VI. DISEASES OF ORNAMENTAL PLANTS

ALTHAEA ROSEA - Hollyhock

Leaf Spot (Ascochyta parasitica). A trace of infection was seen at Winnipeg, Man. (W.L. Gordon)

Leaf Spot (Cercospora althaeina) was moderate at Morden and heavy at Winnipeg, Man. (W.L. Gordon)

Rust (Puccinia Malvacearum) was common in gardens on Vancouver Island and the lower mainland, B.C. (W. Jones). It was found in several localities in the Okanagan Valley, but damage was usually light or moderate (G.E. Woolliams). Rust was severe in one planting at Edmonton, Alta. (M.W. Cormack). A trace was noted at Winnipeg, Man., on July 19; it was general and severe by Sept. 16 (W.L. Gordon, A.M. Brown). Nearly all hollyhocks at Ottawa, Ont., were heavily rusted; but the high rainfall promoted such vigorous growth that abundant foliage formed above the severely injured lower leaves and long spikes of good blooms were produced (D.B.O. Savile). Rust was moderately heavy at the Montreal Botanical Garden, Que. (J.E. Jacques). It was heavy and destructive in P.E.I. (R.R. Hurst)

Leaf Spot (Septoria malvicola) was moderately heavy on some leaves at Morden, Man. (W.L. Gordon)

ANTIRRHINUM - Snapdragon

Basal Rot (Fusarium oxysporum) affected odd plants in a border at Morden, Man. (W.L. Gordon)

Leaf Spot (Phyllosticta Antirrhini). A light infection occurred at Morden, Man. (W.L. Gordon)

Rust (Puccinia Antirrhini) was found occasionally at Summerland, B.C., but did little damage. (G.E. Woolliams)

Sclerotinia Rot (S. sclerotiorum). Specimens of greenhouse plants were received from a florist at Kingston, Ont., who stated that he had a considerable amount of the disease in his beds. (H.N. Racicot)

Witches' Broom (?virus). One plant at the Experimental Station, Fredericton, N.B., showed a severe witches' broom. (D.J. MacLeod)

AQUILEGIA - Columbine

Mosaic (Cucumis virus 1). One plant of A. caerulea out of several in a garden at Westboro, Ont., showed a striking mosaic; some leaves were nearly normal, some were striped with light green, some were puckered, and many had narrow lobes with pale green tips; the plant was stunted, and the flowers were few and distorted. Inoculation of cucumber seedlings produced a mosaic indistinguishable from that produced by inoculation from mosaic-infected Echinocystis. (D.B.O. Savile)

ASTER

Downy Mildew (Basidiophora entospora), previously reported only from near Toronto, Ont. on A. novae-angliae, was epidemic on this species in the Ottawa district. All clumps in the Macoun Memorial Garden were lightly to heavily attacked. Many large clumps in the Arboretum and in Westboro lost all their lower leaves, and the disease was abundant on wild plants. Infection tends to run along the mid-rib; infected leaves can often be spotted from above by the necrosis along the mid-rib and yellowing of the adjacent lamina; the fungus fruits on the lower surface. A trace was found on a tall

variety of A. novi-belgii at Westboro; on this host little necrosis occurred and the lesions spread diffusely over the lamina. (D.B.O. Savile)

Rust (Coleosporium Solidaginis) was severe on Aster sp. in a border at Morden, Man. (W.L. Gordon). It was widespread at Ottawa, Ont., on A. novi-belgii; in three severely affected clumps there was partial defoliation and the heads were few and small; dwarf forms in the Macoun Memorial Garden were moderately affected. No infection was seen on A. novae-angliae, even when intermixed, in the wild state, with heavily rusted A. cordifolius. This rust was collected on A. novae-angliae near Ottawa a few years ago, but evidently different races were present in 1943. (D.B.O. Savile)

Powdery Mildew (Erysiphe Cichoracearum) was seen on A. novi-belgii at Westboro, Ont.; in some plants a heavy weft of mycelium covered the upper leaf surface, but few or no perithecia were formed; in others, there was virtually no superficial mycelium, but perithecia were fairly abundant on the under side of the leaf; little development occurred before October owing to the wet summer (D.B.O. Savile). A severe general infection occurred on A. novae-angliae var. Barr's Pink, and on A. novi-belgii vars. Beechwood Challenger and Harrington's Pink at Montreal Botanical Garden, Que. (J.E. Jacques)

Rust (Puccinia Asteris) caused little damage to cultivated A. novae-angliae at Ottawa, Ont., but a large patch of wild plants was heavily rusted; intermixed A. cordifolius, known as a host, was free from the rust. (D.B.O. Savile)

Dodder (Cuscuta sp.) caused severe damage to Aster sp. in a nursery at Charleswood, Man.; it was reported to be spreading to and killing young raspberry plants. (W.L. Gordon)

Blight (?virus). A blight of unknown cause attacked all the dwarf A. novi-belgii plants in the Macoun Memorial Garden; Victor was especially severely attacked. The lower leaves and sometimes the whole tops of the plants are killed, but there is no necrosis of the roots and new shoots are sent up from the crown. Killing of the leaves is preceded by feathery and then necrotic spotting. In general appearance and course of development, the disease is similar to blight of perennial phlox and a blight found locally on wild Convolvulus Spithamaeus. (D.B.O. Savile)

BEGONIA

Yellows (Callistephus virus 1). Three plants of B. undine and five of B. wallichiana were severely affected at the Montreal Botanical Garden, Que. The disease was found early in the summer on young China asters that were kept for some time in the greenhouse with the begonias; infection may have occurred then. (J.E. Jacques)

BELAMCANDA - Blackberry-Lily

Leaf Spot (Heterosporium Iridis). A trace occurred in a clump of B. chinensis at Brandon, Man. (W.L. Gordon). A moderate infection occurred late in the summer in a clump at Ottawa, Ont.; the infection was lighter than that on most irises. (D.B.O. Savile)

BERBERIS - Barberry

Rust (Puccinia graminis). Aecia were found on B. vulgaris at Fredericton, N.B. on July 6; infection ranged from 0-65% (S.F. Clarkson). Heavy infections were seen in several new locations at Charlottetown and one at Summerside, P.E.I. (R.R. Hurst)

BOLTONIA

Streak (virus). A trace was found in the border at the Experimental Station, Fredericton, N.B. (D.J. MacLeod)

CALENDULA

Yellows (Callistephus virus 1) was severe in the border at the Experimental Station, Fredericton, N.B. (D.J. MacLeod). It was also found in P.E.I. (R.R. Hurst)

CALLISTEPHUS CHINENSIS - China Aster

Rust (Coleosporium Solidaginis). A trace was present at Winnipeg, Man. (W.L. Gordon). Rust was extremely heavy in a bed in the Arboretum, Ottawa, Ont. Every plant of all varieties was rusted and many in the centre of the bed were completely covered and seriously disfigured. (D.B.O. Savile)

Wilt (?Fusarium sp.). A specimen was received from Perdue, Sask.; Fusarium and Rhizoctonia were present. (H.W. Mead)

Yellows (Callistephus virus 1). Moderate damage occurred in a planting of wilt-resistant varieties at Edmonton, Alta., and a trace was seen at Lethbridge (M.W. Cormack). Yellows was severe on most varieties at Ottawa and Westboro, Ont., but infection was much lighter and less conspicuous in a dark red variety than in all others. As described under Milkweed, it now seems that Asclepias syriaca may be the most important overwintering host for the virus in the Ottawa district, the search for other perennial weed hosts having been unsuccessful. It may further be noted that no yellows has occurred at Ottawa on kok-saghyz (q.v.), although this plant has been growing close to infected Callistephus in the Arboretum. The local restriction in host range may be due to the existence, in this region, either of a particular strain of the virus or of a race of Cicadula sexnotata with restricted host preferences. It may be pointed out that yellows on carrot was first detected at Ste. Clothilde, Que., in 1941 (P.D.S. 21:32) and that in 1943 H.N. Racicot was able to find infected ragweed and sow-thistle in that locality without difficulty. It appears likely that, if yellows of carrot reaches Ottawa, it will be possible to find the disease on some of the other well known weed hosts (D.B.O. Savile). Yellows was common in gardens in York Co., N.B. (D.J. MacLeod). Yellows was very prevalent in P.E.I.; it was also found on Calendula officinalis, Centaurea Cyanus, Chrysanthemum coccineum, C. frutoscens, C. Leucanthemum, Gaillardia aristata, Helichrysum bracteatum, Phlox Drummondii, Schizanthus, and Tagetes patula. See also Carrot. (R.R. Hurst)

CAMPANULA

Rust (Coleosporium Campanulae) was first seen in the Ottawa district, Ont., in 1942, when it was reported on C. persicifolia var. Mrs. Harrison's Double Blue (P.D.S. 22:98), and a single rusted specimen of C. rapunculoides was received from Rockcliffe. In 1943 it was found on C. rapunculoides on July 14 in two locations; it became epidemic in August, defoliating many clumps and disfiguring and stunting others. By the end of August, 35 out of 45 clumps of this species under observation in the district were rusted, but no rust could be found on C. persicifolia, even when adjacent to rusted C. rapunculoides, or on other species. The record on Mrs. Harrison's Double Blue is of interest, since C. persicifolia has been reported rusted only in B.C. (P.D.S. 16:72) and California. (D.B.O. Savile)

Blight (Septoria sp.) severely infected occasional plants of C. sp. at Morden, Man., attacking leaves, branches and stems; spores 17-25 x 1.5 microns. (W.L. Gordon)

CARAGANA

Leaf Spot (Septoria Caraganae). A general, slight to moderate infection occurred in hedges at Edmonton, Alta. (M.W. Cormack). At Brandon, Man., infection was moderate, less than in some years; at Morden infection was slight to moderate; and at Winnipeg infection was slight. (W.L. Gordon)

CENTAUREA

Leaf Spot (Septoria centaureicola var. brevispora) heavily infected a single clump of C. Cyanus at Westboro, Ont.; by mid-July the lower halves of the stems were defoliated, severe stem lesions were present, and the plants were noticeably stunted and had smaller and fewer heads than those in healthy clumps. A light to moderate infection occurred in a garden in Ottawa. (D.B.O. Savile)

Yellows (Callistephus virus 1) was seen on C. Cyanus in P.E.I. (R.R. Hurst)

CHEIRANTHUS - Wallflower

Wilt (Botrytis cinerea) killed most of the plants in one row of C. Allionii at Brentwood, B.C. (W. Jones)

CHRYSANTHEMUM

Wilt (Fusarium sp.) attacked scattered plants of C. maximum in a commercial greenhouse at Saskatoon, Sask. (H.W. Mead)

Leaf Spot (Septoria chrysanthemella). A slight infection occurred on the lower leaves of plants in a greenhouse at Edmonton, Alta.; first record in Alta. (M.W. Cormack)

Yellows (Callistephus virus 1) was found on C. coccineum (pyrethrum), C. frutescens (marguerite), and C. Leucanthemum (oxeye daisy) in P.E.I.

CLEMATIS

Leaf Spot and Stem Blight (Ascochyta ?clematidina) slightly affected Clematis sp. at Morden, Man.; spores were 7-15 x 3-4 microns; first record in Man. (W.L. Gordon). About eight species were severely attacked in the Arboretum, Ottawa, Ont., with considerable defoliation and stem girdling. Despite the heavy infection, sporulation was sparse at the time of examination. Spores were 11-14 x 3-3.2 microns, which is considerably smaller than is given for A. clematidina (16-18 x 6-7 microns) but agrees with E. and E. F. Col. 2503. (I.L. Conners, D.B.O. Savile)

Leaf Spot (Septoria Clematidis) was light to moderate at Brandon, Man., on C. ligusticifolia, and was heavy and destructive at Morden. (W.L. Gordon)

DAHLIA

Sclerotinia Rot (S. sclerotiorum). Specimens received from Lloydminster, Sask. bore sclerotia and showed severe basal rot. (H.W. Mead)

Spotted Wilt (Lycopersicum virus 3). At the Montreal Botanical Garden, Que., a whole collection comprising several dozen varieties was discarded because of this disease. The disease was present in 1942 and tuber indexing was used during the winter to select healthy plants. It was intended to take cuttings from the healthy plants only, but, owing to a misunderstanding after a change of labourers, cuttings were made indiscriminately and without precautions from both healthy plants and diseased plants kept for observation, and the disease was greatly spread. (J.E. Jacques)

Stunt (virus) was common in gardens at Charlottetown, P.E.I. (R.R. Hurst)

DELPHINIUM

Powdery Mildew (Erysiphe Polygoni) was unusually heavy on D. cultorum in eastern Ont. and Que., where it seemed to be stimulated rather than inhibited by the wet season. A number of plants were heavily infected at Westboro, Ont.; heavily mildewed leaves were received from Père Léopold, La Trappe, Que.; and all the plants in a garden at Abbotsford, Que. had almost all leaves stems and blossoms, including corollas, completely covered (D.B.O. Savile). Mildew was severe at the Montreal Botanical Garden, Que. and prevalent in the Montreal district (J.E. Jacques). Mildew was moderately heavy in P.E.I. (R.R. Hurst)

Bacterial Blight (Pseudomonas delphinii) attacked a few plants at the Montreal Botanical Garden, Que. (J.E. Jacques). One heavy attack was reported in P.E.I. (R.R. Hurst)

Witches' Broom (?virus). All plants in a garden at Lethbridge, Alta. were severely affected. (G.F. Manson)

DIANTHUS

Bud Rot (Fusarium Poae (Pk.) Wollenw.). A few plants of D. Caryophyllus (carnation) had affected buds in the greenhouse at the Experimental Station, Sidney, B.C.; not previously reported. (W. Jones)

Rust (Uromyces caryophyllinus) lightly infected all varieties of carnation in a commercial greenhouse at Saskatoon, Sask. (H.W. Mead)

DIGITALIS - Foxglove

Leaf Spot (Phyllosticta Digitalis Bellynck) occurred in two adjacent beds in the Arboretum, Ottawa, Ont., on D. argyrostigma, D. ferruginea, D. lanata, D. purpurea (common foxglove), and D. purpurea var. alba. Spots were most numerous on D. purpurea, but damage was worst on D. argyrostigma and D. ferruginea, the lesions often killing half the leaf; D. lanata was slightly affected. The disease did not reach the main Digitalis planting, which was far from the affected beds. Not previously reported. (D.B.O. Savile)

Mosaic and Streak (?virus). Three plants in the border at the Experimental Station, Fredericton, N.B., showed a severe mosaic, crinkling and leaf necrosis. (D.J. MacLeod)

EPILOBIUM - Willow-Herb

Rust (Pucciniastrum sp.). Seedlings of E. hirsutum, received from Europe under the name E. rosmarinifolium, became heavily rusted in October, in the Arboretum greenhouse, Ottawa, Ont. The rust attacks E. tetragonum sparingly and Clarkia elegans heavily. Faull (J. Arnold Arb. 19: 163-173. 1938) gives 19 x 16 microns as the average size for urediniospores of P. Abieti-Chamaenerii and 19 x 14 microns for those of P. Epilobii. In the rust under discussion, the spores average 17 x 12 microns, which is close to the sizes found for earlier collections on Clarkia and Godetia. Examination of specimens of rust on Epilobium spp. (Sect. Lysimachion) reveals a gradation of average sizes from about 17 x 12 to 19 x 14 microns. (D.B.O. Savile)

GAILLARDIA

SMUT (Entyloma sp.) was severe on some plants of G. aristata in a border at Morden, Man. (W.L. Gordon). Entyloma Compositarum Farl. was found on G. aristata in two locations at Ottawa and one at Westboro, Ont., causing considerable shedding of the lower leaves. A study of numerous specimens reveals that the above material, and specimens from Sask. previously regarded

as E. polysporum (Pk.) Farl., are referable to E. Compositarum; spores abundant but not replacing all parenchyma tissue, about 8-14 x 7.5-11 microns, wall 0.5-1.5 (rarely 2) microns, conidia abundant; Fungi Columbiani 3319 on Ambrosia trifida and 5014 on Aster adscendens are in close agreement. Fungi Columbiani 541 and Seymour and Earle Econ. Fungi 292a both on Ambrosia artemisiifolia, issued as E. Compositarum, are E. polysporum and agree well with Roum. Fungi Sel. Gall. 4868; spores densely crowded with disappearance of almost all parenchyma, 10-17 (rarely 21) x 9-14 (rarely 17) microns, wall 1.02-2.5 (rarely 3.5) microns, conidia not seen. Fungi Columbiani 4820 on Gaillardia pulchella and 4917 on Helenium autumnale, issued as E. polysporum, are typical E. Compositarum; both are wrongly cited in N.A.F. 7:1022. Fungi Columbiani 3424 on Rudbeckia hirta agrees well with E. polysporum in all respects but wall thickness, the thick walls, 1.0-5.0 (commonly 2.0-3.5) microns, are so striking that, if other specimens should not reveal intergradations, Ciferri's segregation of this fungus as E. Davisii would seem justified. Among specimens in the herbarium are collections from Sask. on Helenium montanum referable to E. Compositarum, and one from Timagami, Ont., on Aster macrophyllus referable to E. polysporum. There have been several reports of E. polysporum on Gaillardia in Man., but up to the time of writing it has not been possible to examine any specimens. (D.B.O. Savile)

Yellows (Callistephus virus 1). A single infected plant of G. aristata was seen at Ottawa, Ont. (D.B.O. Savile). Yellows was also seen on this host in P.E.I. (R.R. Hurst)

GARDENIA

Bacterial Leaf Spot (Pseudomonas gardeniae Burkh. & Pirone). Specimens were received from Thos. A. Ivey, Port Dover, Ont., who stated: "We are having considerable trouble this year with what we believe to be a new disease. This disease has shown up on all our young potted plants as well as the gardenias in the beds. These spots on the leaves seem to increase in number each week and apparently the disease is spreading very rapidly and will in time destroy our entire stock of gardenias if not brought under control". This is the first Canadian report of this recently described disease. See P.P. Pirone, Diseases of gardenia. N.Y. Agr. Exp. Sta. Bull. 679: 6-7. 1940, and W.H. Burkholder and P.P. Pirone, Phytopath. 31: 192-194. 1941. (I.L. Conners)

GLADIOLUS

Core Rot (Botrytis sp.) severely damaged a lot of Paul Grampel in storage at Regina, Sask.; Botrytis was isolated in pure culture from seven corms (T.C. Vanterpool). This trouble has been recently described by F.L. Drayton (Can. Hort. and Home Mag. Feb. 1944).

Corm Rot (Fusarium oxysporum f. Gladioli). Several infected bulbs were found at Winnipeg, Man. in a lot that had been grown near Keewatin, Ont. (W.L. Gordon). One per cent infection occurred in a small lot brought in for examination at Charlottetown, P.E.I. (R.R. Hurst)

Yellows (Fusarium oxysporum) affected about 20% of plants at Brandon, a trace at Morden, and more than for several years at Winnipeg, Man.; it was severe in the Keewatin area, Ont., up to 50% of corms having to be discarded (W.L. Gordon). Few to many plants were affected with yellows in several gardens in P.E.I. (R.R. Hurst)

Corm Rot (Penicillium Gladioli) caused slight damage to stored corms at Edmonton, Alta. (M.W. Cormack). Two per cent infection was seen in one lot at Charlottetown, P.E.I. (R.R. Hurst)

Scab (Pseudomonas marginata). Moderate to severe damage occurred in several lots of stored corms at Edmonton, Alta.; damage was severe in forced plants in a commercial greenhouse, and was slight in several gardens (M.W. Cormack). Occasional plants were affected at Brandon, Man., and in the Keewatin area, Ont. (W.L. Gordon)

Bacterial Blight (Xanthomonas gummisudans). Moderate infection occurred in a few varieties in a garden at Edmonton, Alta., and slight damage occurred at Lethbridge (M.W. Cormack). A localized outbreak occurred in a planting of cormels at Winnipeg, Man. (J.E. Machacek). A heavy infection caused considerable damage, especially to young plants, in a garden at Simcoe, Ont. (F.L. Drayton)

HELIANTHUS - Sunflower

Powdery Mildew (Erysiphe Cichoracearum) was moderately heavy on H. decapetalus in a garden at Westboro, Ont., late in the season. (D.B.O. Savile)

Rust (Puccinia Helianthi) was moderately heavy on Stella at Brandon, Man. (W.L. Gordon)

HELICHRYSUM - Everlasting

Yellows (Callistephus virus 1) was severe on H. bracteatum in the border at the Experimental Station, Fredericton, N.B. (D.J. MacLeod). It was also seen in P.E.I. (R.R. Hurst)

HESPERIS - Rocket

Basal Rot and Wilt (Rhizoctonia sp.) was severe in a garden at Saskatoon, Sask. (H.W. Mead)

HIPPEASTRUM

Spotted Wilt (Lycopersicum virus 3) affected about 60% of the plants at the Montreal Botanical Garden, Que.; see Lachenalia. (J.E. Jacques)

HYLOCEREUS - Night-Blooming Cereus

Stem Rot (Phyllosticta ?opuntiicola Bubak) occurred on H. undatus in a greenhouse in the Arboretum, Ottawa, Ont. Lesions were few but extensive and causing considerable damage to the branches involved, elongate, white or greyish, finally with many pycnidia; pycnidia irregular and with indefinite ostioles, often lobed as though tending to become compound, sometimes two together; spores 4.0 to 5.5 x 1.6 to 2.9 microns, cylindric, ellipsoid, reniform or clavate; tentatively assigned to this species, but there are many inadequately described spp., on various genera of Cactaceae, that are doubtfully distinct. (D.B.O. Savile)

IRIS

Eelworm (Ditylenchus dipsaci). A trace was found in one planting of bulbous iris on Vancouver Island, B.C. (R.J. Hastings)

Rhizome Rot (Erwinia carotovora) caused 80% loss in the spring, in a large new planting at Brandon, Man. (W.L. Gordon). A few plants of Lady Foster were attacked at the Montreal Botanical Garden, Que. (J.E. Jacques). A heavy outbreak occurred at Kentville, N.S., about half the clumps being severely damaged (J.F. Hockey). It was reported from 8 gardens in P.E.I., 12 out of 17 plants in one being affected. (R.R. Hurst)

Leaf Spot (Heterosporium Iridis) was less prevalent on bulbous iris on Vancouver Island and the lower mainland, B.C. than in 1942, and caused very slight damage (R.J. Hastings). It was general on all 92 varieties of I. germanica at the Experimental Farm, Agassiz, B.C.; it was very severe on Gazelle, Iris King, Prosper Loughier and Leta Williamson, and slight to severe on all others; it is widely distributed in gardens and causes considerable damage (W. Jones). Infection was severe in gardens at Edmonton and Pine Lake, Alta., and was general elsewhere (M.W. Cormack). A trace of leaf spot occurred at Brandon, and a moderate to heavy infection occurred at Morden, Man. (W.L. Gordon). It was heavy in many gardens in P.E.I. and often caused severe injury. (R.R. Hurst)

Bulb Rot (Penicillium sp.) affected nearly 60% of I. tingitana var. Wedgewood in a nursery at Brampton, Ont. The affected plants were also infected with mosaic. (G.C. Chamberlain)

Bacterial Leaf Blight (Phytomonas tardicrescens). The following species and varieties at the Montreal Botanical Garden, Que. were attacked to the extent shown; T stands for trace, L for light, M for moderate, and S for severe: I. chamaeiris var. italica, T; I. germanica, Prairie Gold, L; Ethelwynn Dubuar, T; Queen Caterina, M; Germaine Perthuis, T; Mount Royal, S; Mildred Presby, L; Corrida, L; Joycette, M; Ethel Peckham, M; Georgia, T; Romance, L; Jane Williamson, S; Soledad, L; Hene, L; Ambassadeur, M; Suzanne Antissier, M; Dolly Madison, M; Crusader, L; Lady Foster, S; Mary Barnett, L; I. pumila, Excelsa, T; Florida, T; Formosa, T; Orange Queen, T; Jean Siret, L; Blue Pigmy, T; Schneekuppe, L; Sunny Boy, T; I. reticulata, Hercules, M. (J.E. Jacques)

Rust (Puccinia Iridis) was heavy on I. spuria var. halophila at the Montreal Botanical Garden, Que. (J.E. Jacques). It was heavy on I. versicolor in Kings Co., N.S. (R.M. Lewis)

Crown Rot (low temperature basidiomycete). This pathogen (see Alfalfa) was isolated from severely damaged plants in a garden at Edmonton, Alta. (M.W. Cormack)

Mosaic (Iris virus 1) affected 90% of the plants of I. tingitana var. Wedgewood, the principal commercial variety, in a 10 acre planting, and infection averaged 4% in other plantings on Vancouver Island and the lower mainland, B.C. (R.J. Hastings). About half the plants of an unidentified bulbous iris in a planting at Winnipeg, Man. showed dwarfing, mottling and chlorotic streaking (J.E. Machacek). Mosaic affected 75 to 90% of this variety in a nursery at Brampton, Ont.; the bulbs originated from B.C.; affected plants showed breaking of the flowers and stunting of the flower stalks (G.C. Chamberlain). As has been pointed out by K.M. Smith (Textbook of Plant Virus Diseases, p. 421. 1937) Wedgewood is exceptionally susceptible to this disease; it may be impossible to grow this variety in districts where mosaic is firmly established.

LACHENALIA

Spotted Wilt (Lycopersicum virus 3) severely damaged the collection of these liliaceous plants at the Montreal Botanical Garden, Que.; infection was as follows: L. unicolor and L. Pillansii, 15%; L. unicolor var. fragrans, 25%; L. pendula, 35%; L. mediana and L. odorata, 50%; L. mutabilis and L. Roodeae, 75%; L. ochioides, 90%; L. pustulata, 95%; L. contaminata, L. Gillettii, L. juncifolia, L. ovatifolia, L. pallida and L. tricolor var. Nelsonii, 100%. Affected plants had mottled and malformed leaves. These plants, along with Hippeastrum, Ornithogalum and Tritonia were placed out of doors during the summer and are thought to have become infected from adjacent weeds. (J.E. Jacques)

LATHYRUS ODORATUS - Sweet Pea

Pod Blight (Botrytis cinerea). Slight damage occurred at Centreville, N.S., through rotting of the pods and shrivelling of the seeds. (J.F. Hockey)

White Mould (Erostrotheca multiformis) caused severe damage in one garden on Lulu Island, B.C. (W. Jones)

Streak (Erwinia lathyri) caused slight to moderate damage in several gardens at Edmonton, Alta. (M.W. Cormack). It was heavy in many gardens in P.E.I. (R.R. Hurst)

Wilt (Fusarium Solani) was severe in a few gardens at Saskatoon, Sask. (H.W. Mead)

Anthracnose (Glomerella cingulata). Specimens received from London, Ont. showed salmon coloured conidial masses on many of the lesions. According to the grower, the plants were 2 to 3 feet high and starting to flower before the disease was seen in late June. Then many growing points commenced to curl; if pulled gently the stem tip would break off at a light brown lesion varying from 1/8 to 1 inch in length. Soon the peduncles became affected, a lesion commonly occurring about 2 inches below the lowest bud and causing the flowering portion to topple. New growth starts from below the affected portions, but this may in turn be attacked. This is the first Canadian record of Glomerella cingulata on this host. (I.L. Conners)

Powdery Mildew (Microsphaera diffusa) caused severe damage in many gardens in P.E.I. (R.R. Hurst)

Root Rot (Rhizoctonia sp.) was heavy in two gardens in P.E.I. (R.R. Hurst)

Mosaic (virus) affected 30% of plants in a bed in the Arboretum, Ottawa, Ont. (D.B.O. Savile). It was severe in one garden in P.E.I. (R.R. Hurst)

Basal Rot (cause unknown). Infection was moderate on King Lavender at Winnipeg, Man. (J.E. Machacek)

Bud Drop (non-parasitic) was heavy in five gardens in P.E.I. (R.R. Hurst)

Fasciation was found in three gardens in P.E.I. (R.R. Hurst)

LIGUSTRUM - Privet

Powdery Mildew (Microsphaera Alni) was very common on L. vulgare (common privet) in Lincoln Co., Ont., but caused no damage except for slight defoliation. (G.C. Chamberlain)

Winter Injury. The severe winter of 1942-'43 killed almost all the hedges of common privet in the Kamloops area, B.C.; no new growth from the roots was visible on June 1. (G.E. Woolliams)

LILIUM - Lily

Blight (Botrytis elliptica). A light, general infection occurred at Morden, Man. (W.L. Gordon). Specimens of affected buds and leaves of L. candidum (Madonna lily) were received from St. Thomas, Ont. (I.L. Conners). Blight caused considerable foliage damage to most lilies at the Central Experimental Farm, Ottawa; some plants showed extensive stem lesions, probably due to the same cause. (D.B.O. Savile)

LINUM - Flax

Wilt (Fusarium oxysporum f. Lini). Scarlet flax (L. grandiflorum) proved highly susceptible to wilt in the wilt nursery and in flax-sick soil in

the greenhouse at Saskatoon, Sask.; but wild flax (L. Lewisii) and perennial garden flax (probably L. perenne) seemed to be immune, no post emergence wilting being seen. (T.C. Vanterpool)

Rust (Melampsora Lini). A 5% infection with well developed uredinia was seen on L. Lewisii at Juniata, Sask. (T.C. Vanterpool)

Wilt (cause unknown) severely damaged the entire planting of L. perenne at the Experimental Station, Lacombe, Alta. An unidentified fungus was isolated. (W.C. Broadfoot)

LONICERA - Honeysuckle

Leaf Spot (?Diplodia sp.). A slight infection occurred on L. tatarica at Morden, Man.; a Diplodia, with spores 12.5-22.5 x 7.5-9 microns) was associated. (W.L. Gordon)

Leaf Blight (Glomerularia Lonicerae) affected one plant in a hedge of L. sp. at Pointe Claire, Que. (I.L. Conners)

Powdery Mildew (Microsphaera Alni) was light on a hedge of L. Morrowii at Morden, Man. It was light at Brandon and Morden and moderate at Winnipeg, on L. tatarica (W.L. Gordon). A light infection was seen on L. sp. in P.E.I. (R.R. Hurst)

LUPINUS - Lupine

Stem Canker (Botrytis cinerea). Infection was a trace on blue lupine (?L. hirsutus) at Kentville, N.S. (J.F. Hockey)

Eye Spot (Ovularia sp.) considerably disfigured the foliage of plants on Vancouver Island, B.C. (W. Jones)

LYCHNIS

Leaf Spot (Phyllosticta Lychnidis) was moderately heavy on L. chalcedonica at Ottawa, Ont., the lesions being accompanied by considerable necrosis. (D.B.O. Savile, I.L. Conners)

Leaf Spot (Septoria Lychnidis) was moderately heavy on L. Haageana at Ottawa, Ont., but caused little injury. (D.B.O. Savile, I.L. Conners)

LYCIUM - Matrimony Vine

Leaf Roll (Solanum virus 14) was found in three plants of L. halimifolium growing outdoors at the Laboratory, Fredericton, N.B. (D.J. MacLeod). This appears to be the first record of this virus in Lycium.

MALOPE

Foot Rot (?Fusarium oxysporum) was severe on plants at Brandon, Man.; F. oxysporum was isolated. (W.L. Gordon)

MATTHIOLA - Stock

Wilt (Sclerotinia sclerotiorum). Specimens were received from a florist at Kingston, Ont., who stated that he had a considerable amount of this disease in his greenhouse beds. (H.N. Racicot)

MONARDA

Rust (Puccinia Menthae) was moderately heavy on one clump of M. fistulosa at Ottawa, Ont. and very heavy on a second, which was largely defoliated by late August. (D.B.O. Savile)

NARCISSUS

Smoulder (Botrytis narcissicola). A trace was found in a field of imported bulbs at Falmouth, N.S.; first report from N.S. (J.F. Hockey)

Root Knot (Ditylenchus dipsaci) slightly affected three plantings on Vancouver Island and the lower mainland, B.C. (R.J. Hastings)

NIGELLA

Foot Rot. A single plant of N. damascena (love-in-a-mist) was infected at Brandon, Man.; Fusarium Solani was isolated. (W.L. Gordon)

OENOTHERA - Evening Primrose

Downy Mildew (Peronospora Arthuri Farl.) was very prevalent in Kings Co., N.S., on Oe. biennis Auct.; many plants were completely wilted (J.F. Hockey). Not previously reported in P.D.S., but represented in the Herbarium on Oe. spp. from Sask., Ont., Que., and N.S. It is of interest to note that P. Arthuri was recently found (DAOM 14084) on an unidentified Epilobium in the phanerogamic herbarium, collected on Kodiak I., Alaska, in 1938. As far as we are aware this is the first report of P. Arthuri on Epilobium; it also probably represents a considerable range extension. (D.B.O. Savile)

Leaf Spot (Septoria Oenotherae) was severe on the leaves of a few plants of Oe. sp. in a border at Morden, Man. (W.L. Gordon). It caused premature death of the leaves of evening primrose at the Montreal Botanical Garden, Que. (J.E. Jacques)

OPUNTIA

Superficial Discoloration (?unbalanced water relation). Joints of Opuntia, set to root at Ottawa, Ont., nearly all became discolored the whole surface finally being involved; most joints survived, but were very unsightly. Dr. J.E. Jacques states in a letter in response to a query about this trouble: "Observed on Opuntia and a few other genera of the Cactaceae. I am inclined to believe that the silvery areas which eventually crack and turn brown are caused by an unbalanced water relation. An Opuntia plant was kept under observation for several months - when it was watered sparingly and the soil moisture maintained fairly uniform the brown patches made no noticeable progress; on the other hand, if the plant was given abundant water after a period of drought, the old patches enlarged and many new ones appeared. The discoloration usually begins at the base of the bristles and spines. At first tissues are water soaked and gradually turn silvery to brownish."

ORNITHOGALUM

Spotted Wilt (Lycopersicum virus 3). All plants of O. lacteum at the Montreal Botanical Garden, Que. were severely affected and had to be discarded; see Lachenalia. (J.E. Jacques)

PAEONIA - Peony

Blight (Botrytis Paeoniae). A light infection occurred on all varieties at the University, Saskatoon, Sask. (H.W. Mead). Blight was a trace at Brandon, slight at Morden, and severe at Winnipeg, Man. (W.L. Gordon). It was severe on all plants in a garden at Timmins, Ont. (I.L. Conners). It was general and severe in P.E.I. (R.R. Hurst)

Leaf Blotch (Cladosporium Paeoniae) was general at the Montreal Botanical Garden, Que., and was severe on a few plants. (J.E. Jacques)

Leaf Spot (Septoria Paeoniae). A light infection was found in a garden at Edmonton; first record in Alta. (G.B. Sanford)

Mosaic (virus) affected a few isolated plants at the Montreal Botanical Garden, Que. (J.E. Jacques)

Ring Spot (virus). One plant was lightly affected at Morden, Man., where the disease was common a few years ago (W.L. Gordon). It was severe in P.E.I. (R.R. Hurst)

Chlorosis (excess lime). A trace was seen on odd plants at Brandon, Man., much less than in some recent years. (W.L. Gordon)

Blossom Failure (cause unknown) severely damaged several varieties at Saskatoon, Sask. Buds did not open properly, and petals were thickened and lacking colour; some ring spot was also present (H.W. Mead). According to Dr. F.L. Drayton, such a condition may be due to several causes; Lemoine's disease (reported from Alta.) causes blossom failure but not the petal thickening; Botrytis often interferes with normal opening; and certain varieties are extremely sensitive to weather conditions, opening normally one year and failing completely the next.

PARTHENOCISSUS

Leaf Spot (Guignardia Bidwellii (Phyllosticta viticola) caused slight damage at Ottawa, Ont., to a single plant of P. quinquefolia (Virginia creeper). (D.B.O. Savile)

Downy Mildew (Plasmopara viticola) was abundant on Parthenocissus spp. in the Ottawa district, Ont. (see under Vitis), and on P. quinquefolia at Abbotsford, Que.; not previously reported in P.D.S. on these hosts. (D.B.O. Savile)

PELARGONIUM - Geranium

Grey Mould (Botrytis cinerea) caused spotting of the leaves of two greenhouse plants at Charlottetown, P.E.I. (R.R. Hurst)

PENSTEMON

Leaf Spot (Ramularia sp.). Infection was moderate to severe on some plants of P. grandiflorus and P. sp. at Morden, Man.; spores 22-42 x 3.5-5 microns. (W.L. Gordon)

PETUNIA

Virescence (?virus). A greening of the flower parts was seen on one plant in a garden at Fredericton, N.B. (D.J. MacLeod)

PHLOX

Powdery Mildew (Erysiphe Cichoracearum) is generally so universally heavy by late August in the Ottawa district, Ont., on P. paniculata that it escapes comment. In 1943 it could only be found to an appreciable extent in a few small, well-ventilated clumps or solitary stems, up till mid-September; only in October did its attack become noticeable. (D.B.O. Savile)

Leaf Spot (Septoria divaricata). All the plants of P. Drummondii in a greenhouse at Charlottetown, P.E.I., were heavily attacked. Spraying with Copper Hydro checked the disease effectively. (R.R. Hurst)

Blight (?virus) previously reported from Ont., Que. and P.E.I., is evidently identical with the streak reported from N.B. The former name is here used, because it is the established name in use in the United States and because

the streak symptom is not always conspicuous. Blight was heavy at Ottawa, Ont., infection being 100% in some plantings; severe defoliation occurred in some clumps, and the widespread spotting spoiled the appearance of many others late in the flowering period (D.B.O. Savile). Eight per cent of the plants in the border at the Experimental Station, Fredericton, N.B., were affected. (D.J. MacLeod)

Virescence (?virus). A greening of the floral parts was seen in two plants in the border at the Experimental Station, Fredericton, N.B. (D.J. MacLeod)

Yellows (Callistephus virus 1) was seen on P. Drummondii in P.E.I. (R.R. Hurst)

PODOPHYLLUM PELTATUM - May Apple

Leaf Spot (Phyllosticta Podophylli (Curt.) Wint.) killed large areas of the leaves of plants at the Montreal Botanical Garden, Que.; some leaves died prematurely. (J.E. Jacques)

PORTULACA - Purslane

Wilt (Fusarium sp.) affected 10% of the plants in one section of a field of P. grandiflora being grown for seed at Grand Forks, B.C. (G.E. Woolliams)

POTENTILLA

Rust (Phragmidium Andersoni Shear) was heavy on part of a hedge of P. fruticosa at Morden, Man. (W.L. Gordon). Not previously reported in P.D.S., but recorded in the Herbarium from Winnipeg, Man., and from Alta., Sask. and Que.

Powdery Mildew (Sphaerotheca Humuli) was heavy on some plants of P. nivalis at Morden, Man.; first record on this host. (W.L. Gordon)

RANUNCULUS - Buttercup

Mosaic (?Spotted Wilt - Lycopersicum virus 3). A collection of 50 plants of R. asiaticus giganteus florentinus at the Montreal Botanical Garden, Que., became infected and had to be discarded (J.E. Jacques). The virus of spotted wilt has been reported on Ranunculus and under the circumstances it is the most likely cause of this trouble; see Lachenalia.

RIBES

Rust (Cronartium ribicola) was heavy in a hedge of R. diacantha at Morden, Man.; first record of C. ribicola for Man. (W.L. Gordon). It is now unreported only in Alta. and Sask. Rust attacked a number of Ribes spp. in the Arboretum, Ottawa, Ont., but was particularly heavy on R. orientale, which was seriously defoliated (D.B.O. Savile). A light infection occurred on Ribes sp. in Prince Co., P.E.I. (R.R. Hurst)

Cluster Cup Rust (Puccinia Pringsheimiana). A trace was present on a hedge at Morden, Man. (W.L. Gordon). This record gives the host as R. oxyacanthoides, which is little cultivated; R. hirtellum frequently passes under this name. (D.B.O. Savile)

Leaf Spot (Septoria spp.). S. aurea was moderate at Morden and light at Winnipeg, Man., on R. odoratum (W.L. Gordon). It was very heavy on R. aureum in the Arboretum, Ottawa, Ont., and caused considerable defoliation (D. B.O. Savile). S. Ribis almost completely defoliated a hedge of R. alpinum and was moderately heavy on a hedge of R. ?hirtellum (see under Cluster Cup Rust) at Morden, Man. (W.L. Gordon)

ROSA - Rose

Crown Gall (Agrobacterium tumefaciens) killed five plants of Paul's Scarlet in one garden and was reported from six others near Charlottetown, P.E.I. (R.R. Hurst)

BLACK SPOT (Diplocarpon Rosae) was severe in a garden at Salmon Arm, B.C., especially on a climbing briar rose (G.E. Woolliams). It caused slight damage in a garden at Edmonton, Alta. (G.B. Sanford). A light, general infection occurred at Morden, Man. on R. rubrifolia and other species (W.L. Gordon). Black spot was extremely prevalent in gardens at St. Catharines, Ont.; Rev. Page Roberts, Talisman, Etoile de Hollande, McGredy's Ivory, McGredy's Sunset, Christopher Stone, Edith Nellie Perkins, and Hadley were seriously affected, (G.C. Chamberlain). Many varieties were affected at the Montreal Botanical Garden, Que., and there was some premature defoliation (J.E. Jacques). Heavy infections and some severe defoliation occurred in P.E.I. (R.R. Hurst)

Stem Canker (Leptosphaeria Coniothyrium) was frequently found developing from pruning stubs in Lincoln Co., Ont.; the Poulson hybrid polyantha varieties appeared to be most susceptible. (G.C. Chamberlain)

Leaf Spot (Mycosphaerella rosicola) was light on some leaves at Brandon, Man. (W.L. Gordon)

Rust (Phragmidium spp.). P. americanum was heavy on Rosa sp. at Westboro, Ont. and caused slight defoliation; a single bush in a garden at Abbotsford, Que., was heavily infected and showed some defoliation; the rust has been seen on this bush for a number of years but has never spread to adjacent plants of other species (D.B.O. Savile). P. disciflorum was heavy on General Jacqueminot and moderate on Capt. Hayward at the Central Experimental Farm, Ottawa, Ont., but was not seen on adjacent varieties (D.B.O. Savile). P. speciosum was common on young leaves and shoots of Rosa sp. at Winnipeg, Man. P. subcorticinum was very abundant on cultivated roses at Kentville, N.S., and caused some defoliation (J.F. Hockey). P. sp. was heavy in several gardens at Charlottetown, P.E.I. (R.R. Hurst)

Anthracnose (Sphaceloma Rosarum). A moderate, general infection, lighter than in 1942, occurred on a hedge of R. spinosissima var. altaica at Morden, Man.; a moderate infection also occurred on some bushes of other species. (W.L. Gordon)

Powdery Mildew (Sphaerotheca spp.). S. Humuli was slight generally, but severe on Polyantha varieties at Morden, Man. (W.L. Gordon). At St. Catharines, Ont., Crimson Rambler (Multiflora) was completely covered, its growth stunted and its blooms marred (G.C. Chamberlain). S. pannosa was moderate on R. rugosa at Abbotsford, Que., but did not attack other species nearby (D.B.O. Savile). It was common on ramblers in N.S., specimens being received from Lunenburg, Annapolis and Kings Co. (J.F. Hockey). It was severe on ramblers and slight on other roses in P.E.I. (R.R. Hurst). The host range and geographic distribution of these two rose mildews in Canada is imperfectly understood; contributors to the P.D.S. are invited to sent in specimens, with flowers and fruit, or with variety names, to the herbarium, to help in remedying the situation.

Mosaic (virus) affected odd plants of Rosa spp. at Morden, Man.; it is destructive and is spreading. (W.L. Gordon)

SAMBUCUS - Elder

Leaf Spot (Septoria sambucina) was common on Vancouver Island and the lower mainland, B.C. (W. Jones). It was light at Brandon and moderate at Morden, Man., on S. racemosa. (W.L. Gordon)

SAPONARIA - Soapwort

Leaf Spot (Phyllosticta ?Dianthi Westend.) was heavy on some leaves of S. officinalis at Morden, Man.; spores were 5-17.5 x 2.5-5 microns; Grove regards this organism as a developmental phase of Ascochyta Dianthi Berk., with spores tardily 1-septate, which is recorded on Saponaria in England. (W.L. Gordon)

SCHIZANTHUS - Butterfly-Flower

Yellows (Callistephus virus 1) was found on Schizanthus sp. in P.E.I. (R.R. Hurst)

SEMPERVIVUM - Houseleek

Rust (Endophyllum Sempervivi). Dr. J. Dearness writes that this rust was present in his garden at London, Ont., from 1939 to 1941, but that all plants died in the winter of 1941-'42. The outbreak reported in P.D.S. 22:106 was, therefore, not the first to occur in Ont. (I.L. Conners)

SOLIDAGO - Goldenrod

Rust (Coleosporium Solidaginis) was severe on some plants of Solidago spp. in a border at Morden, Man. (W.L. Gordon). See also Goldenrod.

SYMPHORICARPUS

Powdery Mildew (Microsphaera diffusa) was moderately heavy on a large clump of S. orbiculatus at Ottawa, Ont., late in the season (D.B.O. Savile). A trace was seen on S. albus in Queens Co., P.E.I. (R.R. Hurst)

Leaf Spot (Septoria Symphoricarpi) was heavy on a hedge of S. occidentalis at Morden, Man. (W.L. Gordon)

SYRINGA - Lilac

Powdery Mildew (Microsphaera Alni) ranged from slight to moderate on a few bushes of S. vulgaris at Morden, Man. (W.L. Gordon). Mildew became moderately heavy on S. vulgaris at Ottawa, Ont., in late September (D.B.O. Savile). It was widespread and moderately heavy in P.E.I. (R.R. Hurst)

Bacterial Wilt (Pseudomonas syringae) caused moderate damage in a garden in North Saanich, B.C. (W. Jones)

Leaf Spot. A leaf spot was seen on a single bush at Morden, Man. Coniothyrium sp. and Pleospora sp. were associated. (W.L. Gordon)

Crown Rot and Blight. French lilacs planted separately and in a hedge at Winnipeg, Man., suddenly wilted and died; the trunks tended to split at the base, cortex of crowns and roots was brown and soft; no micro-organisms were associated (J.E. Machacek). This may be graft blight; see P.D.S. 22:106.

TAGETES - Marigold

Basal Rot (Fusarium oxysporum associated) affected odd plants of T. patula var. Little Gem at Brandon, Man. (W.L. Gordon)

Yellows (Callistephus virus 1) attacked 100% of T. patula in a planting in Queens Co., P.E.I. (R.R. Hurst)

THYMUS - Thyme

Snow Mould (low-temperature basidiomycete) was isolated from thyme that was covered with mycelium and suffered moderate damage at Edmonton, Alta. (M.W. Cormack). See Alfalfa.

TRITONIA

Spotted Wilt (Lycopersicum virus 3) affected about 90% of the plants of T. hyalina (Iridaceae) at the Montreal Botanical Garden, Que.; see Lachenalia. (J.E. Jacques)

TULIPA - Tulip

Fire (Botrytis Tulipae) was general in 93 plantings on Vancouver Island and the lower mainland, B.C., but caused slight damage (R.J. Hastings). Fire was found in some commercial plantings at Vernon and Salmon Arm, but usually caused little damage (G.E. Woolliams). Damage was moderate in Wm. Copeland and nil to slight in other varieties forced in a greenhouse at Edmonton, Alta. (J.G. Grimble)

The plantings at the Laboratory, St. Catharines, Ont., showed 100% infection with practically no perfect blooms (J.K. Richardson). Fire was again widespread and severe in Ont. (J.E. Howitt). It was seen in virtually every garden in Westboro, Ont., and was unusually severe (D.B.O. Savile). Fire destroyed 39% of the blooms and marked others in a 2-year-old planting in N.S. (J.F. Hockey)

Storage Rot (Penicillium sp., Fusarium sp., and Sun Scald) caused slight losses on Vancouver Island and the lower mainland, B.C. (R.J. Hastings)

Snow Mould (Typhula sp.) was found on a few samples from Greenwood, B.C. (R.J. Hastings)

Break (virus). Infection ranged from 0.1 to 5% on Vancouver Island and the lower mainland, B.C. (R.J. Hastings). It was found in many varieties being grown commercially at Vernon and Salmon Arm, B.C., infection ranging from a trace to 10% (G.E. Woolliams). One plant each of Bartigon, Bleu Aimable, and Telescopium were infected in a planting of 500 bulbs at Winnipeg, Man. (J.E. Machacek). One plant was found in 1942, at Fredericton, N.B., which showed a striking break; the symptoms recurred in 1943 in plants produced from it; attempts to transit the disease by sap inoculation were unsuccessful and grafting has not yet been attempted (D.J. MacLeod). Break affected 6% of tulips in a garden at Charlottetown, P.E.I. (R.R. Hurst)

Abnormal Growth. In a planting of an unnamed yellow tulip in Queens Co., P.E.I., 80% of the plants had thickened stems, which often cracked and toppled, and extra leaves that tended to be petaloid. According to R.J. Hastings, this condition is a sign of excessive vigour; it may be caused by excess nitrogen or by the planting of mother bulbs; in addition, the stem cracking may be induced by wide variation between day and night temperatures. (R.R. Hurst)

VERONICA - Speedwell

Leaf Spot (Septoria Veronicae) was moderate on some plants of V. longifolia at Morden, Man. (W.L. Gordon)

VIOLA

Leaf Spot (Cercospora Violae Sacc.). A small amount of Cercospora was found on leaves of V. tricolor in a specimen of Phyllosticta Violae, collected in 1928 at Kentville, N.S. We have a specimen identified as C. Violae from Ont., and specimens from Man. and Que. identified as C. Violae-tricoloris Bri. & Cav. The present specimen seems to fit C. Violae most closely, but, in view of the great variation of conidiophore lengths in a single specimen, there is some doubt as to the distinctness of these species. (D.B.O. Savile)

Leaf Spot and Stem Blight (Phyllosticta Violae Desm.). A specimen of V. tricolor collected at Kentville, N.S., in 1928, bore abundant pycnidia of this fungus; first Canadian record. (D.B.O. Savile)

Rust (Puccinia Violae) was abundant on V. tricolor var. Oregon Giant purchased from a nursery at Winnipeg, Man. (J.E. Machacek)

Leaf Spot (Ramularia lactea (Desm.) Sacc.) Caused moderate damage to V. tricolor in cold frames near Vancouver, B.C.; first Canadian record. (J.W. Eastham)

VITIS - Grape

Downy Mildew (Plasmopara viticola) was abundant on wild and ornamental grapes and on Parthenocissus in the Ottawa district, Ont. The following table was compiled largely from the main plantings in the Arboretum; some information concerning Parthenocissus came from elsewhere in the district, but nil infections were disregarded unless abundant mildew could be found close at hand.

Host	No. of Plants	Amount of Disease On Fruit	Amount of Disease On Leaves	Foliage Symptoms
Vitis amurensis	3	Slight to severe	Heavy to v. heavy	Necrosis, slight to complete defoliation
V. Kaempferi	3	None; little fruit	Heavy	Necrosis; slight to moderate defoliation
V. labrusca	1	No fruit	Trace	Necrosis
V. Lecontiana	1	No fruit	Moderate	Necrosis
V. Longii	2	Severe	Trace to slight	Necrosis
V. Piasezkii	1	Slight	Moderate	Necrosis
V. vulpina	3	No fruit	Heavy	Necrosis; slight defoliation
Ampelopsis aconitifolia	1	Nil	Nil	Nil
Parthenocissus inserta	4	Nil	Slight to moderate	Purpling
P. inserta v. laciniata	1	Nil	Nil	Nil
P. inserta v. macrophylla	1	Nil	Slight	Purpling
P. quinquefolia	7	Nil	Nil	Nil

Host	No. of Plants	Amount of Disease On Fruit	Amount of Disease On Leaves	Foliage Symptoms
P. quinquefolia v. ?Engelmannii	1	Nil	Slight	Purpling
P. quinquefolia v. hirsuta	3	Nil	Heavy	Purpling; moderate defoliation
P. quinquefolia v. ?Saint-Paulii	1	Nil	Nil	Nil
P. tricuspidata	2	Nil	Nil	Nil

Readings were made late in September, long after the disease became widespread, and it is thought that the table gives a reliable picture of susceptibility to the predominant local form of P. viticola; it should be noted, however, that physiologic specialization must exist in this species, since P. tricuspidata is listed as a host by Seymour (Host Index of the Fungi of North America. 1929); that P. inserta (Psedera vitacea) is not so listed is ascribable to its confusion with P. quinquefolia. (D.B.O. Savile)

ZINNIA

Yellows (Callistephus virus 1A) caused severe damage in Queens Co., P.E.I., infection being 100% in some gardens. (R.R. Hurst)