

V. DISEASES OF TREES AND SHRUBS*

ACER - Maple

Anthrachnose (Gloeosporium apocryptum). Infection was mod. on 25 saplings of A. rubrum var "Drummondii" at Ottawa, Ont. and sl. on 1500 saplings of A. saccharinum in a nursery at Rougemont, Que. (A.E. Straby). Moderate-sev. browning of maple foliage was observed at a number of locations in the Maritime Provinces (L. Magasi).

Coral canker (Nectria cinnabarina). Bark from a cankered area on A. negundo was received from Windsor, N.S. (K.A. Harrison). It was observed fruiting on dead ends of living branches and on a large branch near an old wound on A. platanoides at St. John's, Nfld. (O.A. Olsen).

Tar spot (Rhytisma acerinum). Infection was 40% on 200 trees of A. saccharinum at Hymers, Ont. (W. G. Powell).

Wilt (Verticillium albo-atrum). Typical symptoms developed on a few trees of A. platanoides in a nursery at Oldcastle, Ont. (A. E. S.), and affected several trees of A. saccharum at Cowansville, Que. (G.B. Ouellette).

Deterioration (cause unknown) continued to cause concern throughout s. Ont. Significant mortality of A. saccharum occurred along highways, secondary roads and streets in urban areas. Further evidence was obtained that adverse environmental conditions are responsible (B. W. Dance, D. F. Lynn). Mortality of many trees of A. saccharinum and a few of A. platanoides in parks in Montreal West, Que. was attributed to water-logged, shallow soils over a heavy clay layer. Seeping water from defective drainage also caused dieback on maple trees at Quebec City (G.B.O.).

Leaf scorch was again common on A. saccharum and other deciduous trees in s. Ont. (B.W.D., D.F.L.).

Winter killing. Three 8-10' trees of A. platanoides var "Crimson King" died from cankers one foot above the soil line at Spencerville, Ont. (A. E. S.).

* Diseases referred to in this section are mainly those of shade trees and ornamental shrubs, although occasional reference is made to diseases of native forest trees. For a more comprehensive report of tree diseases in Canada the reader is referred to the Annual Reports of the Forest Insect and Disease Survey, published by the Forest Entomology and Pathology Branch, Canada Department of Forestry, Ottawa, Ont.

AESCULUS - Horsechestnut

Leaf blotch (Guignardia aesculi) affected A. hippocastanurn throughout N.S. but damage was most evident at locations in Pictou and Yarmouth counties (L. Magasi). Infection was 100% at Kentville, N.S. (C.O. Gourley). It was unusually sev. in P.E.I. in 1963. Some trees at Montague suffered 90% defoliation (G.W. Ayers).

Coral canker (Nectria cinnabarina) was sev. on 25 nursery trees, killing most of them, at Ottawa, Ont. and sl. on 10 nursery trees at Ste. Rose, Que. (A.E. Straby).

BERBERIS - Barberry

Anthracnose (Gloeosporium berberidis) was sl. on 1000 nursery plants at Cookesville, Ont. (A.E. Straby).

Wilt (Verticillium albo-atrum) affected 6/50 plants in a nursery at Victoria, B.C. (M. Waseem).

BETULA - Birch

Rust (Melampsorium betulinum). Infection was sl. on 12,000 birch trees in a nursery at Yarrow, B.C. (Gibson, Watt).

Leaf spot (Septoria betulae) was mod. -sev. on B. alba at Charlottetown, P.E.I. Infection was accompanied by progressive chlorosis and defoliation (G.W. Ayers, D.W. Creelman).

CATALPA

Wilt (Verticillium albo-atrum). A badly wilted specimen of C. speciosa was received from Montreal, Que. The accompanying description of tree symptoms strongly suggested Verticillium infection (D.W. Creelman).

CORNUS - Dogwood

Dieback (Apioportha corni) caused mod. damage to 12 plants of C. alba var elegantissima at Wellesley, Ont. (A.E. Straby, R.H. Arnold). This is the first report to the Survey, of A. corni (D.W.C.).

Leaf blight (Monilinia corni). The fungus was isolated from blackish-brown lesions on leaves of C. nuttallii nr. Sidney, B.C. (R.G. Atkinson).

Low temperature injury caused sev. curling of the foliage on new growth of C. florida at Vancouver, B.C. Some leaves became necrotic by the end of July (H.N. W. Toms).

CRATAEGUS - Hawthorn

Anthracnose (Gloeosporium sp.) was sl. on 10 nursery trees at Glen Williams, Ont. (A.E. Straby). This disease has not previously been reported to the Survey. The U.S.D.A. Index of Plant Diseases lists a G. crataegi Dearn. & Barth. on this host (D.W.C.).

Rust (Gymnosporangium sp.). Specimens bearing pycnia only were received from Galt and Carlisle, Ont. and from Chomedey, Que. where it was sl. on 200 plants (A.E.s.).

Powdery mildew (Podosphaera clandestina.) was sev. on 10,000 plants in a nursery at Yarrow, B.C. (Gibson, Watt).

Stem pitting (? virus). Several trees on the University of Manitoba campus, Fort Garry, exhibited symptoms similar to those caused by a virus on apple (W. C. McDonald).

FORSYTHIA - Golden Bells

Bacterial blight (Pseudomonas syringae) caused mod. damage on 25 trees in a nursery at Aylmer, Que. (A.E. Straby).

FRAXINUS - Ash

Rust (Puccinia sparaganioides). Damage to F. americana was sev. in the Round Hill - Lequille area and on 1 tree at Digby, N.S. (L. Magasi). Defoliation caused by rust was less severe than for several years at Kentville, N.S. (K.A. Harrison).

JUNIPERUS - Juniper

Rust (Gymnosporangium spp.,). The following occurrences were recorded in Ont. G. clavipes was heavy on J. virginiana in a planting surrounded by rosaceous shrubs at Simcoe. G. juniperi-virginianae was sl. on J. virginiana var. canaerti in a nursery in the Toronto area. G. clavipes was sl. on J. communis var. "Krakovia" in a 1/4 acre planting at Clarkson and sl. on 750 plants of J. communis var. suecica and J. sabina at Oakville. G. globosum was tr. on Juniperus sp. (indet.) at Oakville (A.E. Straby, J.A. Parmelee).

Needle cast (Lophodermium juniperinum) was tr. on 100 nursery shrubs at Richmond, Ont. (A.E.S.).

LABURNUM - Beantree

Coral canker (Nectria cinnabarina) was sev. on a specimen tree of L. anagyroides at Gander, Nfld. (O.A. Olsen).

LIQUIDAMBER - Sweetgum

Coral canker (Nectria cinnabarina). Infection was mod. on 5 trees in a nursery at Clarkson, Ont., possibly following winter injury (A.E. Straby).

LONICERA - Honeysuckle

Leaf blight (Herpobasidium deformans). Affected specimens of L. tatarica were received from Riviere du Loup, Que. (J. Santerre, D. W. Creelman), The same host was severely infected nr. Moncton, N.B. (K.M. Graham, R. G. White).

Powdery mildew (Microsphaera penicillata var lonicerae). Infection was mod. on a hedge at Ottawa, Ont. (D. W. Creelman). In nurseries in Que. it was mod. on 2,000 plants at Boucherville, mod. on 1500 bushes at Charlesbourg and sev. on 300 bushes at Joliette (A.E. Straby, Cardinal, Benazet).

MAHONIA - Oregon Grape

Rust (Cumminsia mirabilissima) was sev. on a small planting at Sherkston and on 25 plants at Waterdown Ont. (C.H. Hovey, A.E. Straby).

MALUS - Flowering Cra'b

Twig and stem canker (Cytospora sp.), Infection was mod. on 100 trees in a nursery at Richmond, Ont. (A.E. Straby) and was observed on a few ornamental Malus trees at Ste. Foy and Shawinigan Falls, Que. (G. B. Ouellette).

Fire blight (Erwinia amylovora). Moderate-sev. infections were common on ornamental plantings in s. Alta. (F.R. Harper).

Rust (Gymmosporangium juniperi-virginianae). A heavily infected specimen of Becthel's crab, Malus ioensis, was received from the Prescott, Ont. district (D.W. Creelman, J.A. Parmelee).

Powdery mildew (Podosphaera leucotricha) was mod. on half the trees in a nursery at Yarrow and sl. on 20% of the trees in a nursery at Fort Langley, B. C. (Gibson, Watt).

Scab (Venturia inaequalis). Infection ranged from mod. -sev. in nurseries at Aldergrove, Fort Langley, Pitt Meadows, North Surrey, Yarrow and Saanich, B.C. (Gibson, Watt). It was sl., in nurseries at Acton, Ont. and Ancienne Lorette, Que. (A. E. S.).

MORUS - Mulberry

Coral canker (Nectria cinnabarina) severely damaged 2 trees of M. alba var pendula in a nursery at Montreal, Que. (Cardinal, Benazet)

Twig blight (Septomyxa tulasnei v. Hoehn.) caused mod. damage to 10 saplings of Morus sp. at Chomedey, Que. This is probably the conidial state of Diaporthe longirostris Sacc, (A. E. Straby, R. H. Arnold). **This** disease has not previously been reported to the Survey (D. W. Creelman).

PICEA - Spruce

Eastern dwarf mistletoe (Arceuthobium pusillum) caused numerous witches' brooms on Picea glauca on the Green Gables Golf Course, Cavendish, P.E.I. (L.P. Magasi).

PINUS - Pine

Blister rust (Cronartium ribicola). Severe infections were seen in a planted row of 15-year old P. strobus at Bathurst, N.B. (L.P. Magasi).

POPULUS - Poplar

Canker (Dothichiza populea). Affected specimens of P. nigra var. italica were received from Aylmer, Que. (A.E. Straby).

Yellow leaf blister (Taphrina populina). Infections on Populus spp., principally P. nigra var italica, ranged from sl. -sev. on most trees in nurseries at Victoria, Ocean Park, Richmond, White Rock, North Surrey, Pitt Meadows, Langley, Chilliwack and Royal Oak, B. C. (Gibson, Watt). It was sl. on 500 trees in a nursery at Coteau du Lac, Que. (J.A. Cardinal, J. Benazet).

PRUNUS - Native and Flowering Cherries

Crown gall (Agrobacterium tumefaciens). Fifty trees of P. padus, imported from the U.S.A., were sev. infected in a nursery at Lethbridge, Alta. and ordered destroyed (R.P. Stogryn).

Black knot (Dibotryon morbosum). Nearly 100% infection was seen on imported trees of P. padus in a nursery in s. Alta. A check of trees imported and subsequently distributed by this nursery in the past 2 years showed 25-50% of the material infected (R.P.S., F.R. Harper). It was common on P. pensylvanica and P. virginiana in s. N. B. and N. S. (L. P. Magasi). Wild cherries were heavily infected in the St. John's Nfld. area (O.A. Olsen).

Leaf blight (Monilinia demissa). Infection was heavy on leaves and petioles of P. demissa at Keremos, Irish Creek and Swan Lake, B. C. (L.E. Lopatecki).

Blossom blight (Monilinia fructicola) was seen on a number of bushes of P. triloba in the Summerland, B. C. district (D. L. McIntosh).

Powdery mildew (Podosphaera clandestina). Moderate infections occurred on 1000 plants of Prunus in a nursery at Ste. Dorothée, Que. (J.A. Cardinal, J. Benazet).

Bacterial canker (Pseudomonas mors-prunorum). Leaves and blossoms of a 12-ft. flowering cherry at Victoria, B. C., were wilting as a result of a barely noticeable stem canker extending about 8" from the crown region. The infection appeared to occur at the union of scion and rootstock. The casual organism was isolated (R. G. Atkinson).

Bacterial blight (Pseudomonas syringae) continues to cause sev. damage to Japanese ornamental cherry in North and West Vancouver, B. C. (H.N. W. Toms).

Leaf spot (Septoria pruni). P. virginiana at Port Morien, N.S. was 100% infected (C.O. Gourley).

Witches' broom (Taphrina cerasi). Lightly infected trees of P. pensylvanica were reported from scattered locations in N.B. and e. N.S. (L. P. M.).

PYRUS - Mountain Ash

Canker (Cytospora spp.). C. rubescens was found on 1 tree at Lethbridge, Alta. (F.R. Harper) and Cytospora sp. caused sev. twig and stem cankers, following winter injury to understock, to 20 young trees at Aylmer, Que. It was also sev. at Richmond, Ont. (A.E. Straby).

Fire blight (Erwinia amylovora). There was a sharp increase in incidence in c. Alta, (W.P. Skoropad). Fire blight was very sev. in the Calgary and Lethbridge areas of Alta. and necessitated the destruction of many specimen trees (R.P. Stogryn, F.R.H.). The disease was epidemic in Saskatoon, Sask. in 1963 (R. J. Ledingham) and was mod. on 200 plants in a nursery at Ste. Dorothée, Que. (J.A. Cardinal, J. Benazet).

Coral canker (Nectria galligena) followed winter injury and damage from fire blight in the previous season at Aylmer, Que. Six/12 nursery trees were killed. It also occurred at Richmond, Ont. (A. E. S.).

QUERCUS - Oak

Anthracoze (Gnomonia quercina). Infection was sev. on 5 saplings of Q borealis at Fabreville and sl. on 500 at Ste. Dorothée, Que. (A.E. Straby).

Twig canker (Myxosporium lanceolata Sacc. & Roum.) caused sev. damage on 25 trees of Q. robur var. fimbriata in a nursery at Ottawa, Ont. The trees were imported from Europe in 1962. This fungus is the conidial state of Diaporthe leiphaemia (Fr.) Sacc. (A.E.S., R.H. Arnold). The disease has not been previously reported to the Survey (D. W. Creelman).

Leaf blister (Taphrina caerulescens) was sl. on 5 trees at Senneville, Que. (A.E.S.).

RHODODENDRON - Azalea

Shoot gall (Exobasidium vaccinii). Ten plants of the azalea variety Debutante were affected in a nursery at Victoria, B.C. (M. Waseem).

RIBES - Flowering Currant

Anthracnose (Drepanopeziza variable). Moderate infections developed on hedges of R. alpinum in the Ottawa, Ont. area. Some defoliation resulted but the disease was not as sev. as in the past 2 seasons (H.S. Thompson, D. W. Creelman). It was mod. on 1000 plants in a nursery at Boucherville, Que. (J.A. Cardinal, J. Benazet).

Powdery mildew (Sphaerotheca mors-uvae) was sl. on a hedge of R. alpinum at Ottawa, Ont. (D. W. C.), mod. on 100 nursery plants at Boucherville and sev. on 1500 plants at Ste. Dorothée, Que. (J.A.G., J.B.).

ROSA - Rose

Black spot (Diplocarpon rosae). A moderately infected specimen was received from an Ottawa, Ont. garden (D. W. Creelman). A heavy infection was seen at Port: Morien, N.S. (C.O. Gourley).

Stem canker (Leptosphaeria coniothyrium). The organism was isolated from cankers on several moribund plants from a greenhouse at Pictou, N.S. (K.A. Harrison).

Dieback ? (Phoma sp.). About 20% of the plants being forced in a commercial greenhouse at Lethbridge, Alta. suffered mod. -sev. damage. A species of Phoma was associated with the cankers (F.R. Harper).

Powdery mildew (Sphaerotheca pannosa). Infection varied from sl. -sev. on assorted varieties in 2 nurseries at Victoria and in 1 at Chilliwack, B.C. (M. Waseem, Gibson, Watt). It was sl. -mod. in garden plantings at Lethbridge, Alta. (F.R.H.) and very sev., causing 90% defoliation on a climbing variety at Kentville, N.S. (C.O. G.).

Chemical injury. A summer application of 2, 4-D caused mod. damage to hybrid teas and sev. damage to climbers in an Ottawa, Ont. garden (D. W. Creelman). Hybrid teas in a home garden at Weston, Ont. were affected (A.E. Straby).

Inon deficiency chlorosis was common in many areas of Sask. (R. J. Ledingham).

SALIX - Willow

Canker (Cytospora chrysosperma). Severe infections occurred on 25 trees in a nursery at Richmond, Ont. (A.E. Straby).

Twig canker (Marssonina kriegeana). Moderately cankered specimens of S. babylonica were received from a garden in Victoria, B.C. (R. G. Atkinson).

Scab and blight (Venturia saliciperda, Physalospora miyabeana) was observed, in varying degrees of intensity, in nurseries at Langley, Richmond, Chilliwack and Yarrow, B. C. (Gibson, Watt). Heavy infections occurred at St. Tite and other localities in Champlain Co. and at Ville Marie, Témiscamingue Co., Que. (G.B. Ouelette). The disease was generally light in the Maritime Provinces but was occasionally mod-sev. in Inverness, Antigonish, Colchester and Annapolis counties, N.S. (L. P. Magasi). Trace infections only were seen on S. vitellina in Kings Co., N.S. (K.A. Harrison)

Dieback (cause unknown) affected 1 ornamental planting at Lethbridge, Alta. (F.R. Harper).

SAMBUCUS - Elder

Coral canker (Nectria cinnabarina) caused the abrupt wilting of one or more branches of several plants at Saskatoon, Sask. (C.G. Riley, R. J. Ledingham).

SYMPHORICARPOS - Snowberry

Spot anthracnose (Sphaceloma symphoricarpi). A small bush at Kentville, N.S. was badly defoliated as a result of heavy infection (K.A. Harrison).

SYRINGA - Lilac

Powdery mildew (Microsphaera penicillata). Heavy infection occurred on several young plants at Kentville, N.S. (K.A. Harrison).

Bacterial blight (Pseudomonas syringae) caused sev. damage in a small planting at Lethbridge, Alta. (F.R. Harper). Infection was sl. on 100 French hybrids in a nursery at Ottawa, Ont. and on 75 nursery shrubs at Aylmer, Que. (A.E. Straby).

Winter killing caused slight injury to the main stems of French hybrids in a nursery at Aylmer, Que. (A.E.S.).

Twig blight (Pestalotia funera). Trace amounts of damage occurred in a nursery at Richmond, Ont. (A.E. S.).

TILIA - Linden

Leaf spot (Gloeosporium tiliae). Infection was mod. on 100 trees in a nursery at Spencerville, Ont. (A. E. Straby).

Chemical injury (herbicide) occurred in nurseries at Ottawa and Spencerville, Ont. (A.E. Straby).

ULMUS - Elm

Dutch elm disease (Ceratocystis ulmi). The known distribution of this disease was extended to the town of Callendar, on Lake Nipissing, Ont. (B.W. Dance, D.F. Lynn) and in Témascamingue Co., Que. (G.B. Ouellette). It was found for the first time in Northumberland and Charlotte counties, N. B. at Blissfield and Milltown, respectively (L. P. Magasi).

Black spot (Gnomonia ulmea) was sl. on Ulmus sp. in a nursery at Edmonton, Alta. (R.P. Brandrith), on a single specimen tree of U. pumila in an Ottawa, Ont. garden (D. W. Creelman) and on 8000 saplings of U. parvifolia at St. Paul d'Abbotsford, Que. (A.E. Straby). It was common on U. americana shade trees at Fredericton, N. B. (L.P.M.).

Coral canker (Nectria cinnabarina) continued to cause mortality of U. pumila planted as ornamentals at Cornerbrook, Nfld. (W. J. Carroll).