VI. DISEASES OF ORNAMENTAL PLANTS

ALTHAEA ROSEA - Hollyhock

Leaf Spot (Cercospora althaeina). Infection varied from a trace to heavy on double hollyhocks at Morden, Man., many plants being severely attacked. (W.L. Gordon)

Rust (Puccinia Malvacearum). A moderate, patchy infection occurred at Winnipeg, Man. (A.M. Brown). Infection was general but not heavy at Montreal Botanical Garden. (J.E. Jacques)

Leaf Spot (Septoria malvicola). A moderate, general infection occurred at Brandon, Man. (W.L. Gordon)

AMELANCHIER ALNIFOLIA - Saskatoon

Blight (Diaporthe tuberculosa (Ell.) Sacc.) was severe at Winnipeg, Man., killing entire plants. (W.A.F. Hagborg, I.L. Conners; confirmed by L.E. Wehmeyer)

Leaf Spot (Phyllosticta innumerabilis) was severe at Morden, Man., causing considerable yellowing. (W.L. Gordon)

ANTIRRHINUM MAJUS - Snapdragon

Rust (Puccinia Antirrhini) was general in Vancouver Island and the lower mainland, B.C. but the damage was less than usual in plants grown for seed, owing to dry weather (W. Jones). It was abundant throughout the Okanagan Valley, B.C., in some cases causing considerable injury. (G.E. Woölliams)

Leaf Spot (Septoria Antirrhini) caused spotting and some falling of lower leaves of a few plants at North Saanich, B.C. (W. Jones)

Curly Top (?Beta virus 1). Two plants in the border at the Station, Fredericton, N.B., had thickened, dwarfed and twisted leaves, especially at the ends of branches, and a number of secondary shoots; the plants were dwarfed; the virus was transmitted to healthy snapdragon by grafting. (D.J. MacLeod)

ASTER

Rust (Coleosporium Solidaginis). Several heavily rusted plants of Beechwood Challenger were seen at Morden, Man. (W.L. Gordon)

Powdery Mildew (Erysiphe Cichoracearum). Beechwood Challenger was moderately infected at Morden, Man. (W.L. Gordon)

BEGONIA

Stem Rot (Botrytis cinerea) affected 8% of plants in a greenhouse at St. Catharines, Ont., causing rotting and breaking of the stems, especially near the base. Lack of ventilation, cloudy weather and heavy growth of plants, contributed to its development. (G.C. Chamberlain)

BELAMCANDA CHINENSIS - Blackberry-Lily

Leaf Spot (Heterosporium Iridis) A moderate, general infection was recorded at Brandon, the first Man. record on this host. (W.L. Gordon)

BERBERIS VULGARIS - Barberry

Rust (Puccinia graminis) caused slight to severe damage in York, Westmorland and Victoria counties, N.B. (S.F. Clarkson, J.L. Howatt). Rust was very heavy on bushes found in Queens Co., P.E.I. (R.R. Hurst)

BOLTONIA

Streak (virus). Fifteen per cent of the plants at the Station, Fredericton, N.B. were affected. See P.D.S. 21:88 (D.J. MacLeod)

CALENDULA

Yellows (Callistephus virus 1) affected 15% of the plants in the border at the Station, Fredericton, N.B. (D.J. MacLeod). It also occurred at Charlottetown, P.E.I. (R.R. Hurst)

CALLISTEPHUS CHINENSIS - China Aster

Rust (Coleosporium Solidaginis). A slight general infection occurred at Winnipeg, Man. (J.E. Machacek)

Wilt (Fusarium oxysporum f. Callistephi) was reported from North Bay, Ont. (L.T. Richardson)

Yellows (Callistephus virus 1) affected a few plants at Edmonton and Lacombe, Alta. (M.W. Cormack). It was common in York, Sunbury and Queens counties, N.B.; 12 healthy plants, 12-18" high, were set out from the greenhouse into a garden; all developed symptoms of yellows about September 15 (D.J. MacLeod). All plants in many gardens in P.E.I. were affected. (R.R. Hurst)

CAMPANULA

Leaf Spot (Ascochyta sp.) was slight on C. glomerata dahurica at Brandon, and severe on some plants of C. macrostyla at Morden, Man. This appears to be the first record of Ascochyta on Campanula in Canada. (W.L. Gordon)

Rust (Coleosporium Campanulae). A fairly heavy infection occurred on Mrs. Harrison's Double Blue near Ottawa, Ont., but none was seen on adjacent plants of other varieties. (D.C. McIntosh, I.L. Conners)

Green Blossom (?virus). A few plants in a garden at Victoria, B.C. had the following symptoms: blossoms were green and did not open normally, the petals adhering to each other; sepals were chlorotic with inrolled margins; the leaves were normal; there was some proliferation of the stems as in aster yellows. (W. Jones)

CARAGANA

Leaf Spot (Septoria Caraganae) was epidemic in central Sask., appearing earlier than usual and causing almost complete defoliation of some hedges by late August; some hedges in Saskatoon show the weakening effects of annual premature defoliation (T.C. Vanterpool). Moderate infections occurred at Brandon, Morden and Winnipeg, Man., with less defoliation than in some years. (W.L. Gordon)

CENTAUREA CYANUS - Cornflower

Leaf Spot (Septoria centaureicola Brun., var. brevispora Pk.) was received from Peterborough, Ont., (I.L. Conners)

CHRYSANTHEMUM

Powdery Mildew (Erysiphe Cichoracearum) was received from Sovereign, Sask. (R.J. Ledingham)

Wilt (?Verticillium sp.). Specimens were received from greenhouses in various parts of Ont. (J.E. Howitt)

Spotted Wilt (Lycopersicum virus 3) caused moderate damage to 20% of the plants in a greenhouse in Sussex Co., N.B. (D.J. MacLeod)

CLEMATIS LIGUSTICIFOLIA

Leaf Spot (Septoria Clematidis). A slight infection occurred at Brandon, Man. (W.L. Gordon)

CONVALLARIA MAJALIS - Lily of the Valley

Leaf Spot (Phyllosticta Convallariae) was prevalent in the Guelph area, and many specimens were received from other parts of Ont. (J.E. Howitt)

COSMOS

Yellows (Callistephus virus 1) occurred at Charlottetown, P.E.I. (R.R. Hurst)

CRATAEGUS

Rust (Gymnosporangium clavariaeforme). A trace to heavy infection occurred in Queens Co., P.E.I. (R.R. Hurst)

CROCUS

Bulb Rot (Botrytis sp.) affected a few plants in one planting at Comox, B.C. (W. Jones)

CYCLAMEN

Stunt (Cladosporium Cyclaminis). About 60% of the plants at the Montreal Botanical Garden were useless for display, and many others bloomed very irregularly, as a result of this disease. (J.E. Jacques)

Leaf Spot (cause unknown) affected odd leaves in the greenhouse at Morden, Man.; Phoma glomerata, Hormodendron cladosporioides and Coniothyrium sp. were recovered. (W.L. Gordon)

DAHLIA

Sclerotinia Rot (S. sclerotiorum). A few plants of Jane Cowl and Golden Dream were badly rotted in storage at the Montreal Botanical Garden. (J.E. Jacques)

Ring Spot (virus). All plants of Satan and Scarlet Pimpernel at the Montreal Botanical Garden were attacked and had to be discarded early. (J.E. Jacques)

Yellows (Callistephus virus 1) was seen at Charlottetown, P.E.I. (R.R. Hurst)

Purple Top (cause unknown) was seen on Jane Cowl, Maude Adams and Treasure Island in Queens Co., P.E.I. (R.R. Hurst)

DELPHINIUM

Bacterial Blight (Pseudomonas delphinii(E.F. Sm.) Stapp in Sorauer, Handb. d. Pflanzenkr. Auf. 5, 2:106. 1928; Bacillus delphinii E.F. Smith, Science N.S. 19:417. 1904; Starr & Burkh. Phytopath. 32:601. 1942) caused moderate damage in a nursery at Oyster River, B.C. (W. Jones)

Mosaic (Cucumus virus 1) affected 1% of the plants in a Fredericton, N.B. garden, causing vein clearing followed by marked mosaic without leaf distortion. (D.J. MacLeod)

DIANTHUS

Leaf Spot (Heterosporium echinulatum). Slight to moderate infection of carnation, D. Caryophyllus, occurred in several greenhouses at Sidney and Victoria, and severe damage was caused in a half-acre field of Sweet

William, D. barbatus, at Keating, B.C. The foliage was cut back and the plants heavily treated with Bordeaux dust; as a result a crop of seed was ensured, although considerable new infection occurred. (W. Jones, W. Newton)

Rust (Uromyces caryophyllinus) caused considerable loss to a Montreal, Que. grower, in spite of repeated sprayings. (J.E. Jacques)

ELAEAGNUS COMMUTATA

Leaf Spot (Septoria Elaeagni (Chev.) Desm.) was found at Morden, Man.; a new record for Canada. (W.L. Gordon, I.L. Conners)

GAILLARDIA

Smut (Entyloma polysporum). A moderate infection occurred on G. aristata at Morden, Man. (W.L. Gordon)

Yellows (Callistephus virus 1) severely affected three plants at the Station, Fredericton, N.B. (D.J. MacLeod). It did severe damage to all varieties at Charlottetown, P.E.I. (R.R. Hurst)

GARDENIA

Canker (Phomopsis Gardeniae). A single old plant at the Montreal Botanicql Garden was girdled near soil level (J.E. Jacques)

GERANIUM

Rust (Uromyces Geranii) was collected on G. sp. at St. Andrews, N.B., Sept. 1, 1936. (J. Adams, I.L. Conners)

GLADIOLUS

Yellows (Fusarium oxysporum) attacked odd plants at Brandon and Winnipeg, Man., and near Lake of the Woods, Ont. (W.L. Gordon)

Scab (Pseudomonas marginata (McCull.) Stapp in Sorauer, Handb. f. Pflanzenkr. Auf. 5, 2:56. 1928; Bacterium marginatum McCulloch, Science n.s. 54:115. 1921; Starr & Burkh. Phytopath. 32:601. 1942). A slight infection occurred at Vernon, B.C. (G.E. Woolliams, F.L. Drayton). Slight to moderate infections were seen at Edmonton and Lacombe, Alta. (M.W. Cormack). Scattered plants were destroyed at Brandon and Winnipeg, Man., and near Lake of the Woods, Ont. (W.L. Gordon). Scab was widespread in Ont. with up to 20% of corms affected (J.E. Howitt). A few corms of Rapture were attacked at Montreal Botanical Garden, and traces were seen on a few other varieties. (J.E. Jacques)

Hard Rot (Septoria Gladioli). A few diseased corms, especially of Apricot Glow, were found at Montreal Botanical Garden. (J.E. Jacques)

GODETIA

Rust (Pucciniastrum pustulatum). A moderate infection occurred on Crimson Glow at Morden, Man. (W.L. Gordon)

HELIANTHUS ANNUUS - Sunflower

Rust (Puccinia Helianthi) was very heavy on Sungold at Montreal Botanical Garden - killing some leaves. (J.E. Jacques)

HELICHRYSUM

Yellows (Callistephus virus 1) severely affectgd 5% of the plants at the Station, Fredericton, N.B. (D.J. MacLeod)

IRIS

Bulb Nematode (Ditylenchus dipsaci). Five per cent infection occurred on Vancouver Island and the lower mainland, B.C. (R.J. Hastings)

Rhizome Rot (Erwinia carotovora) was reported from Toronto, Ont. (L.T. Richardson)

Leaf Spot (Heterosporium Iridis) was slight to heavy in a few plants of bulbous iris on Vancouver Island and the lower mainland, B.C.; it seems to be checked by good soil drainage. (R.J. Hastings). It was general on I. germanica in gardens in the same region, causing considerable foliage damage. (W. Jones). It was general in the Okanagan Valley, B.C., on I. germanica, but did not cause serious damage. (G.E. Woolliams). It was severe at Brooks and moderate at Lacombe, and was common elsewhere in Alta. (M.W. Cormack). A heavy infection occurred in the University gardens, Saskatoon, Sask. (H.W. Mead). A moderate general infection was found at Brandon and a severe infection in the iris border at Morden, Man. (W.L. Gordon). I. germanica was badly disfigured by leaf spot at St. Eustache, and several spotted iris specimens were received from Rawdon, Que. (J.E. Jacques)

Bacterial Leaf Blight (Phytomonas tardicrescens; cf. Starr & Burkh. 32: 603. 1942) attacked Lady Foster (I. germanica) at Montreal Botanical Garden; most of the plants were involved, but in most cases the leaves were only spotted and not blighted; other varieties in the bed were unaffected. (J.E. Jacques)

Rust (Puccinia Iridis) was heavy on I. spuria var. halophila at Montreal Botanical Garden. (J.E. Jacques)

Grey Bulb Rot (Sclerotium Tuliparum). A small amount was found in two plantings at New Westminster and Langley, B.C.; at Abbotsford two areas, each about 20' x 20', of Wedgewood bulbous iris were almost completely destroyed. (R.J. Hastings)

Mosaic (virus). More than 75% of the plants in a large Ontario commercial greenhouse of I. tingitana, var. Wedgewood, from B.C. showed mosaic; the stems were stunted and about 20% of the blooms showed tear-drop symptoms at the time of inspection. (G.H. Berkeley)

LATHYRUS ODORATUS - Sweet Pea

Streak (Erwinia lathyri). Infection was slight to moderate in several Edmonton gardens and moderate to severe at the Station, Lethbridge, Alta. (M.W. Cormack)

Root Rot (Fusarium sp.) A moderate infection was found at Lethbridge, Alta. (M.W. Cormack)

Powdery Mildew (Microsphaera diffusa) was widespread and often heavy in P.E.I. (R.R. Hurst)

Root Rot (Thielaviopsis basicola) caused severe damage in a garden at Saskatoon, Sask. (R.J. Ledingham)

Bud Drop (non-parasitic) was severe in a garden at Saskatoon, Sask. (H.W. Mead). It affected up to 7% of blossoms in gardens examined in P.E.I. (R.R. Hurst)

LIGUSTRUM - Privet

Leaf Spot (Cercosporella sp.) again caused considerable defoliation of a hedge at Milner, B.C. (W. Jones)

LILIUM - Lily

Blight (Botrytis elliptica) caused severe damage at Brooks and was also reported from Medicine Hat and elsewhere in Southern Alta. (M.W. Cormack). It caused severe foliage damage to some plants at Morden, Man. (W.L. Gordon)

LIMONIUM LATIFOLIUM - Sea-Lavender

Rust (Uromyces Armeriae (Schl.) Lév.). Two heavily infected plants were found in August, 1941, in a garden at Brampton, Ont. (G.D. Darker, I.L. Conners)

LINUM PERENNE - Garden Flax

Rust (Melampsora Lini). A light infection was seen at Saskatoon, Sask. (T.C. Vanterpool)

Foot Rot (Phoma sp.) caused plants at Saskatoon to die down prematurely; the organism was isolated from diseased seed and from stem lesions. (T.C. Vanterpool)

LONICERA - Honeysuckle

Blight (Glomerularia Lonicerae). Young shrubs at Ste. Anne de la Pocatière and Rivière du Loup, Que., were seriously affected. (C. Perrault). Blight considerably disfigured bushes in York, Sunbury and St. John Counties, N.B., and caused partial defoliation. (J.L. Howatt). Affected specimens were received from Tusket, N.S., on L. tatarica. (I.L. Conners). C.J. Gould (Phytopath. 33: 4, 1943) describes the conidial, Glomerularia, stage and a basidial stage; basidia from binucleate hyphae protrude through the stomata, become transversely septate and produce four basidiospores; cultures from leaf tissue, conidia and basidiospores produce similar mycelia and conidia in culture but no basidia; infection is readily obtained with basidiospores but not with conidia.

Powdery Mildew (Microsphaera Alni) was moderate and general on L. tatarica at Brandon, and on L. Morrowi and other species at Morden, Man. (W.L. Gordon). Hedges at Montreal Botanical Garden were badly disfigured. (J.E. Jacques)

LUPINUS

Leaf Spot and Blight (Ascochyta sp.) was general along roadsides at Haney and Agassiz, B.C., and in plots at Agassiz, causing considerable foliage damage. (W. Jones)

Streak (Pisum virus 2). Four plants in a York Co., N.B., garden showed stunting and a severe streak on stems and leaves. (D.J. MacLeod)

MALOPE

Foot Rot (?Fusarium oxysporum). 50% of plants at Brandon, Man., were killed by a foot rot; F. oxysporum was isolated. (W.L. Gordon)

MALUS BACCATA

Leaf Spot (?Coniothyrium sp.). A light infection occurred in a hedge at Morden, Man. Coniothyrium sp. was found in some spots. (W.L. Gordon)

MATTHIOLA - Stock

Bacterial Blight (Xanthomonas incanae (Kendr. & Baker) Starr et al. Phytopath 33: 316. 1943; Phytomonas incanae Kendrick & Baker. Univ. Calif. Bull. 665: 11, 1942) was reported on stocks in greenhouses at Dundas and Toronto, Ont., in October and November. (L.T. Richardson, F.L. Drayton)

NARCISSUS

Smoulder (Botrytis narcissicola) killed a few plants in North Saanich, B.C. The disease is becoming less important with the adoption of bulb treatment. (R.J. Hastings)

Eelworms (Ditylenchus dipsaci) were common on Vancouver Island and the lower mainland, B.C., but are becoming less serious due to use of the hot-water treatment. (R.J. Hastings)

White Mould (Ramularia vallisumbrosae) was general on the lower mainland, B.C., but caused negligible damage. (R.J. Hastings)

Leaf Scorch (Stagonospora Curtisii) was serious on the early variety Forerunner, which appears to be highly susceptible, and was general but caused negligible damage on the main commercial varieties. (R.J. Hastings)

Mosaic (virus) infected ½% in the best plantings of King Alfred in Vancouver Island and the lower mainland, B.C., where the growers are roguing. (R.J. Hastings). About 1% infection occurred at Kelowna and Vernon, B.C. (G.E. Woolliams)

NIGELLA - Fennelflower

Foot Rot. 40% of plants at Brandon, Man., were killed. Isolations from the basal parts yielded Fusarium Solani. (W.L. Gordon)

OENOTHERA BIENNIS - Evening Primrose

Rust (Puccinia ludibunda) was seen on a few plants at Vercheres, Que. (J.E. Jacques)

Leaf Spot (Septoria Oenotherae) killed many of the leaves of plants at Vercheres, Que. (J.E. Jacques)

PAEONIA - Peony

Blight (Botrytis Paeoniae) attacked all the buds in one Calgary garden and caused slight damage at Edmonton, Alta. (M.W. Cormack). It was slight on some plants at Morden, Man., but very severe on others. (W.L. Gordon). Blight was prevalent at Guelph, Ont., and many other specimens were received from elsewhere in the province. (J.E. Howitt). Many enquiries about blight were received in P.E.I., where it was serious in clumps with rank growth. (R.R. Hurst)

Leaf Blotch (Cladosporium Paeoniae)was common and caused considerable foliage injury in Vancouver Island and the lower Mainland, B.C. (W. Jones)

Leaf Spot (Septoria Paeoniae) caused moderate damage in two gardens at Sardis and Cloverdale, B.C. (W. Jones)

Mosaic and Leaf Curl (virus). A plant from Charlottetown, P.E.I., showed definite mottling, ringspotting and curling; affected plants are severely dwarfed. The virus is transmitted to healthy peony by grafting, but not by sap inoculation, and is carried over in the roots. The disease may be caused by the ringspot virus combined with a distorting virus. (D.J. MacLeod, R.R. Hurst)

Ring Spot (virus). A trace occurred at Morden, Man. (W.L. Gordon). 3% of the plants at the Station, Fredericton, N.B., showed ring spot, which is slowly spreading. The virus is carried over in the roots. (D.J. MacLeod)

PELARGONIUM - Geranium

Black Shank (?Pythium sp.). 20% of the cuttings in a flat in the greenhouse at Saskatoon, Sask., became diseased; it is thought that they were kept too cool. (T.C. Vanterpool)

Leaf Curl (Pelargonium virus 1). 6% of young plants in a greenhouse in N.S. were affected. (J.F. Hockey)

PETUNIA

Powdery Mildew (Erysiphe ?Cichoracearum) was found in November on a potted plant brought in from outdoors at Ottawa, Ont. The lower leaves were affected and fell off. (C.G. Riley, I.L. Conners)

Leaf Curl (Virus). Two plants in the border at the Station, Fredericton, N.B., showed severe curling and distortion of the leaves, and slight chlorosis of the upper leaves. The disease resembles that caused by Beta virus 1 in other hosts. The virus was transmitted to healthy petunia by grafting but not by sap inoculation. (D.J. MacLeod)

PHLOX

Powdery Mildew (Erysiphe Cichoracearum) caused considerable damage in a garden in the Sumas district, B.C. (W. Jones). It was widespread on the Island of Montreal, Que., often being serious where sulphur dust was not applied. (L.J.S. Laporte). At Montreal Botanical Garden, Sweetheart was particularly severely attacked. (J.E. Jacques). A heavily infected specimen was received from Sydney, N.S. (J.F. Hockey). Powdery mildew caused heavy damage in some P.E.I. gardens; sulphur dust was used on one planting with very good results. (R.R. Hurst)

Leaf Spot (Septoria divaricata) was severe on P. Drummondii at Morden, and moderate on P. paniculata at Brandon, Man. (W.L. Gordon)

Streak (virus). 5% of the plants in the border at the Station, Fredericton, N.B., were affected with streak, which is spreading. See P.D.S., 21:96 (D.J. MacLeod)

Leaf Blight (cause unknown) was found throughout Que., but the damage was not as severe as in 1941. (L.J.S. Laporte). What is apparently the same disease was seen in considerable amounts in P.E.I. (R.R. Hurst)

PRUNUS

Shot Hole (Cylindrosporium prunophorae) was light on P. americana and very heavy on P. nana at Morden, the latter being a new host record for Man. (W.L. Gordon). C. hiemale was moderate on P. pennsylvanica and very heavy on P. Cerasus (sour cherry) in hedges at Morden, the latter being a new Man. record. (W.L. Gordon)

Shot Hole (Phyllosticta circumscissa) was moderate on P. tomentosa at Morden, this being the first record in Man. on this host. (W.L. Gordon)

Shot Hole (cause unknown) was heavy on Siberian Almond on the University campus, Saskatoon, Sask., and caused serious leaf-fall. (T.C. Vanterpool)

Blossom and Twig Blight (Sclerotinia laxa) was isolated from diseased twigs of P. Besseyi and P. triloba in a nursery at Sardis, B.C. (W. Jones)

PYRACANTHA

Scab (Fusicladium Pyracanthae)badly discoloured the fruits in a garden in North Saanich, B.C. reducing their ornamental value. (W. Jones)

RHAMNUS - Buckthorn

Rust (Puccinia coronata) was slight on R. alnifolia in Carleton and Victoria, moderate to heavy on R. cathartica in Westmorland and heavy on R. Frangula in York Co., N.B. (S.F. Clarkson, J.L. Howatt). R. Cathartica was also found rusted in P.E.I. (R.R. Hurst)

Mosaic (virus) affected several bushes in a hedge at Charlottetown, P.E.I.; Aphis abbreviata was abundant. (R.R. Hurst)

RHUS TRILOBATA

Leaf Spot (Phyllosticta rhoina). A slight infection occurred at Morden, the first record in Man. on this host. (W.L. Gordon)

RIBES

Leaf Spot (Septoria spp.). S. aurea was light to moderate on R. odorata var. Crandall at Morden; S. Ribis was reported at Morden, for the first time in Man. on these hosts, as causing almost complete defoliation of R. alpinum, slightly infecting R. diacantha, and severely attacking R. oxycanthoides. (W.L. Gordon)

ROSA - Rose

Black Spot (Diplocarpon Rosae) was recorded at Vulcan and Wetaskiwin, Alta. (M.W. Cormack). It caused premature defoliation of Christopher Stone, Rev. Page-Roberts, Pres. Hoover, General McArthur, McGredy's Sunset, Joanna Hill, Etoile de Holland, Los Angeles, and Karl Druski in the Niagara Peninsula, Ont., where it was widespread. (G.C. Chamberlain). Black spot was prevalent in the Guelph area and defoliated many hybrid tea roses in the test garden at O.A.C. (J.E. Howitt). It was also reported from Woodstock, Ont. (L.T. Richardson). At Montreal Botanical Garden, Que., Else's Rival was heavily infected and lighter attacks occurred on Rouge, Anne Mette Poulson, and Julien Potin. (J.E. Jacques). Slight to severe damage was caused on many varieties at Charlottetown, P.E.I. (R.R. Hurst)

Stem Canker (Leptosphaeria Coniothyrium) killed the new growth of Kirsten Poulson (hybrid polyantha) in Lincoln Co., Ont. (G.C. Chamberlain)

Leaf Spot (Mycosphaerella rosicola) was general on moss rose (R. centifolia var. muscosa) at Patricia Bay, B.C., causing slight damage. (W. Jones). A moderate infection occurred on R. rugosa at Brandon, Man. (W.L. Gordon)

Rust (Phragmidium sp.) was general on both wild and cultivated roses in the Okanagan and Kootenay Valleys, B.C., evidently because of the unusually wet weather. (G.E. Woolliams). A moderate infection of Phr. speciosum occurred at Winnipeg, Man. (A.M. Brown). Phr. disciflorum was received from Amherst, N.S. (I.L. Conners)

Crown Gall (Agrobacterium tumefaciens; see p. 27) Galls were found near the bases of stems of 2-year-old Paul's Scarlet at Kentville, N.S. (J.F. Hockey). Crown gall severely damaged Paul's Scarlet and other climbers in P.E.I. (R.R. Hurst)

Anthracnose (Sphaceloma Rosarum (Pass.) Jenkins) was found to be fairly general at the Station, Agassiz, B.C.; det. by Miss Jenkins, (W. Jones); and it was found on R. spinosissima var. altaica at Morden, Man. (Coll.

W.L. Gordon, det. I.L. Conners). This is the first report in the P.D.S., but Dr. A.E. Jenkins has it from phanerogamic specimens collected in Que. and N.B. (J. Agr. Res. 45:321-337, 1932)

Powdery Mildew (Sphaerotheca spp.). S. Humuli severely defoliated a few plants at Edmonton, Alta. (M.W. Cormack). A trace of S. pannosa was present on Dorothy Perkins at Charlottetown, P.E.I. (R.R. Hurst)

SEMPERVIVUM - Houseleek

Rust (Endophyllum Sempervivi) was found infecting all 10 species of Endophyllum in a nursery at Grimsby, Ont. All diseased plants had abnormally elongated stems, and telia were abundant on the leaves. Control was obtained by the destruction of all diseased plants. (J.D. MacLachlan). Previously reported only from B.C. (P.D.S. 14:86 and 15:68); it is represented in the herbarium by one specimen from Vancouver, 1931, coll. C.W. Armstrong and two specimens from Victoria, 1935, coll. W. Jones.

SYRINGA VULGARIS - Lilac

Leaf Spot (Phyllosticta Syringae) was severe on one shrub at Langley, B.C. (W. Jones)

Mosaic (?virus). 2% of the bushes at the Station, Fredericton, N.B. showed a definite veinal mottle. (D.J. MacLeod)

Chlorosis & Wilt (cause unknown). Two bushes at the Station, Fredericton, N.B., showed progressive chlorosis of the leaf edges and interveinal areas, with reduction in number and size of leaves, brittle and curled leaves, stunting and ultimate death of the plants. It appears to be similar to the graft blight described by K.S. Chester (Jour. Arnold Arboretum 11: 232-233, 1930), as due to lilac-privet incompatibility. The privet root stock continued to grow after the lilac had died. (D.J. MacLeod)

TAGETES PATULA - French Marigold

Yellows (Callistephus virus 1) affected 10% of the plants in the border at the Station, Fredericton, N.B., causing chlorosis, stunting, and a dense cluster of shoots with small leaves and with many flower buds that often failed to open; many diseased plants died down early. (D.J. MacLeod)

Purple Top (undetermined) affected 2% of the plants in the border at the Station, Fredericton, N.B. causing extreme leaf rolling and distortion, dwarfing and vivid purpling; affected plants wilted and died early; the symptoms resembled those described in this report for purple top on tomato. (D.J. MacLeod)

TULIPA - Tulip

Fire (Botrytis Tulipae). Examination of 94 plantings in coastal B.C. revealed a trace in 75%, slight (0.1 to 0.2%) in 15% and severe (0.2 to 0.5%) in 10% of plantings. (R.J. Hastings). Most plantings in the Vernon, B.C. area were free from fire, but two with poor air drainage showed about 10% infection. (G.E. Woolliams). Only traces were found in P.E.I., even in gardens where it was severe in 1941. (R.R. Hurst)

Storage and Bulb Rot (Penicillium sp. & Botrytis Tulipae) was severe in one field in the lower mainland, B.C., owing to storage in a warm attic; the plants were stunted and the bulbs rotted. (R.J. Hastings)

Stem Rot (Sclerotinia sclerotiorum). When a planting of tulips near Victoria, B.C., was inspected May 12, ⅛% of the plants were found to be infected by what proved to be S. sclerotiorum. The fungus attacked the stem at ground

level and spread up into the leaves, causing large whitish lesions; mycelium and large, white, immature sclerotia were seen near the leaf axils. There was no sign of the disease when the plants were first inspected March 19. The tulips followed alfalfa. This appears to be the first record of this fungus on tulip in Canada, though Prof. H.H. Whetzel is known to have isolated it from tulip in England, and W.C. Moore (Diseases of bulbs. Bull. 117, Brit. Min. Agr. & Fisheries, 1939) mentions that it has been reported on tulip in New Zealand. (R.J. Hastings, F.L. Drayton)

Grey Bulb Rot (Sclerotium Tuliparum) was slight in one New Westminster, B.C., planting; see, however, under Iris. (R.J. Hastings)

Break (virus). Examination showed a trace in 40%, slight infection in 16%, and severe infection in 12% of 24 plantings, in Vancouver Island and the lower mainland, B.C. (R.J. Hastings). Break affected up to 50% of a few plantings in the Okanagan Valley, B.C., but in most the rate was below 1%. (G.E. Woolliams)

VIBURNUM TRILOBUM - High Cranberry

Leaf Spot (Cercospora varia). A moderate infection occurred in a hedge at Morden, particularly on the lower leaves; this is the first record of C. varia on this host in Man. (W.L. Gordon)

VIOLA TRICOLOR - Pansy

Powdery Mildew (Sphaerotheca Humuli). Slight to moderate infections were found in gardens at Edmonton and Lloydminster, Alta. (M.W. Cormack)

ZINNIA

Wilt (Fusarium sp.) was found at Ottawa, Ont., (L.T. Richardson)

Curly Top (? Beta virus 1). 2% of the plants in a nursery at Sussex, N.B., showed veinal mottle, curling and waviness of the leaf blade, and stunting. (D.J. MacLeod)

RHUS TOXICODENDRON

Foot Rot (Fusarium oxysporum associated). At Camp Shilo, Man., a foot rot was found to be causing the complete destruction of poison ivy plants in certain patches; F. oxysporum was isolated (first record on this host in Man.), but its pathogenicity has not yet been tested. (W.A.F. Hagborg, W.L. Gordon). This record is included here as being of probable interest to gardeners and others.

COKE FUMES INJURY TO GREENHOUSE PLANTS

Serious injury was caused in a Victoria, B.C., greenhouse when the furnace door was left open. Damage was rated as follows: (1) no damage - cup of gold; (2) leaf edge discolouration - viola; (3) tip burn - aloe, alternanthera, heliotrope, kentia palm, Monterey cypress; (4) tip burn and spotting - begonia, Boston fern, geranium, ivy geranium, nasturtium; (5) severe tip-burn, spotting, defoliation, with death of many plants - calceolaria, fuchsia; (6) general debility but no serious injury - date palm. (W.R. Foster)