VI. DISEASES OF ORNAMENTAL PLANTS

ACONITUM

Yellows (Callistephus virus 1) severely affected five plants in a garden at Fredericton, N. B. (D. J. MacLeod).

ALTHAEA - Hollyhock

Rust (Puccinia malvacearum) was seen in most interior sections of B. C., but infection was light owing to a dry season (G. E. Woolliams). Infection was heavy at the Laboratory, Fort Garry, Man. (A. M. Brown). Rust was abundant in eastern Ont. and western Que. Extremely heavily rusted specimens were received from Knowlton, Que. The primary lesions were 0.4-0.6 mm. diam., 3-6 mm. apart. The secondary pustules were 0.2-0.4 mm. diam., contiguous to 1.0 mm. apart. From examination under a graticule it was estimated that there were 3.5 pustules per sq. mm. (I. L. Conners). Double varieties were reported to be very severely affected at Ile Perrot and many plants were killed (J. E. Jacques). It was heavy at Charlottetown, P. E. I., and several specimens were sent in (D. B. Robinson).

ANTIRRHINUM - Snapdragon

Blight and Wilt (Botrytis cinerea). A wilting of the leaves from the top downward and cankering at the base of the stem were seen in three greenhouses at Brampton, Ont., in March. B. cinerea fruited on the cankers. Damage was slight in two houses and moderate in the third. All three growers had experienced a similar trouble in other years (J. D. Gilpatrick). A light infection occurred in a greenhouse at Canard, N. S. (J. F. Hockey).

Rust (Puccinia antirrhini) was fairly extensive in two greenhouses at Brampton, Ont., in March (J. D. Gilpatrick).

Wilt (Verticillium albo-atrum) attacked 30% of plants in a garden at Kentville, N. S. Infection apparently originated in the greenhouse in which the plants were started (J. F. Hockey).

Yellows (Callistephus virus 1) was found at the Experimental Station and the Laboratory, Fredericton, N. B. Infection was trace to 3% (D. J. MacLeod).

BEGONIA

Grey Mould (Botrytis cinerea) affected flowers, leaves and stems of tuberous begonias in a garden at Beauharnois, Que. (J. E. Jacques).

Powdery Mildew (?Erysiphe cichoracearum) completely killed the tops of some tuberous begonias at Port Elgin, Ont., in July. Two tuberous begonias in a window-box at Montreal, Que., were severely damaged; adjacent petunias were not attacked. These are our first reports of this disease outdoors (H. S. Thompson). A single affected leaf of an elephant-ear begonia was received from Montreal Que., in Feb. 1952 (D. B. O. Savile).

Bacterial Leaf Spot (Xanthomonas begoniae) affected 25% of the plants in a commercial greenhouse at Greenwich, N. S. The plants quickly recovered when kept in a cool, dry atmosphere (J. F. Hockey).

BERBERIS - Barberry

Canker (?Dothidella berberidis (Wahl.) Theiss. & Syd.). Affected stems of B. wilsonae, received from Victoria, B. C., in April 1952, bore immature fructifications apparently of this fungus (I. L. Conners).

Rust (P. graminis). A few mature aecia were seen on B. vulgaris at Merrickville, Ont., on 8 June (I. L. Conners). Infection was a trace at Ste. Anne de la Pocatiere, Que. (A. Payette). Only traces were found on barberries in various parts of N. B.; the lightest infection ever noticed (J. L. Howatt).

BOLTONIA

Streak (virus) severely damaged 62% of the plants in the border at the Station, Fredericton, N. B. (D. J. MacLeod)

CALENDULA

Mosaic and Streak (Cucumis virus 1) caused a severe mosaic and foliar necrosis on two plants in a garden at Fredericton, N. B. (D. J. MacLeod).

Yellows (virus) severely damaged 10% of the plants in a garden in Queens Co., P. E. I. (R. R. Hurst).

CALLISTEPHUS - China Aster

Wilt (Fusarium oxysporum f. callistephi). The pathogen was isolated from plants sent in from Creston, B. C. (G. E. Woolliams). Wilt was found in a garden at Longueuil, Chambly Co., Que., with a Fusarium associated (J. E. Jacques).

Wilt (Verticillium albo-atrum). The pathogen was isolated from plants on a farm at Summerland, B. C., where the disease had been found on several other host plants (G. E. Woolliams).

Yellows (Callistephus virus 1) affected almost all the plants in a garden at Montreal, Que. (J. E. Jacques). Infection was trace to 100% in gardens at Charlottetown, P. E. I. (R. R. Hurst).

CHRYSANTHEMUM

Powdery Mildew (Erysiphe cichoracearum) slightly disfigured leaves of plants in a shaded location at Point Grey, B. C., in late August (H. N. W. Toms). Infection was moderate at the Botanical Garden, Montreal, Que., in October, and a trace in a local greenhouse (J. E. Jacques).

Root Knot (Meloidogyne (Heterodera) sp.) was fairly general in a nursery at Saanichton, B. C. (J. Bosher).

Stem Rot (Rhizoctonia solani). A scattered infection of greenhouse plants was seen in August at Falmouth, N. S. It was most conspicuous in freshly rooted and deeply planted cuttings to which peat had been added (J. F. Hockey).

Wilt (Sclerotinia sclerotiorum) attacked 2% of the plants in a garden at Vancouver, B. C. The pathogen was isolated (R. Messum, W. Orchard).

Yellows (Callistephus virus 1), Infection was 100% in a planting of 12 varieties in a garden at Charlottetown, P. E. I. (R. R. Hurst).

COREOPSIS

Yellows (Callistephus virus 1) attacked 2% of the plants in a garden at Fredericton, N. B. (D. J. MacLeod).

CYCLAMEN

Stunt (Ramularia cyclaminicola). Traces occurred at the Botanical Garden, Montreal, Que., and about 5% in a commercial greenhouse in April (J. E. Jacques).

DAHLIA

Crown Gall (Agrobacterium tumefaciens). The pathogen was isolated from gigantic galls found in a garden at Guelph, Ont. All the plants were affected (E. H. Garrard). Infection was 100% on recently imported Carolina Maid and Limelight at Charlottetown, P. E. I. (G. W. Ayers).

Ring Spot (virus) was severe on 2 of 12 plants in a garden at Fort Garry, Man. (W. E. Sackston).

Stunt (virus) severely affected a small planting at the Botanical Garden, Montreal, Que. (J. E. Jacques). Stunt attacked 1% of the plants at the Station, Fredericton, N. B. (D. J. MacLeod).

DAPHNE

Mosaic (?virus). A mottled specimen of D. mezereum was received from Penticton, B. C. (W. R. Foster).

DELPHINIUM

Powdery Mildew (Erysiphe polygoni) affected 3% of 450 plants in a nursery at Whonock, B. C. (I. C. MacSwan). Infection was heavy in several gardens at Charlottetown, P. E. I. (R. R. Hurst).

Bacterial Blight (Pseudomonas delphinii) affected 5% of 450 plants in a nursery at Whonock, B. C. It was most severe on plants shaded by fruit trees (I. C. MacSwan). The pathogen was isolated from specimens brought in from a planting at Calgary, Alta., where infection was general and damage heavy (T. R. D.). A specimen was received from Quebec City, Que. (J. E. Jacques).

DIANTHUS

Wilt and Branch Rot (Fusarium sp.). Wilting and rotting of the branches were seen on 10% of carnation plants in a greenhouse at Clarkson, Ont., in March. Fusarium sp. was isolated (J. D. Gilpatrick). Wilt (F. oxysporum f. dianthi) affected 10% of carnation cuttings in sterilized soil at Kitchener, Ont. The cuttings were apparently infected before transplanting (H. S. Thompson). Stem Rot (F. avenaceum) affected a specimen sent in from Truro, N. S., the grower claimed severe losses (D. W. Creelman, W. L. Gordon).

Rust (Uromyces caryophyllinus) was light but general on flowering carnations in five greenhouse establishments in s. Ont. visited in March. At Concord it was heavy on and caused severe damage to, young rooted cuttings. High humidity seemed to have aggravated the trouble (J. D. Gilpatrick).

Mosaic (carnation mosaic virus). All the plants in eight greenhouses examined in s. Ont. showed symptoms. The virus was transferred from several randomly selected plants to the indicator D. barbatus. Several specimens were also submitted to the laboratory (J. D. Gilpatrick).

Streak (virus) was seen on a few plants in five greenhouses in s. Ont. in March. Symptoms were most severe on Virginia and mildest on William Sim (J. D. Gilpatrick).

Blindness (boron deficiency) was abundant in a greenhouse near Victoria, B. C. It was corrected by the application of borax at 30 lb. per acre (W. R. Foster).

ERIGERON - Fleabane

Yellows (Callistephus virus 1) infected 2% of E. mucronatus in the laboratory disease garden, Fredericton, N. B. (D. J. MacLeod).

FILIPENDULA

Powdery Mildew (?Sphaerotheca humuli). A plant very heavily infected with the conidial stage was received from Iroquois Point, Ont., in June (I. L. Conners, H. S. Thompson).

FORSYTHIA

Bacterial Blight (Pseudomonas syringae) caused severe damage to F. sp. at Kentville, N. S. (D. W. Creelman).

GAILLARDIA

Yellows (Callistephus virus 1) infected five plants in a garden at Fredericton, N. B. (D. J. MacLeod). Infection was 100% in a planting of Burgundy in Queens Co., P. E. I. (R. R. Hurst).

GLADIOLUS

Leaf Spot (Alternaria fasciculata Cke. & Ell.). S. A. Simmons (U. S. D. A., P. D. R. 35:333-334. 1951) describes a leaf spot in Ont. due to this organism, whose identity was confirmed by J. W. Groves (H. S. Thompson).

Yellows (Fusarium oxysporum f. gladioli) attacked many varieties near Charlottetown, P. E. I., infection being trace to 15%. Many specimens were also sent in (R. R. Hurst).

Storage Rot (Penicillium gladioli) was predominant in 15/22 corms submitted from Vernon, B. C., in March 1952. Scab, mechanical injury and inadequate curing had allowed a heavy infection to occur (D. B. O. Savile). Severely infected corms were received from Marieville, Rouville Co., Que. (J. E. Jacques). Infection was 10% in one lot of corms at Charlottetown in May (R. R. Hurst).

Scab (Pseudomonas marginata) was heavy on one of three corms received from Odessa, Ont., in April 1952 (D. B. O. Savile). In a planting at Ottawa in 1950 corm infection was 79. 6% on Leading Lady and 73. 6% on Spotlight (J. Sibalis). Infection was about 15% in the stock of a grower in Montreal, graded in Jan. 1951 (J. E. Jacques).

Core Rot (Sclerotinia draytoni). Three shrivelled, infected corms received from Montreal, Que., in March 1952 had evidently been inadequately cured (D. B. O. Savile). A planting at Sherbrooke suffered severely from the leaf spot and stem rot phases of the disease. Specimens received on 23 Oct. showed severe stem rot spreading downward into the corm (J. E. Jacques). This appears to be the first definite record of the stem and leaf phases of the disease in Que.

Dry Rot (Sclerotinia gladioli) was present, with Septoria gladioli on two of three corms received from Odessa, Ont., and was heavy on others from Ormstown, Que., in April 1952 (D. B. O. Savile). Slightly infected corms were received in November from Marieville, Rouville Co., (J. E. Jacques).

Hard Rot (Septoria gladioli) was present on two of three corms received in April 1952 from Odessa, Ont. It was heavy on corms received from Montreal, Que., in January 1952; pycnidia were forming on corms of several varieties, and in some instances a secondary Fusarium rot was present (D. B. O. Savile).

Mosaic (virus complex). A survey of a commercial planting at St. Catharines, Ont., yielded the following percentages of the different varieties with various symptoms: Green mottle: Commando 42.4, Corona 0.4, Harvest Moon 35.9, Kestrel 11.7, Magnolia 0.9, Star Dust 10.2. Yellow mottle: Kestrel 2.2, Rosa van Lima 5.8. Yellow mottle and spot necrosis: Rosa van Lima 0.6. Necrotic spotting: Mrs. Marks' Memory 14.9, Myrna 65.8, Rosa van Lima 32.4. Graying and necrotic spotting: Mighty Monarch 100. Streaking: Kestrel 19.0, Myrna 1.4. Bright chlorotic line pattern: Mrs. Marks' Memory 23.4. Chlorosis: Mrs. Marks' Memory 3.4 (G. C. Chamberlain). A faint mottle, due to Phaseolus virus 2, was seen in seven gardens in York, Sunbury and Charlotte Counties, N.B. (D. J. MacLeod).

GODETIA

Yellows (Callistephus virus 1) affected 35% of the plants in the laboratory disease garden, Fredericton, N.B. (D. J. MacLeod).

HEDERA - Ivy

Leaf Spot (Xanthomonas hederae) has been heavy for several years in a greenhouse at London, Ont. Strict sanitation and regulation of watering have given fair control (J. D. Gilpatrick). Infected leaves were sent in from a private residence in Montreal, Que. (J. E. Jacques).

HIPPEASTRUM - Amaryllis

Scorch (Stagonospora curtisii). Traces could be found on almost every bulb, leaf or flower stalk at the Botanical Garden, Montreal, Que., in July. Many flower stalks were so heavily infected that they dried up without flowering. Plants were cleaned up by cutting out diseased tissues and treating with powdered ferbam. Thereafter weekly sprays with ferbam controlled the disease (J. E. Jacques).

HYDRANGEA

Powdery Mildew (?Erysiphe cichoracearum). Traces occurred at the Botanical Garden, Montreal, Que., in March, and it was severe in two local greenhouses (J. E. Jacques).

IRIS

Bacterial Leaf Blight (Bacterium tardicrescens) caused severe scorching of leaves at the Botanical Garden, Montreal, Que. (J. E. Jacques).

Leaf Spot (Didymellina macrospora). A trace was found in one planting out of 22 inspected for certification on Vancouver I., B. C., but none was seen on the mainland (N. Mayers). A small amount was seen in plantings in most parts of the interior (G. E. Woolliams). Infection was slight at Edmonton, Lacombe and Beaverlodge, Alta. (T. R. D.). Leaf spot was heavy in most gardens at St. Roch, Verchères Co., Que., and traces were recorded at Sorel (J. E. Jacques).

Soft Rot (Erwinia carotovora). Traces occurred in July at the Botanical Garden, Montreal, Que., (J. E. Jacques). Two plants in Queens Co., P. E. I., were severely affected (R. R. Hurst).

Mosaic (virus) was found in 18.2% of plantings entered for certification on Vancouver I., B.C., and infection ranged from trace to 1%. It was seen in 22.7% of mainland plantings, infection averaging 0.7% (N. Mayers).

LATHYRUS

Powdery Mildew (Microsphaera diffusa). Infection was trace to moderate on several varieties in Queens Co., P.E.I. (R.R. Hurst).

LILIUM - Lily

Blight (Botrytis elliptica) caused moderate damage to Croft lilies in a garden at Courtenay, B.C. (W. Jones). Foliage infection was 75% on L. sp. at Round Hill, Annapolis Co., N.S. (J.F. Hockey).

LOBELIA

Mosaic (Cucumis virus 1) severely affected two plants of L. cardinalis in a garden at Fredericton, N.B. (D.J. MacLeod).

LONICERA - Honeysuckle

Leaf Blight (Glomerularia lonicerae) occurred in hedges at the Botanical Garden, Montreal, Que., and specimens were sent in by a nursery inspector who reported it to be general (J.E. Jacques)

Powdery Mildew (Microsphaera alni) was heavy on a climbing honeysuckle at Charlottetown, P.E.I. (J.E. Campbell).

MAHONIA

Rust (Cumminsiella sanguinea) appeared later on M. aquifolium at Ste. Anne de la Pocatière, Que., and caused negligable damage (A. Payette). A shipment of 25 bushes of M. aquifolium from Holland intercepted at Toronto, Ont., in April 1952, was extremely heavily infected and had to be condemned. It seems impractical for nurserymen to secure this plant from western Europe, where the rust is general, rather than from eastern North America where the disease is practically absent. It is clear that the infection at Ste. Anne de la Pocatière arose from imported stock and continuation of the practice can only lead to complete dispersal of the disease east of the Rockies (D.B.O.S., I.L.C.).

MATTHIOLA - Stock

Grey Mould (Botrytis cinerea). A few lesioned leaves were received from a greenhouse at Hudson, Que., in April (I.L. Conners).

Stem Rot (Rhizoctonia solani). Infection was 10% in a planting of well-grown Ten Weeks stocks at Charlottetown, P.E.I., in July (R.R. Hurst).

MENTHA - Mint

Downy Mildew (Peronospora stigmaticola). As already noted (Mycologia 43: 113-114. 1951) this remarkable species has been found on stigmas of M. arvensis from Ont. and P.E.I. Dr. H.C. Greene (in litt.) reports it on herbarium specimens from Wisconsin. It may be widespread but is extremely inconspicuous and should be sought for carefully, especially in humid areas. It probably greatly reduces seed set under suitable conditions. More data are needed on host and geographic range (D.B.O. Savile).

Rust (Puccinia menthae) was general on M. spicata in two gardens at North Saanich, B. C. (W. Jones).

MYOSOTIS - Forget-me-not

Grey Mould (Botrytis cinerea) attacked stems and petals of M. sp. in a greenhouse at Brampton, Ont., in March, causing 50% loss. The house had been kept at 60° F. with high humidity (J. D. Gilpatrick).

NARCISSUS

Basal Rot (Fusarium spp.). Less than 1% was seen in a commercial stock on Vancouver I., B. C., and a trace to 2% in some stocks on the mainland during bulb inspection (N. Mayers).

Smoulder (Sclerotinia narcissicola) was not found in recordable amounts on Vancouver I., B. C., during inspection of plantings for certification; it occurred in 13.2% of mainland plantings, incidence averaging 1.6% (N. Mayers).

Scorch (Stagonospora curtisii) was negligible on Vancouver I., B. C. Primary lesions were noted in 76% of mainland plantings inspected and averaged 1.5%, but there was no spread owing to dry weather (N. Mayers).

Decline (virus) was seen in every King Alfred planting inspected on Vancouver I., B. C. Infection was less than 2.5% in 58% of plantings, and the maximum was 6%. On the lower mainland no decline could be seen on the first inspection, but it was found in 77%, incidence ranging from 0.5 to 8.0%, on the second inspection. As in 1950 more infected plants showed up after the second inspection (N. Mayers).

Mosaic (virus). Of the plantings inspected on Vancouver I., B. C., 50% were free, 33% carried 0.25-0.5% and 17% carried over 0.5% infection. On the mainland mosaic was found in 25% of plantings and averaged 0.39% infection, less than half the amount found in 1950; early roguing is responsible for the decrease (N. Mayers).

PAEONIA - Peony

Blight (Botrytis paeoniae). Infection was moderate in a planting at Calgary, Alta. (T. R. D.). Damage was very heavy in a commercial planting at Charlottetown, P. E. I., and four cases were reported from Prince and Kings Co. (R. R. Hurst).

Mosaic (virus). A trace was seen in a garden at Edmonton, Alta. (T. R. D.). A specimen was received from Oakville, Ont. (G. C. Chamberlain).

Ring Spot (virus). Symptoms were severe on 2% of the plants at the Station, Fredericton, N. B. (D. J. MacLeod).

Blossom Blight (cause unknown) was common in gardens at Saskatoon, Sask., and was reported by D. Robinson, Extension Dept., to be common in the province. An enquiry was also received from Tisdale (T. C. Vanterpool). Similar troubles have previously been reported from Alta., Sask., and P. E. I. (P. D. S. 16:80, 23:114, and 29:109). Probably partly environmental, but not necessarily all due to the same cause. See also under Frost Injury.

Chlorosis (lime-induced iron deficiency). What seemed to be this trouble was seen for the first time in Sask. It is common on certain soils in roses, raspberries, mountain ash, etc. (R. J. L.).

Frost Injury. Throughout the Okanagan Valley, B. C., many peony buds failed to develop beyond 1/4 in. diam. No pathogen could be isolated. On the night of 19 April a minimum of 14° F. was registered at Summerland, and it was correspondingly cold in other sections. This low temperature is thought to have injured the buds (G. E. Woolliams). See also Blossom Blight.

PAPAVER - Poppy

Boron Deficiency was severe on a plant at Charlottetown, P. E. I. See E. Brandenburg (R. A. M. 21:471. 1943) (R. R. Hurst).

PARTHENOCISSUS

Powdery Mildew (Uncinula necator) was heavy on P. quinquefolia at Kentville, N. S. (D. W. Creelman).

PELARGONIUM - Geranium

Grey Mould (Botrytis cinerea) attacked blossoms and large areas of leaves at Montreal, Que., in late August (J. E. Jacques). It was severe on leaves, peduncles, petioles and stems at Ste. Anne de la Pocatiere, Que., in September. Infection often originated from an adherent petal (A. Payette).

Mosaic (virus) affected one plant in a garden at Fredericton, N. B. (D. J. MacLeod).

PETUNIA

Stem Rot (Sclerotinia sclerotiorum) killed the upper portions of plants at Ottawa, Ont., in July. No lesions were present at soil level. Previously reported from Alta. and Que. (H. S. Thompson).

Root Rot (Thielaviopsis basicola) attacked 10% of plants in a garden at Ottawa, Ont., in early July. The roots and stem bases were discoloured. Infection evidently started in the greenhouse flats (H. S. Thompson). James Johnson (Jour. Agr. Res. 7:289-300. 1916) showed experimentally that petunia is slightly susceptible to the organism (I. L. C.).

Yellows (Callistephus virus 1). Infection was trace to 5% at the Station, Fredericton, N. B. (D. J. MacLeod).

PHILADELPHUS - Mock Orange

Bacterial Blight (Pseudomonas syringae) caused severe damage at Kentville, N. S. (D. W. Creelman). First report to the Survey.

PHILODENDRON

Leaf Spot (Phyllosticta sp.). Leaves received from Montreal, Que., in June bore a Phyllosticta with spores 2.3-4.6 x 0.8-1.5 microns (H. S. Thompson). Possibly a microconidial stage of some leaf-spotting pathogen. There seems to be no record of a Phyllosticta on this host.

PHLOX

Powdery Mildew (Erysiphe cichoracearum) was heavy on all plants of P. paniculata in a garden at Vancouver, B. C. (H. N. W. Toms). It was heavy on plants at Outremont, Que. (J. E. Jacques). Infection was light on phlox in Queens Co., P. E. I. (R. R. Hurst).

Leaf Spot (Septoria divaricata) caused slight damage in Kings and Queens Counties, P. E. I. (J. E. Campbell).

Blight (virus). Eleven plants of P. paniculata showed severe streaking in a border at the Station, Fredericton, N. B. (D. J. MacLeod). One severely affected clump was seen at Charlottetown, P. E. I. (R. R. Hurst).

Yellows (Callistephus virus 1). One clump of P. maculata was infected at the Botanical Garden, Montreal, Que. (J. E. Jacques). Three per cent of P. drummondii in a border at the Station, Fredericton, were severely affected (D. J. MacLeod).

RHODODENDRON

Red Leaf (Exobasidium vaccinii) was seen on R. japonicum in a nursery on Lulu I., B. C. (W. Jones). Specimens of azalea were received from a greenhouse at Mount Pleasant, Ont., in January, 1952 (I. L. Conners).

Angular Leaf Spot (Septoria azaleae Vogl. ex Sacc. & Syd.). Azaleas, var. Princess Beatrix, imported in Oct. 1951, from Belgium, were apparently healthy at that time; but when inspected in December by the Plant Protection Division in a greenhouse at Leamington, Ont., the fungus was fruiting freely on the leaves of 25 plants (size of shipment unstated). Weiss (Index Pl. Dis. in the U. S. II:36 states that the disease is widespread; it may be of general distribution, but there are few authentic reports. In the present material pycnidia are epiphyllous and spores elongate, rounded or sometimes narrowed at ends, septa 0-4, mostly 3, 14. 3-25. 7 x 2. 0-2. 5 microns (I. L. Conners).

ROSA - Rose

Crown Gall (Agrobacterium tumefaciens) caused heavy damage to Dorothy Perkins at Charlottetown, P. E. I., and other specimens were brought in (R. R. Hurst).

Graft Canker (Coniothyrium sp.) affected at least 10% of the grafts of Happiness on R. noisettiana in a commercial greenhouse at Brampton, Ont. A Coniothyrium, close to C. fuckelii, was isolated (J. D. Gilpatrick).

Black Spot (Diplocarpon rosae) was very heavy on hybrid teas and hybrid polyanthas in the vicinity of St. Catharines, Ont., and caused complete defoliation by mid-August in some gardens. It was also prevalent in the rose gardens in Victoria Park, Niagara Falls. Severely spotted leaves were received in October from Frankford (G. C. Chamberlain). Specimens were received from private gardens at Montreal, Que., and traces were seen at the Botanical Garden (J. E. Jacques). Infection was trace to moderate on several varieties in gardens at Charlottetown, P. E. I. (R. R. Hurst).

Leaf Spot (Mycosphaerella rosicola). Heavily infected leaves were sent in from Ste. Rose, Laval Co., Que., in late July (J. E. Jacques).

Rust (Phragmidium sp.). A trace occurred at Charlottetown, P. E. I. (J. E. Campbell).

Anthracnose (Sphaceloma rosarum) is reported from London, Ont., by Jenkins and Dearness (U. S. D. A., P. D. R. 35:460. 1951).

Powdery Mildew (Sphaerotheca pannosa). Heavily infected specimens were received from St. Damase, St. Hyacinthe Co., Que., (J. E. Jacques). It was heavy on rambler roses at Charlottetown, P. E. I., and several specimens were received (R. R. Hurst).

Chlorosis (cause unknown) followed by leaf drop occurred in late winter in the grafting frames of a grower at Brampton, Ont. The scions were severely affected, but produced healthy new growth soon after removal from the frames. All the stocks were found to have brown, often rotted, roots from which Fusarium sp. was consistently isolated. The development of brown roots in controls as well as inoculated plants left the pathogenicity of the fungus in doubt; and it is uncertain whether the condition of the roots were responsible for the chlorosis (J. D. Gilpatrick).

SYRINGA - Lilac

Powdery Mildew (Microsphaera alni). Heavily infected specimens were received from Ville Lasalle, Que., and it was also reported from Longueuil, St. Lambert, Joliette and Sherbrooke (J. E. Jacques).

Bacterial Blight (Pseudomonas syringae) caused slight damage in a garden at Langley, B. C. (T. Anstey, W. Jones). It was severe on white lilacs, but light on others at Kentville, N. S. It was common in the Annapolis Valley and specimens were also received from Halifax and Lunenburg Counties (J. F. Hockey).

TAGETES - Marigold

Yellows (Callistephus virus 1) was general in gardens at Fredericton, N. B.; infection ranged from trace to 7% (D. J. MacLeod).

TULIPA - Tulip

Fire (Botrytis tulipae). In plantings inspected for certification on Vancouver I., B. C., fire was very light in 21% of plantings on the lower mainland, and moderate to severe in 79%. One grower mulched some plots with sawdust (mainly alder and poplar) during the winter, to a depth of 4 in. The sawdust finally compacted to about 2 in. Wet weather from 11 to 14 May provided ideal conditions for the initiation of severe secondary lesions some of which girdled the flower stalk. Spread was very rapid in all but the mulched plots. The surface of the mulch was generally dry except immediately after rain, and may have caused the foliage of mulched plants to dry out fast after rain. It is also possible that there is less splashing from sawdust than from soil. Furthermore, varieties with dropping leaves tend to harbour more fire than those with erect leaves; and it is probable that contact with the mulch is less likely to favour infection than contact with soil. The mulch had been applied to control weeds and conserve moisture. Such a mulch introduces problems because it may fail to break down rapidly when ploughed in, thus trying up soil nitrogen and water. It may be advisable to add nitrogen to offset the nitrogen starvation and to hasten breakdown. The mulched bulbs also flower 7-10 days later than those without mulch (N. Mayers).

Fire was quite prevalent at the Botanical Garden, Montreal, Que., and was reported to be severe in Quebec City (J. E. Jacques). B. aff. tulipae destroyed all the plants in an area 4 x 4 ft. in a bed at Westmount, Que. The severe damage suggested Sclerotinia sativa, once before recorded from Westmount (P. D. S. 18: 110), but it appears to be a strain of B. tulipae. Soil conditions may have enhanced the damage (F. L. Drayton, J. Sibalis). Fire was quite general in N. S., over 50% of the plants being affected in some untended plantings (J. F. Hockey). Infection was heavy and damage severe in several thousand bulbs in Queens Co., P. E. I., dug in October for transfer to a new site because fire had been heavy during bloom (R. R. Hurst). The bulbs should, of course, have been dug as soon as the leaves started to turn yellow, perhaps late June. Then, if the blossom heads had been removed before the petals fell, a high proportion of bulbs might have been salvaged (D. B. O. S.).

Break (virus). Only traces were observed in plantings inspected on Vancouver I., and the lower mainland, B. C. (N. Mayers).

VERBENA

Wilt (cause undetermined) attacked 20% of a planting at Ottawa, Ont. The stem bases were darkened and the lower leaves yellow (H. S. Thompson).

VINCA - Periwinkle

Yellows (Callistephus virus 1) severely affected 3 plants of V. rosea at the Laboratory, Fredericton, N. B. (D. J. MacLeod).

VIOLA

Leaf Spot (Cercospora violae). Specimens of V. cornuta were received from Sarnia, Ont. (I. L. Conners).

Crown and Stem Rot (Myrothecium roseum) caused the eventual death of 20% of a seed planting of V. tricolor var. hortensis at Keating, B. C. (W. Jones).

Powdery Mildew (Sphaerotheca humuli) was abundant on V. tricolor var. hortensis at Keating, B. C. (W. Jones).

ZINNIA

Grey Mould (Botrytis cinerea) was severe at Ste. Anne de la Pocatière, Que. Infection spread from blossoms to leaves and stems, involving the entire plant (A. Payette).

Mosaic (virus) affected a few plants in a private garden at Montreal, Que. (J. E. Jacques).

Yellows (Callistephus virus 1). Trace to 1% infection was seen in two gardens in Sunbury Co., N. B. (D. J. MacLeod).