VII. DISEASES OF ORNAMENTAL PLANTS

ACONITUM - Monkshood

Powdery Mildew (Erysiphe Polygoni) was troublesome on A. bicolor at Indian Head, Sask.

ALTHAEA ROSEA - Hollyhock

Leaf Spot (Cercospora althaeina). Moderate infection was recorded on the leaves of some plants in Man. and a trace at Souris, P.E.I.

Rust (Puccinia Malvacearum) was recorded as follows: Widely distributed on the lower mainland and on Vancouver Island, B.C.; fairly heavy at Armstrong and Lytton; in spite of the comparatively dry summer, very prevalent and causing injury in many parts of Ont.; present and sometimes heavy throughout P.E.I.

ALYSSUM

Downy Mildew (Peronospora parasitica) was found in 2 gardens at Fredericton, N.B. Some White Rust (Cystopus candidus) was also present. (J.L. Howatt).

ANEMIA

Leaf Spot (Phyllosticata Pteridis Halsted) lightly infected the ferns: A. densa, A. rotundifolia, Asplenium nidus, Coniogramme japonica, Lygodium circinatum and Phymatodes muscifolium in a greenhouse, Montreal Botanical Garden, Montreal, Que. The damage was nil. These ferns are kept in a greenhouse at 60° F. and a rather high humidity. Only a few spots appeared on the fronds. The pathogen was not observed in fruit on A. densa and frequently the ash-grey centres fall out. The fungus, however, was isolated. This appears to be the first record of the disease in Canada. (J.E. Jacques)

ANTIRRHINUM - Snapdragon

Rust (Puccinia Antirrhini) was reported as follows: Common in gardens on the lower mainland and Vancouver Island, B.C., and damage considerable; slight damage in a garden at Saskatoon, Sask.; infection moderate late in the season, but less than in former years at Winnipeg, Man.; slight damage in a garden in York Co., N.B.

Yellows (virus) severely affected 50% of the plants in a garden in Queens Co., P.E.I.

ASTER

Powdery Mildew (Erysiphe Cichoracearum). Patches of mildew were present on the lower leaves of some plants of A. novae-angliae in late summer at the Botanical Gardens, Montreal, Que.

BEGONIA

Stem Rot (Botrytis cinerea) was observed in the greenhouse at Toronto, Ont., by W.A. Fowler: "the stems turn brown at the soil level and eventurally shrivel and die". It has been seen before on snapdragon and calendula. (F.L. Drayton)

BERBERIS - Barberry

Rust (Puccinia graminis) was seen on a few bushes at Courtenay, B.C. (W.R. Foster). Pycnia and aecia were abundant on a barberry at Winnipeg on June 12; infection was heavier than in former years. (A.M. Brown)

BOLTONIA

Streak (virus) affected 20% of the plants in the border at the Station, Fredericton, N.B., causing a severe streaking of the leaves and stems. The disease advanced acropetally and in severe cases most of the leaves died and remained hanging to the stems. There was a marked clearing of the veins followed by a necrosis of the veinal network, ultimately resulting in collapse of the leaf. The disease was transmitted by grafting to healthy Boltonia, but attempts to transmit the virus by sap and insect were unsuccessful. The disease overwinters in the affected clumps. It is considered to be a new virus. (D.J. MacLeod)

CALENDULA

Yellows (Callistephus virus 1) severely affected 10% of the plants in the border at the Station, Fredericton, N.B. (D.J. MacLeod). Yellows is widespread and occasionally prevalent in P.E.I. Plants produce good bloom in the early season, but inevitably develop "yellows" by mid or late summer. (R.R. Hurst)

CALLISTEPHUS - China Aster

Rust (Coleosporium Solidaginis). A slight infection was noted in October at Winnipeg, Man.

Wilt (Fusarium oxysporum f. Callistephi) killed scattered plants at Morden and Parkdale, Man; the causal organism was isolated readily from the Morden specimens. (W.L. Gordon)

Yellows (virus). Odd plants were found affected at Brandon and Parkdale, Man. Among the 17 varieties of China aster grown at the Botanical Garden, Montreal, Que., every few plants were free from yellows on Aug. 12; all varieties seemed equally susceptible.(J.E. Jacques). Yellows was widespread and severe on China aster in N.B. The virus was identified as Callistephus virus 1 and was successfully transmitted to healthy China aster by virus-free leafhoppers (Macrosteles divisus) Yellows was also common on yellow hawkweed, Hieracium floribundum Wimm. & Grab. in N.B. The disease was transmitted from this host by leafhoppers to China aster and identified as Callistephus virus 1 (D.J. MacLeod). All plants were affected in several gardens in Queens Co., P.E.I.

CAMPANULA MEDIUM - Canterbury Bells

Leaf Spot (Ramularia macrospora Fres.) caused moderate damage in a garden at Brentwood, B.C. (W. Jones and I.L. Conners)

Crown Rot (Sclerotinia sclerotiorum) was severe in a garden in Queens Co., P.E.I.

CARAGANA

Polyporus Tulipiferae was apparently destructive in a mixed stand with spruce at the Forestry Station, Indian Head, Sask.

Leaf Spot (Septoria Caraganae) was widespread in Saskatoon Sask., in spite of the heat and drought from midsummer onwards; damage was generally light (T.C. Vanterpool). Affected specimens were received from Valor. Infection was general and moderate at Morden, Man., and slight at Brandon and Winnipeg; defoliation was less than in some years.

CHRYSANTHEMUM

Foot Rot affected odd plants at Brandon, Man. Isolations yielded Fusarium oxysporum and F. Solani. (W.L. Gordon)

Spotted Wilt (virus). The plants were slightly to moderately affected in a greenhouse at Redcliff, Alta. The diagnosis was confirmed by Dr. Berkeley. (G.B. Sanford)

CISSUS - Treebine

Black Mould (Hormodendron cladosporioides Sacc.). The fungus was so abundant on the only plant of C. sicyoides grown at the Botanical Garden, Montreal, Que., that it became completely defoliated. It formed a sooty coating on the leaves, which yellowed and dropped. Its growth was favoured by the high humidity in the greenhouse. The plant suffered loss of vigour, but it soon recovered. (J.E. Jacques)

CLARKIA

Foot Rot. A severe infection occurred at Brandon, Man.; isolations yielded Fusarium oxysporum and F. Solani. (W.L. Gordon)

Heat Canker or Girdle was severe on about 35% of the plants in a private garden, Saskatoon, Sask.; Dr. Roderick Sprague suggested the trouble was due to heat, high temperatures of 100°F+ having been experienced. (T.C. Vanterpool)

CLEMATIS

Stem Rot (Ascochyta clematidina Thüm.) destroyed all 5 plants in a garden at Charlottetown, P.E.I.; the stems were girdled at the soil level. This has not been previously observed in P.E.I. (R.R. Hurst)

Leaf Spot (Septoria Clematidis). A slight infection was present on C. ligusticifolia at Brandon, Man.

COTONEASTER

Dark Berry (Phytophthora Cactorum) was general in the Victoria and Sidney districts, B.C., on C. horizontalis and caused much damage reducing the ornamental value of the shrub. It was also severe on C. Francheti in several gardens particularly in shady locations, although no disease was seen on this variety in 1939 (P.D.S. 19:102). (W.R. Foster)

CRATAEGUS - Hawthorn

Fire Blight (Erwinia amylovora). A severe infection was present on several trees of C. pinnatifida at the Station, Morden, Man.; first record on Crataegus in Man. (W.A.F. Hagborg)

Rust (Gymnosporangium clavariiforme) was severe on a few trees of C. Oxyacantha in a nursery at Courtenay, B.C. (W.R. Foster and I.L. Conners) It was also observed in P.E.I.

Powdery Mildew (Podosphaera Oxyacanthae) was very severe at Mount Denson, N.S. (J.F. Hockey)

CYCLAMEN

Stunt (Cladosporium Cyclaminis Massey & Tilford). As high as 75-80% of the plants of C. persicum have been observed to be diseased at the Botanical Garden, and in commercial greenhouses at Montreal, Que. The loss was at least 50% and in certain cases was even higher. The affected plants have smaller leaves than the healthy. The most striking symptom is the opening of the flowers below the leaves. Many young flower buds never reach maturity and dry up. The fungus lives in the corm, being largely confined to the crown. It causes a purple coloration of the infected portions. The fungus has been observed in the peduncle just below the flower bud and in very young seedling corms. It is presumed that the pathogen is disseminated through seeds. This disease does not seem to have been reported before in Canada. (J.E. Jacques)

DAHLIA

Mosaic (virus). A plant showing yellowing and distorted leaves, shortened internodes and bushy habit was sent from a nursery at Sussex, N.B. The virus was identified as Dahlia virus 1. (D.J. Macleod).

Stunt (virus) was prevalent in dahlia, especially pompom varieties in P.E.I.; during the past 2 years many gardeners have had to renew completely their dahlia stocks on account of stunt. (R.R. Hurst)

DELPHINIUM - Larkspur

Leaf Spot (Ascochyta Aquilegiae (Rabh.) v. Höhn.) caused well defined black spots on larkspur at Saskatoon, Sask. It has been reported by G.P. Clinton (Conn. Agr. Exp. Sta. Bull. 358. 1934). The fungus was determined by Dr. J.A. Stevenson. It has not been previously reported in Canada. (R.C. Russell and I.L. Conners)

Powdery Mildew (Erysiphe Polygoni) caused slight damage at Indian Head, Sask.

Bacterial Blight (Phytomonas delphinii) affected several clumps in a 2-year old planting at Woodville, N.S. (J.F. Hockey). The disease moderately affected about 50% of the plants observed in Queens and Kings Co., P.E.I., but infection varied widely in different plantings. (R.R. Hurst)

Mosaic (virus) affected 2% of the plants in a garden at Fredericton, N.B. The plants showed marked mosaic and vein-clearing without distortion of the leaves. The virus was not identified (D.J. MacLeod). Mosaic affected 1% of the plants at the Station, Charlottetown, P.E.I., and affected plants were present in 15 gardens examined. (R.R. Hurst)

Fasciation (non-parasitic) was observed in 5 plants at the Station, Fredericton, N.B. (D.J. MacLeod)

DIANTHUS

Foot Rot. Scattered plants were attacked at Brandon and Morden, Man. Isolations yielded Fusarium oxysporum f. ?Dianthi from specimens from both places. (W.L. Gordon)

Leaf Spot (Heterosporium echinulatum) caused considerable damage to carnation in a greenhouse at Langley, B.C.; it is also widely distributed in gardens on Vancouver Island (W. Jones). This leaf spot has been destructive to plants of sweet william, D. barbatus, being grown for seed in the lower part of Vancouver Island (W. Newton). The perfect stage has been recently described by Catharine C. Burt (Trans. Brit. Myc. Soc. 20:207-215. 1941) as Didymellina Dianthi.

Bacterial Leaf Spot (Phytomonas woodsii). A severe infection was found on carnations in a greenhouse at Calgary, Alta. (A.W. Henry). The disease was previously reported from Ont. in 1938 (P.D.S. 18:101).

Rust (Uromyces caryophyllinus) was reported as follows: Slight infection on carnations in a greenhouse at Victoria, B.C.; slight to moderate infection in greenhouses at Calgary, Medicine Hat and Edmonton, Alta.; spreading rapidly in a commercial greenhouse at Sherbrooke, Que., with moderate damage; pinks found affected in a garden at the Acadia Forestry Sta., Fredericton, N.B.

ERYTHRONIUM GRANDIFLORUM - Lambs-tongue Fawnlily

Rust (Uromyces heterodermus) was present at Courtenay and North Saanich, B.C.; pink flowered plants seem more susceptible. (W. Newton)

FILIPENDULA - Meadowsweet

Powdery Mildew (Sphaerotheca Humuli) was severe on plants of F. rubra from a garden in Westboro, Ont., communicated by R.M. MacVicar. On July 5 the affected shoots were variously bent and stunted by the mildew and floral development was completely suppressed. In addition, F. Ulmaria was found affected although not so seriously. S. Blumer (Beiträge Krypt.-Fl. der Schweiz 7, pt. 1:104. 1933) reports that the disease is widespread in Europe and common locally in Switzerland. The oidal stage is very conspicuous on leaves and inflorescence, which are often deformed. Perithecia are not formed abundantly (in contrast to Erysiphe Polygoni (l.c. p. 172), which forms perithecia abundantly and conidia only sparingly on the same host). The disease has been reported from Vermont (U.S.D.A. Dept. Bull. 1366:47. 1926). (I.L. Conners)

GAILLARDIA

Yellows (virus) affected all the plants in 4 gardens and common in others in Queens and Kings Counties, P.E.I.

GARDENIA

Canker (Phomopsis Gardeniae Hansen & Barrett). Only one plant of G. Veitchii was affected and died at the Botanical Garden, Montreal, Que. The first symptoms are brown sunken dead areas on the stem near the surface of the soil. As the lesions enlarge the affected tissue becomes rough and corky. The branches are frequently attacked. If the surface is cut away the diseased tissue appears pale or deep orange, while the healthy is white or greenish white. The canker, small at first, increases in size and finally girdles the stem or branches. The foliage and branches above the cankered area wilt and dry up. The disease does not appear to have been reported previously in Canada. (J.E. Jacques)

GERANIUM

Rust (Uromyces Geranii) heavily infected G. pratense in a rock garden at Brakley Beach, P.E.I. This is a new record for P.E.I. (R.R. Hurst and I.L. Conners)

GLADIOLUS

Yellows (Fusarium oxysporum) was widespread in Man.; usually only scattered plants were affected, but at Carmen it infected 75% of the plants of King George (W.L. Gordon). Very little yellows was observed this year in P.E.I., probably on account of the wet season. (R.R. Hurst)

Penicillium Rot (P. Gladioli). Occasional corms were found in 4 lots grown in P.E.I. and brought to the Laboratory for inspection. (R.R. Hurst)

Scab (Phytomonas marginata). Slight to modorate infections were found in several plantings at Edmonton, Alta.

Dry Rot (Sclerotinia Gladioli). A slight infection was found at Edmonton, Alta. (A.W. Henry)

Hard Rot (Septoria Gladioli). In one lot of corms examined at the Laboratory, Charlottetown, P.E.I., 2% were affected.

Mosaic (virus). One plant of Doctor Bennett was found affected in N.B. with a definite mosaic and severe break of the flower. The disease was carried over in the corm and cormels. The virus appears to be new. All attempts to transmit the virus by sap inoculation were unsuccessful. No vector has been established. (D.J. MacLeod)

GODETIA

Rust (Pucciniastrum Epilobii) was present on cultivated Godetia at the Acadia Forestry Station, Fredericton, N.B.

HEDERA HELIX - English Ivy

Bacterial Leaf Spot (Phytomonas hederae Arnaud ex. Burkh. & Guterm.). Affected leaves taken from a house plant were received from Toronto, Ont. The diagnosis was confirmed by W.A.F. Hagborg. W.H. Burkholder and C.E.F. Guterman (Phytopath. 22:781-784. 1932) isolated two organisms from the spots. One was found to be pathogenic and the other had a distinct accelerating action on the disease complex. The latter organism is unnamed, according to them, but it appeared to be similar to the epiphyte, Bacterium herbicola aureum. This appears to be the first record of the occurrence of the disease in Canada. (I.L. Conners)

HELIANTHUS - Sunflower

Rust (Puccinia Helianthi) was severe on Sungold sunflower (H. annuus) at the Botanical Garden, Montreal, Que.; it caused little damage for it affected the plants rather late in the season. (J.E. Jacques)

HELICHRYSUM - Everlasting

Yellows (Callistephus virus 1) severely affected 2% of the plants in the border at the Station, Fredericton, N.B. (D.J. MacLeod)

IMPATIENS BALSAMINA - Garden Balsam

Foot Rot. A single plant of Bush Flowered balsam was severely attacked at Morden, Man.; isolations yielded Fusarium oxysporum and F. Scirpi var. acuminatum. (W.L. Gordon)

INULA

Powdery Mildew (Erysiphe Cichoracearum). Two plants of I. Helenium were found slightly affected at the Botanical Garden, Montreal, Que.; an immediate application of sulphur rid them of the fungus. (J.E. Jacques)

IRIS

Blossom Blight (Botrytis sp.) was severe on Mainhillan Gray in the variety rows at Sidney, B.C., while other varieties were free. In the affected plants, the petals were twisted and did not open normally; tissues were soft, but not decayed. In some varieties the stems and blossoms have a flabby wilted appearance followed by death. In others the spikes tend to bend over, while the unopened blossom is soft and sometimes dry and necrotic. (W. Jones)

Eelworms (Ditylenchus dipsaci) slightly infected 2 plantings out of 22 examined on Vancouver Island and the lower mainland, B.C. (R.J. Hastings)

Soft Rot (Erwinia carotovora) partially decayed a few clusters in 2 varieties at the Botanical Garden, Montreal, Que. In every case the iris borer was found associated with the diseased plants. The damage was negligible (J.E. Jacques). Soft rot affected 7 out of 24 plants in one garden and was also common in 6 others in Queens and Prince Counties, P.E.I.

Leaf Spot (Heterosporium gracile) was reported as follows: Trace in 12 plantings, slight in 2 and severe in 8 of bulbous iris in the coastal region of B.C. (R.J. Hastings); severe on Monsignor, Pelldier, Micheline and Candelabre in the variety trial rows at the Station, Sidney, B.C., while several varieties were clean; general in a planting at Armstrong; severe on a few plants at Indian Head, Sask.; infection moderate at Brandon, Man., slight to severe at Morden; slight infection in a planting at St. Catharines, Ont.; damage fairly heavy at the Station, Kentville, N.S.; common in P.E.I.; infection a trace to very heavy. According to J. Emile Jacques (Contrib. Instut. Bot. Univ. Montréal No. 39:7-46. 1941), H. gracile applies to an entirely different fungus; he, therefore, proposes the new combination, Heterosporium Iridis (Fautr. & Roum.) Jacques.

Ink Disease (Mystrosporium adustum). Infection was a trace in all 22 plantings inspected in the coastal region of B.C. (R.J. Hastings)

Bacterial Leaf Blight (Phytomonas tardicrescens (McCulloch) Burkh.) attacked about 10 plants of Rhein Nixe at the margin of a bed at the Botanical Garden, Montreal, Que. Infection was heavy. The development of the disease was favoured by the plants being daily wetted by the sprinklers. The disease appears on the leaves in the form of small pale areas, which enlarge into irregular water-soaked spots or elongated stripes. The margins of the leaves are infected first, but frequently the entire leaf is killed and turns brown. This appears to be an addition to the long list of diseases of iris already known in Canada. (J.E. Jacques)

Grey Bulb Rot (Sclerotium Tuliparum) severely infected a small area in a planting of Wedgewood at Victoria, B.C. It was found previously at Esquimalt (P.D.S. 20:94). (R.J. Hastings)

Mosaic (virus) affected 15% of the plants of Tingitana bulbous iris in a lot being grown in Peel Co., Ont. on Mar. 27; the stock was imported from B.C. (G.C. Chamberlain)

LATHYRUS ODORATUS - Sweet Pea

Root Rot (Fusarium sp.). Damage was a trace in gardens at Lacombe and Edmonton, Alta.

Powdery Mildew (Microsphaera diffusa) was prevalent in P.E.I.

Root Rot (Rhizoctonia and Fusarium spp.) caused slight to severe damage in many small plantings in York Co., N.B. Root rot was severe and destructive in several plantings in P.E.I.

Mosaic (virus) was reported 4 times in P.E.I.; up to 50% of the plants were infected. Flowers were broken, peduncles short and leaves showed a well-defined mosaic. (R.R. Hurst)

Streak (virus) affected up to 100% of the plants in plantings in P.E.I.

Bud-Drop (non-parasitic) was frequently complained of in P.E.I.

LATHYRUS SYLVESTRIS - Flat Pea

Leaf Spot (Ascochyta Pisi) was general in the rows at the Station, Sidney, B.C.

LAVATERA

Foot Rot. Scattered plants were affected at Brandon, Man.; isolations yielded Fusarium oxysporum and F. Solani. (W.L. Gordon)

LIGUSTRUM - Privet

Leaf Spot (Cercosporella sp.) caused severe defoliation of a hedge at Milner, B.C. The fungus was compared with that reported last year in Ont. (P.D.S. 20:94) and was found to be identical with the latter. (W. Jones and I.L. Conners)

LILIUM - Lily

Blight (Botrytis elliptica). A moderate infection was present on the leaves of some plants of L. tigrinum at Morden, Man.

Rust (Uromyces Holwayi) was severe on the hybrid Lilium Humboldti x pardalinum at Duncan, B.C. (W. Newton)

LIMONIUM - Sea-Lavender

Leaf Spot (Cercospora sp.). A severe infection was observed on the leaves of L. sinuatum (L.) Mill. (Statice sinuata L.) at Morden, Man. (W.L. Gordon). Dr. Charles Chupp has identified the material as referable to Cercosporina insulana Sacc. and Cercospora Staticis Lobik, the American material differing from the published descriptions in having conidia 2.5-4.0 u wide. This leaf spot was first noted in Man. in 1938 (P.D.S. 18:108). (I.L. Conners)

LONICERA - Honeysuckle

Grey Mould (Botrytis cinerea) was fruiting on the leaves of honeysuckle at Red Head, N.B.; it affected 25% of the leaves. (S.F. Clarkson)

Powdery Mildew (Microsphaera Alni) was reported as follows: Severe infection at Beaverlodge, Alta.; slight to moderate infection in different spots in a hedge of L. Morrowii at Morden, Man.; slight infection on L. tatarica at the Botanical Garden, Montreal, Que., but immediately cleared up by an application of sulphur.

Frost Injury. On May 12 the temperature dropped to 27°F. at Fredericton, N.B. A marked vein-clearing resembling a virus disease developed on a Lonicera bush near the Laboratory; the effect persisted for several weeks. The same effect was observed on maple and clover. On oats, barley and some grasses, the injury appeared as a definite white banding of the blades. This injury was quite general in N.B. (D.J. MacLeod)

MATTHIOLA - Stock

Root Rot and Stem Blight (Rhizoctonia Solani) destroyed many plants in greenhouses at Picton, Fergus and Brampton, Ont. (J.E. Howitt)

NARCISSUS

Smoulder (Botrytis narcissicola) was usually a trace in the coastal region of B.C. but infection was higher on plantings left down for 2 years or longer. (R.J. Hastings)

Basal Rot (Fusarium bulbigenum). Only a slight infection was observed in the coastal region of B.C. (R.J. Hastings)

Eelworms (Ditylenchus dipsaci) were absent in 43 plantings and present in 20 in the coastal region of B.C.; in the affected plantings damage was slight to moderate. The trouble is on the decline due to the system of treatment now followed. (R.J. Hastings)

White Mould (Ramularia vallisumbrosae) caused severe damage on small-leaved varieties on the lower mainland, B.C., but none on King Alfred; a trace was also present on Vancouver Island. (R.J. Hastings)

Leaf Mould (Stagonospora Curtisii). Infection was general in the coastal region of B.C., but the damage was negligible. (R.J. Hastings)

Mosaic or Stripe (virus) affected about 1% of the plants in the best plantings in the coastal region of B.C., but up to 50% of the plants were diseased in degenerated lots (R.J. Hastings). An entire lot of 1,000 King Alfred bulbs obtained from B.C. developed mosaic symptoms on being forced at Edmonton, Alta. The flowers are apparently not affected. The disease was identified by F.L. Drayton. (G.B. Sanford)

NIGELLA - Fennelflower

Foot Rot. Odd plants were affected at Brandon, Man. Isolations yielded Fusarium oxysoporum and F. Solani var. Martii. (W.L. Gordon)

PAEONIA - Peony

Blight (Botrytis Paeoniae) was reported as follows: Severe on Souvenir du Dr. Bretonneau at the Station, Sidney, B.C.; several varieties were clean; scattered plants blighted at Morden, Man.; severe throughout N.B., but only slight damage at the Station, Fredericton, where a

routine programme of spraying has been followed for the control of the disease (S.F. Clarkson); widespread and frequently destructive in P.E.I.

Leaf Blotch and Stem Spot (Cladosporium Paeoniae) was widely distributed in gardens in the coastal region of B.C.; at the Sidney Station it was moderate on Souvenir du Dr. Bretonneau, Magnifica, Duchesse d'Orleans, Charlemagne, Henri Demay and Marguerite Gerard; other varieties were free. (W. Jones)

Ring Spot (virus) Two per cent of the plants at the Station, Fredericton, N.B., showed a well defined ring spot with slight dwarfing. The disease has been under observation for 8 years and is spreading. (D.J. MacLeod). Diseased plants at Charlottetown, P.E.I., were brought to the attention of D.J. MacLeod, who thought they were affected by ring spot. (R.R. Hurst)

Chlorosis (non-parasitic) was fairly general in peonies at Brandon, Man.; the trouble was partially overcome by spraying the plants with iron sulphate. This is the first time it has been noticed on peony in Man.

PELARGONIUM - Geranium

Leaf and Blossom Blight (Botrytis cinerea) was general and caused moderate damage to the blossoms at the Station, Sidney, B.C.; the trouble was favoured by overhead watering. Leaf spot affected one potted plant in a greenhouse in Queens Co., P.E.I.

PETUNIA

Mosaic (virus) affected scattered plants at Brandon, Man.; this is first time it has been noticed on petunia in Man. Two plants were found in a garden in York Co., N.B., and one in a window box in Victoria Co. affected with Solanum virus 2. The typical mosaic and distortion of the leaves was quite evident in the plants. (D.J. MacLeod)

PHLOX

Powdery Mildew (Erysiphe Cichoracearum) was observed in many gardens throughout Ont., some varieties were badly disfigured. (J.E. Howitt)

Foot Rot was severe at Morden, Man. on P. Drummondii, particularly Crimson Beauty and Salmon Beauty; isolations yielded Fusarium Scirpi var. acuminatum and to a less extent F. oxysporum. A severe foot rot on this host has not been recorded previously. (W.L. Gordon)

Leaf Spot (Septoria divaricata) caused a loss of 10-30% of the foliage of P. paniculata in local plantings at Kentville, N.S. (J.F. Hockey)

Streak (virus). Ten per cent of the plants in a border at Fredericton, N.B., were severely affected by a disease, which caused a streak of the stems and leaves. The affected leaves showed a severe necrosis of the collenchyma of the veins and petioles and a distortion of the lamina. The streak advanced acropetally and in severe cases the leaves died and remained hanging on the stem. There was also a faint clearing of the veins. The disease was repeatedly transmitted by grafting to healthy phlox. It was also established that the disease is carried over from year to year in affected clumps. The virus is not transmissible and no insect vector was found. The virus appears to be new. (D.J. MacLeod)

Leaf Blight. Over 40 varieties of phlox belonging to P. suffruticosa, P. Arendsi, P. maculata and P. paniculata suffered from the

disease at the Botanical Garden, Montreal, Que. It also caused considerable damage in Montreal. The lower leaves begin to yellow and the discoloration moves upward. This is followed by a drying of the affected portions and sometimes of entire shoots. Certain varieties are more readily affected than others, but no variety appears to escape entirely. The trouble was noted for the past few years, and was particularly severe in 1941 (J.E. Jacques). Leaf blight has been noted on several varieties in many gardens in Queens Co., P.E.I.; the damage is severe. The lower leaves are the first to die to be followed by the progressive collapse of those above; often the plant dies. Affected plants seem to suffer especially from red spider (R.R. Hurst). It is highly probable that the leaf blight described in Que. and P.E.I. is identical with the Streak described by Mr. MacLeod. The disease is also destructive in Ont. according to F.L. Drayton. The same disease has been described in the United States (Anon. What causes phlox blight? N.J. Agr. Exp. Sta. Nursery Dis. Notes 10(No. 12):47-50. June 1938). (I.L. Conners)

Yellows (virus) severely affected 5% of the plants in the border at the Station, Fredericton, N.B. The virus was identified as Callistephus virus 1 and was transmitted by the leaf hopper, Macrosteles divisus. The disease was more common in white than in red and purple varieties. (D.J. MacLeod)

PRUNUS

Shot Hole (Coniothyrium sp.) moderately infected a hedge of pin cherry, P. pennsylvanica, at Morden, Man. (W. L. Gordon)

Shot Hole (Higginsia hiemalis (Cylindrosporium hiemale) was common but not severe at the University, Winnipeg, Man.

RHAMNUS - Buckthorn

Rust (Puccinia coronata) moderately infected a hedge of R. cathartica at the Station, Charlottetown, and roadside bushes at Hunter River, P.E.I. (R.R. Hurst)

ROSA - Rose

Canker (Coniothyrium Fuckelii) A fairly high percentage of imported stock from California developed this trouble in greenhouses in Peel Co., Ont. (G.C. Chamberlain)

Black Spot (Diplocarpon Rosae) was reported as: general in gardens in the coastal section of B.C.; prevalent on hybrid tea roses about Guelph and reported to be so from Belleville, Hamilton, Weston and Toronto (J.E. Howitt); general and severe on hybrid tea roses at the Victoria Park rose garden, Niagara Falls, Ont., causing complete defoliation by July 27 (G.C. Chamberlain); all rose bushes remained free from black spot at the Botanical Garden, Montreal, Que., throughout the summer except 4 plants of hybrid tea, which were slightly infected; dry weather and spraying prevented the spread of the disease (J.E. Jacques); widespread and in many instances causing premature defoliation in P.E.I.

Leaf Spot (Mycosphaerella rosicola (Cercospora rosicola). A slight infection was general on several varieties at Morden, Man.

Rust (Phragmidium spp.). A moderate infection occurred on roses at the Station, Fredericton, N.B.

Crown Gall (Phytomonas tumefaciens). Four climbing roses in a garden at Charlottetwon, P.E.I., have been infected for several years. (R.R. Hurst)

Powdery Mildew (Sphaerotheca pannosa) was reported as follows: Moderate infection on Crimson Rambler at St. Catharines, Ont., infection at first mostly confined to blossom clusters, later infecting the canes and causing some defoliation; a light infection on a few bushes of hybrid tea at the Botanical Garden, Montreal, Que.; slight to moderate damage particularly to climbers in home gardens at Fredericton, N.B.; infection heavy on climbers in P.E.I., but less prevalent than usual.

Mosaic (virus) was destructive to some bushes at Morden, Man.; it was first noted at Morden in 1940 when it was reported as Witches' Broom (P.D.S. 20:98) (W.L. Gordon). Mosaic affected a single bush of Else Poulsen at St. Catharines, Ont.; the mosaic was a very definite vein-banding type. (G.C. Chamberlain)

SALPIGLOSSIS

Foot Rot affected scattered plants at Brandon, Man.; isolations yielded Fusarium Solani and F. Scirpi var. acuminatum. (W.L. Gordon)

SAMBUCUS - Elderberry

Leaf Spot (Septoria sambucina) moderately infected some bushes of S. racemosa at Morden, Man.

SENECIO CRUENTUS - Cineraria

Wilt (Pseudomonas sp.) affected a plant in the Laboratory greenhouse, Winnipeg, Man. The causal organism was isolated and its pathogenicity proved. A detailed study of the morphology, physiology and cultural characters of the organism is completed. It can be described as a new species. (W.A.F. Hagborg)

SOLIDAGO - Goldenrod

Rust (Coleosporium Solidagnis) moderately infected the leaves of a Solidago being grown as an ornamental at Morden, Man.

Leaf Spot (Septoria solidaginicola) also moderately infected the leaves of this Solidago at Morden, Man.

SYRINGA - Lilac

Blight (Botrytis cinerea). A slight infection occurred on branches of lilac at Red Head, N.B. A trace was noticed on a hedge at Summerside, P.E.I.

Leaf Blight (Cladosporium sp.) was present on a few bushes in a garden at Milner, B.C. (W.R. Foster)

Powdery Mildew (Microsphaera Alni). A trace of infection was present on Aug. 7 in the Botanical Garden, Montreal, Que. Powdery mildew was sometimes heavy in P.E.I.

Bacterial Blight (Phytomonas syringae) infected a few bushes at Milner, B.C. (W.R. Foster)

Mosaic (?virus). About 2% of the lilac bushes at the Station Fredericton, N.B., showed a definite veinal mosaic. Cuttings of these

bushes also showed a definite mosaic when they were grown in the greenhouse. Attempts to transmit a virus by grafting and sap inoculation were unsuccessful. There was no distortion of the leaf blade. (D.J. MacLeod)

TULIPA - Tulip

Fire (Botrytis Tulipae). Primary infection was absent in 2 fields, less than 0.2% in 30, less than 1.0% in 5, and over 1.0% in 12 of the fields inspected in the coastal regions of B.C.; the disease was only serious in unrogued plantings (R.J. Hastings). Severe damage was found in one garden at Edmonton, Alta. (A.W. Henry). Fire was recorded as causing considerable loss in gardens at Paris, Harley, Pickering, and Mono Road, Ont. (J.E. Howitt). Fire was widespread in P.E.I.; it did a great deal of damage this year both in private gardens and in those from which is usually derived a fair revenue from cut tulips. The disease is definitely worse where the beds have been given a winter cover of litter and in older plantings. (R.R. Hurst)

Storage Rot (Penicillium sp.) Only a trace of storage rot was found in the coastal regions of B.C., due to the improvement in curing, handling, grading, and storage of bulbs. (R.J. Hastings)

Grey Bulb Rot (Sclerotium Tuliparum). A trace was found in one field in North Sannich, B.C. (R.J. Hastings)

Break (virus) affected a trace to 1% of the plants in 38 fields out of 68 inspected in the coastal regions of B.C. In a few small plantings of different varieties, 3-50% of the plants were affected. Rogued plantings were always free from break. (R.J. Hastings)