V. DISEASES OF TREES AND SHRUBS

ACER - Maple

Leaf Spot (Phleospora Aceris) was very heavy on A. spicatum 30 miles north-east of St. Leonard, N.B., on 30 Aug.; most of the leaves were tattered and dying; the microconidial stage was abundant (D.B.O. Savile).

Leaf Blight (Ramularia lethalis Ell. & Ev.) was heavy on A. rubrum in two localities near Danford Lake, Que., following Taphrina Dearnessii (q.v.). On 1 July the Taphrina predominated, but by 11 July the Ramularia was the only conspicuous fungus to be found and injury had greatly increased. The season had been very wet up to this time and it is believed that R. lethalis, which was described from London, Ont., may be an important pathogen under such conditions, but it is not known whether it can become established in the absence of Taphrina. The lesions are large, irregular, often confluent, blackish brown, with the fungus fruiting below as a white, delicate mould; spores 6-10 x 1.7-2.5 microns, continuous, in branching chains (D.B.O. Savile).

Tar Spot (Rhytisma acerinum) covered 75% of the leaf surface of trees of A. saccharum about 15 years old on a hill at Ste. Anne de la Pocatiere, Que. (A. Payette). These hills are often above the base of low cloud sheets for considerable periods, which might increase the amount of infection.

Leaf Blister (Taphrina Dearnessii Jenkins, Journ. Wash. Acad. Sci. 29:222-230. 1939) was heavy on A. rubrum in two localities near Danford Lake, Que. In this specimen asci were 12.5-28 x 7-12 microns, with stalk cells 3.5-8 x 8-15 microns. Jenkins gives 17-29 x 8-13 microns for the asci and 6-12 x 10-18 microns for the stalk cells. Specimens from Portland, Ont. (P.D.S. 17:69-70. 1938) also on A. rubrum yield asci 21-34(39) x 10.5-14 microns with stalk cells 9-13 x 15-21 microns, and a collection on the same host from Davidson, Que., yields asci 25-32 x 10.5-13 microns with stalk cells 9-13 x 12-15 microns. We believe all these specimens to be the same fungus, on the basis of host, symptoms and morphology, despite the length of the asci in the last two mentioned, and all are filed as T. Dearnessii but there seems to be some doubt whether T. Dearnessii is actually distinct from all of the species described on Acer. In both these outbreaks Ramularia lethalis (q.v.) followed the Taphrina (D.B.O. Savile).

AESCULUS - Horsechestnut

Leaf Blight (Guignardia Aesculi) was moderate to severe on all trees of Ae. Hippocastanum at the Station, Kentville, N.S., late in the summer (D. Creelman). It was a trace to heavy in Queens Co., P.E.I. (R.R. Hurst).

Canker (Nectria sp.) was heavy on a dying tree at Charlottetown, P.E.I. (R.R. Hurst).

ALNUS - Alder

Powdery Mildew (Microsphaera Alni) was heavy on A. crispa var. mollis near Perce, Que., on 28 Aug. (D.B.O. Savile).

Leaf Spot (Passalora bacilligera Mont. & Fr.) was light on A. crispa var. mollis near Perce, Que. on 28 Aug. Passalora is very close to Cercospora, the spores being 2-celled with the lower cell appreciably broader than the upper. This fungus has been described as Cercospora Alni

Chupp & Greene (H.C. Greene, Farlowia 1:560. 1944), following its discovery on A. crispa in Wis. The name Cercospora bacilligera had already been applied to a fungus on Rhamnus (D.B.O. Savile).

AMELANCHIER

Leaf Spot (Entomosporium maculatum). A specimen on A. alnifolia was received from Aspen Beach, Alta. (A.W. Henry).

Rust (Gymnosporangium spp.). G. juvenescens was reported to have caused severe damage in a planting of A. alnifolia at Drumheller, Alta. (L.E. Tyner). G. sp. was heavy on leaves of A. alnifolia received from Oyen (H.N. Racicot).

Seedling Blight (Pythium spp.). Many seedlings were killed in nursery beds at the Station, Beaverlodge, Alta. Pythium spp. and other fungi were isolated (J.D.G.).

BETULA - Birch

Die-Back (cause unknown) was severe in many parts of the Gaspe Peninsula, Que. and in northwestern N.B. Adjacent cutting, burning or construction work may often have been a factor, but serious killing had also occurred in some areas where no change in the environment was apparent (D.B.O. Savile). In order to study this disease in its early stages, an area in Pictou Co., N.S., was selected in 1947 in which die-back is of fairly recent origin. It has been established that die-back of twigs, and even some branches, in the top of the crown can occur in the complete absence of the bronze birch borer. Trees thus affected are soon attacked by the borer and killed. The cause of the initial die-back is still not known. Excavation of the root system of large trees has shown practically no killing except of the ultimate rootlets; and only a slightly higher proportion of rootlets was dead in diseased than in apparently healthy trees; but no conclusions can be drawn from these studies until more is known of the condition of the roots of normal, vigorous trees. Many fungi have been isolated from affected twigs, but their pathogenicity has yet to be tested. The possibility that reduced precipitation over the whole affected area is a contributing factor has received some support from increment and meteorological data. These studies are being made in co-operation with the N.S. Dept. of Lands and Forests (A.J. Skolko). Few trees in P.E.I. do not show symptoms of die-back (R.R. Hurst). L.S. Hawboldt (Jour. For. 45: 414-422. 1947) suggests that irregular precipitation, exposure during logging of other trees, injury during logging, defoliating insects, and injury by sapsuckers, rabbits and porcupines have all weakened stands and laid them open to attack by various weakly parasitic fungi and the bronze birch borer.

CARAGANA

Leaf Spot (Septoria Caraganae) is present each year at Regina, Sask., and is often conspicuous and severe. The cumulative effect is serious and it is largely responsible for the poor condition of many hedges. Crown rot (? Fusarium sp.) may also be a factor (T.C. Vanterpool).

CHAMAECYPARIS

Canker (Pestalotia funerea associated) was present in 1946 on C. Lawsoniana var. erecta in a nursery at Vancouver, B.C. Adjacent C. L. Allumii was unaffected (W. Jones).

CORNUS - Dogwood

Leaf Blight (Monilia Cornu) was light but general on C. Nuttallii in 1946 at North Saanich, B.C. (W. Jones).

CRATAEGUS - Hawthorn

Scald (Entomosporium Thuemenii) caused severe defoliation in a hedge of C. Oxyacantha at Agassiz, B.C. (W. Jones).

Rust (Gymnosporangium clavariaeforme) was a trace at Charlottetown, P.E.I. (G.W. Ayers).

FRAXINUS - Ash

Rust (Puccinia sparganioides) was heavy on F. americana at L'Islet, Que., severely distorting leaves, fruits and young twigs. Spartina pectinata was also heavily rusted (A. Payette).

JUGLANS

Leaf Spot (Marssonina Juglandis). Infected leaves of J. nigra were received from Smiths Falls, Ont. (Ruth Macrae).

JUNIPERUS

Rust (Gymnosporangium Juniperi-virginianae). Specimens of J. virginiana were received from Welland Co., Ont. The affected tree was close to a shrub of Malus Sargenti and 300 yds. from apple trees (G.C. Chamberlain).

MALUS

Scab (Venturia inaequalis). Specimens of the ornamental crab, M. Scheideckeri, from Toronto, Ont., showed twig stunting and leaf scorching; the leaves were completely overrun by scab. M. ioensis was reported to be less severely affected (G.C. Chamberlain).

OSTRYA - Hop-Hornbeam

Leaf Spot (Cylindrosporium Pearnessii) was heavy on and caused moderate damage to O. virginiana at Danford Lake, Que. (D.B.O. Savile).

POPULUS - Poplar

Rust (Melampsora medusae) was heavy and general on P. balsamifera in Sept. at Dunrobin (H.N. Racicot) and Westboro, Ont. (D.B.O. Savile).

Yellow Leaf Blister (Taphrina aurea) was common on P. trichocarpa at Duncan, B.C. (W. Jones).

QUERCUS - Oak

Anthracnose (Gloeosporium nervisequum). Specimens of Q. alba were received from Niagara-on-the-Lake, Ont. (I.L. Conners). It was severe on a number of trees of Q. macrocarpa near Ottawa, Ont. (D.B.O. Savile).

Leaf Blister (Taphrina coerulescens) was heavy and caused moderate damage on Q. borealis at Danford Lake, Que. (D.B.O. Savile). It was heavy on a branch of Q. borealis at Kentville, N.S.; first record from N.S. (J.F. Hockey).

RHAMNUS - Buckthorn

Rust (Puccinia coronata). Aecia on R. cathartica, past prime, were collected at Macdonald College, Que., on 19 June (W.C. Broadfoot).

Infection was heavy on a hedge and scattered shrubs of R. Frangula at Fredericton, N.B. (J.L. Howatt). Infection of R. cathartica was light at Charlottetown, P.E.I. (G.W. Ayers).

SALIX - Willow

Scab (Fusicladium salicisperdum) caused about 50% defoliation of French willow in Kings Co., N.S. Spraying is holding the disease in check at Grand Pre Park (K.A. Harrison).

Anthracnose (Gloeosporium Salicis) was heavy on an isolated tree of Salix sp. at Ottawa, Ont. (D.B.O. Savile).

Rust (Melampsora spp.) M. Abieti-capraearum was general but not severe on S. Bebbiana at Redgwick, N.B. M. Bigelowii was heavy and hastened defoliation of several trees of S. alba var. vitellina at Britannia, near Ottawa, Ont. (D.B.O. Savile).

Powdery Mildew (Uncinula Salicis) was general on S. sp. about North Saanich, B.C. (W. Jones).

Die-Back (Valsa ambiens). A large tree of Wisconsin willow at Strathroy, Ont., bore many affected branches and showed considerable die-back of the current season's growth (G.C. Chamberlain).

SORBUS - Mountain Ash

Fire Blight (Erwinia amylovora). The branch tips of 3 trees of S. aucuparia in a garden at Montreal, Que., were severely blighted (J.E. Jacques).

ULMUS - Elm

Dutch Elm Disease (Ceratostomella Ulmi). Work was continued during 1947 on a co-operative basis by the Dominion Department of Agriculture, the Quebec Department of Lands and Forests, and the Ontario Department of Agriculture. The eastern section of Ontario was scouted intensively but no positive cases of diseased trees were found. In Quebec there was an extension of the infected area westward north of the Ottawa River, five infected trees being found in Argenteuil County. The nearest of these was about three miles from the Ontario border, across the Ottawa River. In the eastern and south-eastern part of the infected area, in Lotbiniere, Richmond, and Megantic Co., there was considerable intensification of the disease. In 1946 there were 2114 infected trees located in Quebec and in 1947 the number of such trees was 840. These figures, however, are not comparable and the greatly reduced number of diseased trees found in 1947 does not indicate a corresponding reduction in the incidence of the disease.

The removal of diseased trees as a means of control was continued, except in the very heavily infected area in the vicinity of Sorel, and spraying experiments to prevent beetles emerging from diseased trees and also to prevent them from entering healthy trees were initiated (A.W. McCallum).

Coral Spot (Tubercularia ulmea Carter). This organism, which has previously been referred to Nectria cinnabarina, has recently been described by J.C. Carter (Phytopath. 37:243-246. 1947) as Tubercularia ulmea. Coral spot was again very prevalent among hedges of U. pumila at the Botanical Garden, Montreal, Que. (J.E. Jacques). A young tree of U. americana was girdled near the ground by Nectria sp. at Charlottetown, P.E.I. (R.R. Hurst).