VI. DISEASES OF ORNAMENTAL PLANTS

AIMOND (Persica)

Blight (Coryneum Beijerinckii Oud.) slightly infected one bush at Saanichton, B.C.

ASPARAGUS FERN (Asparagus)

A root rot was found affecting this plant in a greenhouse in Peel county, Ont. The fungi isolated from the roots have not been determined. (G.C. Chamberlain)

ASTER

Powdery mildew (Erysiphe Cichoracearum DC.) slightly infected the lower leaves of a few plants of A. novae-angliae at Summerland, B.C.

Leaf spot (Septoria atropurpurea Pk.) slightly infected A. tartaricus and Perry's Blue variety of A. novi-belgi at Morden, Man.

AZALEA (Rhododendron)

Red leaf (Exobasidium Vaccinii (Fckl.) Woron.) infected all the leaves on A. Hinodegiri in a nursery near Victoria, B.C. It was not found on A. amoena and A. mollis.

BARBERRY (Berberis)

Pycnia of stem rust (Puccinia graminis Pers.) were present on the common barberry (B. vulgaris) on May 21 at Ottawa, Ont. Young barberry plants in a nursery row in the Arboretum were found rusted as follows: slight on B. Guimpelii, B. macrophylla, B. Vernae, and B. provincialis; moderate on B. emarginata; heavy on B. macrocarpa and B. lucida. A hedge of purple barberry on the Experimental Farm was moderately infected; a single pustule was found on a Mahonia fruit.

Rust slightly to moderately infected both common and purple barberry at Macdonald College, Que. Pycnia were mature on June 2, and aecia on June 10, while some of the latter were still discharging spores on July 9. A very heavy infection was also observed at Cedar Park, Montreal.

About 50 feet of a 400 foot hedge appeared to be suffering from a nutritional disorder at L'Assomption, Que. The leaves were turning yellow to yellowish red and dropping off.

BEE BALM (Monarda sp.)

Rust (Puccinia Menthae Pers.) was reported from Abord à Plouffe, Que.

BOUNCING BET (Saponaria officinalis)

Leaf spot (probably Cylindrosporium officinale Ell. & Ev.) of a shot hole type affected the leaves at Morden, Man., but the fungus was immature.

BUCKTHORN (Rhamnus)

No crown rust (Puccinia coronata Cda.) was present on a hedge at Boissevain, Man., on June 7.

A slight amount of rust was present on buckthorn at Macdonald College, Que.; pycnia were mature on June 2 and aecia on June 10.

CALENDULA

Yellows (virus) was severe on calendula in gardens in York county, N.B. Ninety per cent of the plants were affected at the Experimental Station, Fredericton. (D.J. MacLeod)

Yellows was severe in a garden in Queens county, P.E.I.

CARAGANA

Leaf spot (Septoria Caraganae (Jacz.) Died.) caused slight to severe damage in two hedges at Edmonton, Alta.

The disease heavily infected nearly all caragana hedges at Indian Head, Sask., and caused some defoliation. Light and moderate infections were reported from Swift Current and Saskatoon, respectively.

Crown rot (Fusarium Solani App. & Woll.) was severe on a caragana hedge set out 5 years ago in Saskatoon, Sask. The owner states that it was first noticed last year and has rapidly become worse. Isolated cases of what was probably the same trouble was commonly observed (T.C. Vanterpool). Cultures from isolations were identified as Fusarium Solani by Dr. W.L. Gordon, who reported he has obtained it from affected caragana at Winnipeg, Man., but its pathogenicity had not been tested.

CARNATION (Dianthus)

Anther smut (Ustilago violacea (Pers.) Fuck.) was found in the anthers of all of the 6 plants (3696) in flower on August 1 in the Botany greenhouses, Ottawa, Ont., out of 8 cuttings of diseased plants which were received last December from Toronto. Although no special precaution was taken to prevent these cuttings from becoming contaminated by spores, the results strongly suggest that smut infection is systemic and that once a plant becomes infected, cuttings from it will also carry the contagion. (I.L. Conners)

Rust (Uromyces caryophyllinus (Schrank) Wint.) slightly infected red and white carnations in the Macdonald College greenhouse, Que. It was also found in the Laboratory greenhouse, Ste. Anne de la Pocatière.

Rust was severe on Improved Ward in a greenhouse in Fredericton, N.B.

Leaf spot (Heterosporium echinulatum Berk.) was fairly general on border carnations at Saanichton, B.C.

Grey mould (Botrytis cinerea Pers.) caused some bud rot in a greenhouse at Greenwich, N.S.

CENTAUREA

Powdery mildew (Erysiphe Cicoracearum DC.) was prevalent in several gardens in Lincoln county, Ont.

CENTURY PLANT (Agave)

Nearly all of the 50 century plants in the greenhouse at the Oliver Institute, near Edmonton, Alta., were severely affected and unsightly on account of a bacterial leaf spot. The lesions swarmed with motile bacteria. According to Mr. S.F. Ashby the only bacterial disease reported on Agave is a yellow bacterial blotch found on Agave sisalana at Nairobi in Kenva Colony (cfr. Dowson, W.J., Problems of economic biology in East Africa. Ann. Appl. Biol. 8:83. 1921). (G.B. Sanford)

CHINA ASTER (Callistephus)

Rust (Coleosporium Solidaginis (Schw.) Thum.) was found at Ste. Dorothée, St. Martin and Abbotsford, Que.; infection varied greatly from plant to plant, some being severely rusted.

A single infected plant was observed in a nursery at Sussex, N.B.

Yellows (virus) was present on only a few plants at Summerland, B.C.

Four plants out of 200 were affected with yellows at L'Assomption, Que.

Yellows was severe in gardens in York, Sunbury, and Carleton counties, N.B.

Yellows was severe in Queens county, P.E.I.

Plants affected with wilt (Fusarium conglutinans Woll. var. Callistephi Beach) were received from Peachland and Cranbrook, B.C. The correspondent at the former place reported that most of his plants were affected and dying and at the latter that the disease was troublesome in the district.

Wilt was rather common in zone 10, Alta.; 15% of the plants were affected in one garden.

Wilt infection was moderate at Winnipeg and slight on the Princess variety at Morden, Man.

Wilt had infected 20% of the plants of California Giant in a commercial planting in Wentworth county, Ont., on July 12.

This disease was observed in several gardens at Macdonald College and Ste. Anne de Bellevue, Que. It caused the death of practically all the plants set out in the borders at the Experimental Station, Ste. Anne de la Pocatière; all varieties seemed to be susceptible. Diseased specimens were received from St. Hyacinth.

Some of the plants, that wilted at Ste. Anne de la Pocatière, Que., were killed by a Sclerotinia (S. ?Sclerotiorum (Lib.) de Bary) which developed profusely on the lower part of the stems.

CHRYSANTHEMUM

Powdery mildew (Oidium Chrysanthemi Rabh.) caused 1% damage to

chrysanthemums in greenhouses on Vancouver island, B.C.

Nematode (Aphelenchoides fragariae Ritzema Bos) caused up to 50% infection and 20% damage in a few plots in Saanich county, B.C.; shipments from affected areas were restricted.

CLARKIA

Leaf spot (Alternaria sp.) caused slight damage in one garden in Queens county, P.E.I.

CLEMATIS (C. ligusticifolia)

Leaf spot (Septoria Clematidis Rob.) was severe at Morden, Man.

COLCHICUM (C. autumnale)

Smut (Urocystis Colchici (Schlechtd.) Rabh.) was prevalent in one clump of colchicum (3585) on the Experimental Farm, Ottawa, Ont.; other clumps in the same border were not infected. (M. Timonin) This is the first record of this smut in Canada.

COLUMBINE (Aquilegia)

Powdery mildew (Erysiphe Polygoni DC.) affected plants growing in the Laboratory garden, Summerland, B.C.

Leaf spot (cause uncertain) moderately infected A. flabellatum at Morden, Man.

COREOPSIS

Yellows (virus) was found on 2 plants in a garden at the Experimental Station, Fredericton, N.B.

COSMOS

Stunt (virus?) was found in a garden at Saskatoon, Sask. The plants failed to flower or branch; the upper internodes were short and the plants resembled asters affected with yellows.

DAHLIA

Stunt (virus) was reported on Jane Cowl, Ambassador, Jersey Beacon, Maud Adams, Pride of California, Jersey Beauty, Cigarette, and Mrs. J.A. Clark at Charlottetown, P.E.I.

Mosaic (virus) was found on dahlia in a greenhouse at Saskatoon, Sask.; a trace was present outdoors later in the summer.

Mosaic was found in several private gardens in Toronto, Ont.

EVERLASING (Helichrysum)

Yellows (virus) was severe on everlasing at the Experimental Station, Fredericton, N.B.

FIRE THORN (Pyracantha)

Scab (Fusicladium Pyracanthae Otth) causes considerable defoliation on Vancouver island and the Mainland, B.C.

FREESIA

Stem rot (Sclerotinia Sclerotiorum (Lib.) de Bary) slightly infected freesia at Winnipeg, Man.

GAILLARDIA

Smut (Entyloma polysporum (Pk.) Farl.) heavily infected gaillardia at Winnipeg, Man.

Yellows (virus) was severe at the Fredericton Experimental Station, N.B.

GERANIUM (Pelargonium)

Basal stem rot (probably Pythium ultimum Trow.) was found on geranium cuttings in a greenhouse at Saskatoon, Sask. (T.C. Vanterpool)

Crown gall (Pseudomonas tumefaciens (Sm. & Towns.) Dugg.) was affecting a plant sent from a greenhouse at Oakville, Ont.

Blight (Botrytis cinerea Pers.) caused severe damage to greenhouse material at Charlottetown, P.E.I.

GLADIOLUS

Hard rot (Septoria Gladioli Pass.) was reported from Edmonton, Alta.

Scab (Bacterium (Pseudomonas) marginatum McCull.) infected one per cent of the corms at Saanichton, B.C.

About 3% of the plants were affected by scab on August 20, at Macdonald College, Que. Badly diseased corms were also received from Three Rivers, October 24 (2244).

Root rot (cause undetermined) was found again in Queens county, P.E.I.; the damage was moderate.

A petaloid modification of the margin of the leaf in the apical region was independently reported by Drs. G.H. Berkeley and P.M. Simmonds on Apricot Glow variety, together with specimens of leaves showing this teratological phenomenon. The specimens were from Smithville, Ont., and Regina, Sask., and have been deposited in the teratology folders of the Phanerogamic Herbarium. In the Ontario plantation 10% of the plants were affected. The modified tissue has the texture and the apricot colour of the petals of the variety. (F.L. Drayton)

GOLDENGLOW (Rudbeckia laciniata)

Powdery mildew (Erysiphe Cichoracearum DC.) slightly infected goldenglow at Summerland, B.C., and Abbotsford, Que.

HAWTHORN (Crataegus)

Rust (Gymnosporangium clavariaeforme (Jacq.) DC.) was collected at Charlottetown, P.E.I., July 12 (2288).

Powdery mildew (Podosphaera Oxyacanthae (DC.) de Bary) was heavy on hawthorn in Queens county, P.E.I.

HEPATICA (H. triloba)

Leaf spot (Septoria Hepaticae Desm.) was severe on a few plants in the perennial border at Lennoxville, Que.

HOLLY (Ilex)

Tar spot (Rhytisma sp.) affected a few leaves of holly on Vancouver island.

HOLLYHOCK (Althaea)

Rust (Puccinia Malvacearum Bert) was fairly abundant in Saanich county, B.C., where it was observed as early as January. It was prevalent and caused some stunting in many gardens throughout the Okanagan valley.

Rust was first observed on June 11, in a garden at Ottawa, Ont.; at that time most of the plants were free from infection, the rust being confined to a few leaves in one or two centres. It was also collected on July 5 (3962) and July 15 (2061) at Ottawa. The disease was widespread in central Ontario.

The rust was common in southwestern Quebec; it was reported from Abbotsford, Macdonald College, L'Assomption, Chateauguay, and about Montreal. Climatic conditions seemed to be very favourable for its development. It also heavily infected hollyhocks at Ste. Anne de la Pocatière.

Rust was general and severe in York and Carleton counties, N.B.

Rust slightly to severely infected hollyhocks and caused some defoliation in all 3 counties of Prince Edward Island.

Leaf spot (Ascochyta althaeina Sacc. & Bizz.) caused slight damage in a garden in Queens county, P.E.I.

Wilt (Sclerotinia Sclerotiorum (Lib.) de Bary) caused extensive decay in a single stalk of hollyhock at Winnipeg, Man. This is the first record of its occurrence on hollyhock in Manitoba.

HONEYSUCKLE (Lonicera)

Blight (Glomerularia Lonicerae Pk.) was collected on L. orientalis (3690), L. discolor (3091), and L. Morrowi bella candida in the Arboretum, Ottawa, Ont. The first two species were badly infected. The basidiomycetous stage reported by Sinden (unpublished

data) was found fruiting on the young lesions. (I.L. Conners, M. Timonin and F.S. Thatcher)

Blight slightly to severely infected honeysuckle depending on the species and variety at Lennoxville, Que.

HOUSE LEEK (Sempervivum)

A single rusted (Endophyllum Sempervivi (Alb. & Schw.) de Bary) plant was collected in a rockery at Vancouver, B.C., in March by Dr. Wm. Newton. Materials collected in 1931 either from newly imported plants or from a rock garden nursery at Vancouver was received from Mr. J.H. Eastham, on January 4, 1935. Mr. Eastham stated that he had seen the disease more than once at Vancouver. The rust was identified as E. Sempervivi; this is the first report of its occurrence in Canada. (I.L. Conners)

IRIS

Leaf spot (Didymellina macrospora Kleb. (Heterosporium gracile Sacc.) was general, but caused only a trace of damage on Vancouver island and in the Fraser valley, B.C.; infection was heavy, stunting growth in a few gardens where the soil was wet or over irrigated in the Okanagan valley, B.C.; slight to moderate, mostly on the lower leaves at Edmonton and Ponoka, Alta. (2319); severe in some plots of iris at Morden, Man. - I. pumila, a dwarf iris, was moderately infected while I. pseudoacorus gigantea was the most resistant, only one plant being infected; observed at Niagara Falls, St. Catharines, and Westboro, Ont.; usually slight to moderate at Macdonald College, Ste. Dorothée, Abord à Plouffe, L'Assomption, Abbotsford, and Sherbrooke in western Quebec; general and severe causing complete drying up of the leaves before September at St. Anne de la Pocatière and Cap Rouge, Que., wherever the plants were not protected by Bordeaux sprays; present on many varieties on May 17, at the Experimental Station, Kentville, N.S.; heavily infected and very destructive to iris in 1934 in Queens, Kings, and Prince counties, P.E.I.

Rhizome rot (Bacillus carotovorus L.R. Jones) caused severe damage in August in Queens county, P.E.I.

Nematode (Tylenchus dipsaci Kühn) affected 5% of the plants of Hart Nibbrig in the Laboratory garden, Saanichton, B.C. A few diseased plants were found following affected daffodils in the Gordon Head district.

LARKSPUR (Delphinium)

Bacterial blight (Pseudomonas Delphinii (E.F. Sm.) Stapp) slightly infected larkspur at Morden, Man. It was reported from L'Assomption, Que., and caused severe damage to 16% of the plants at Charlottetown, P.E.I.

Powdery mildew (Erysiphe Polygoni DC.) caused slight damage on Vancouver island and in the Fraser valley, B.C.; was general

and severe on many plants in the Summerland district; reported from Saskatoon, Sask.; moderate infection at Pine Falls, Man.; severe damage in one planting in York county, N.B.

Stunt (virus) affected a few plants at Windsor, Ont. (F.J. Hudson and G.C. Chamberlain)

Phoma Jacquiniana Cke. & Mass. (2122) was found on dying larkspur stalks on October 14 at Ottawa, Ont. (M. Timonin)

LILAC (Syringa)

Powdery mildew (Microsphaera Alni (Wallr.) Salm.) was reported from Macdonald College, Que., and Queens county, P.E.I.

Lilac apparently affected by mosaic (virus) was observed by Dr. H.T. Gussow at Kentville, N.S. This is the first report of a trouble of this nature to the Survey.

LILY (Lilium)

Blight (Botrytis elliptica (Berk.) Cke.) affected 15-20% of the plants of L. concolor in a garden at Lacombe and 90% in one at Edmonton, Alta.

LUPINE (Lupinus)

Powdery mildew (Erysiphe Polygoni DC.) was general and caused slight damage on Vancouver island and in the Fraser valley, B.C.

MALTESE CROSS (Lychrus chalcedonica)

A leaf spot moderately infected this host at Lennoxville, Que. The pathogen and the effect on the leaf agrees well with the description of Phyllosticta Lychnidis A. Bondarzew (3717) as given in Saccardo, Sylloge Fungorum 25:28, except that a few spores are uniseptate. (F.S. Thatcher and H.N. Racicot)

MARIGOLD (Tagetes)

Yellows (virus) was severe on marigold at the Experimental Station, Fredericton, N.B.

MATRIMONY VINE (Lycium)

Powdery mildew was heavy on L. chinense at Summerland, B.C. The perfect stage of the fungus was not found. Sphaerotheca pannosa (Wallr.) Lév. has been reported on L. halimifolium in North America (cfr. Seymour, Host Index 596. 1929).

MEXICAN ORANGE (Choisya ternata)

Die-back (Nectria cinnabarina (Tode) Fr.) caused 30% damage to a 14 year old bush at Victoria, B.C.

MORNING GLORY (Ipomaea)

Leaf spot (Cercospora sp.) heavily infected the leaves of morning glory at Fredericton, N.B.

NARCISSUS

Only a trace of leaf scorch (Stagonospora Curtisii (Berk.)Sacc.) was found on Vancouver island, B.C.

Smoulder (Botrytis narcissicola Kleb.) caused slight to severe damage on Vancouver island. It was most severe where cultivation and weed eradication were neglected; also early varieties, such as Golden Spur and Obvallarius were more severely affected than later ones.

Eelworms (Anguillulina dipsaci Kühn) caused a trace to severe damage on Vancouver island, B.C. It was serious on one farm, but where the stock has been treated for the past 3 years infection has been reduced to a minimum.

Root decline (Anguillulina pratensis de Mann) was found in patches, but on the whole the infection was slight in the Gordon Head district, B.C.

NASTURTIUM (Trepaeolum majus)

White rust (Cystopus candidus (Pers.) Lév.) was found at Saskatoon, Sask., on nasturtium (3653).

PANSY (Viola)

Leaf spot (Cercospora Violae-tricoloris Bri. & Cav.) was prevalent in one garden in Lincoln county, Ont.; a single infected plant was found at L'Assomption, Que.

Powdery mildew (?Sphaerotheca Humuli (DC.) Burr. var. fuliginea (Schlecht.) Salm.) was general on pansies on October 22 at Summerland, B.C. The perfect stage was not found.

PENTSTEMON

Powdery mildew (Erysiphe Cichoracearum DC.) affected leaves of a few plants at Summerland, B.C.

PEONY (Paeonia)

Blight (Botrytis Paeoniae Oud.) infected all the plants in a garden in Cariboo Co., B.C.; the damage was 8%.

The disease was observed in 3 gardens in zone 10, Alta.

Blight was apparently fairly prevalent at Saskatoon, Sask.

A slight amount of blight was reported at Macdonald College, Que. At Cap Rouge the amount of bloom was reduced where plants had not been sprayed. Young plants failed to bloom on account of the disease. Similarly at Ste. Anne de la Pocatière, late buds became infected and dried up. The disease was quite conspicuous once the heavy bloom was over. Some young plants were destroyed.

Blight was severe on peonies at the Experimental Station, Fredericton, N.B.

A few plants were affected by blight at Kentville, N.S.

Leaf blotch (Cladosporium Paeoniae Pass.) was moderate in July at Macdonald College, Que. Diseased leaves were collected at L'Assomption.

A trace of Septoria leaf spot (Septoria Paeoniae West. var. berolinensis Allesch.) was found on most varieties at Morden, Man.

Ringspot (virus) was found on the following varieties at the Experimental Station, Fredericton, N.B.: Carnea striata, Virgo Maria, Boule de Neige, Marquis d'Ivry, Asa Gray, Alsace-Lorraine, and Margaret Gerow.

The following varieties were commonly infected with ringspot at the Experimental Station, Morden, Man.: Avalanche, Sarah Bernhardt, Germaine Bigot, Atro-sanguinea, Mons. Krelage, La Loraine, and Triomphe de l'Exposition de Lille.

PETUNIA

A powdery mildew of petunias was seen in the autumn of 1933 and it has been sent in during 1934 from gardens in Winnipeg. No perithecia have been seen. (G.R. Bisby)

PHLOX

Powdery mildew (Erysiphe Cichoracearum DC.) was general in several gardens in Lincoln county, Ont. It was also observed in the Ottawa district.

The disease caused slight damage to 4 plants at the Experimental Station, Fredericton, N.B.

One specimen affected with yellows (virus) was sent in from Kings county, N.B.

RED CEDAR (Juniperus)

Collections of the quince rust (Gymnosporangium clavipes Cke. and Pk.) and the hawthorne rust (G. globosum Farl.) were made in the Arboretum, Ottawa, Ont., on May 17 and 18, 1934 on the following hosts:-

Gymnosporangium clavipes: Juniperus canadensis 5903 (3576); J. communis aurea 1250 (3579), 1262 (3565); J. communis aurea-variegata 4389 (3573), 4611 (3575), 4612 (3574); J. communis depressa (3564); J. communis suecica 1259 (3548); J. communis suecica compacta 1272 (3549); J. cuppresifolia 5015 (3558); J. litoralis 3519 (3580); J. nana canadensis aurea 3534 (3657); J. Oxycedrus 4633 (3559); J. rigida 2160 (3571); J. Sabina 1260 (3553), 1256 (3550), 4166 (3560); J. Sabina tamariscifolia 2156 (3572); J. Wilthmanniana 5009 (3578).

Gymnosporangium globosum: Juniperus fragrans 4390 (3552); J. pendula viridis 4626 (3557), 4627 (3556); J. Sabina erecta 2157 (3569); J. virginiana 3145 (3570); J. virginiana cinerascens (3563); J. virginiana Cannartii 2144 (3554); J. virginiana elegantissima

1265 (3555); J. virginiana nana 3520 (3581); J. virginiana pendula 3523 (3566); J. virginiana plumosa 2148 (3561); J. virginiana plumosa alba 4388 (3577); J. virginiana pyramidalis 3146 (3568); and J. virginiana Schottii 1258 (3562), 3147 (3551).

In general it may be said that G. clavipes is common on Juniperus communis and its varieties, but the form common in many parts of eastern United States on J. virginiana is not present. G. globosum is somewhat less prevalent on Juniperus virginiana and its varieties. Juniperus chinensis, which also grows in the Arboretum has never been found infected, while J. Sabina has been found rusted but rarely by G. clavipes and still less frequently by G. globosum. Both species of rust have never been collected on the same plant. The hosts have not been critically studied, but the names and numbers reported are those, under which the specimens are carried in the Arboretum. (I.L. Conners)

About 40% of the plants of Hills Silver red cedar in a consignment from Dundee, Ill., to Ridgetown, Ont., were affected with rust. Two species (G. Juniperi-virginianae Schw. and G. globosum Farl.) were about equally prevalent on the specimens communicated by Mr. Chamberlain. (I.L. Conners)

Gymnosporangium clavipes heavily infected nearly every shoot of Juniperus communis var. depressa, which was abundant in a 2-acre field at Woodside, N.S. G. clavariaeforme (Jacq.) DC. was not as prevalent, but infected branches were more erect than those free from this rust. (K.A. Harrison)

ROSE (Rosa)

Rust (Phragmidium sp.) slightly infected La France variety at Saanichton, B.C. in April.

Rust was heavy on the lower leaves of Conrad F. Meyers in the University grounds, Saskatoon, Sask.

The aecial stage of P. speciosum lightly infected roses in patches at Morden, and it was commonly found at Winnipeg, Man.

Rust was prevalent on several varieties of roses in the rose gardens in Victoria Park, Niagara Falls, Ont., on July 15.

Rust (P. americanum Diet.) was severe on a few rose bushes at Lennoxville, Que. (2067). A trace of rust was found on 2 rose bushes at Ste. Anne de la Pocatière.

Rose leaves affected with rust (P. disciflorum (Tode) J.F. James) were sent from Kentville, N.S. (3655).

All varieties examined at the Experimental Station, Charlottetown, P.E.I. showed a trace to 100% infection; rust was also found in Kings and Prince counties.

Powdery mildew (Sphaerotheca pannosa (Wallr.) Lév.) was general and caused slight damage on Vancouver island and in the Fraser valley, B.C. It was rather severe on one variety, but little or none was present on most of them at Summerland, B.C.

A specimen affected with powdery mildew was received from Montreal, Que.

Black spot (Diplocarpon Rosae Wolf (Marssonina Rosae (Lib.) Died.) was of general occurrence on Vancouver island and in the Fraser valley, B.C.; it causes slight damage, but the affected plants are unattractive.

The disease was present on a few varieties in the University gardens, Saskatoon, Sask. (2180); infection was moderate on Austrian Copper and a trace on Persian Yellow. About 20% of the lower leaves of Harrison's Yellow were spotted at Swift Current (2186).

Black spot was prevalent in the Rose Garden of the Victoria Park Commission, Niagara Falls, Ont., and the civic garden, St. Catharines.

Black spot was found on all rose varieties and caused slight defoliation in a few bushes at Ste. Anne de la Pocatière, Que.

This spot was heavy on a rose variety in Queens county, P.E.I. on September 5.

Crown gall (Pseudomonas tumefaciens (Sm. & Towns.) Dugg.) severely affected one Paul Scarlet plant in Ottawa, Ont.

A root rot (cause undetermined) caused considerable loss in a greenhouse in Peel county, Ont. Isolations yielded fungi, but the cause has not been definitely determined. (G.C. Chamberlain)

A mosaic (virus) found on rose in York county, N.B., was transmitted by the rubbing method to tobacco; it produced severe mosaic in the latter plant. (J.L. Howatt)

SANDHILL ROSE (Lewisia rediviva)

A few plants in a rockery at Saanichton, B.C., were rusted (Uromyces unitus Pk.). The rust was also collected on the wild host at Kaleden (3666) and Summerland (3667), where it was quite general on plants growing on the hills near the Laboratory.

SAXIFRAGE (Saxifraga)

A trace of leaf spot (Phyllosticta sp. immature) was found at Morden, Man., on S. cordifolia purpurea.

SHASTA DAISY (Chrysanthemum maximum)

Yellows (virus) caused severe damage to shasta daisy at Charlottetown, P.E.I.

SNAPDRAGON (Antirrhinum)

Rust (Puccinia Antirrhini Diet. & Holw.) was found in one third of the greenhouses in the Victoria district, B.C., and was general in the fields and gardens on Vancouver island. It is a rather serious disease where plants are grown for seed. Rust destroyed whole plantings in many gardens throughout the Okanagan valley.

In one garden in Lincoln county, Ont., rust killed many plants before the blooming period. Several complaints were also received.

regarding this disease.

Snapdragons were moderately rusted in a greenhouse at Macdonald College, Que., on November 1.

Rust was general in York county, N.B., and diseased specimens were received from Sussex.

SNOWBERRY (Symphoricarpos)

The leaves of snowberry were moderately infected with leaf spot (Sphaceloma Symphoricarpi Barrus & Horsfall) at L'Assomption, Que.

SOLOMON SEAL (Polygonatum)

A leaf spot (cause undetermined) with a striking purplish border was found on P. multiflorum at Morden, Man.

SPIRREA

One shoot of spiraea was infected by Nectria cinnabarina at Kentville, N.S.

Winter injury was severe on Spiraea Vanhouttei at the Experimental Station, Fredericton, N.B.

STOCK (Matthiola)

Basal stem rot (cause unknown) was reported to have caused severe damage in one garden and moderate in another at Saskatoon, Sask.

SWEET PEA (Lathyrus)

Powdery mildew (Microsphaera diffusa Cke. & Pk.) caused severe damage in a garden in Queens county, P.E.I.

Several plants wilted and died at the Experimental Farm, Indian Head, Sask.; the roots were rotted.

At Saskatoon, root rot was not observed or reported this year, while in 1932 and 1933 it was common both in the seedling and flowering stages. (T.C. Vanterpool)

Root rot infected from a trace to 65% of the plants in a garden in Queens county, P.E.I. Liberal applications of organic mercury compounds to the soil give splendid control. (R.R. Hurst)

Streak (virus) was abundant in a few gardens at Winnipeg, Man., and in some of these the damage was severe. It was not noted in previous years.

TULIP (Tulipa)

Blight (Botrytis Tulipae (Lib.) Lind) spread rapidly and caused moderate damage at the beginning of April on Vancouver island, B.C., but it was checked about the middle of April by a dry spell. Very little primary infection was found in the majority of fields. (W. Jones and R. Hastings)

Blight affected 12 to 15% of the tulips in the Laboratory garden, St. Catharines, Ont. In a garden in Lincoln county 1% of the Darwin tulips were diseased.

Breaking (virus) is quite general in private flower gardens in the Salmon Arm district, B.C., but the disease was not noticed in commercial plantations.

VINCA

Rust (Puccinia Vincae (DC.) Berk.) was found developing on vines in window boxes at a private residence in Ottawa, Ont. (3670).

ZINNIA

Wilt (Sclerotinia ?Sclerotiorum (Lib.) de Bary) affected 3 plants at the Experimental Station, Summerland, B.C.

Wilt (Fusarium ?conglutinans Woll.) caused the death of 4% of the plants in a garden in Ottawa, Ont.

WINTER INJURY

Mr. M.B. Davis, Dominion Horticulturist, supplied the following observations of winter injury to shrubs growing at the Central Experimental Farm, Ottawa, Ont.: Weigela (Diervilla Eva Rathke, D. florida alba) 90%; Forsythia (F. intermedia) none; Salt tree (Halimodendron argenteum) 20%; Hydrangea (H. arborescens, H. paniculata) none; Bush clover (Lespedeza Sieboldi) none; Honeysuckle (Lonicera), all varieties, none; Lilac (Syringa) 10-15%; Mock orange (Philadelphus) 20-80%; Rose (Rosa) R. rugosa 10-20%, hybrid perpetuals 20-80%, hybrid teas 10-90%; Spiraea 10-75%.