VI. DISEASES OF ORNAMENTAL PLANTS

ACHILLEA

Rust (Puccinia millefolii) appeared at least two weeks earlier than usual (13 July) on A. ptarmica at Ste. Anne de la Pocatiere, Que., just before bloom commenced; but thereafter it spread slowly. Later it was again found on A. millefolium (A. Payette).

ALTHAEA - Hollyhock

Rust (Puccinia malvacearum) was found in most parts of the interior of B.C., but a warm, dry season caused infection and damage to be much less than usual (G.E. Woolliams). Rust was heavy on young plants at Winnipeg, Man. (A.M. Brown). It was very common in the St. Catharines district, Ont., in most cases causing serious defoliation before bloom (G.C. Chamberlain). Damage was severe at Brighton, the lower leaves being shed in late July (K.M. Graham). Specimens were received from St. Hyacinthe, Que., where the disease was said to be severe (J.E. Jacques). Infection was 5% and damage slight at Charlottetown, P.E.I. (R.V. Clark).

ANTIRRHINUM - Snapdragon

Blight and Wilt (Botrytis cinerea). A severe outbreak occurred in late November, 1950, in a large greenhouse planting at Brampton, Ont. When it was examined on 7 Dec. about 50% of the plants were diseased or dead. Infected plants bore cankers and basal lesions, and the leaves were severely wilted. Stem cankers seldom extended more than 3-4 in. above the soil. The basal parts were overrun by the mycelium and conidiophores of B. cinerea. Individual flowers of several plants were blighted. The variety Cornwallis was most severely damaged (J.D. Gilpatrick).

Rust (Puccinia antirrhini) was general at Elk Lake, near Victoria, B.C., on susceptible varieties, with severe damage, but was only a trace on the resistant Shasta Major (W. Jones). Rust occurred on 2 volunteer plants in a garden at Vancouver (H.N.W. Toms). Little rust occurred in the Okanagan Valley, owing to a warm, dry summer (G.E. Woolliams).

Bunch Top (Solanum virus 17). One plant at the Station, Fredericton, N.B., showed severe dwarfing, rolling and distortion of leaves, reddening of stems and leaves, and distorted axillary shoots, but the blossoms were not distorted. The virus was transmitted by means of dodder to tomato and proved to be that of potato bunch top (D.J. MacLeod).

Mosaic (Cucumis virus 1) was heavy in the fall of 1950 in a greenhouse at Clarkson, Ont. Inoculations indicated the virus to be a strain of the cucumber mosaic virus. The plants had been growing outside next to a row of watermelons heavily infected with mosaic. This was evidently the source of infection, for a later sowing, started indoors, was healthy. The most heavily

infected varieties were Christmas Star, Ball's Yellow Hybrid, Gold Mine, and Ball's Hybrid Red. The least affected were Margaret Yodders 33, Mary Ellen, and, especially, Dorcas Jane. The heaviest loss was 30% in one bed. The outbreak was brought under control by rogueing (J.D. Gilpatrick).

AQUILEGIA - Columbine

Powdery Mildew (Erysiphe polygoni). About 75% of the plants in the Okanagan Valley, B.C., showed leaf infection (G.E. Woolliams).

ASTER

Downy Mildew (Basidiophora entospora) was light on a few plants of the native A. douglasii at Sidney, B.C.; first report on this host (W. Jones, W. Orchard).

Rust (Coleosporium solidaginis) was heavy on A. novae-angliae at Contrecoeur, Vercheres Co., Que. (J.E. Jacques).

Powdery Mildew (Erysiphe cichoracearum) was heavy at the Botanical Garden, Montreal, Que. (J.E. Jacques).

BEGONIA

Basal Rot (Botrytis sp.). Several tuberous begonias in a house at Yorkton, Sask., were attacked and some were killed. Botrytis sp. was isolated (E.T. Reeder).

Powdery Mildew (?Erysiphe cichoracearum). Specimens were received from St. Albert and Penhold, Alta. (A.W. Henry). A specimen was sent in from Summerberry, Sask., in August (T.C. Vanterpool). A group of plants of B. socotrana became heavily infected in November at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Bacterial Leaf Spot (Xanthomonas begoniae). A specimen was received from Toronto, Ont. (E.H. Garrard).

BERBERIS - Barberry

Rust (Puccinia graminis). The first pycnia were seen on 14 June at Ste. Anne de la Pocatiere, Que., on B. vulgaris. Infection was sparse both there and at St. Roch des Aulnaies (A. Payette). Only a trace of rust was seen on the known barberries in N.B. (J.L. Howatt).

Wilt (Verticillium sp.) severely damaged 2% of the plants of B. thunbergii in a hedge at Charlottetown, P.E.I., in late June. The affected parts of the hedge were under trees (R.R. Hurst).

CACTUS

Oedema (physiological). Badly affected specimens were received from St. Jean, Que., in April (J.E. Jacques).

CALENDULA

Yellows (Callistephus virus 1) was severe at the Station, Fredericton, N.B. Infection was 100% in two beds (D.J. MacLeod). On 8 Sept. half a bed of 25 plants at Kentville, N.S., were infected, and all showed the disease by mid Oct. (K.A. Harrison).

CALLISTEPHUS - China Aster

Wilt (Fusarium oxysporum f. callistephi). Patches of diseased plants of Artemisia biennis were found by J.E. Machacek at Melita, Man., which showed symptoms of wilt and root rot. Isolations from stem and base yielded a form of F. oxysporum resembling f. callistephi. Its pathogenicity has not yet been tested (W.L. Gordon).

Yellows (Callistephus virus 1). A trace was seen at Beaverlodge, Alta. Half the plants in a bed at Edmonton were severely injured (T.H. Davidson). Infection was 75% and 85% in 2 beds at the Station, Fredericton, N.B. (D.J. MacLeod). Yellows was severe in gardens in Kings Co., N.S., late in the season. Infected Plantago and Leontodon were found in lawns adjacent to the beds (J.F. Hockey).

CAMELLIA

Mosaic (?virus). Mosaic symptoms were seen on a few plants at Port Dover, Ont., on 30 Oct. The plants were unthrifty and had poor root development. A virus was suspected (J.D. Gilpatrick).

CAMPANULA

Wilt (Sclerotinia sclerotiorum) caused slight damage in a commercial planting of Canterbury bell, C. medium, at Elk Lake, B.C. (W. Jones).

CATTLEYA

Mosaic (virus). Mottling of petals and sepals disfigured 2% of the plants in a greenhouse at Brampton, Ont., on 7 Dec. (J.D. Gilpatrick).

CHRYSANTHEMUM

Grey Mould (Botrytis cinerea) was reported by growers throughout Ont. as common on blossoms of plants in cloth houses in the fall of 1950. Generally blighting was confined to the outer rays. The lesions bore abundant conidiophores of B. cinerea in periods of high humidity (J.D. Gilpatrick). At Greenwich, N.S., the rays of nearly 20% of open heads were blotched, following unseasonably warm, rainy weather. A return to normal weather prevented further spread (J.F. Hockey).

Powdery Mildew (Erysiphe cichoracearum). Traces were seen at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Root Knot (Heterodera marioni), in association with a trace of root rot (?Verticillium sp.) and what seemed to be non-parasitic leaf lesions, caused premature defoliation of plants in a greenhouse at New Westminster, B.C., in early Dec. (H.N.W. Toms).

Wilt (Verticillium dahliae). Infection was 15% on Silversmith and also heavy on another variety in a greenhouse at Brampton, Ont., on 7 Dec. (J.D. Gilpatrick).

Stunt (virus). Infection was 50% on Christmas Star in a greenhouse at Brampton, Ont., on 7 Dec. Infected plants were shorter by 12 or more inches than healthy ones, bloomed earlier and had smaller leaves. It was also serious on Minstrel (J.D. Gilpatrick). This disease, so prevalent 5 years ago, could only be found in the occasional plant in N.S. this year. Selection and careful propagation has nearly eliminated it (J.F. Hockey).

Oedema (physiological) was quite prevalent in Sept. in a greenhouse at Montreal, Que. (J.E. Jacques).

COREOPSIS

Yellows (Callistephus virus 1). A trace was seen at the Station, Fredericton, N.B. (D.J. MacLeod).

CYCLAMEN

Stunt (Ramularia cyclaminicola Trel.). Light infections occurred at the Notre Dame and Montreal Botanical Gardens, Montreal, Que. (J.E. Jacques). Baker, Dimock and Davis have recently shown (Phytopath. 40:1027-1034. 1950) that stunt, a leaf disease, and a wilt are all due to R. cyclaminicola, of which Cladosporium cyclaminis is a synonym (I.L.C.).

DAHLIA

Crown Gall (Agrobacterium tumefaciens). Specimens were received from Bowmanville, Ont. (E.H. Garrard).

DELPHINIUM

Powdery Mildew (Erysiphe polygoni). Traces occurred at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Bacterial Blight (Pseudomonas delphinii) was sent in from Ganonoque, Ont. (E.A. Garrard).

Chlorosis (iron deficiency) was common at Saskatoon, Sask., on soils of high pH. It was remedied by spraying with 1% iron sulphate (T.C. Vanterpool).

DIANTHUS

Grey Mould (Botrytis cinerea). Carnations with blighted petals were received in Sept. from a greenhouse at St. Catharines, Ont. (J.D. Gilpatrick).

Wilt (Fusarium sp.). Several carnation plants were infected in greenhouses at Brampton and St. Catharines, Ont. (J.D. Gilpatrick). Wilt, and crown and root rot caused 10% loss of carnations in a greenhouse at Rougemont, Que., where it is a persistent problem for which no adequate control has been obtained (L. Cinq-Mars).

Stem Rot (Rhizoctonia solani) attacked a few scattered plants in a greenhouse at Brampton, Ont. (J.D. Gilpatrick).

Bacterial Leaf Spot (Pseudomonas woodsii). Carnation specimens were received from Parry Sound, Ont. (E.H. Garrard).

Rust (Uromyces caryophyllinus) was heavy on carnation var. Olivette in a greenhouse at Brampton, Ont., but other varieties were almost free from infection (J.D. Gilpatrick). Rust was moderately heavy on carnation in 2 commercial greenhouses at Quebec, Que. (J.E. Jacques).

Mosaic, Streak and Yellows (virus). It is believed that most florists' stocks of carnation in Ont. are carrying virus. Mosaic was seen in all greenhouses examined in 1950 (J.D. Gilpatrick).

GAILLARDIA

Yellows (Callistephus virus 1). Infection was about 5% at Elk Lake, B.C., in plants of G. pulchella var. picta being grown for seed (W. Jones). Two severely infected plants of G. aristata were found at the Station, Fredericton, N.B. (D.J. MacLeod).

GARDENIA

Bud Drop (?physiological) caused 50% loss of bloom in Dec. in a greenhouse at Brampton, Ont. A bacterium was associated with bud drop in a few plants at the Laboratory, St. Catharines, Ont. (J.D. Gilpatrick).

GLADIOLUS

Fasciation (Corynebacterium fascians). A corm with malformed shoots was received in the fall from Nipawin, Sask., through Prof. T.C. Vanterpool. Because of the resemblance to a photograph published by Lacey (Ann. App. Biol. 23:750. 1930) isolations were made. The resulting bacterium caused fasciation of sweet pea seedlings and, later, caused distortion of gladiolus shoots when a sprouting corm was inoculated (J. Sibalis). This is the first fully confirmed record of this organism in Canada.

Soft Rot (Erwinia carotovora). L.W. Koch (A bacterial soft rot of gladiolus. Sci. Agr. 30:483-487. 1950) has recently described a disease that was destructive in s.w. Ont. in 1949, especially to plants from which the flower stalks had been cut. Brown discoloration ran down from the cut toward the corm. Sometimes all leaves turned yellow and died. Superficial brown or black lesions were formed in Sept. on corms of some infected plants. Diseased plants produced few if any cormels. The pathogen agreed closely with E. carotovora culturally, in host range and in pathological histology.

Dry Rot (Fusarium oxysporum var. gladioli). Badly diseased corms were seen from a garden at Montreal, Que. (J.E. Jacques).

Yellows (Fusarium orthoceros var. gladioli) was a trace to 20% in stands examined throughout P.E.I., and 32 enquiries about this disease were received. There is notably less of the disease on rotated land than where gladioli are repeated (R.R. Hurst).

Storage Rot (Penicillium gladioli) caused considerable loss in a collection of corms stored under poor conditions at Montreal, Que. Humidity was too high, ventilation nil and temperature above 50°F. (J.E. Jacques). Seven cases were noted in P.E.I. Infection was 7% in one lot in Queens Co. (R.R. Hurst).

Scab (Pseudomonas marginata). At least 10% of the corms of a grower at Chambly, Que., were infected (J.E. Jacques). Infection was 6% in a lot in Queens Co., P.E.I. (R.R. Hurst).

Core Rot (Sclerotinia draytoni). A single corm was received from Sicamous, B.C., with no data on the rate of infection (D.B.O. Savile). Leaf and blossom spotting was severe in low-lying fields at Burlington, Ont., on 18 Sept., following a week of cold, wet weather, but the damage came too late to cause serious loss, provided it did not lead to serious storage rot (J. Sibalis). A few plants in Kings Co., N.S., showed a stalk rot at the flower nodes, due to S. draytoni (J.F. Hockey, J.W. Groves). Core rot destroyed 52% of one lot of corms in Queens Co., P.E.I., in early Feb. Several enquiries about this disease were later received (R.R. Hurst).

Dry Rot (Sclerotinia gladioli). Some affected plants were seen in most plantings in s. and e. Ont., but losses were light, especially in young stock (J. Sibalis).

Mosaic (virus). At the St. Catharines Laboratory, Ont., strains of the tobacco ring-spot virus have been isolated repeatedly from mottled gladioli. A plant of Mrs. Mark's Memory that showed bright chlorotic ring and lime patterns yielded a strain of tobacco ring-spot virus and a strain of tobacco mosaic virus. It is not yet known whether the combination of these viruses caused the unusual symptoms. One plant also yielded a strain of cucumber mosaic virus. G.H. Bridgmon (Phytopath. 41:5. 1951) has recently reported isolating tobacco

ring-spot and cucumber mosaic viruses from gladiolus. F.P. McWhorter et al. (Science 105: 177-178. 1947) had previously shown gladiolus to be an important source of bean yellow mosaic virus (G.H. Berkeley). Mosaic (?Phaseolus virus 2) was seen at the Botanical Garden, Montreal, Que. A grower from St. Francois du Lac, Yamaska Co., who brought in mottled plants, said that his plants were almost 100% infected (J.E. Jacques). Phaseolus virus 2 caused a faint mottle in 1% of the plants in a garden at Fredericton, N.B. Adjacent Kentucky Wonder beans showed yellow mosaic (D.J. MacLeod). Mosaic is increasing in N.S., up to 25% of plants being infected in some gardens (J.F. Hockey). A mild mottle affected 15% of several varieties in a garden at Charlottetown, P.E.I. (R.R. Hurst).

Chemical Injury. Too high a concentration of mercuric chloride caused pitting of 10% of an unknown variety in Queens Co., P.E.I., and resulted in a poor stand of weak plants (R.R. Hurst).

Curing Injury. Corms of Snow Princess received in Jan., 1950, from Mr. M.W. Hambleton, Montreal, Que., showed a curious superficial browning of an unfamiliar type. Mr. Hambleton later showed some of these corms to Dr. McLelland of Beltsville, Md., and Dr. Magie of Bradenton, Fla., who diagnosed the trouble as due to excessive heating in curing, with consequent injury from esters evolved from the corms. The percentage of corms affected was high, but the damage appeared to be very slight (D.B.O. Savile).

Freezing Injury. Loss was 100% in one storage in Queens Co., P.E.I. Four cases of freezing were reported to us (R.R. Hurst).

GYPSOPHILA

Root Rot (Fusarium sp.). F. sp. was isolated from severely damaged plants from a garden at Medicine Hat, Alta. (M.W. Cormack).

HEDERA - Ivy

Bacterial Leaf Spot (Xanthomonas hederae) affected many hundreds of potted plants out of over 100,000 in a greenhouse at London, Ont. (E.H. Garrard).

HYACINTHUS - Hyacinth

Bulb Nematode (Ditylenchus dipsaci). Of two plantings inspected on Vancouver I., B.C., one was free, and the other showed a general, moderately severe infection (R.P. Messum).

HYDRANGEA

Powdery Mildew (?Erysiphe cichoracearum) affected several plants in a greenhouse at St. Catharines and is apparently general throughout Ont. (J.D. Gilpatrick). Specimens were received from St. Zenon, Berthier Co., Que., and the disease was seen in commercial greenhouses in Montreal and at the Botanical Garden (J.E. Jacques).

IRIS

Bacterial Leaf Blight (Bacterium tardicrescens) was prevalent at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Leaf Spot (Didymellina macrospora). Traces were recorded in 7.7% of the plantings inspected on Vancouver I., B.C., and in a few on the mainland (R.P. Messum). It was general, and occasionally disfiguring, in plantings at the University of British Columbia, Point Grey (H.N.W. Toms). Leaf spot was found in most parts of the interior, but infection nowhere exceeded 5% owing to the dry season (G.E. Woolliams). Light infections were seen at Beaverlodge, Edmonton and Alliance, Alta. (T.R. Davidson). A heavy infection caused severe scorching of leaves in a bed at St. Catharines, Ont. (G.C. Chamberlain). This disease was severe at St. Roch, Richelieu Co., Contrecoeur, Vercheres Co., and Mont Rolland, Terrebonne Co., Que. (J.E. Jacques).

Soft Rot (Erwinia carotovora) caused moderate damage to leaves and rhizomes in a garden at Saskatoon, Sask. (T.C. Vanterpool).

Mosaic (virus) was found in 30.8% of the plantings inspected on Vancouver I., B.C., ranging from a trace to 22.5%. Only a trace was found in a single plot on the mainland (R.P. Messum).

LATHYRUS

Root Rot (Pythium ultimum) caused slight damage to L. odoratus at Saskatoon, Sask. (T.C. Vanterpool).

Leaf Spot (Ramularia deusta (Fckl.) Baker, Snyder & Davis). K.F. Baker, W.C. Snyder and Lily H. Davis (Mycol. 42:403-422. 1950) have shown that leaf spot of sweet pea, formerly called white mould and the pathogen termed Cladosporium album Dowson, and for which Erostrotheca multiformis was erroneously claimed to be the perfect stage, is caused by a true Ramularia. The pathogen, which attacks various L. spp. was first described as Scolecotrichum deustum by Fuckel in 1869. It has since received many other names. The fungus attacking sweet pea is recognised as a physiologic form, R. deusta f. odorati Baker, Snyder & Davis (I.L.C.).

LIATRIS

Basal Rot (Sclerotinia sclerotiorum). The pathogen was isolated from a specimen of L. sp. sent in from Wetaskiwin, Alta. (A.W. Henry).

LIGULARIA

Nematode Blight (Aphelenchoides ritzema-bosi). A badly diseased specimen was brought in from Montreal in March (J.E. Jacques).

LUPINUS - Lupine

Eye Spot (Ovularia lupinicola) caused considerable foliage damage to Russell lupines, L. polyphyllus, and to wild plants at Metchosin and Comox, B.C. (W. Jones).

MAHONIA

Rust (Cumminsiella sanguinea). Every plant of M. aquifolium in a shipment from Belgium examined at St. Catharines, Ont., on 5 April showed trace to 20% of the leaf surface infected (R.G. Atkinson). Examination of three plantings in the Arboretum, Ottawa, in May, showed no trace of rust (I.L. Conners). Infection was light at Ste. Anne de la Pocatiere and St. Roch des Aulnaies, Que., and damage negligible (A. Payette).

MATTHIOLA - Stock

Damping-Off (Rhizoctonia solani) caused heavy damage at Whonock, Fraser Valley, B.C. Soil sterilization was apparently not thorough enough (H.N.W. Toms).

MYOSOTIS - Forget-me-not

Leaf Blight (Alternaria sp. associated) was a trace in Queens Co., P.E.I. (R.R. Hurst).

NARCISSUS

Bulb Nematode (Ditylenchus dipsaci) was present to varying degrees in 28.6% of fields inspected on Vancouver I., B.C. It was not a problem in plantings entered for certification on the mainland but was heavy in 3 commercial fields (R.P. Messum).

Basal Rot (Fusarium spp.). Two per cent was seen in one stock entered for certification on Vancouver I., B.C., and it is known to have been present in one stock on the mainland (R.P. Messum).

Smoulder (Sclerotinia narcissicola). Only 14.3% of plantings inspected on Vancouver I., B.C., showed any infection, all in trace amounts only. On the mainland it was recorded in 65.9% of plantings on first inspection with an average of 0.47% infection. Only 14.3% of fields showed the disease on second inspection, but in these the average incidence was 4.1%, owing to a few growers failing to remove plants with primary lesions (R.P. Messum).

Scorch (Stagonospora curtisii) was of minor importance in B.C. because dry weather checked secondary infection. No measurable amount was present in fields examined on Vancouver I. On the mainland it was present in 72.7% of plantings, but the average infection was only 0.46% (R.P. Messum).

Decline (virus) was present in every planting of King Alfred on Vancouver I., B.C. In only 28.5% of plantings was the infection less than the 2.5% maximum allowed for certification on second inspection. On the mainland decline could be seen in only 5% of plantings during first inspection in April and May. On second inspection, starting in the second week of June it was seen in 82.5% of plantings and varied from 0.2 to 9.0%, av. 2.6%. More decline showed up after second inspection and it is doubtful whether any plantings were rogued completely clean. These figures, it must be noted refer to rogued plantings. The foliage symptoms are characteristic when they first appear, but they develop appreciably only late in the season. The following data, from inspection records, illustrate the short period for accurate diagnosis: In a block of King Alfred stock, known to be 100% infected, no symptoms could be observed on 19 April. By 9 May white-streak symptoms started to show clearly. The apparent incidence almost doubled between 18 and 27 May. It was late June before all plants showed infection. The multiplicity of symptoms suggest that more than one virus may be involved. Physiological disorders complicate diagnosis (R.P. Messum). See P.D.S. 29:108.

Mosaic (virus). On Vancouver I., B.C., the first inspection, 5-15 April, gave the following results: 28.6% of plantings free; 28.6% with less than 0.25%; 21.4% with less than 0.5%; and 21.4% with over 0.5% to a maximum of 4.3%. In 1949 only a trace of mosaic was recorded in mainland plantings, but it was suggested in the report that this condition was due to late inspection. This suspicion was proved correct in 1950 when inspections were made 2-3 weeks earlier (3-4 weeks earlier in seasonal development), at a stage when mottling is still distinct. At first inspection mosaic was found in 50% of fields, av. 0.82%. At second inspection it was found in 25% of fields, av. 0.98%. The highest infection was 2.7% (R.P. Messum).

Asphyxiation (winter flooding). Specimens were received from Alexandria, Ont., on 29 Mar. 1950. Seventy-five per cent of the planting was destroyed, all tissue in the bulbs being killed. Heavy rains in Dec. and Jan., with enough frost to hinder drainage, caused the bed to be under water for prolonged periods. The same condition has occasionally been noted in iris (D.B.O. Savile).

PAEONIA - Peony

Blight (Botrytis paeoniae). Severe crown rot occurred in plantings at Edmonton, Alta. (A.W. Henry). Damage was heavy at Brooks and Lethbridge (M.W. Cormack). Crown rot was seen in a garden at Saskatoon, Sask. Blossom blight (B. cinerea) was commoner than usual at Saskatoon (T.C. Vanterpool). Blossom blight killed 50% of blooms at Charlottetown, P.E.I. (R.V. Clark).

PELARGONIUM - Geranium

Grey Mould (Botrytis cinerea) caused heavy spotting of flowers, leaves and stems, in one corner of a greenhouse at Charlottetown, P.E.I., in May (R.R. Hurst).

Crown Gall (Agrobacterium tumefaciens). Large galls were found on about half the plants of Goodendhorst at the Laboratory and at the Station, Ste. Anne de la Pocatiere, Que. Infected plants were greatly weakened (A. Payette).

Cane Blight (Botrytis cinerea). A blighted cane, with B. cinerea fruiting sparsely on it, was received in Oct. from Dr. H.T. Gussow, Victoria, B.C. Blackened areas suggested the start of sclerotium formation. The condition suggests that occurring in raspberries in N.S. (D.B.O. Savile).

Black Spot (Diplocarpon rosae) was very common in gardens at St. Catharines, Ont., causing serious defoliation in Aug. It was also prevalent in the rose garden at Niagara Falls (G.C. Chamberlain). It was reported to be prevalent on about 30 varieties in a garden at Ottawa (J.E. Jacques). More specimens than usual were received from N.S., perhaps because of increased planting of hybrid teas (J.F. Hockey).

Leaf Spot (Mycosphaerella rosicola). Specimens of climbing roses were sent in from Sorel, Que. (J.E. Jacques).

Rust (Phragmidium sp.) was heavy on several varieties in Queens Co., P.E.I., in Oct. (R.R. Hurst).

Powdery Mildew (Spaerotheca spp.). S. sp. was heavy on several Crimson Glory ramblers in a garden at St. Catharines, Ont. Mildew was also found on Dorothy Perkins rambler and various hybrid polyanthas in the district (G.C. Chamberlain). S. pannosa was generally troublesome during the fall on greenhouse roses throughout Ont. Though largely checked, it was still causing damage in some houses in Dec. (J.D. Gilpatrick). Specimens of S. pannosa were received from Terrebonne, St. Aime, and Laval sur le Lac, Que. It was also seen on a few varieties at the Botanical Garden, Montreal (J.E. Jacques). S. pannosa was quite common on ramblers near Kentville, N.S. (J.F. Hockey). S. sp. was heavy on Dorothy Perkins and very heavy on Crimson Rambler at Charlottetown, P.E.I., in late Aug. Twelve specimens were later brought in (R.R. Hurst).

Leaf Drop (cause unknown). Premature dropping of lower leaves occurred in a large greenhouse planting in Ont., during the fall. The leaves showed angular apical or lateral marginal dead areas with a yellow zone between the dead and normal tissue (J.D. Gilpatrick).

SENECIO - Cineraria

Nitrogen Deficiency caused moderate damage to two plants of S. cruentus brought in for examination from Queens Co., P.E.I. (R.R. Hurst).

SPIRAEA

Leaf Spot (Cylindrosporium spiraeicola) was seen on a few plants of S. discolor at Metchosin, B.C. (W. Jones).

SYRINGA - Lilac

Powdery Mildew (Microsphaera alni) was reported to be severe on a group of trees at Montreal, Que., on 1 Sept. (J.E. Jacques). Most lilacs in the Montreal district had their leaves covered by mildew by 20 Sept. (F. Godbout).

TULIPA - Tulip

Fire (Botrytis tulipae). Infection was nil in 60.9%, slight in 26.6% and moderate to severe in 12.5% of plantings inspected on Vancouver I., B.C. On the mainland, primary lesions were found in 23.4% of plantings, infection averaging 2.5%. Secondary infection was seen in 72.3% of fields, of which 78.6% were classed as slight to moderate and the rest as severe (R.P. Messum). The pathogen was isolated from specimens from a florist at Edmonton, Alta. (T.R. Davidson). Fire caused unthrifty growth and petal spotting of Darwin tulips in a garden at St. Catharines, Ont. (G.C. Chamberlain). Specimens were received from St. Vincent de Paul, Que., in May, where 12,000 plants were said to be diseased. Fire was also reported to be severe in a planting of 500,000 bulbs at Levis. Many varieties were discarded at the Botanical Garden, Montreal, because of fire (J.E. Jacques). Fire damaged 75% of Orange King at Kentville, N.S.; it was also noticed on other varieties (J.F. Hockey).

Break (virus). Some yellow and white varieties on Vancouver I., B.C., seem to carry a small percentage from year to year; but in most forcing varieties break is not a serious problem. On the mainland it was noted in 31.9% of plantings entered for certification with the average 0.79% (R.P. Messum). Break was widely distributed in many varieties, in commercial and home plantings, in the B.C. interior (G.E. Woolliams).

Streak (Nicotiana virus 11). Two bulbs sent in for examination from Charlotte Co., N.B., produced weak plants with severe necrotic lesions on the leaves. This necrosis caused early collapse and death of the tops. The bulbs were also severely necrotic. The virus produced reddish local lesions on Phaseolus vulgaris and was identified as Nicotiana virus 11, the tobacco necrosis virus (D.J. MacLeod).

Chalkiness (?Penicillium sp.). In Oct. a condition was seen in Wm. Copeland from Greenwich, N.S., which resembled chalkiness except that the affected scales were not hard. P. sp. was readily isolated from these scales (J.F. Hockey).

Frost Injury. Forced plants in a greenhouse showed considerable injury in March, 1950, following frost damage when the bulbs were in flats outdoors (J. Bosher).

VERBENA

Powdery Mildew (Oidium sp.) was fairly general on Spectrum Red in a seed planting at Elk Lake, B.C. (W. Jones).

VIOLA

Crown and Stem Rot (Myrothecium roridum). Infections of 10 and 50% caused considerable damage to two plantings of pansy on Vancouver I., B.C. (W. Jones).

Powdery Mildew (Sphaerotheca humuli) caused considerable damage in a commercial planting of pansies at Elk Lake, B.C. (W. Jones).

Rust (Puccinia violae) caused slight damage in a commercial planting of pansies at Elk Lake, B.C. (W. Jones). It caused severe spotting of pansy leaves in a garden at Vancouver (I.C. MacSwan).

YUCCA

Leaf Spot (Coniothyrium concentricum). Specimens of Y. filamentosa were received from Port Burwell, Ont., in Aug. (J. Sibalis).

ZINNIA

Damping-Off (Botrytis sp.) was 100% in flats of seedlings in a commercial greenhouse at Charlottetown, P.E.I. (R.R. Hurst).

Yellows (Callistephus virus 1). Six plants at the Station, Fredericton, N.B., were severely affected. The virus was identified as the western strain (D.J. MacLeod).