## VI. DISEASES OF ORNAMENTAL PLANTS

ACONITUM - Monkshood

Yellows (Callistephus virus 1). One infected plant was found in a garden at Fredericton, N.B. (D.J. MacLeod).

ALTHAEA - Hollyhock

Rust (Puccinia Malvacearum) was reported as follows on A. rosea: general in gardens at Vancouver, B.C. (H.N.W. Toms); general and light to severe in the Interior of B.C. (G.E. Woolliams); severe in several plantings at Lethbridge, Alta. (M.W. Cormack); caused severe blighting and defoliation at St. Catharines, Ont. (G.C. Chamberlain); heavily infected specimens received from Orillia, Stella, and Smiths Falls, and severe in many gardens near Ottawa with all lower leaves in one shady border later overrun by Alternaria tenuis (D.B.O. Savile); severe on about 25 plants in a garden at Ottawa (H.N. Racicot); heavily infected leaves received from Bourget, Ont., and also brought in from Montreal and L'Assomption, Que. (J.E. Jacques). severe in two gardens at Charlottetown, P.E.I. (W.A. Hodgson); very abundant and destructive at Charlottetown in late August (R.R. Hurst). A moderate infection caused some killing of the lower leaves of A. armeniaca Tenore in the Arboretum, Ottawa, Ont.; apparently the first report on this host (D.B.O. Savile).

ANCHUSA

Root Rot (Sclerotinia sclerotiorum) killed 30% of a commercial seed crop of A. azurea at Elk Lake, B.C. (W. Jones). First report to the Survey on this host.

ANEMONE

Rust (Tranzschelia Pruni-spinosae) was seen on a few plants of Anemone coronaria at Saanichton, B.C.; previously reported on plums at the same locality (J. Bosher, W. Jones).

ANTIRRHINUM - Snapdragon

Grey Mould (Botrytis cinerea) caused considerable damage to branches of seed plants of A. majus at Elk Lake, B.C., and caused premature ripening of the inflorescences. Rust was also prevalent (W. Jones).

Rust (Puccinia Antirrhini). The uredinial stage was seen on 5 June at North Saanich, B.C., and the disease was general throughout lower Vancouver Island. It caused considerable damage to seed plants at Elk Lake, despite consistent spraying with Bordeaux mixture (W. Jones). Rust was widespread in the interior, damage varying from slight to severe according to location and variety (G.E. Woolliams).

Yellows (Callistephus virus 1). A trace was found in two gardens in York Co., N.B. (D.J. MacLeod).

AQUILEGIA - Columbine

Leaf Spot (Actinonema Aquilegiae) was moderately heavy in a garden at Cobble Hill, B.C. (W. Jones).

Mosaic (Cucumis virus 1) caused moderately severe damage to several plants in a garden at Ottawa, Ont. (D.B.O. Savile).

ASTER

Powdery Mildew (Erysiphe Cichoracearum) was general but not severe at the Botanical Garden, Montreal, Que. (J.E. Jacques).

BEGONIA

Grey Mould (Botrytis cinerea). Affected specimens of Lady Mac were received from Crystal Beach, Ont. (G.C. Chamberlain). Several cases were observed in gardens at Montreal, Que., especially on tuberous begonias (J.E. Jacques).

Powdery Mildew (?Erysiphe Cichoracearum). Specimens were received from Evesham, Sask. (T.C. Vanterpool). Specimens of an elephant's-ear begonia, grown in a private house at Ottawa, Ont., were received in March and April 1948. The lesions were about $\frac{1}{8}$ to $\frac{3}{4}$ inch across and were necrotic, suggesting a hypersensitive reaction; but there were no other plants in the house, and the fungus must have maintained itself all winter; oidia were fairly abundant, but there was no sign of perithecia. This is presumably the fungus studied in Sweden by G. Hammarlund (Botaniska Notiser 1945:101-108. 1945), and named by him Erysiphe polyphaga. It is doubtfully distinct from E. Cichoracearum, the only morphological difference being, according to Hammarlund, that the asci occasionally contain 3-4 spores instead of the typical 2. Using conidia from Begonia var. Gloire de Lorraine, he inoculated 100 species of plants, selected on the basis of observations of imperfect mildews that had recently come into prominence. Inoculations were successful on 62 species in the Crassulaceae, Begoniaceae, Scrophulariaceae, Primulaceae, Solanaceae, Cucurbitaceae, Linaceae, Compositae, Verbenaceae, Labiatae and Euphorbiaceae. Perithecia were abundant on Veronica speciosa and occasional on Begonia. These are our first reports of powdery mildew on Begonia, but we have various records of what, judging from Hammarlund's results, might be the same strain on a number of hosts including: Cucumber, Ont., N.B., P.E.I.; pumpkin, B.C., Que., N.B.; Dahlia, Ont., N.B.; Kalanchoe, Sask. (P.D.S. 25:115. 1946); and Verbena hastata, Ont. Specimens of the last plant bear perithecia that are slightly immature, but in which the asci seem to be exclusively 2-spored (D.B.O. Savile).

BERBERIS - Barberry

Rust (Puccinia graminis) was moderate on a few bushes of B. vulgaris at Ste. Anne de la Pocatiere, Que. (A. Payette). It was heavy on bushes at the Station, Fredericton, N.B. (J.L. Howatt).

BOLTONIA

Streak (virus) affected 57% of the plants in the border at the Station, Fredericton, N.B. (D.J. MacLeod).

CALENDULA

Yellows (Callistephus virus 1) attacked 82% of plants in a garden at Fredericton, N.B. (D.J. MacLeod). Infection ranged from a trace to 100% in Queens Co., P.E.I., all varieties being affected (R.R. Hurst).

CALLISTEPHUS CHINENSIS - China Aster

Stem Blight (Botrytis cinerea). One specimen was brought in from Queens Co., P.E.I. (R.R. Hurst).

Wilt (Fusarium oxysporum f. Callistephi) attacked a few plants at the Station, Summerland, B.C. (G.E. Woolliams). An unusually large number of specimens was received from places in Ont. (J.D. MacLachlan). One plant out of 12 was affected in a garden at Ottawa (H.N. Racicot). Specimens were received from Caughnawaga, Que., with information that the damage was heavy (D.B.O. Savile).

Yellows (Callistephus virus 1). Specimens were received from various parts of Ont. (J.D. MacLachlan). Heavy loss was reported by a grower at Giffard, Que. (J.E. Jacques). Affected blooms were seen at the market in Charlottetown, P.E.I. (R.R. Hurst).

CAMPANULA

Rust (Coleosporium Campanulae) was moderate on a few plants of C. rotundifolia var. intercedens, transplanted some years ago into a rock garden at St. Aubert, L'Islet Co., Que. This rust seems to be general in the lower St. Lawrence (A. Payette).

CHEIRANTHUS - Wallflower

Downy Mildew (Peronospora Cheiranthi) was severe on a yellow-flowered variety at North Saanich, B.C. (W. Jones).

CHRYSANTHEMUM

Leaf Spot (Cylindrosporium Chrysanthemi). Several specimens were received from greenhouses in Ont. (J.D. MacLachlan).

Leaf Spot (Septoria Chrysanthemi) attacked 20 out of 100 rooted cuttings of Sunnyside at Leamington, Ont.; damage was heavy on the specimens received (D.B.O. Savile).

CONVALLARIA MAJALIS - Lily-of-the-Valley

Blight (Botrytis cinerea) attacked 30% of the stems in a crowded, well-shaded bed at the Central Experimental Farm, Ottawa, Ont., and killed at least half of them. Infection may have been aggravated by frequent sprinkling. The pathogen fruited freely on the stems, and small black sclerotia were rupturing the epidermis near ground level (D.B.O. Savile).

COREOPSIS

Yellows (Callistephus virus 1) severely damaged 9 plants in a garden at Fredericton, N.B. (D.J. MacLeod).

CYCLAMEN

Stunt (Cladosporium Cyclaminis) was prevalent in three greenhouses at Montreal, Que., and many of the plants for sale on the market were affected (J.E. Jacques).

DAHLIA

Stunt (virus). Coltness hybrids at St. Catharines, Ont., showed stunting and blossom malformation (G.C. Chamberlain).

DAPHNE

Anthracnose (Marssonina Daphnes). Infection of D. Mazereum was general in gardens in Point Grey and Dunbar districts, Vancouver, B.C. Defoliation was heavy in July (H.N.W. Toms).

DELPHINIUM - Larkspur

Powdery Mildew (Erysiphe Polygoni). A light attack occurred at the Botanical Garden, Montreal, Que. (J.E. Jacques). Slight to severe damage was seen in Queens Co., P.E.I. (R.R. Hurst).

Bacterial Blight (Pseudomonas delphinii). Infection was slight in plantings at Edmonton, Alta. (J.D. Gilpatrick). Spotting of the lower leaves was seen in a few varieties at the Botanical Gardon, Montreal, Que. (J.E. Jacques). Infection was a trace at Kentville, N.S. (D. Creelman).

DIANTHUS

Damping Off (Alternaria ?Dianthi) caused considerable damage in a flat of carnation, D. Caryophyllus, at Elk Lake, B.C. (W. Jones).

Stem Rot (Heteropatella valtellinensis) was found by the Division of Plant Protection on imported carnation stock in a greenhouse at Burnaby, near Vancouver, B.C. (R.E. Fitzpatrick, H.N.W. Toms).

Rust (Uromyces caryophyllinas) caused slight damage to carnations in a greenhouse at Sidney, B.C. (W. Jones). It was general, but caused slight damage to greenhouse plants at the University of B.C., Point Grey (H.N.W. Toms). A severe outbreak occurred in the municipal greenhouses, Montreal, Que.; red varieties were particularly heavily damaged (J.E. Jacques).

Bud Rot (Fusarium Poae (Pk.) Wor.) destroyed nearly all the bloom of D. plumarius var. Mrs. Sinkins at Ottawa, Ont., but it did not occur on several other pinks. First report to the Survey (D.B.O. Savile).

DIMORPHOTHECA - Cape Marigold

Yellows (Callistephus virus 1). Traces were found in two gardens at Fredericton, N.B. (D.J. MacLeod).

ESCHSCHOLZIA

Yellows (Callistephus virus 1) affected 7% of the plants in a garden at Fredericton, N.B. (D.J. MacLeod).

EUPHORBIA

Stem Rot (Coniothyrium Euphorbiae) affected all the stems of two clumps of E. epithymoides in a garden at Ottawa, Ont. Lesions ran almost the full length of the stems, but there was no leaf infection. Some stems were nearly dead in late June, and most blossoms had abscissed. Reported previously on E. lactea from Que. (P.D.S. 25:112. 1946) (D.B.O. Savile).

GAILLARDIA

Yellows (Callistephus virus 1). A trace was found in two gardens at Fredericton, N.B. (D.J. MacLeod).

GARDENIA

Canker (Phomopsis Gardeniae). Specimens with severe cankers, accompanied by fusiform swellings at ground level, were received in Nov., 1947, from a greenhouse at Port Dover, Ont. A few pycnidia with typical spores were present and the pathogen was isolated (R.G. Atkinson).

GLADIOLUS

Penicillium Rot (P. Gladioli). Traces were seen in several varieties at the Botanical Garden, Montreal, Que. (J.E. Jacques). Infection

was 2% in a lot brought in for examination at Charlottetown, P.E.I. (R.R. Hurst).

Scab (Pseudomonas marginata) was severe in a garden at Vancouver, B.C., and caused spotting of leaves and blossoms (I.C. MacSwan). Plantings at Steveston and Vancouver showed 100% leaf spotting (R.E. Fitzpatrick, H.N.W. Toms). Damage was severe at Lorlie near Indian Head, Sask. (T.C. Vanterpool). Several varieties were affected in May at the Botanical Garden, Montreal, Que., and diseased corms were received in November from Dozois, Terrebonne Co. (J.E. Jacques). Moderately infected corms were received from Montreal; lesions were typical on Snow Princess, but were narrow and deeply tunnelled on Non Pareil (D.B.O. Savile). A trace was seen on corms at Kentville, N.S., in Jan., 1948 (D. Creelman).

Core Rot (Sclerotinia Draytoni). Foliage infection was seen at Milton, Ont. (S.A. Simmons). Specimens were received from Truro, N.S., in Nov., 1948. The sender stated that the disease was severe in his own and other growers' stocks, but that it had not been seen in previous years (D.B.O. Savile).

Dry Rot (Sclerotinia Gladioli) was severe in specimens received from Okanagan Mission, B.C.; light in specimens from Ancaster, Ont., and severe in others from Haileybury (D.B.O. Savile).

Hard Rot (Septoria Gladioli) was severe in two plants received from Ancaster, Ont., in July, but the rate of infection was said to be low (D.B.O. Savile). There was a noticeable increase of foliage infection in planting stock and plants from cormels in the Huttonville district (S.A. Simmons). Traces were noted in Picardy at the Botanical Garden, Montreal, Que. (J.E. Jacques).

White Break (virus). A severely infected plant was received from Renfrew, Ont., in late June; infection was a trace. This is apparently the first time that this disease has been definitely identified in Canada, but, owing to the confusion existing until recently over virus diseases of gladiolus, it has probably occurred sporadically for some time. What was probably the same disease was seen at Ottawa, but, in addition to the usual foliage symptoms, wider brown streaks occurred below the soil line (D.B.O. Savile).

Mosaic (Phaseolus virus 2). Seven plants in a mixed lot of gladiolus showed a well-defined mottle in a garden at Fredericton, N.B. The virus obtained from three of these plants produced typical symptoms of yellow mosaic on Phaseolus vulgaris and Vicia Faba (D.J. MacLeod). Specimens from Hants and Kings Co., N.S., showed leaf mottle and flower breaking; it seems to be becoming more prevalent (J.F. Hockey). Mosaic symptoms occurred on 20% of Aladdin and about 25% of an unidentified variety at Kentville (D. Creelman).

HELIANTHUS - Sunflower

Powdery Mildew (Erysiphe Cichoracearum) was heavy on a few plants of H. tuberosus in a garden at Woodroffe, near Ottawa, Ont. (D.B.O. Savile).

HIBISCUS

Canker (Fusarium lateritium) was present on specimens of H. syriaca, Rose-of-Sharon, received in Dec., 1948, from a nursery at Kingsville, Ont. (I.L. Conners, W.L. Gordon).

HYACINTHUS - Hyacinth

Soft Rot (Erwinia carotovora). Specimens of L'Innocence were received from a greenhouse at Toronto, Ont., in Jan., 1949, with lesions on the leaves and individual flower buds; the latter soon spread into the scape, which was then rapidly destroyed. A pink variety in the same bed was not visibly affected. In the early stages when progress was relatively slow, saprophytic nematodes were found to the extreme limit of the affected tissue, and the disease simulated bulb nematode infection; but decay developed so fast in the scape that the nematodes were generally left behind. Decay zones in some of the outer scales, spreading down from the top, suggest that the pathogen was carried in a more or less dormant state in the outer parts of the bulbs and that the young leaves became inoculated as growth commenced. Such dormant lesions would be extremely difficult to detect on a hyacinth bulb. W.C. Moore (Diseases of Bulbs. Bull. 117, Brit. Min. Agr. and Fish. 1939) states that L'Innocence, Perle Brilliant and Grand Maitre seem to be particularly susceptible and Queen of the Pinks relatively resistant. First report to the Survey; known from U.S.A., Europe and Japan (D.B.O. Savile).

IMPATIENS

Leaf Spot (Stemphylium botryosum associated). A target spot occurred on 75% of the leaves of mixed varieties of I. balsamina in the seed plots at University of British Columbia, Point Grey, and caused slight defoliation. S. botryosum, with some top-shaped and some typical spores, all falling within the size range given by Dr. J.W. Groves, fruited abundantly on the spots, but it is not definitely known whether it was the primary cause of the disease (H.N.W. Toms, D.B.O. Savile).

IRIS

Leaf Spot (Didymellina macrospora). Attention given to drainage by growers in Vancouver Island, B.C., has greatly reduced losses in bulbous iris. One grower planted his bulbs in a tile-drained field, which, however, stayed wet and soft until late spring; every depression became a focal point of infection, which rapidly spread and killed the foliage, with the result that hardly any bulbs reached the minimum saleable size of 8 cm. (R.J. Hastings). At North Saanich sporulation was abundant on overwintered leaves of I. germanica on 15 Feb., 1948, and on 16 Apr. it was quite abundant on a few plants of Dutch iris (?I. Xiphium) in a garden (W. Jones). Leaf spot was found in most plantings in the B.C. Interior (G.E. Woolliams). Infection was general in the iris planting at the Station, Vineland, Ont. (G.C. Chamberlain). Infection was 100% and damage considerable at Kentville, N.S. (D. Creelman). Infection was a trace to very heavy and damage sometimes severe in Queens Co., P.E.I.; a number of enquiries received (R.R. Hurst).

Bulb Nematode (Ditylenchus dipsaci). The main commercial stocks of bulbous iris in B.C., about 70% of the total, carry nematode infection, varying according to size; average in 10 cm. size is 3.2%, in 9 cm. 0.5%, in 8 cm. trace, and in smaller bulbs very occasionally (R.J. Hastings).

Soft Rot (Erwinia carotovora) caused considerable loss to many varieties in a nursery at the Botanical Garden, Montreal, Que. (J.E. Jacques). All the plants were attacked in one garden in Queens Co., P.E.I., and damage was very severe (R.R. Hurst).

Mosaic (virus). In the final field inspection of seven and a half million Wedgewood in B.C., infection above 2% occurred in only 5% of the stocks. Virus-free stocks are being developed, but at present these only comprise about 15% of the total. Most stocks carry about 2% infection. A few still carry about 95% infection, but they are rapidly disappearing (R.J. Hastings).

LATHYRUS

Root Rot (Fusarium ?Solani var. Martii). Many specimens were received from various parts of Ont. (J.D. MacLachlan).

Bud Drop (excess nitrogen). In a bed of sweet peas at Ottawa, Ont., prepared by trenching with sheep manure, 75% of the buds fell off (D.B.O. Savile).

LIGUSTRUM - Privet

Twig Blight (Glomerella cingulata) killed 10% of bushes of L. vulgare at Thorold, Ont. (G.C. Chamberlain). First report to the Survey.

LILIUM - Lily

Blight (Botrytis elliptica) was general and severe on L. concolor, L. Humboldti and L. Parryi at Oyster River, B.C. (W. Jones). It was severe at the Central Experimental Farm, Ottawa, Ont., in several lines of hybrids between L. dauricum and L. Willmottiae. As infection was trace or nil in most other lilies in the nursery it appears that all these lines have inherited the full susceptibility of L. dauricum (D.B.O. Savile).

LIMONIUM - Sea Lavender

Rust (Uromyces Limonii) was heavy on a single leaf of L. ?vulgare sent from Guelph, Ont., by Dr. S.A. Simmons (D.B.O. Savile).

LONICERA - Honeysuckle

Leaf Blight (Glomerularia Lonicerae) was common and caused much disfiguration of the honeysuckles near Fredericton, N.B. (J.L. Howatt). Damage was moderate at Digby, N.S. (J.F. Hockey).

Powdery Mildew (Microsphaera Alni). Hedges were moderately infected at the Botanical Garden, Montreal, Que. (J.E. Jacques).

LUPINUS - Lupine

Foot Rot (Sclerotinia sclerotiorum) caused wilting and death of 15% of a bed of 2-year-old Russell hybrids (L. polyphyllus) at Kentville, N.S. (J.F. Hockey).

LYCHNIS

Leaf Spot (Phyllosticta Lychnidis) was collected on L. chalcedonica at Oyster River, B.C. (W. Jones, D.B.O. Savile).

LYSIMACHIA - Loosestripe

Leaf Spot (Septoria Lysimachiae Westd.) was heavy and locally destructive in shady places on L. nummularia spreading from cultivation at Britannia, near Ottawa, Ont. As in material collected at Abbotsford, Que., in 1943, the pycnidia were often imperfectly formed and the spores

somewhat variable. There is some doubt whether S. conspicua Ell. & Mart., S. Steironematis Ell. & Ev. and Cylindrosporium Steironematis Atk. are distinct from this species (D.B.O. Savile).

NARCISSUS

Bulb Nematode (Ditylenchus dipsaci). Of 153 fields inspected in B.C. 12½% showed over 2% infection, the maximum tolerance at first inspection for certification (R.J. Hastings).

Basal Rot (Fusarium sp.). Infection in dry bulbs inspected in B.C. ranged from 0-16%. Field notes showed that bulbs on low, wet areas generally contained most basal rot (R.J. Hastings). A shipment of daffodil bulbs from B.C. consigned to England was examined at Montreal on 8 Sept. About 160 crates were a total loss (J.E. Jacques).

White Mould (Ramularia vallisumbrosae) was not serious in B.C. (R.J. Hastings).

Smoulder (Sclerotinia narcissicola). Most plantings in B.C. showed some infection, but it seldom exceeded 1% (R.J. Hastings).

Fire (Sclerotinia polyblastis) was not serious in B.C. (R.J. Hastings). A light infection was seen on Emperor at Aldergrove (R.P. Messum).

Leaf Scorch (Stagonospora Curtisii) was not serious in B.C. (R.J. Hastings).

Mosaic and Grey Streak (virus), considered together, were present in nearly all fields inspected in B.C. The amount of infection varies with the size of the stock and the amount of selection carried out; e.g. selected mother bulbs may carry 3-4% grey streak, and field-run planting stock 10-20% (R.J. Hastings).

PAEONIA - Peony

Blight (Botrytis spp.). Bud blight (?B. cinerea) was seen at Vancouver and in the lower Fraser Valley, B.C. (R.E. Fitzpatrick, H.N.W. Toms). Blight was moderate in several gardens at Saskatoon, Sask. (H.W.M.). Diseased plants (B. Paeoniae) were received from Marieville, Que. (J.E. Jacques). One third of the foliage of a new planting was destroyed at Pleasant Lake, Yarmouth Co., N.S. (K.A. Harrison). Damage was severe in some plants in a garden at Charlottetown, P.E.I., and many enquiries about the disease were received (R.R. Hurst).

Leaf Blotch (Cladosporium Paeoniae). Traces were found at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Mosaic (virus) affected two clumps at the Botanical Garden, Montreal, Que. (J.E. Jacques).

Ring Spot (virus). A specimen was received from Indian Head, Sask. (D.B.O. Savile). Nine plants in a bed at the Station, Fredericton, N.B. were affected (D.J. MacLeod). Symptoms were seen for the third successive year in a clump at Charlottetown, P.E.I. (R.R. Hurst).

PARTHENOCISSUS

Leaf Spot (Cercospora Ampelopsidis) was heavy on leaves of P. quinquefolia received from Frelighsburg, Que. Spores were 19.5-81 x 3.5-5.0 microns and conidiophores 30-40 x 3.5-5.5 microns; such a range in a single specimen makes it doubtful whether C. arboreae and C. pustula can be maintained. Reported to the Survey from Man. and in the Herbarium from Ont. (D.B.O. Savile).

Downy Mildew (Plasmopara viticola) was locally heavy in shady situations on P. quinquefolia at Westboro, near Ottawa, Ont., in August (D.B.O. Savile).

PELARGONIUM - Geranium

Grey Mould (Botrytis cinerea). Large triangular areas of the leaf blades were killed in several gardens at Montreal, Que. (J.E. Jacques).

Stem Rot (Fusarium sp. associated). Severely damaged specimens were received from Montreal, Que., in August; it was stated to be general in an outdoor bed (D.B.O. Savile).

PETUNIA

Powdery Mildew (?Erysiphe Cichoracearum) was heavy on a single house plant at Winchester, Ont. Damage was heavy, but was partly due to red mite. This mildew, already reported from Man. and Ont., is possibly the same strain that attacks Begonia (q.v.) and many other plants (D.B.O. Savile).

PHILADELPHUS

Mosaic (?virus). Leaf variegations on a few shrubs at the Agricultural College, Truro, N.S., had the appearance of a typical mosaic (J.F. Hockey).

PHLOX

Powdery Mildew (Erysiphe Cichoracearum) was very common on susceptible varieties at Guelph, Ont. (J.D. MacLachlan). Mildew was moderately heavy on leaves received from Smiths Falls (D.B.O. Savile). Infection was moderate at the Botanical Garden, Montreal, Que., and heavy at St. Emile, Quebec Co. (J.E. Jacques).

Yellows (Callistephus virus 1). Two infected plants were found at the Botanical Garden, Montreal, Que. Diseased plants were also seen at Contrecoeur, Vercheres Co. (J.E. Jacques). Yellows was common on phlox in York and Sunbury Co., N.B. (D.J. MacLeod).

Blight (?virus) was prevalent at the Botanical Garden, Montreal, Que., and elsewhere in the district (J.E. Jacques).

PORTULACA

Wilt (Fusarium sp.) caused about 10% loss in fields of portulaca being grown for seed at Grand Forks, B.C. (G.E. Woolliams).

RIBES - Currant

Blossom Blight (Botrytis cinerea) destroyed the petals, calyx tubes, and ovaries of a shrub of R. odoratum at the Station, Kentville, N.S. (D. Creelman, R.G. Ross). First report to the Survey on R. odoratum, but recorded from B.C. on gooseberry.

ROSA - Rose

Grey Mould (Botrytis sp.) killed a number of buds and blossoms in a garden at Sidney, B.C. B. cinerea caused serious bud rot at Quebec, Que., according to information and specimens received (J.E. Jacques).

Black Spot (Diplocarpon Rosae) was seen commonly at and near St. Catharines, Ont., but was less serious than usual (G.C. Chamberlain). Infection was moderate on polyantha roses at the Botanical Garden, Montreal, Que., and specimens were received from Hudson Heights and St. Bruno (J.E. Jacques).

Kenneth F. Baker (U.S.D.A. Pl. Dis. Reptr. 32:260-274, 397, 448. 1948) reviews the history, distribution and nomenclature of this fungus. He concludes that the correct binomial for the imperfect stage is Marssonina Rosae (Lib.) Lind and for the perfect stage Diplocarpon Rosae Wolf. The first definite report of the fungus, by Fries in 1815, refers to a collection made in Sweden by Acharius and apparently called Sclerotium radiosum Achar. In 1822 Fries distributed the fungus in Scleromyceti Sueciae 254 as Erysiphe radiosum Fr. In 1827 Mlle. Libert gave the first definite description and illustrations of the disease, from specimens collected near Malmedy, Belgium, and called the fungus Asteroma Rosae. Fries later abandoned his name and called the fungus Actinonema Rosae (Lib.) Fr. The disease was known in France in 1822, was common in England by 1840, and was abundantly found in most countries of Europe. The first report for North America was made by Schweinitz in 1831 as Dothidea Rosae L.v.S.

In Canada, the earliest report cited by Dr. Baker was that of J.E. Howitt (Ont. Agr. Coll. Exp. Farm. Ann. Rept. 37:50. 1912), who found the disease common in Ontario in 1911; but search in the Mycological Herbarium has revealed an undated specimen, Canadian Fungi 106, labelled Phyllachora Rosae Sacc. = Actinonema Rosae, collected London, Ont., by John Dearness (D2176). In response to an inquiry Dr. Dearness wrote (22 Oct. 48): "Respecting the dating of Actinonema Rosae: "the oldest packet I have bears the date '1st of July 1893' in different inking from the other words. The locality - Gammage's grounds - may have been an earlier collecting ground. Your annotations [in Dr. Dearness' hand on the packet] make me think you have one of a set sent to Dr. Fletcher who had asked me to send him examples of economic species. The date cited may have been added when I complied with his request. Gammage was a commercial florist; I often visited his place and may have been there on that 1st of July to collect the rose leaves and other things if I found them. The paper of my 2176 bears printing on the inside and the date 'April 1890'. You may rest assured that the parasite in question was in the Gammage greenhouse before 1-7-93.".

Black spot is reported from every province of Canada, but the records are backed by specimens in the Herbarium from Ont., Que. and Sask. only (I.L. Conners).

Stem Canker (Leptosphaeria Coniothyrium). Specimens of affected hybrid teas were sent in from Thorold, Ont. (G.C. Chamberlain).

Rust (Phragmidium spp.) was common on roses throughout the B.C. Interior (G.E. Woolliams). The aecial state of P. ?subcorticinum was heavy on young fruits of R. spinosissima received in July from Shediac Cape, N.B. (D.B.O. Savile).

Powdery Mildew (Sphaerotheca spp.). S. Humuli was heavy on 2,000-3,000 seedling R. canina in a cold frame at Langley Prairie, B.C. and caused some defoliation (I.C. MacSwan, H.N.W. Toms). S. pannosa was heavy on Crimson Rambler in a garden at St. Catharines, Ont. (G.C. Chamberlain).

S. pannosa was heavy on buds and spines, but light on leaves, of rose specimens sent in from Brookville (D.B.O. Savile). A light outbreak of S. pannosa occurred at the Botanical Garden, Montreal, Que. (J.E. Jacques). Specimens of S. ?pannosa on R. rugosa were received from Chateauguay (D.B.O. Savile).

Mosaic (virus). Three bushes of Kirsten Poulsen were infected in a bed at St. Catharines, Ont. Only one plant was affected in 1945 (G.C. Chamberlain). A single plant of Purity climber at the C.E.F., Ottawa, was mottled and severely distorted, and bore no bloom; a single normal shoot of different habit from the edge of the clump, apparently originating from below the graft, indicated that the rootstock was either uninfected or was a symptomless carrier. One plant of R. gallica var. Tuscany also showed severe mottling and distortion; many blooms had failed to open normally (D.B.O. Savile).

SINNINGIA - Gloxinia

Bub Rot (Botrytis cinerea) prevented blossoming in specimens of S. speciosa received from Riviere du Loup, Que. (J.E. Jacques).

SOLIDAGO - Goldenrod

Powdery Mildew (Erysiphe Cichoracearum) was light but general at the Botanical Garden, Montreal, Que. (J.E. Jacques).

SYMPHORICARPOS - Snowberry

Bacterial Blight (?Pseudomonas syringae). A hedge of S. "roseus" (?orbiculatus) at Ste. Anne de la Pocatiere, Que., was completely ruined by this blight, which attacked leaves, flowers and fruit (A. Payette).

TAGETES - Marigold

Yellows (Callistephus virus 1). A few odd plants were affected at the Botanical Garden, Montreal, Que. (J.E. Jacques). Infection was 37% and 62% in two gardens at Fredericton, N.B. (D.J. MacLeod).

TULIPA - Tulip

Fire (Botrytis Tulipae). In coastal B.C. primary infections exceeded the certification tolerance of 1% in 17½% of the 304 fields inspected. Cool, wet weather in May promoted spread, and loss to the bloom crop was serious. Infection of Bartigon tulips by an organism closely resembling B. Tulipae apparently caused the loss of blue pigment at the base of the blooms. A high percentage of blooms with white, rather than the normal deep blue, bases were from partly decayed bulbs that bore numerous sclerotia of the fungus (R.J. Hastings). Fire was very heavy at the C.E.F., Ottawa, Ont., in late May, following a week of cool, wet, cloudy weather. The condition of the main planting, in which there was probably appreciable carry-over from 1947, was aggravated by nearby rows, bordering beds of perennials, having been left undug; one of these rows showed primary lesions on nearly half the plants (D.B.O. Savile). Fire was prevalent at the Botanical Garden, Montreal, Que., and in a planting at Westmount. Specimens were received from a grower at Levis who claimed serious losses (J.E. Jacques). Fire was severe in two-year-old plantings at Kentville, N.S. (J.F. Hockey). Damage was heavy throughout a commercial planting at Charlottetown, P.E.I. (R.R. Hurst).

Break (virus). The tolerance of 1% at first inspection for certification was exceeded in only 5.5% of the 304 fields examined in coastal B.C. (R.J. Hastings). Break occurred quite generally throughout the interior of B.C. in both home gardens and commercial plantings (G.E. Woolliams).

VERONICA - Speedwell

Leaf Spot (Gloeosporium Veronicarum Ces.) attacked a few plants of V. Tournforti at North Saanich, B.C. Not reported in the Survey, but in the Herbarium from Beauceville, Que. on V. officinalis. The various Gloeosporium spp. described on Veronica are doubtfully distinct, with the possible exception of G. arvense which is stated to have spores 8-9x3.5-4 microns. In the present specimen the spores are 9.5-15.5x2.3-3.8 microns, guttulate, often subclavate (W. Newton, D.B.O. Savile).

VIOLA

Blossom Blight (Botrytis cinerea) caused considerable damage to seed crops of pansy, V. tricolor var. hortensis, on Vancouver Island, B.C., during July (W. Jones).

Leaf Spot (Cercospora Violae) caused some shedding of lower leaves of pansy at the Arboretum, Ottawa, Ont., in July (D.B.O. Savile).

Anthracnose (Colletotrichum Violae-tricoloris) caused slight damage to pansies in a garden at Ottawa, Ont. (D.B.O. Savile).

Stem Rot (Myrothecium roridum) caused 20% loss in a seed planting of pansies at Elk Lake, B.C., and 6% loss in a seed planting of Swiss Giant pansies at Oyster River. Infected plants are eventually killed (W. Jones).

Leaf Spot (Ramularia lactea) was widely distributed in gardens and commercial plantings of pansy on Vancouver Island, B.C., and caused slight to moderate damage (W. Jones).

Powdery Mildew (Sphaerotheca Humuli) caused considerable damage to seed plants of pansy at Elk Lake, B.C. (W. Jones).

VITIS - Grape

Downy Mildew (Plasmopara viticola) was moderately heavy in August on V. vulpina in a garden at Westboro, near Ottawa, Ont. (D.B.O. Savile).

ZINNIA

Alternaria Blight (A. Zinniae) was general on foliage and blossoms of Z. elegans in ornamental plantings at Brentwood, B.C. (W. Jones).

Bud Blight (?Fusarium sp.) was stated to be abundant in a garden at Belleville, Ont., in late July. In specimens received the buds had dried up when about $\frac{1}{4}$ inch in diameter. Fusarium sp. was predominant (D.B.O. Savile).

Yellows (Callistephus virus 1). A grower at Montreal, Que., suffered 60-75% loss in an area of about $1\frac{1}{2}$ acres (J.E. Jacques). Four outbreaks were noted in P.E.I., but there was much less of this disease than in past years, presumably due to the use of DDT (R.R. Hurst).