VI. DISEASES OF ORNAMENTAL PLANTS

ACONITUM - Monkshood

Yellows (Callistephus virus 1) affected 75% of the plants in a garden in Fredericton, N.B. (D.J. MacLeod).

ALTHAEA - Hollyhock

Rust (Puccinia malvacearum) was very sev. on plants of A. rosea grown from seed in a commercial crop near Victoria, B.C.; it was of general occurrence on Vancouver Is. (W. Jones). The rust was also noted on Malva neglecta at Saanichton (W.R. Orchard). Specimens received from home gardens in the Vancouver area (H.N.W. Toms). The rust was general and quite sev. in the Okanagan valley (G.E. Woolliams). Reported to be sev. in 3 plantings in Edmonton, Alta. (T.R. Davidson, A.W. Henry). Rust reported to be already showing at Oshawa, Ont. on 7 April and specimens submitted 23 April were heavily rusted (I.L. Conners). Rust heavy on specimens submitted from Ottawa (H.S. Thompson). Diseased specimens received from 2 places in Que. (D. Leblond). Sl. infected sample received from Salisbury, N.B. (S.R. Colpitts). Infection was sl.-sev. throughout P.E.I. (J.E. Campbell).

ANTIRRHINUM - Snapdragon

Rust (Puccinia antirrhini) was sev. on Golden Monarch, Red Emperor and Royal Rose causing a wilting and death of almost all the leaves in the Univ. plots, Vancouver, B.C., whereas infection was light on Avalanche, Evensong, Dawn of Day, Fair Lady and Twilight, causing only some yellowing of the leaves (H.N.W. Toms). Rust sev. affected overwintered plants in a home garden at Osoyoos (G.E. Woolliams). The disease sev. affected Golden Queen in the Laboratory gardens, St. Catharines, Ont. (W.G. Kemp).

Wilt (Pythium sp.). A few plants were destroyed in a planting in Fort Garry, Man. Pythium, as well as Fusarium spp., was isolated from roots and crowns of the wilted plants (W.E. Sackston).

Yellows (Callistephus virus 1) affected sev. 10% of the plants in a garden at Fredericton, N.B. (D.J. MacLeod).

AQUILEGIA - Columbine

Powdery Mildew (Erysiphe polygoni) was quite general about Summerland, B.C. in August (G.E. Woolliams).

BEGONIA

Grey mould (Botrytis cinerea) sev. blighted 4 tuberous begonias in a garden in Charlottetown, P.E.I. (R.R. Hurst).

Powdery Mildew (?Erysiphe cichoracearum) was sev. on the leaves of about half the tuberous begonias in a garden at Lethbridhe, Alta. (M.W. Cormack). Diseased specimens of tuberous begonias being grown as house plants were received from Millbank, R.R. 1, Ont. (C.B. Kelly). Powdery mildew rapidly became sev. in a garden in Ottawa on tuberous begonia plants, which were already infected when purchased. Although flower production had nearly ceased when spraying with zineb began, the plants largely recovered by putting out new growth, which was kept free from infection (I.L. Conners). Affected specimens were received from Quebec, P.Q., where it was reported the disease was noticed first in 1952 (H.S. Thompson).

Bacterial Blight (Xanthomonas begoniae). Affected leaves from a house plant in Ottawa were submitted. The organism was isolated and its pathogenicity proved by inoculation of a young plant. Typical leaf symptoms developed (I.L. Conners, M.D. Sutton).

BERBERIS

Rust (Puccinia graminis). A mod. infection was observed on escaped B. vulgaris in a neglected garden at Ste. Anne de la Pocatiere, Que.; sl. infections were noted on other barberry plantings at St. Roch, L'Islet Co.; Ile d'Orleans; and Champlain (A. Payette). Infection was mod. on escaped bushes at the Station, Fredericton, N.B. (P.N. Grainger) and sl. on B. vulgaris in a nursery at Southport, P.E.I. (J.E. Campbell).

CALENDULA

Yellows (Callistephus virus 1) was very conspicuous on Calendula, Petunia and Schizanthus in the Univ. plots, Saskatoon, Sask., according to Dr. C.F. Patterson, Professor of Horticulture. Yellows was also sev. on Callistephus (as usual) and carrots. The year 1953 was a 'yellows year' (T.C. Vanterpool). Yellows was sev. in gardens in and about Fredericton, N.B.; percentage of infected plants was 17-60% (D.J. MacLeod).

CALLISTEPHUS - China Aster

Wilt (Fusarium oxysporum f. callistephi). Several plants of the variety Princess were brought in by a home gardener in Lincoln Co., Ont. The plants showed the typical symptoms of wilt and the fungus was isolated from the discoloured vascular tissue (W.G. Kemp).

Yellows (Callistephus virus 1) was very common about Edmonton, Alta. In one planting 90% of the plants were affected. The disease was also noted on Zinnia, Petunia, Helichrysum, Daisy (?Chrysanthemum maximum), Tagetes, and the weeds, dandelion and Descurainia sophia.(T.R. Davidson). Yellows was sev. on Callistephus and was observed on Calendula, Tagetes and Zinnia in gardens at Lethbridge (M.W. Cormack). About 10% of the plants were affected in a planting in St. Catharines, Ont. (G.C. Chamberlain). Yellows was sev. in gardens in Fredericton, N.B., affecting 19-62% of the plants. Asters maintained under cloth-covered cages in one garden remained free from yellows throughout the season (D.J. MacLeod). Yellows was sev. in one garden at Charlottetown, P.E.I. (R.R. Hurst).

CAMELLIA

Cork Spot (non-parasitic) was observed in a garden at Sidney, B.C. (W. Jones).

CENTAUREA

Rust (Puccinia cyani) affected a few plants in a garden at Saanichton, B.C. (W.R. Orchard).

CHEIRANTHUS - Wallflower

Downey Mildew (Peronospora cheiranthi) systemically infected a few plants at Sydney, B.C. (W. Jones).

Foot Rot (Phytophthora sp.) killed 50% of the plants in 2 flower beds in a low area on heavy soil at the Station, Saanichton, B.C. (W.J.).

CHRYSANTHEMUM

Crown Gall (Agrobacterium tumefaciens). All 5 plants of Paris daisy, C. frutescens, in a window box, which had held infected plants in 1952 (P.D.S. 32:112), were affected at Vancouver, B.C.; the plants were unthrifty (H.N.W.Toms).

Leaf Nematodes (Aphalenchoides ritzema-bosi). Affected specimens of C. morifolium received on 2 occasions from G.R. Thorpe, Prov. Horticulturist, from New Westminster, B.C. (J.E. Bosher).

Stem Rot (Fusarium sp.). Samples of affected C. morifolium var. Indianapolis received from London, Ont. A Fusarium sp. was isolated from the stem tissue. Grower reported that other varieties were also showing symptoms (W.G. Kemp).

Rust (Puccinia chrysanthemi) was sl. on a few benched plants of C. morifolium and somewhat heavier on plants in the propagating beds at Sarnia, Ont. (W.G. Kemp, I.L. Conners).

Stunt (virus) symptoms were observed on a few plants of Seagull and Memorial in a cloth house at Brampton, Ont. (W.G. Kemp). The disease affected 2% of the plants in a commercial greenhouse in York Co., N.B.(D.J. MacLeod).

Topple (cause unknown). A disorder resembling topple in lily and tulip was found affecting plants of Christmas Cheer in a greenhouse at Alberni, B.C. (W.R. Foster).

COTONEASTER

Dark Berry (Phytophthora cactorum) was observed in several gardens in Victoria, B.C.; damage tr.-mod. (W.R. Foster).

CYCLAMEN

Grey Mould (Botrytis cinerea). A mod. infection was seen on the leaves and blooms of plants at a florist's at Sarnia, Ont., on 30 Oct.; there was very little heat in the greenhouse (W.G. Kemp).

Soft Rot (Erwinia carotovora). Sev. affected 6/24 plants in a greenhouse at Charlottetown, P.E.I. (R.R. Hurst).

DAHLIA

Crown Gall (Agrobacterium tumefaciens) sev. affected one plant of Radiance in a garden at Charlottetown, P.E.I. (R.R. Hurst).

Mosaic (virus) was sev. on many varieties in gardens in Queens and Prince counties, P.E.I. (R.R. Hurst).

DELPHINIUM

Powdery Mildew (Erysiphe polygoni) was sev. on a few plants in the Univ. plots, Edmonton, Alta. (T.R. Davidson). Traces were seen on several varieties in Queens Co., P.E.I. (R.R. Hurst).

Bacterial Blight (Pseudomonas delphinii). Traces were present on mixed varieties in a garden at Charlottetown, P.E.I. (R.R. Hurst).

Winter Injury. On account of deep frost penetration and poor snow coverage, biennial and perennial plants especially delphiniums suffered considerable frost damage in N.B. (J.L. Howatt).

DIANTHUS

Leaf Spot (Heterosporium echinulatum) was common on outdoor D. caryophyllus at Comox, B.C. (W. Jones).

Rust (Uromyces caryophyllinus) caused sl. damage on Virginiana Rose and the Northland varieties in a commerical greenhouse at St.Catharines, Ont. It was also noticed on Olivette at Brampton (W.G. Kemp).

Mosaic (carnation mosaic virus). Specimens of carnation variety Midas was received from a commercial grower at Brampton, Ont. This virus was transferred to local lesion indicator plants by mechanical inoculation with expressed sap from the samples (W.G. Kemp).

DIEFFENBACHIA

Bacterial Leaf Spot (Xanthomonas dieffenbachiae (McCull. & Pirone) (Dowson). Diseased specimens were received from a grower in Toronto, Ont. through the District Inspector, Plant Protection Division. Yellow spots up to 1.0 cm in diameter occur on the leaves; if the spots are numerous the leaves

yellow, wilt and die. The disease was first reported by Pirone (Phytopath. 29(1):19. 1939) from New Jersey greenhouses. The present report appears to be the first of its occurrence in Canada. (J.A. Parmelee, D.B.O. Savile). A detailed description of the disease and pathogen are given by McCulloch and Pirone (Phytopath. 29(11):956-962. 1939).

FICUS

Grey Mould (Botrytis cinerea). In a shipment of 24 plants of F. elastica, from Belgium to Ste. Therese, Que. 15 were found infected upon inspection. Large water-soaked lesions were present on the leaves and stem. The fungus was fruiting abundantly on the lesions and sclerotia were present on the stem. The common fig, F. carica, suffers from a fruit rot caused by B. cinerea, but this report is apparently the first of grey mould on the rubber plant (J.A. Parmelee).

GLADIOLUS

Leaf Spot (Curvularia lunata). The pathogen was isolated from the leaves of plants growing in a field near Montreal, Que.; affected corms produced on the same field were received last year (P.D.S. 32:113). (H.S. Thompson). A survey tour of the principal gladiolus growers in the Montreal district revealed that another grower in the district is well acquainted with the disease. An account of our present knowledge of the disease in Canada has been published in the U.S.D.A. Plant Dis. Reptr. 38(7):515-517. 1954.(J.A. Parmelee)

Yellows (F. oxysporum f. gladioli race 2) was very common in Man. in 1953 (J.E. Machacek). About 3/4 of the plants in a commercial greenhouse at St. John's, Nfld. were affected (G.C. Morgan).

Penicillium Corm Rot (P. gladioli). Every corm in a 10 lb. sample grown in Queens Co., P.E.I., was sev. affected (R.R. Hurst). Mod. infection on corms grown at Torbay, Nfld., and stored over winter (G.C. Morgan).

Scab (Pseudomonas marginata) was common in many gardens in Kings Co., N.S., but the disease was not seen in one large commercial planting where the grower regularly treats his corms (J.F. Hockey). Scab was sev. on a sample of corms grown in Queens Co., P.E.I., brought in for diagnosis (R.R. Hurst).

Core Rot (Sclerotinia draytoni) was found sev. affecting 8% of the corms intended for forcing in the greenhouse at Sidney, B.C., in January. These corms were discarded and the remainder were treated with Ceresan and planted. On 12 March about 10% produced plants showing neck rot symptoms or had failed to grow (J.E. Bosher). Leaves and flowers apparently affected by the core rot organism were received 21 Sept. from Montreal, Que. (H.S. Thompson). This disease affected about 10% of the plants of several varieties in a large garden at Truro, Colchester Co., N.S.; it was also observed on a few plants in Kings Co. (J.F. Hockey). Core rot was sev. on corms brought in for examination from Queens Co. P.E.I., in April (R.R. Hurst).

Mosaic (Phaseolus virus 2) infected tr.-5% of the plants in 5 gardens examined in Fredericton, N.B. (D.J. MacLeod). Two affected plants were brought in from a garden in Queens Co., P.E.I. (R.R. Hurst).

Yellows (cause unknown) caused extensive damage in many plantings about Medicine Hat, Lethbridge, and Calgary, Alta., causing the death of 10% of the plants. The symptoms resembled those of Fusarium yellows (q.v.) but the pathogen was not isolated (M.W. Cormack).

HELLEBORUS

Leaf Spot (Coniothyrium hellebori) was general on christmas rose, H. niger, in 2 private gardens in the Vancouver area, B.C. (H.N.W. Toms, J.W. Groves).

HYACINTHUS

Soft Rot (Erwinia carotovora) caused the failure of several plants being forced at Lethbridge, Alta., from bulbs imported from Holland (M.W. Cormack).

HYDRANGEA

Powdery Mildew (?Erysiphe cichoracearum) caused mod. infection on plants in a commercial greenhouse at Hamilton, Ont.; the damage was sl. (W.G. Kemp).

ILEX - Holly

Decline (?Pratylenchus sp.). Plants of I. aquifolium at Victoria, B.C. showed decline in vigour and premature leaf drop. Pratylenchus in large numbers present on the roots, but cultural conditions were also poor (J.E. Bosher).

IRIS

Leaf Spot (Didymellina macrospora) affected 35% of the iris plantings inspected on Vancouver Island, B.C., in varying degrees; it was not observed in the 3 small plantings examined on the mainland (N. Mayers). It was common in home gardens at Comox (W. Jones). Sl. infections were observed in some gardens in Edmonton (T.R. Davidson) and in a planting at Barons, Alta. (M.W. Cormack). A mod. infection was noted in a private garden at Deep River, Ont.

Mosaic (virus) is now rarely observed in B.C. in Wedgewood iris, the only variety entered for inspection. Most growers have one of the two strains of Wedgewood that are immune to mosaic. The rest of the growers have rogued their plantings so thoroughly that the disease is of little ecomonic importance (N. Mayers).

LATHYRUS

Streak (Erwinia lathyri) caused mod. damage to L. odoratus in a garden at Lethbridge, Alta. (M.W. Cormack). The disease was sev. in several gardens about Neepawa, Man. (J.E. Machacek).

Root Rot (Fusarium sp.). A mod. infection was general in a planting at

Neepawa, Man. Roots were brown and badly decayed; the plants were wilted and bleached (J.E. Machacek). Several cases of wilt were reported in Charlottetown, P.E.I. Young plants, 6-10 inches high, turned yellow and died, but no organism could be isolated from the rust system. Later in the season, Fusarium sp. was isolated from the roots of larger wilted plants (J.E. Campbell).

Root Rot (Thielaviopsis basicola). The pathogen was isolated from roots of a greenhouse crop, specimens of which were received from Sydney, N.S. (J.F. Hockey).

LILIUM

Blight (Botrytis elliptica). A mod. infection causing a blackening of the buds and upper part of the stem was observed in a garden at Winnipeg, Man. (J.E. Machacek).

Stem Rot (Phytophthora sp.) affected 3-4 plants in a home garden in Guelph, Ont. (C.B. Kelly).

MAHONIA

Rust (Cumminsiella mirabilissima (Peck) Nannf. in Lundell & Nannf.). was general on M. aquifolium in a garden at Parkersville, B.C. (W. Jones). Affected specimens received from Kelowna (D.L. McIntoch). Sev. shipments of M. aquifolium from Europe to firms in Ont. were refused entry in Canada upon inspection because the plants were more or less heavily rusted (H.S. Thompson). The above name for the pathogen replaces C. sanguinia previously used in these reports.

MATHIOLA - Stock

Leaf Spot (Alternaria rhaphani Groves & Skolko) was heavy in stocks in flower beds at St. Charles de Caplan, Que. The pathogen is reported on M. incana from Denmark, England and California, but not previously in Canada (D. Leblond, D.B.O. Savile).

Grey Mould (Botrytis cinerea) caused considerable damage as a blight and die-back on overwintered plants of M. incana being grown for seed at Keating, B.C. (W. Jones).

NARCISSUS

Nematode (Ditylenchus dipsaci). One planting in B.C. was rejected on account of this nematode; it is not generally encountered in fields entered for certification (N. Mayers). This nematode caused sev. damage in a planting in Victoria, B.C.; Magnificent was wiped out, the planting of King Alfred showed some large gaps and Princeps and Golden Spur, although generally infected, were less sev. injured (J.E. Bosher).

Decline (Pratylenchus penetrans). A field of about 4 acres in tulips and 10 acres in narcissus at Cloverdale, B.C., were examined 23 May. Decline

in production due to root injury and early maturity was stated by grower to be very severe. Both crops, as well as the cover crops rye and red clover were affected by this nematode (J.E. Bosher). Losses on this farm have been very heavy for the last 5 years. Small scale trials with the soil sterilant, M.C.2 gave an estimated increase of about $900 per acre in yield and grade (N. Mayers).

Basal Rot (Fusarium bulbigenum) was not observed in B.C.; again, cool temperatures during the growing season may have held the disease in check as several stocks with a history of basal rot appeared healthy. (N. Mayers).

Neck Rot (Sclerotinia narcissicola) and Scorch (Stagonospora narcissi) were present in all plantings on the mainland of B.C. and to a lesser extent on Vancouver Island, but no sev. losses occurred. Several growers sprayed with a copper fungicide (N. Mayers).

White Streak and associated virus diseases have been and still are responsible for heavy losses in yield and grade of daffodils in B.C. Affected plants are difficult to detect as they generally do not show any foliage symptoms until late in the season. These diseases appear to be more prevalent on Vancouver Island than on the mainland (N. Mayers).

Mosaic (virus) was observed in all plantings inspected in B.C. but it occurred mostly in trace amounts. Most of the narcissi entered for certification are the King Alfred variety, in which mosaic symptoms are very distinct when the plants are 4-6 inches high. The highest infection ever recorded in this variety was 5%, in contrast to 100% in Treverse and nil in Cheerfulness (N. Mayers).

PAEONIA - Peony

Blight (Botrytis paeoniae). Infection was tr.-mod. in gardens at Edmonton and general but sl. at the Station, Lacombe, Alta. (W.P.C.). About half the buds were blighted in a planting at Vulcan (M.W. Cormack). Infection was sl. in one garden and mod. on the buds in another at Winnipeg, Man. (J.E. Machacek). A sev. outbreak occurred in the gardens at Kentville, N.S., following the bloom period; the weather was wet (J.F. Hockey).

Ring Spot (virus) sev. affected 3 plants in a planting of 300 at the University, Edmonton, Alta. (T.R. Davidson). Two per cent of the plants in the Station border at Fredericton, N.B., showed striking symptoms (D.J. MacLeod).

Stunt (cause undetermined). Ten per cent of the plants in a test plot at the Station, Fredericton, N.B., showed a sev. rolling of the leaves and stunting (D.J. MacLeod).

PARTHENOCISSUS

Powdery Mildew (Uncinula necator) was recorded on Virginia creeper at one location in Edmonton, Alta. (A.W. Henry).

PELARGONIUM - Geranium

Grey Mould (Botrytis cinerea) caused a basal rot destroying, depending on the variety, 5-25% of the cuttings made in the fall for propogation at Summerland, B.C. (G.E. Woolliams). A mod. infection was observed at Lethbridge, Alta., in 2 lots of cuttings imported from California (M.W. Cormack). The disease caused a blight of 17% of the plants in a greenhouse in Queens Co., P.E.I. (R.R. Hurst).

Mosaic (virus). A marked mosaic was showing in 2% of the plants in a greenhouse at the Station, Fredericton, N.B. (D.J. MacLeod).

PERESKIA

Mosaic (virus). A plant of P. aculeata showing a marked veinal mottle was sent to laboratory at Fredericton, N.B., for examination. The virus was transmitted by grafting to a Pereskia source believed to be free from virus (D.J. MacLeod).

PETUNIA

Yellows (Callistephus virus 1) was common at Saskatoon, Sask., and affected plants were received from Maple Creek (T.C. Vanterpool).

PHILADELPHUS - Mock Orange

Powdery Mildew (Phyllactinia corylea) was heavy on the leaves of a shrub in the laboratory grounds, Summerland, B.C. (D.L. McIntosh). Weiss and O'Brien (Index on Pl. Dis. in U.S. p. 1073) report its occurrence in Mont. and Wash. but the above report appears to be the first for Canada (I.L.C.).

PHLOX

Powdery Mildew (Erysiphe cichoracearum) caused some defoliation of the lower leaves of P. paniculata in a border at Vancouver, B.C. (H.N.W. Toms). A mod. infection was observed in the gardens at Rideau Hall, Ottawa, Ont. (H.S. Thompson). Powdery mildew was common and sev. everywhere around Quebec, P.Q. (D. Leblond).

Leaf spot (Septoria phlogis). A mod.-sev. infection was observed at the Provincial School, Deschambault, Que. (D. Leblond, D.B.O. Savile).

Blight (virus) affected a few plants in the border at the Station, Fredericton, N.B. (D.J. MacLeod).

RHODODENDRON

Leaf Blister (Exobasidium vaccinii) was observed on azalea in a garden in Victoria, B.C. (W.R. Foster). A mod. infection occurred on the

leaves of a bush in a garden at Chilliwack (I.C. MacSwan).

ROSA - Rose

Leaf Spot (Coryneum microstictum Berk. & Br. var. foliae Dearn. & Overh.) caused large spots on leaflets of wild Rosa submitted from La Trappe, Que., Sept. 1952. Spores 4-celled, brown, clavate to ellipsoid or irregular, 11-18 x 4.5-5.7 microns. Described in Dearness, Mycologia 20:243. 1928, from N.Y. As the spores in this specimen cover the range of both the species and the variety, the distinction between the two appears doubtful. A canker caused by C. microstictum is reported from B.C. (P.D.S. 17:83) but the leaf spot has not been reported previously in Canada (D.B.O.S.).

Black Spot (Diplocarpon rosae) was common in North Saanich, B.C. on 25 May (W. Jones). It was sev. on the lower leaves of hybrid teas in a garden at Magrath, Alta. (M.W. Cormack). Black spot was prevalent causing much premature defoliation in many gardens about St. Catharines, Ont.; it was also heavy in the public gardens at Niagara Falls (G.C. Chamberlain). Black spot was sev. on rose hedges at Gifford, near Quebec, P.Q., on 13 Aug. (D. Leblond). Black spot was very prevalent on hybrid teas, causing defoliation in a nursery at Centreville, N.S. None observed were immune; rugosa varieties showed only a trace (J.F. Hockey). Of the several varieties observed at Southport, P.E.I., Capt. Hayward and Mrs. John Long were the only ones affected on 23 July (J.E. Campbell).

Leaf Spot (Mycosphaerella rosicola). Mod. infection on wild bushes along roadside at East Point, Kings Co., P.E.I. (J.E.C.).

Rust (Phragmidium spp.) was found on several varieties in the rose beds at the Station, Summerland, B.C. (G.E. Woolliams). Rust was found on wild and cultivated roses at Edmonton, Alta (T.R. Davidson). Phr. mucronatum was found on a shipment from Holland inspected at Edmonton (I.L.C.). Infection was sev. on young stems and leaves in a planting at Spring Coulee (F.R. Harper). An affected specimen of hybrid tea was received from a nursery at River Canard R.R.1, Ont. (H.S. Thompson). A heavy infection was noted on several bushes at a private home in St. Charles de Caplan, Que. (D. Leblond). A mod. infection of Phr. mucronatum was present on cultivated roses at the Station, Charlottetown, P.E.I. (J.E. Campbell).

Anthracnose (Sphaceloma rosarum) was sev. on the foliage, causing premature defoliation in a garden at Comox, B.C. (W. Jones).

Powdery Mildew (Sphaerotheca pannosa) was sev. on the leaves of a planting at Vulcan, Alta. (M.W. Cormack). The disease was sev., causing stunting and distortion of the foliage of Crimson Rambler plants at St. Catharines, Ont. (G.C. Chamberlain). Powdery mildew was observed on a few roses at St. Chrysostome and Rougemont, Que. (L. Cinq-Mars) and on polyantha roses causing some damage in three gardens at Ste. Anne de la Pocatiere (L.J. Coulombe). A mod. infection at La Trappe (Fr. M. Claude) and on several climbers, which received no treatment, at Charlottetown, P.E.I. (J.E. Campbell).

Mosaic (virus) was found on a few plants of Peter's Briar and Orange Sweetheart at Brampton, Ont. Chlorotic areas appeared on the leaves, a few of which were distorted (W.G. Kemp).

SAINTPAULIA - African Violet

Root Knot (Meloidogyne sp.) was found on a specimen from the U.S.A. and intercepted at Edmonton by E.C. Reid (J.E. Bosher).

SCHLUMBERGERA

?Crown Gall (Agrobacterium tumefaciens). Specimen of Christmas cactus, S. russelliana, showing galls on leaves received from Script, Sask.(T.C. Vanterpool).

SCINDAPSUS

Root Knot (Meloidogyne sp.). A destructive root rot of the variegated ivy, S. aureus, was observed in a greenhouse at London, Ont. About 60% of some 2000 potted plants were affected. A nematode identified by Dr. A.D. Baker as Meloidogyne sp. was found in the roots. A more complete account has appeared in U.S.D.A. Plant Dis. Reptr. 37(11):545-546. 1953 (W.G. Kemp).

SINNINGIA - Gloxinia

Boron Deficiency. About 15 of a lot of 50 gloxinias were affected in a greenhouse in Queens Co., P.E.I. The symptoms agreed well with the description given in "Diseases of Ornamental Plants" Col. A. & M. College 1946, pp. 75-76 fig. 52 (R.R. Hurst).

SYRINGA - Lilac

Powdery Mildew (Microsphaera alni) was common at St. Catharines, Ont., in September (G.C. Chamberlain).

Bacterial Blight (Pseudomonas syringae). Mod. infection on several bushes at Vulcan, Alta. (M.W. Cormack).

TULIPA - Tulip

Fire (Botrytis tulipae) the most serious tulip disease in B.C., was observed in all plantings inspected, but losses were less than expected. On Vancouver Island, where most of the tulips are grown, only 4% of the plantings were sev. affected. On the mainland the percentage was somewhat higher (N. Mayers). Fire was sev. on plants sent in from Maple Creek, Sask. (T.C. Vanterpool). Fire was quite prevalent causing spots on leaves and flowers in the laboratory gardens, St. Catharines, Ont. (W.G. Kemp). Sev. affected specimens were received from Chateau d'Eau, near Quebec, P.Q.; the disease was reported to have been sev. for the last 3 years (D. Leblond). The disease was quite prevalent and destructive in Kings Co., N.S.; weather was wet during blooming (J.F. Hockey).

Break (virus) was present in most plantings inspected in B.C., but systematic roguing is practised and with rare exceptions it is of little importance (N. Mayers).

Decline (Pratylenchus penetrans). See under Narcissus.

VIOLA

Rust (Puccinia violae). Heavy infection on overwintered crop of V. tricolor var. hortensis grown for seed in the Saanich district, B.C. (W.R. Orchard).

Powdery Mildew (Spaerotheca humuli) was found on a few pansy plants in a garden at Summerland, B.C. (G.E. Woolliams). The oidial stage was heavy here and there in the Saanich district (W.R. Orchard).

ZINNIA

Blight (Alternaria zinniae) caused heavy leaf, stem and flower infection in zinnia in the laboratory gardens, St. Catharines, Ont. About half the Polar Bear plants were sev. infected (W.G. Kemp). Diseased plants apparently affected by blight were brought in from 2 gardens in Ottawa. In one almost all the plants were killed (H.S. Thompson).

Yellows (Callistephus virus 1,western strain) was found affecting 3 plants in a garden at Maugerville, York Co., N.B. (D.J. MacLeod).