be infected. A few diseased trees were discovered in other counties as follows: Carleton 5, Leeds 1, Prince Edward 1; and a few trees in which the fungus was living saprophytically in insect galleries, namely: Frontenac 1, Glengarry 2, Peel 1, Prescott 1, Welland 3. With the exception of Carleton and Prescott, this is the first time the fungus has been found in these Ontario counties.

In Quebec, the native elm bark beetle, Hylurgopinus rufipes, is the principal vector of the fungus. In the Windsor area, the European elm bark beetle, Scolytus multistriatus, is also present (Ruth Macrae).

Leaf Spot (Gnomonia ulmea). Infected leaves were sent in From St. Basile le Grand, Chambly Co., Que. (J.E. Jacques).

Timber Rot (Polyporus squamosus) was seen at Fredericton, N.B. (V.J. Nordin).

Twig Blight (Thyrostroma compactum). Twigs of U. pumila, with the pathogen in good fruit, were received from Madoc, Ont., in late May (J.D. MacLachlan, I.L. Conners). Already reported from Ont. and Que. (P.D.S. 17:68. 1938).

Coral Spot (Tubercularia ?ulmea) occurred on U. americana at Middleton, N.S. (V.J. Nordin).