VI. DISEASES OF ORNAMENTAL PLANTS

ACHYRANTHES

Basal Rot (Rhizoctonia Solani) caused severe damage to A. borbonica in a cemetery at Cobourg, Ont., but no disease was reported at several other locations where stock from the same nursery had been used (D.B.O. Savile).

ACONITUM

Yellows (Callistophus virus 1) was severe at the Station, Fredericton, N.B. (D.J. MacLeod).

ALTHAEA ROSEA - Hollyhock

Rust (Puccinia Malvacearum). Fresh infections were found in January at North Saanich, B.C.; damage was considerable during the summer in some gardens (W. Jones). Rust was widespread in the interior of B.C., but severity varied greatly (G.E. Woolliams). Rust caused much damage throughout Ont. (J.E. Howitt). A heavily rusted specimen was received from Kenora. Fresh infections were found near Ottawa on 19 April; the cool wet weather from mid-April to mid-June greatly favoured the disease, although not inducing good growth of the host; rust became very severe in the district (D.B.O. Savile). A few pustules were seen on 17 April at the Botanical Garden, Montreal, Que., on overwintered leaves (J.E. Jacques). Many enquiries from eastern Ont. and Que. indicated that rust was severe (I.L. Conners). Rust was heavy and destructive in all gardens at Charlottetown, P.E.I., and was reported from all other districts (R.R. Hurst).

Leaf Spot (Septoria malvicola) occurred on old leaves of hollyhocks at Fort Garry, Man.; spores 30-62.5 x 1.5-2.5 microns (W.L. Gordon).

ANEMONE

Leaf Spot (Ascochyta ?patagonica Speg.). A light infection occurred in a planting of A. riparia at Fort Garry, Man. Spots were purple-brown, irregular; spores 7-12.5 x 2.5-4 microns, continuous to 1-septate commonly biguttulate; fruiting sparsely. Ascochyta patagonica was described as having spores 8-10 x 3-4 microns. We have seen no record of Ascochyta on Anemone in North America, but this might be the fungus reported on Clematis and doubtfully ascribed to A. clematidina (P.D.S. 23: 105) (W.L. Gordon, D.B.O. Savile).

Rust (Puccinia Anemones-virginianae Schw.) became heavy in a planting of A. riparia at Fort Garry, Man. (W.L. Gordon). Common on wild anemones, but not previously reported in the Survey.

ANTHEMIS

Yellows (Callistephus virus 1) was serious in plantings of A. tinctoria at Winnipeg, Man.; first report to the Survey on this host (W.L. Gordon).

ANTIRRHINUM - Snapdragon

Rust (Puccinia Antirrhini) was seen in various parts of the Okanagan Valley, B.C., but was not severe (G.E. Woolliams). Infection was moderately heavy in a greenhouse in Montreal, Que. (J.E. Jacques).

Sclerotinia Rot (S. sclerotiorum) was heavy and widespread in a market garden near Charlottetown, P.E.I. (R.R. Hurst).

Wilt (Verticillium Dahliae) affected a few plants in coastal B.C.;

the organism was isolated (W.Jones). V. sp. attacked all the snapdragons in a garden near Charlottetown, P.E.I. (R.R. Hurst).

Leaf Curl and Mosaic (virus). Seven plants at the Station, Fredericton, N.B., developed a severe rolling, downward curling and veinal mottling of the leaves. When scions from affected plants were grafted to healthy snapdragons identical symptoms were produced in 30-40 days. Four of the inoculated plants were so weakened and stunted that they produced practically no flowers. The virus has not been identified (D.J. MacLeod).

AQUILEGIA - Columbine

Leaf Spot (Actinonema Aquilegiae (Thüm.) Grove) caused moderate damage to A. sp. at Agassiz and Elk Lake, B.C. Spores 8-21 x 2.5-4 microns, 0-2-septate, mostly 15 x 3.5 microns, 1-septate; this material is typical of Actinonema, the radiating hyphae being clearly visible, and agrees well with Grove's description and illustration (British Stem and Leaf Fungi, 2: 269). First report to the Survey but it is recorded from Man. by Bisby et al. (Fungi of Manitoba and Saskatchewan) as Marssonina Aquilegiae Dearn. Roum. Fungi Sel. 2489 (Phyllosticta Aquilegiae Roum. & Pat.) is indistinguishable from the B.C. material. The fungus on Delphinium reported from Sask. (P.D.S. 21: 90) as Ascochyta Aquilegiae (Rabh.) v. Höhn. is a true Ascochyta, but this name is antedated by A. Aquilegina (Roum. & Pat.) Sacc. and both are apparently the Actinonema; the correct name for the Delphinium fungus therefore remains in doubt (W. Jones, D.B.O. Savile).

Powdery Mildew (Erysiphe Polygoni) was heavy in a planting of hybrid columbines at Fort Garry, Man. (W.A.F. Hagborg, W.L. Gordon).

ASTER

Downy Mildew (Basidiophora entospora). A light infection occurred on A. novae-angliae in a few gardens near Ottawa, Ont. A little was also seen on wild A. cordifolius at Ottawa (D.B.O. Savile).

BEGONIA

Spotted Wilt (virus). What appeared to be this disease attacked several plants in a greenhouse at Fort Garry, Man. (J.E. Machacek). Six plants were attacked at the Botanical Garden, Montreal, Que. (J.E. Jacques).

BERBERIS - Barberry

Rust (Puccinia graminis). Pycnia were first seen on B. vulgaris at Fort Garry, Man., on 20 June; aecia developed late in July; cultures yielded P.g. Tritici, P.g. Avenae and P.g. Secalis (T. Johnson). At the Botanical Garden, Montreal, Que., aecia were fairly abundant on B. aggregata, B. brachypoda, B. Brotschneideri, B. heteropoda, B. Poiretii var. weichangensis, B. sibirica and B. Tischleri (J.E. Jacques). Rust was very scarce on B. vulgaris at Charlottetown, P.E.I. (R.R. Hurst)

Wilt (Verticillium sp.) had attacked and was killing about half the bushes in a large planting of columnberry barberry (? B. Thunbergii var. pluriflora) in a nursery in Louth Twp., Ont. The disease is thought to have been favoured by the wet spring (G.C. Chamberlain). An entire hedge of B. Thunbergii was attacked in Queens Co., P.E.I. (R.R. Hurst).

BERGENIA

Leaf Spot (Phyllosticta ?Saxifragarum) was severe in a clump of B. cordifolia at Fort Garry, Man. The affected areas of the leaves crack in the later stages (W.L. Gordon).

BOLTONIA

Streak (virus) has been under observation at the Station, Fredericton, N.B., for 5 years. It was severe this year. It has spread rapidly and in 1945 it attacked 95% of the plants in one section of the border and 60% in another (D.J. MacLeod).

CALENDULA

Powdery Mildew (Oidium sp.). Some infection occurred on C. officinalis at Fort Garry, Man., in 1944. No perithecia were formed (W.L. Gordon).

Yellows (Callistephus virus 1) was severe at Fredericton, N.B. (D.J. MacLeod). It attacked all the plants in a garden at Charlottetown, P.E.I. (R.R. Hurst).

CALLISTEPHUS CHINENSIS - China Aster

Wilt (Fusarium oxysporum f. Callistephi). Moderate damage occurred in a garden at Edmonton, Alta. Resistant varieties in other gardens were unaffected (A.W. Henry). It was common and very destructive in Ont. (J.E. Howitt).

Yellows (Callistephus virus 1) caused slight to moderate damage in several gardens in Edmonton, Alta. (M.W.C.). Yellows was seen on China aster in several sections of Ont. (J.E. Howitt). It was less abundant than during the last 2 years at Ottawa (D.B.O. Savile). Yellows was general on China aster in York, Sunbury and Westmorland Co., N.B. One grower raised disease-free plants successfully under muslin. Yellows was severe in the border at the Station, Fredericton, on Aconitum, Calendula, Coreopsis, Cosmos, Helichrysum, Phlox Drummondii, and Tagetes. It was common in York, Sunbury and Westmorland Co. on Chrysanthemum Leucanthemum, Erigeron annuus, Leontodon autumnalis, Matricaria suaveolens, Plantago major, Sonchus arvensis, and Spergula arvensis (D.J. MacLeod). Very few asters are grown at Charlottetown, P.E.I., but infection was 100% in one garden. It was also seen on Centaurea, Plantago, and Chrysanthemum Leucanthemum (R.R. Hurst).

CAMPANULA

Rust (Coleosporium Campanulae) was severe on C. persicifolia in one garden at Saanichton, B.C. (W. Jones). A moderate infection occurred in June, 1945, on the one clump of C. rapunculoides found to be rusted in 1944 at Ottawa, Ont. In Aug. some rust developed in a few other clumps in the district (D.B.O. Savile).

Leaf Spot (Phyllosticta ?alliariaefoliae Allescher) was found on C. persicifolia in 2 gardens near Ottawa, Ont. Infection was light, but the individual lesions were large and often killed the entire distal part of the leaf. The fungus seems to be closest to this species, but the spores are somewhat narrow (D.B.O. Savile).

Leaf Spot (Ramularia macrospora) caused considerable damage to C. ?persicifolia at Saanichton, B.C. (W. Jones).

CENTAUREA

Rust (Puccinia Cyani) was severe on C. Cyanus in one garden at North Saanich, B.C. (W. Jones).

CHEIRANTHUS - Wallflower

Downy Mildew (Peronospora Cheiranthi) caused moderate damage to C. Cheiri in one garden at Sidney, B.C. (W. Jones).

CHRYSANTHEMUM

Canker (Phoma sp.) attacked one variety out of several in Grantham Twp., Ont. Infection occurred through the top of the cutting and partly girdled the shoot. The fungus was found in the phloem, xylem and pith (R.S. Willison).

Leaf Spot (Septoria Chrysanthemi) caused slight damage to C. morifolium in a garden at Agassiz, B.C. (W. Jones).

Wilt (Verticillium sp.) caused moderate damage in a greenhouse at Edmonton, Alta. A fungus close to V. Dahliae was isolated (M.W. Cormack). Specimens were received from 2 greenhouses in Ont., the owners reporting a large proportion of their crops to have been destroyed (J.E. Howitt).

CLEMATIS

Chlorosis (lime-induced) was severe in a planting of C. sp. at Fort Garry, Man. (J.E. Machacek).

CONVALLARIA MAJALIS - Lily-of-the-Valley

Leaf Spot (Ascochyta majalis Massal.). A specimen received from Orillia, Ont., showed numerous elliptical spots, to 2 cm. long and with a water-soaked margin, on the leaves; sparse, inconspicuous pycnidia 150-190 microns in diameter occupied the centre of the spot. Spores were 12-36 x 5-6.5 microns with 0-2 septa, hyaline. The shorter, continuous spores agree with the dimensions given for Phyllosticta cruenta (Fr.) Kickx (14-18 x 5.5-7 microns). A majalis was described as having spores 1-septate 18-24 x 4-6 microns; it was published during 1900, but the exact date is in doubt. D. Sacc. Myc. It. 960, collected in 1901 by Massalongo at the type locality has spores 11.5-28.5 x 5-6.5 microns, with 1-2 (-3) septa, and is clearly identical with our fungus. Septoria majalis Aderhold was published in Centralbl. f. Bakt. usf. 2 Abt. Bd. 6: 631, which was issued on 12 Oct., 1900. From the description and illustrations this must be the same organism. Strictly speaking the fungus should be placed in Stagonospora, but the authority for the combination remains in doubt until it can be determined whether or not Massalongo's name antedates Aderhold's. The occurrence of the disease in Pennsylvania has been reported by Anna E. Jenkins (Phytopath. 32: 259-261. 1941), but this is the first report from Canada (D.B.O. Savile).

Blight (Botrytis cinerea) was very destructive in a bed under trees at the Central Experimental Farm, Ottawa, Ont. In addition to numerous small, red-brown spots, commonly sterile, there were large, dark brown lesions, on which the fungus fruited freely, and which commonly involved most of the leaf and sometimes the lower part of the scape. W.C. Moore (Diseases of bulbs. Bull. 117. Brit. Min. Agr. and Fisheries. 1939) discusses the identity of the pathogen. In this material the fungus was definitely of the cinerea type, both in morphology and in cultural characteristics. Less severe outbreaks were seen in several gardens in the district. Sterile, red-brown spots are commonly seen on C. majalis in this district, and it is now thought that much of this trouble may be due to Botrytis; apparently the wet, cool weather in May and early June stimulated the fruiting of the fungus. First report to the Survey. See also Lilium (D.B.O. Savile).

Anthracnose (Gloeosporium Convallariae Allescher) was seen in a few gardens in Ont. (J.E. Howitt). First report to the Survey.

COREOPSIS

Yellows (Callistephus virus 1) was severe at Fredericton, N.B. (D.J. MacLeod). It was seen occasionally in Queens Co., P.E.I. (R.R. Hurst).

COSMOS

Yellows (Callistephus virus 1) was severe at Fredericton, N.B. (D.J. MacLeod).

CYCLAMEN

Basal Rot (Pythium sp.). A severely rotted specimen of C. indicum was received from Strathroy, Ont. The extent of the disease was not started (D.B.O. Savile).

DAHLIA

Spotted Wilt (virus) attacked 15 out of 50 plants at St. James, Man.; first record in Man. (J.E. Machacek). It was severe at the Botanical Garden, Montreal, Que.; infection is believed to have occurred in the greenhouse, where the disease was present (J.E. Jacques).

DAPHNE

Anthracnose (Marssonina Daphnes) caused considerable defoliation of D. Mezereum in a garden at Cowichan, B.C. (W. Jones).

DELPHINIUM

Leaf Spot (Ascochyta sp.). See discussion of Actinonema Aquilegiae under Aquilegia. Conceivably these fungi are different phases of the same organism; the spores are similar and the hosts closely related; but lacking evidence of identity, it seems preferable to carry the fungus on Delphinium as Ascochyta sp. (D.B.O. Savile).

Fasciation (?Corynebacterium fascians (Tilf.) Dowson). Four plants in the border at the Station, Fredericton, N.B., showed severe fasciation and died prematurely. The condition was not transmitted by grafting (D.J. MacLeod).

Powdery Mildew (Erysiphe Polygoni). Foliage infection was heavy in a planting at Ochre River, Man.; the mildew was heavily parasitized by Cicinobolus Cesatii. All plants in a large clump at Clearwater Bay, Ont., were prevented from flowering by a severe early infection of the young leaves and shoots; first record from this district (W.L. Gordon). This type of infection may be the result of abundant inoculum overwintering in the clump; (P.D.S. 24: 108. 1945).

Bacterial Blight (Pseudomonas delphinii) caused considerable damage to perennial larkspurs at Ontario Agricultural College, Guelph, and specimens were received from various parts of Ont. (J.E. Howitt). Odd plants were attacked at the Botanical Garden, Montreal, Que. (J.E. Jacques). It was common in gardens in Queens Co., P.E.I., infection ranging from a trace to heavy (R.R. Hurst).

Crown Rot (?bacteria). A trace occurred in a planting at Dauphin, Man. (J.E. Machacek).

DIANTHUS

Seedling Blight (Alternaria Dianthi) caused damping-off of seedlings of D. Caryophyllus in a few flats at Elk Lake, B.C. (W. Jones).

Bud Rot (Botrytis sp.) occurred in a garden at Saskatoon, Sask., in Aug. (T.C. Vantorpool).

Basal Rot (?Fusarium sp.). Three plants of D. Caryophyllus received from Brampton, Ont., showed purple-brown lesions at the base of the stems. Fusarium sp. fruited on the lesions in a moist chamber. The plants were stunted and the lower leaves were yellow or dead, but the roots were normal (D.B.O. Savile).

Root Rot (?Fusarium sp.). A specimen of D. barbatus was received from Montreal, Que. (D.B.O. Savile).

Basal Rot (Rhizoctonia Solani) caused heavy loss of D. barbatus in a garden at St. Vital, Man., for the second successive year. Odd plants were killed at Winnipeg (J.E. Machacek).

Rust (Uromyces caryophyllinus). A light infection occurred on D. Caryophyllus received from Brampton, Ont. (D.B.O. Savile).

ERANTHIS - Winter Aconite

Smut (Urocystis Anemones (Tuberginia Eranthis (Pass.) Liro). Leaves of E. cilicica received from Dr. H.T. Güssow, Cadboro Bay, B.C., bore lesions of this smut on the petioles; first report to the Survey (I.L. Conners).

ERYSIMUM

White Rust (Cystopus candidus) was very heavy in a single clump of E. sp. in a rock garden at the Central Experimental Farm, Ottawa, Ont., in late June. Defoliation was nearly complete and many stems were dying from girdling. First report to the Survey (D.B.O. Savile).

EUPHORBIA - Spurge

Stem Rot (Coniothyrium Euphorbiae (Roum.) Berl. & Vogl.) caused the loss of many plants of E. lactea at the Botanical Garden, Montreal, Que. (J.E. Jacques).

FILIPENDULA

Leaf Spot (Phyllosticta Ulmariae Thuem.). A leaf spot was common on F. Ulmaria at Fort Garry, Man., in 1944 and 1945. Specimens collected 21 Aug. 45 bore sparse spiphyllous pycnidia with hyaline spores 2.7-5.5 x 1.2-2.2 microns; intermixed were a few Septoria spores 15-22.5 x 1.2-1.7 microns. Possibly the Septoria had predominated earlier and the Phyllosticta is a microconidial stage. The species described on this or related hosts are doubtfully distinct. P. Ulmariae is reported to have spores 3.5-5 x 2-2.5 microns. The Septoria might be S. quevillensis Sacc., described as having spores 30-40 x 1-1.5 microns (W.L. Gordon, D.B.O. Savile).

GAILLARDIA

Smut (Entyloma Compositarum) was found on G. aristata in 2 new locations in the Ottawa district, Ont.; one colony, heavily infected for 2 seasons, had been uprooted by the owner; infection was lighter than in 1944 (D.B.O. Savile).

Yellows (Callistephus virus 1) was severe at Fredericton, N.B. (D.J. MacLeod). Scattered plants were severely damaged in Queens Co., P.E.I. (R.R. Hurst).

GLADIOLUS

Grey Mould (Botrytis sp.) caused considerable damage to Picardy but not to other varieties at Steveston, B.C. (W. Jones, F. Jensen).

Yellows (Fusarium oxysporum). Severe damage was reported in a planting at Viking, Alta. A Fusarium resembling that described by Lucia McCullough (Phytopath. 34: 263-287. 1944) was isolated from most of the corms received. It was isolated from corms of Hindenburg's Memory from Lethbridge (M.W. Cormack). Some plantings in Man. were moderately affected, but yellows was much less injurious than in 1944 (W.L. Gordon). Specimens were received from Kingston and Walkerton, Ont., with reports that infection was heavy in some varieties (D.B.O. Savile).

Penicillium Rot (P. Gladioli). Slight damage occurred in one lot of stored corms at Edmonton, Alta. (M.W. Cormack).

Scab (Pseudomonas marginata). A moderate infection occurred in a planting at Dryden, Ont. (J.E. Machacek). It was found to be widespread on the stored corms at the Botanical Garden, Montreal, Que., in Dec. 1945 (J.E. Jacques). Specimens were received from St. Lambert and Lanoraie (D.B.O. Savile).

Dry Rot (Sclerotinia Gladioli) was severe on specimens received from Walkerton and Ottawa, Ont. Specimens were also received from Burlington and Hamilton, Ont., and Lanoraie and Marieville, Que. (D.B.O. Savile).

Bacterial Blight (Xanthomonas gummisudans). Specimens were received from Orillia, Ont. It was heavy, but with sparse exudate; on some varieties in the Arboretum, Ottawa, causing moderate damage; the development by varieties, with adjacent varieties often unaffected, suggested that the organism had overwintered on the corm scales (D.B.O. Savile).

Mosaic (?virus). Odd plants at Winnipeg, Man., showed chlorotic spots that later turned red-brown; the disease is becoming abundant (J.E. Machacek). A single plant out of several rows at Joliette, Que., showed a severe mottle and flower breaking (D.B.O. Savile).

Drooping and Crookedness (water lack). Specimens were received from Delhi, Ont. This trouble can apparently be caused by drought, root injury, or possibly a heavy application of fertilizer, which causes a temporary flaccidity (D.B.O. Savile).

Flecking (cause unknown) affected 75% of Picardy and a few plants of Sensation at Toronto, Ont.; the flowers were severely damaged but there was little or no leaf mottle (D.B.O. Savile).

GOSSYPIUM - Cotton

Foot Rot. Pythium sp. was isolated from a foot rot of young potted ornamental cotton plants at Winnipeg, Man.; all plants were eventually killed (W.L. Gordon).

HELICHRYSUM - Everlasting

Yellows (Callistephus virus 1) was severe at the Station, Fredericton, N.B. (D.J. MacLeod). It was occasionally seen in Queens Co., P.E.I. (R.R. Hurst).

HESPERIS - Rocket

Downy Mildew (Peronospora Hesperidis). Small amounts were found on the lower leaves of H. matronalis at Westboro and Ottawa, Ont., early in the summer; numerous sterile spots on some plants may have been due to this fungus (D.B.O. Savile).

HYACINTHUS - Hyacinth

Bulb Eelworm (Ditylenchus dipsaci). Traces occurred in 4 plantings in B.C. (R.J. Hastings, J.E. Bosher).

IBERIS - Candytuft

Club Root (Plasmodiophora Brassicae). One severely damaged plant was seen in Queens Co., P.E.I. (R.R. Hurst).

IRIS

Colletotrichum ?Liliacearum (West.) Ferrar. was found fruiting on leaves of iris suffering from a basal rot at Winnipeg, Man., spores 20-25 x 3.5-4 microns. Previously recorded in Man. on Smilax (W.L. Gordon). It is doubtful whether this is a parasite; the specimen bears Botrytis and other fungi also; spores 2.0-3.2 microns wide in lactophenol (D.B.O. Savile).

Leaf Spot (Didymellina macrospora) was widespread in coastal B.C. At the Agassiz Experimental Farm it was severe on Thorlock, Quaker Lily, Dora Langdon, Camlot, Maroi King and Albert Victor, and slight on Mary Garden and Rodney (W. Jones). Of the bulbous iris plantings inspected in coastal B.C., 10% showed a moderate infection, 3% a trace, and 87% were free (R.J. Hastings, J.E. Bosher). Leaf spot was general in the interior (G.E. Woolliams). Infection was light but general at Brooks, Alta. (M.W.C.). Infection was moderate to severe on I. germanica and severe on seedlings at Dropmore, Man. (W.A.F. Hagborg). A scattered infection was seen at St. Catharines, Ont., with slight damage (G.C. Chamberlain). A considerable amount of leaf spot developed near Ottawa early in the summer but was then checked by drier weather (D.B.O. Savile). It was very prevalent in a nursery of I. germanica at the Botanical Garden, Montreal, Que. (J.E. Jacques). Leaf spot was severe at Kentville, N.S., apparently spreading rapidly during the wet spring (J.F. Hockey). It varied from a trace to severe in Queens Co., P.E.I. (R.R. Hurst).

Soft Rot (Erwinia carotovora). Specimens were received from Elora and Britannia Heights, Ont. It was severe in one corner of a large planting at Westboro. The cool, wet weather of April and May was presumably responsible for these outbreaks (D.B.O. Savile). Odd plants were severely affected at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Root Rot (Fusarium sp.) attacked I. sibirica at Saskatoon, Sask. The rhizomes were unaffected (T.C. Vanterpool).

Ink Disease (Mysterosporium adustum). Infection was 60-100% in 2 plantings of Wedgewood in the ground for the second year on Vancouver Island, B.C.; damage was slight (R.J. Hastings, J.E. Bosher).

Bulb Rot (Penicillium sp.) affected 19 out of 79 plants of Wedgewood received from a greenhouse at Port Credit, Ont.; the plants were from a shipment of 300,000 from B.C. (D.B.O. Savile).

Basal Rot (?Rhizoctonia Solani). Odd clumps of I. Kaempferi at Dropmore, Man., showed wilting following decay of the leaf bases; roots and rhizomes appeared to be unaffected; R. Solani was associated with the disease (J.E. Machacek).

Mosaic (virus). Examination of Wedgewood plantings in coastal B.C. showed 25% with severe infection (20%-100%), 16% with moderate infection (1%-20%), 28% with slight infection, and 31% free (R.J. Hastings, J.E. Bosher). Infection was 88% in specimens from Port Credit, Ont., that were claimed to be a random sample from a shipment of 300,000 bulbs from B.C. (D.B.O. Savile).

KALANCHOE

Powdery Mildew (Oidium sp.) was heavy on a potted plant seen at Saskatoon, Sask., in Nov. It had been kept out of doors in the shade during the summer (T.C. Vanterpool).

LATHYRUS

White Mould (Erostrotheca multiformis) was general on the lower leaves of L. odoratus at St. Catharines, Ont., that had been grown under cloth; previously reported from B.C., and known in eastern U.S. (G.C. Chamberlain, I.L. Conners).

Streak (Erwinia lathyri). Infection was light to moderate in several gardens at Edmonton, Alta. (M.W.C.). A heavy infection occurred in Queens Co., P.E.I. (R.R. Hurst).

Root Rot (Fusarium sp.). Two plants were received from Lacolle, Que. (D.B.O. Savile).

Mosaic (virus). Infection was 10% in a large planting at Westboro, Ont. (D.B.O. Savile).

Bud Drop (excess nitrogen). Traces only were seen in one garden in P.E.I. (R.R. Hurst).

LILIUM - Lily

Blight (Botrytis elliptica). At the Station, Saanichton, B.C., damage was moderate on L. candidum and L. speciosum, slight on White Queen, and a trace on L. longiflorum and various hybrids (W. Jones). A few plants of L. sp. were found to be dying in a planting at Olds, Alta. (M.W.C.). Blight was very prevalent on L. regale at O.A.C., Guelph, Ont., and it was reported as serious from other districts (J.E. Howitt). B. elliptica was heavy on L. Henryi and a trace on several other spp. at the Central Experimental Farm, Ottawa. B. cinerea caused slight damage to L. sp. close to severely blighted Convallaria. B. elliptica was severe in specimens of L. candidum received from L'Assomption and Joliette, Que. (D.B.O. Savile). Blight was heavy and prevented blooming of L. regale at Summerside, P.E.I. (R.R. Hurst).

Leaf Spot (Cercosporella inconspicua (Wint.) v. Höhn.) was severe on L. Martagon x Hansoni in a nursery at Dropmore, Man.; spots oval, about 1 cm. long, light brown, sharply delimited; conidiophores amphigenous, in small fascicles, from very short to about 100 x 3-4 microns, smooth, flexuous, regularly septate and with a single apical hilum, sometimes resembling conidia; conidia 49-139 x 2.7-5.2 microns, straight or curved, scarcely obclavate, 2-7-septate. As pointed out by Lindau (Rabenhorst's Kryptogamen-Flora, 2nd ed., 1: 8: 421), von Höhnel showed that Cylindrosporium inconspicuum Wint. was a Cercosporella and identical with C. hungarica Bäuml. The latter was published in 1888, but Winter's fungus was issued with diagnosis in Rab.-Wint.-Paz. Fungi Eur. 3178 in 1884. C. liliicola (Rich.) Sacc. from France and C. Lilii Dearn. from N.Y., both on L. candidum, may be the same; they are incompletely described and have not been seen. Moore (Brit. Min. Agr. and Fish. Bull. 117) suggests that the report of Cercospora unicolor (described from Laurus) on lily from Fla. may also refer to this fungus. This is the first report from Canada (W.A.F. Hagborg, W.L. Gordon, D.B.O. Savile).

Rust (Uromyces Holwayi) was severe on Cyrus Gates and Peter Puget at Cobble Hill, B.C., and slight on White Queen at Saanichton (W. Jones).

Mosaic (virus). Severely mottled plants of L. tigrinum and L. philadelphicum were received from Dropmore, Man.; the latter species also showed yellowing (D.B.O. Savile).

LIMONIUM - Sea Lavender

Rust (Uromyces Limonii) caused considerable defoliation in a few plants of L. latifolium being grown for seed at Brentwood, B.C. (W. Jones).

LONICERA - Honeysuckle

Leaf Spot (Cercospora antipus Ell. & Holw.) was common and caused moderate damage to L. ciliosa at North Saanich, B.C. Not previously reported in the Survey, but reported by Bisby et al. (Fungi of Manitoba and Saskatchewan) from Man. and we have a specimen from Algonquin Park, Ont. In the B.C. specimen conidiophores are 20-30 x 3.5-4 microns, brown, geniculate, hypophyllous; conidia 19-98 x 3.0-3.8 microns, 0-2(-4)-septate, faintly brownish, often catenulate. Fungi Columb. 4806 has spores 19-66 x 2.5-3.8 microns, 0-3-septate, brownish, often catenulate. DAOM 14665 (TRT 17144) on L. hirsuta has conidiophores 38-110 x 3.5 microns, dark brown geniculate; conidia 23-73 x 3.0-3.8 microns, 0-4-septate, brownish, generally catenulate. All three specimens are unquestionably identical; this is not a typical Cercospora, since catenulate spores are conspicuous in all collections (W. Jones, D.B.O. Savile).

Leaf Blight (Glomerularia Loniceae). Leaves on odd twigs of L. tatarica were blighted at Fort Garry, Man. (W.L. Gordon). It caused slight damage to L. tatarica in the Arboretum, Ottawa, Ont., but was heavy on escaped L. spp. in a moister situation nearby (D.B.O. Savile). Leaf blight was common and unusually destructive in York and St. John Co., N.B. (J.L. Howitt).

Powdery Mildew (Microsphaera Alni) infected every bush at the Botanical Garden, Montreal, Que. (J.E. Jacques). A specimen was received from Montreal (D.B.O. Savile). It was observed on honeysuckle at Charlottetown, P.E.I. (R.R. Hurst).

LUPINUS - Lupine

Eye Spot (Ovularia sp.) caused considerable damage to L. sp. in a garden at Brentwood, B.C. (W. Jones).

LYCHNIS

Leaf Spot (Phyllosticta Lychnidis and Septoria Lychnidis). In a nursery at Dropmore, Man., L. chalcedonica showed light infection, with much yellowing of affected leaves, by P. Lychnidis. L. Arkwrightii (L. Haageana x L. chalcedonica) in the same nursery was heavily infected by S. Lychnidis, but uninvaded parts of the leaf were not noticeably affected. This situation, together with the similar finding of P. Lychnidis on L. chalcedonica and S. Lychnidis on adjacent L. Haageana at Ottawa in 1943 (P.D.S. 23: 111), supports the contention of Gilman and Archer (The Fungi of Iowa Parasitic on Plants. Iowa State College Journal of Science 3: 299-502. 1929) that these are merely two phases of a single organism. The Phyllosticta phase seems to predominate on L. chalcedonica, although we have records of Septoria on this host; and the Septoria phase perhaps predominates on other host species (W.A.F. Hagborg, W.L. Gordon, D.B.O. Savile).

LYCIUM - Matrimony Vine

Bunch Top (?virus). A plant of L. halimifolium at the Station, Fredericton, N.B., showed severe rosetting, dwarfing and upward rolling of the top leaves; the affected region was purplish. Cuttings from the affected parts continued to show the symptoms in the greenhouse (D.J. MacLeod).

NARCISSUS

Smoulder (Sclerotinia narcissicola Gregory (Botrytis narcissicola). In coastal B.C. 4% of plantings showed severe infection, 7% moderate infection, 37% a trace, and 52% were free (R.J. Hastings, J.E. Bosher).

Bulb Eelworm (Ditylenchus dipsaci). Ten per cent of plantings in coastal B.C. showed severe infestation, 7% moderate, 12% trace to light, and 71% were free (R.J. Hastings, J.E. Bosher).

Basal Rot (Fusarium sp.) was moderate to severe in 4 plantings in coastal B.C.; the diseased plants were mostly derived from forced stock (R.J. Hastings, J.E. Bosher).

White Mould (Ramularia vallisumbrosae) was severe on Seagull and White Nile in some plantings in coastal B.C.; these varieties seem to be very susceptible. The disease occurs mainly in old or crowded plantings (R.J. Hastings, J.E. Bosher).

Leaf Scorch (Stagonospora Curtisii). Traces are common in coastal B.C. in moist locations. It was seen on Bernardino, Forerunner, King Alfred, and Lady Koster (R.J. Hastings, J.E. Bosher).

Mosaic (virus) was severe in 4% of plantings in coastal B.C., moderate in 11%, trace in 54%, and nil in 31% (R.J. Hastings, J.E. Bosher).

NEMESIA

Root Rot (?Phytophthora sp.). Half the plants in a garden at Edmonton, Alta., were killed. Phytophthora sp. was isolated (M.W. Cormack).

PAEONIA - Peony

Blight (Botrytis Paeoniae) caused considerable damage at the Experimental Farm, Agassiz, B.C. (W. Jones). Slight to moderate damage occurred in a planting at Olds, Alta. (M.W.C.). Slight rhizome infection and blighting of the shoots were seen in a planting at Winnipeg, Man. (J.E. Machacek). Blight did much damage at Ontario Agricultural College, Guelph, and was reported as being serious in several large plantings elsewhere in Ont. (J.E. Howitt). A specimen was received from Brockville. At the Central Experimental Farm, Ottawa, blossom blight (apparently all B. cinerea) was heavy on most varieties; these plants had been 10 years in this location and the disease had received little attention. Wilting and stunting due to B. Paeoniae was serious in most varieties. Of the varieties that were making good bloom, Instituteur Doriat and Jeannot were outstandingly free from both blossom and stem blight (D.B.O. Savile). Specimens and reports indicated that blight was severe at Waterloo, St. Hyacinthe, and St. Bruno, Que. (J.E. Jacques). B. cinerea was abundant on a leaf received from Torryburn, N.B. B. Paeoniae killed all shoots of a clump received from New Aberdeen, N.S., but there was little rotting of the rhizomes (D.B.O. Savile). Considerable bud and blossom blight occurred at Weymouth, Yarmouth and Kentville (J.F. Hockey). Infection varied from a trace to very heavy in Queens Co., P.E.I. One commercial cutting stand was completely destroyed (R.R. Hurst).

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

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

Ring Spot (virus) affected 14 plants in a plot at the Station, Fredericton, N.B.; the disease is spreading (cf. P.D.S. 24: 114) and the infected plants are degenerating (D.J. MacLeod).

PAPAVER - Poppy

Smut (Entyloma fuscum). A few lesions could be seen on the first leaves of P. Rhoeas seedlings at Westboro, Ont. on 25 May; by 3 June spots were quite numerous on the first to third leaves of many plants; on 10 June a number of lesions were found in fruit. In all, the disease was found on P. somniferum in two gardens and on P. Rhoeas in about ten in the district. Inoculations resulted in infection of several species of Papaver (cf. Savile, Entyloma fuscum and related smuts attacking Papaveraceae, Canad. Journ. Res. C, 24: in press), but not of other genera of Papaveraceae (D.B.O. Savile).

Root Rot (?Fusarium sp.) affected a single plant of P. somniferum in the Arboretum, Ottawa, Ont. Fusarium sp. fruited heavily on the roots in a moist chamber (D.B.O. Savile).

Bacterial Blight (Xanthomonas papavericola (Bryan & McWhorter) Dowson) was moderately heavy in a large, partly espaped colony of P. Rhoeas at Westboro, Ont. It was heavy in one set of plants of P. somniferum in the Arboretum, Ottawa, but not on adjacent rows of this species from different seed lots, which suggests that the inoculum was seed-borne. The lesions somewhat resemble those of Entyloma fuscum, being round on P. Rhoeas and elongate-angular on P. somniferum, but they are less opaque and lack the hypophyllous weft that is generally seen on the smut lesions. The above is the correct authority for the pathogen, not as given in P.D.S. 24: 114. (D.B.O. Savile). Bacterial blight was collected on P. somniferum at Lachute, Que.; first report from Que. (W.L. Gordon).

Yellows (Callistephus virus 1). A light infection occurred in a planting of P. nudicaule at Fort Garry, Man. (A.M. Brown). Previously reported on P. sp. from N.B.

PARTHENOCISSUS

Powdery Mildew (Unicinula necator) was seen on P. quinquefolia at Charlottetown, P.E.I. (R.R. Hurst).

PELARGONIUM - Geranium

Grey Mould (Botrytis cinerea) caused some trouble in a greenhouse at Saskatoon, Sask. (R.J. Ledingham).

Chlorosis (lime-induced). A planting at Winnipeg, Man., showed severe chlorosis followed by marginal scorching (J.E. Machacek).

PENSTEMON

Leaf Spot (Ascochyta sp.). Leaf spots found in 1944 on P. sp. at Brandon, Man., bore sparse pycnidia with spores 7.0-11.5 x 2.0-3.0 microns, hyaline, cylindric, 0-1-septate. There does not seem to be any record of an Ascochyta on Penstemon. Phyllosticta Pentastemonis Cke., of which this may be a phase, is reported to produce spores 7-10 x 3-3.5 microns on certain host species (W.L. Gordon, D.B.O. Savile).

PETUNIA

Powdery Mildew (?Erysiphe Cichoracearum). The oidial stage was present on a specimen of P. hybrida received from Shoal Lake, Man. (J.E. Machacek). Similar material was received from Barry's Bay, Ont. (D.B.O. Savile).

PHLOX

Powdery Mildew (Erysiphe Cichoracearum) was not particularly severe at Ottawa, Ont.; the cool, wet weather of early summer is thought to have checked its development (D.B.O. Savile). It was severe on several clumps in gardens at Kentville, N.S. (J.F. Hockey).

Leaf Spot (Septoria divaricata) caused considerable defoliation in a row of seed plants at Brentwood, B.C. (W. Jones). A severely infected specimen was received from Dauphin, Man. (W.L. Gordon).

Blight (?virus). Specimens were received from Montreal, Que., with the statement that the disease had been noticed for 3 years in a garden containing 30 varieties of P. paniculata (I.L. Conners). Severe defoliation occurred in nearly all varieties at the Montreal Botanical Garden (J.E. Jacques). One per cent of P. paniculata at the Station, Fredericton, N.B., were affected. Stalks that showed symptoms early in the season generally died; those produced later seemed to develop some tolerance, but showed streaking of petioles and large veins, interveinal mottling, and unevenness of the blades. Infected plants gradually degenerate and are reduced to a few weak stalks after about 6 years (D.J. MacLeod). Blight was very injurious in P.E.I. (R.R. Hurst).

Yellows (Callistephus virus 1) affected a single plant of P. paniculata at the Botanical Garden, Montreal, Que. (J.E. Jacques). Yellows was severe on phlox at the Station, Fredericton, N.B. (D.J. MacLeod).

Virescence (virus). Three plants in a garden at Charlottetown became infected and were removed (R.R. Hurst).

Chlorosis (lime-induced) was present to some extent in a planting of P. paniculata at Dauphin, Man. (J.E. Machacek).

PORTULACA - Purslane

Wilt (Fusarium sp.) killed up to 10% of plants being grown for seed at Grand Forks, B.C. (G.E. Woolliams).

RIBES

Leaf Spot (Septoria sanguinea) was general on R. sanguineum in gardens at Milner and Saanichton, B.C. (W. Jones).

ROSA - Rose

Die Back (Cytospora ambiens). This fungus was associated with a die back of several rose bushes at Winnipeg, Man.; spores 5-7 x 1 micron (W.A.F. Hagborg, W.L. Gordon).

Black Spot (Diplocarpon Rosae) was common but caused slight damage at Saanichton, B.C. (W. Jones). It was noted at Ayama and Salmon Arm; infection was variable according to location and variety (G.E. Woolliams). This disease is prevalent and severe on susceptible varieties every year in the Niagara Peninsula, Ont., causing defoliation before bloom is completed. The following were severely damaged: Christopher Stone, Rev. Page Roberts, Los Angeles, McGredy's Yellow, McGredy's Sunset, Gen. McArthur, Henrich Gaede,

Mrs. Barraclough, Dame Edith Helen, and Smiles Polyantha. Practically all bushes of hybrid teas in a nursery at Port Burwell were defoliated by the end of August (G.C. Chamberlain). Black spot was very destructive to hybrid teas at Ontario Agricultural College, Guelph, and specimens received indicate that it was prevalent throughout the province (J.E. Howitt). Several enquiries concerning its control were received from the Ottawa district; infection was abundant at Ottawa and the spots were often unusually large (I.L. Conners, D.B.O. Savile). Cynthia Brooks was severely affected at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Stem Canker (Leptosphaeria Coniothyrium). Specimens showing large cankers originating from pruning wounds were received from Calgary, Alta. (D.B.O. Savile). Prevalence of dead wood in the spring is commonly associated with stem cankers starting from pruning wounds, in the Niagara Peninsula, Ont. Hybrid teas and polyanthas are affected; Poulsen's hybrid polyanthas seem to be quite susceptible (G.C. Chamberlain).

Leaf Spot (Mycosphaerella rosicola). The small size of the spores of the Phyllosticta reported last year from Man. (P.D.S. 24: 116), the fact that it was collected in Oct., and the similarity in colour of the pycnidium walls with that of the conidiophores of Cercospora r. all suggested that this fungus might be a microconidial stage of Mycosphaerella r. Careful search of the specimen revealed conidiophores and a few spores of Cercospora r. on the same lesions. A collection of Cercospora r. on R. xanthina in the Arboretum, Ottawa, Ont., made on Sept. 21, showed pycnidia on a number of lesions and some of these yielded spores 2.5-4 x 0.7-1 micron; some pycnidia bore conidiophores of the Cercospora. B.H. Davis (Mycologia 30: 282-298. 1938) makes no mention of a microconidial stage, but he does describe and figure "sterile perithecia", bearing conidiophores, in the overwintered material. Further examination of Dr. Gordon's material shows most of the spores to be 2.5-3.5 x 0.7 micron. D. Sacc. Myc. Ital. 1685 (Phyllosticta rosicola) collected by Massalongo at or near the type station has spores 2.5-4 x 0.5-0.9 micron. It agrees well with our collections except that the spots are somewhat larger and the pycnidia very numerous. There is no sign of Cercospora; but the material was collected in Oct. and the whole of every leaflet is brown, the lesions being distinguished mainly by the presence of the pycnidia. It is strongly suspected that Massalongo's fungus is, like our specimens, a microconidial stage of the Mycosphaerella (D.B.O. Savile).

Rust (Phragmidium spp.). At Saanichton, B.C., P. sp. caused moderate damage to New Dawn (W. Jones). P. speciosum was observed on Hansa at Dropmore, Man., and in the Peace Garden on the U.S.--Manitoba border (W.A.F. Hagborg).

Anthracnose (Spaceloma Rosarum) was fairly general at the Experimental Farm, Agassiz, B.C. (W. Jones).

Powdery Mildew (Sphaerotheca spp.). S. Humuli was seen on a few bushes of Dorothy Perkins at Brentwood, B.C. (W. Jones); it was general but not severe in the Okanagan Valley (G.E. Woolliams). S. pannosa was common on ramblers in the Niagara Peninsula, Ont. Buds and stems of Talisman, Pres. Hoover and Etoile de Holland hybrid teas were also affected (G.C. Chamberlain). Mildew was seen in one garden in P.E.I. (R.R. Hurst).

Mosaic (virus). Two bushes of Kirsten Poulsen were infected at St. Catharines, Ont. The bloom was streaked and the foliage showed a definite mosaic pattern (G.C. Chamberlain). One plant of each of the

following were affected by mosaic at the Central Experimental Farm, Ottawa: Dorothy Perkins, Langdon, Maagraf, Philadelphia Rambler, Tuscany and an unnamed seedling (H.N. Racicot).

RUDBECKIA - Coneflower

Powdery Mildew (?Erysiphe Cichoracearum). Specimens of R. laciniata var. hortensia heavily infected with Oidium sp. were received from a florist at Georgetown, Ont., with the statement that all the plants were seriously disfigured (D.B.O. Savile).

SEDUM - Stonecrop

Leaf Spot (Septoria Sedi). A slight infection occurred at Winnipeg, Man., less than in 1944 (W.L. Gordon).

SENECIO

Stem Rot (Fusarium sp.). About 75% of the plants of S. cruentus (cineraria) were attacked in a greenhouse at Montreal, Que. Dull weather and overwatering seem to have favoured the disease (J.E. Jacques).

Basal Rot (Pythium sp.). Two plants of S. cruentus received from North Bay, Ont., showed heavy root infection and abundant mycelium in the pith cavity at the base of the stem. Various varieties were stated to be affected, and wilting was said to have started just as the plants were coming into flower (D.B.O. Savile).

SORBARIA

Leaf Spot (Septoria sp.). Leafs of S. sorbifolia at Brandon, Man., were heavily attacked by Septoria sp. with acicular spores 16-28 x 0.7-1.3 microns; the spots were small, white above and brown below. S. Arunci, S. ascochytoides and S. salicifoliae, whose descriptions suggest that they may all be the same, have much wider spores (W.L. Gordon, D.B.O. Savile).

SYRINGA - Lilac

Blight (Pseudomonas syringae). A shrub at Olds, Alta., was severely blighted; the organism was isolated and produced typical blight in the greenhouse (M.W. Cormack, W.A.F. Hagborg). Blight was moderately severe at Morden, Man., especially on Nokomis and Skinner's Louvois. A light infection was seen at Dropmore, on S. villosa, S. vulgaris and a seedling. The organism was identical with that from Alta. (W.A.F. Hagborg). It was severe in a hedge in Queens Co., P.E.I., and damaged many other bushes (R.R. Hurst).

Graft Blight (lilac-privet incompatibility). Two bushes at the Station, Fredericton, N.B., showed chlorosis and wilting, and finally died. The privet rootstocks remained alive. Seven bushes have been killed by this trouble in the last 6 years (D.J. MacLeod).

TAGETES - Marigold

Yellows (Callistephus virus 1) was severe at the Station, Fredericton, N.B. (D.J. MacLeod). Occasional plants of Flesh and New Orange were infected at Charlottetown, P.E.I. (R.R. Hurst).

TANACETUM - Tansy

Leaf Spot (Ramularia Tanaceti). T. vulgare was moderately attacked at Fort Garry, Man. (W.L. Gordon).

TROPAEOLUM - Nasturtium

Chlorosis (lime-induced) was severe in a planting at Woodlands, Man. (J.E. Machacek).

TULIPA - Tulip

Fire (Botrytis Tulipae). Approximately 10% of plantings in coastal B.C. were free of fire, 65% showed slight infection, and 25% were moderately or severely affected. Fire was more serious than usual owing to abundant rain in April and May (R.J. Hastings, J.E. Bosher). A trace was seen in commercial plantings at Salmon Arm, B.C. (G.E. Woolliams). Fire was again prevalent throughout Ont. (J.E. Howitt). It was exceptionally severe in the Ottawa district; in 2 gardens at Westboro every bloom was marked out of several hundred, and many other gardens were almost as severely affected. Growth started very early but the weather was cool and wet from mid-April through May. Damage was aggravated by the refusal of some gardeners to discard the belief that the primary lesions are a form of frost injury (D.B.O. Savile). Fire was very destructive in a commercial planting at Charlottetown, P.E.I., and damage was slight to severe in many gardens (R.R. Hurst).

Break (virus) is becoming steadily rarer in coastal B.C. due to careful and consistent roguing by most growers. It is common in gardens, partly because many people prefer the broken flowers. A 20% infection of "mosaic" was seen in Inglescombe Yellow at Gordon Head and the disease occurs in other yellow varieties; inoculated into pink or orange varieties it induces breaking and a pronounced mosaic (R.J. Hastings, J.E. Bosher). True yellow varieties get their colour from the ground tissue and lack anthocyanin; breaking is the effect of the viruses on the distribution and abundance of anthocyanin in the epidermal cells; infected yellow or white varieties may, therefore, show little or no change in the flowers. It is questionable whether this disease differs from typical break except in the possible predominance of tulip virus 1 (D.B.O. Savile). A trace to 5% was seen in commercial plantings in the Okanagan Valley; in private gardens infection ran up to 50% or more (G.E. Woolliams).

Chalking (physiological) was slight to moderate in Pride of Haarlem and Princess Elizabeth at Vancouver, B.C.; it was not present in Inglescombe Yellow from the same planting (W. Jones).

VERONICA - Speedwell

Leaf Spot (Ramularia Veronicae) was heavy on V. Teucrium at the Central Experimental Farm, Ottawa, Ont., and moderate in a garden in Highland Park (D.B.O. Savile).

VIOLA

Leaf Spot (Cercospora Violae) was moderately heavy in a large bed of pansies at Ottawa, Ont., that had been sprinkled frequently and received no afternoon sun; considerable defoliation occurred. Some infection was found in 2 gardens at Westboro; only slight damage occurred in the garden that was heavily damaged in 1944, probably because watering was done with a "soil soaker" instead of a sprinkler (D.B.O. Savile).

Anthracnose (Colletotrichum Violae-tricoloris) severely damaged a large bed of pansies at Ottawa, Ont.; lesions occurred on stems as well as leaves; previously reported from N.B. and N.S. (D.B.O. Savile).

Leaf Spot (Phyllosticta Violae) was common on leaves of pansy at Fort Garry, Man., in 1944; in sparse fruit, with spores 5-7.5 x 2-3 microns (A.M. Brown, W.L. Gordon). First report on V. tricolor from Man., but reported by Bisby et al. (Fungi of Manitoba and Saskatchewan) on V. canadensis. Saccardo's form Violae-tricoloris, described as having spores 6 x 2.5 microns, is doubtfully distinct from P. Violae, which was described as having spores 10 microns long; Bisby gives 4-8 x 2-3 microns for his fungus, and a specimen on V. tricolor from N.S. yielded spores 5.5-10 x 1.4-2.8 microns, indicating that variability is much greater than was originally recognized (D.B.O. Savile).

Powdery Mildew (Sphaerotheca Humuli). Infection varied from a trace to heavy on different varieties of V. cornuta and V. tricolor var. hortensis in a garden at Edmonton, Alta. (M.W. Cormack). Mildew varied from light to heavy on pansies in the Ottawa district, Ont.; reduction in bloom was evident where it was heavy (D.B.O. Savile).

ZINNIA

Wilt (Fusarium Solani var. Martii) occurred to a slight extent in gardens and commercial seed plantings at Summerland and Grand Forks, B.C. (G.E. Woolliams).

Yellows (Callistephus virus 1) attacked occasional plants in Queens Co., P.E.I. (R.R. Hurst).