VII. DISEASES OF ORNAMENTAL PLANTS

ALTHAEA ROSEA - Hollyhock

Rust (Puccinia Malvacearum) was again severe in the same garden at Edmonton, Alta., in which it was reported last year (G.B. Sanford). Rather severe outbreaks were reported in N.B., from Liverpool and Brookfield, N.S., and in P.E.I.

AMYGDALUS - Almond

Shothole (Coniothyrium sp.) infection was moderate on Siberian almond at Brandon, Man.; the above fungus was associated with the shothole, no trace of Cylindrosporium being present. (W.L. Gordon)

ANTIRRHINUM - Snapdragon

Root Rot and Wilt was reported causing damage in a garden at Lloydminster, Alta.; a species of Fusarium was isolated (R.A. Ludwig). Scattered plants of Rich Crimson were wilted at Brandon, Man.; isolations yield Fusarium spp. and Alternaria. (W.L. Gordon)

Rust (Puccinia Antirrhini) was moderate to severe at Edmonton and Camrose, Alta. It was severe on 10% of the plants in a garden at Saskatoon, Sask. Practically every plant was ruined by rust in a greenhouse at Weston, Ont.

BEGONIA

Grey Mould (Botrytis cinerea) destroyed 4 tuberous begonias in a garden at Charlottetown, P.E.I. (R.R. Hurst)

BERBERIS - Barberry

Rust (Puccinia graminis) had been fairly heavy on bushes of B. vulgaris discovered near Cornwall, Vankleek Hill, Almonte, and Hawkesbury, Ont. (I.L. Conners). Rust was general on B. vulgaris in Charlotte, York and Carleton counties, N.B.; 110 bushes were located in Charlotte Co., in the past summer. (S.F. Clarkson)

CALENDULA

Yellows (virus) severely affected scattered plants in several gardens in Edmonton, Alta.

CALLISTEPHUS - China Aster

Wilt (Fusarium conglutinans var. Callistephi) caused severe damage in one large planting and in several gardens in Edmonton, Alta. In one garden infection was moderate to severe on all varieties except the new wilt-resistant Early Giant Light Blue, which was not affected. Scattered plants were destroyed at Winnipeg and Morden, Man.; the organism was isolated from the Winnipeg material and identified. (W.L. Gordon)

Yellows (virus). About half the plants were affected in one garden at Edmonton, Alta., and slight damage occurred in several others (M.W. Cormack). Yellows was general and moderately severe at Morden, Man.

Yellows was common and severe in York and Sunbury counties, N.B., on the ornamentals, Callistephus Chinensis, Calendula officinalis, Centaurea

macrocephala, Phlox Drummondi and P. paniculata, and the weeds, Leontodon autumnalis, and Plantago major. In two areas kept under observation at the Fredericton Station, 8 to 10% of the Leontodon plants died from the disease, while about 5% of the Plantago plants succumbed. The vector, Macrosteles divisus, was very common and active this year. In addition to the severely affected plants, yellows was common, although causing only slight damage on the ornamentals, Chrysanthemum maximum, Clarkia elegans, Coreopsis, Dianthus sp., Dimorphotheca, Gaillardia, Helichrysum, Matthiola, Petunia hybrida, Statice, Tagetes erecta, Veronica spicata, and Zinnia multiflora; on the weeds, Chrysanthemum leucanthemum, Cirsium arvense, Erigeron canadensis, Eupatorium perfoliatum, Rudbeckia hirta, Rumex acetocella, R. crispus, Sonchus arvensis, Spergula arvensis, and Taraxacum officinale; and spinach. (D.J. MacLeod)

Yellows was more prevalent than usual on China aster at Kentville, N.S.; in one small garden all plants were affected (K.A. Harrison). Yellows was severe throughout P.E.I. on China asters. It is also severe on Calendula, Gaillardia, Tagetes, Zinnia, etc. (R.R. Hurst)

The vector, Macrosteles divisus, has been reported as a common or abundant species from B.C. to Que.; it has not, however, been recorded from the Maritimes. (C.R. Twinn)

CARAGANA

Leaf Spot (Septoria Caraganae) caused slight damage at Edmonton, Alta. Damage was moderate at Saskatoon, Sask. Leaf spot was slight at Brandon and Winnipeg, Man., while it was moderate at Morden.

CHRYSANTHEMUM

Yellows (virus). A few plants were moderately affected in a greenhouse at Medicine Hat, Alta.

Powdery Mildew (Erysiphe Cichoracearum) was reported as abundant on young plants in a greenhouse in Winnipeg, Man.

CLARKIA

Rust (Pucciniastrum pustulatum). A trace was observed on C. elegans at Saskatoon, Sask.

CLEMATIS LIGUSTICIFOLIA

Leaf Spot (Septoria Clematidis) infections were severe at Brandon and Morden, Man.

COTONEASTER

Dark Berry (Phytophthora Cactorum) badly affected C. horizontalis at Vancouver and Victoria, B.C., and considerably reduced its ornamental value. The following species were practically free, C. adpressa, C. divaricata, C. Francheti, C. frigida, C. humifusa, C. microphylla, C. nitens, C. pannosa, C. racemiflora, C. rotundifolia, C. salicifolia, C. Simonsii, and C. thymifolia. (W.R. Foster)

Twig Blight (Cytospora ambiens) was fairly general on Vancouver Island and the occasional plant was killed. An organism resembling Cytospora ambiens was isolated. (W.R. Foster)

DAHLIA

Powdery Mildew (Erysiphe Polygoni) was general in October in Lincoln Co., Ont.; Incadescent, J. Trimbel, and Grand Soleil appeared to be the most susceptible varieties in the planting at the Laboratory, St. Catharines. (G.C. Chamberlain)

Stunt (virus) is very destructive in P.E.I. in all types of dahlias. (R.R. Hurst)

Spotted Wilt (virus). Several plants in the beds at the Laboratory, St. Catharines, Ont., showed a distinct ring spotting of the foliage. Dr. F.O. Holmes, Rockefeller Institute, noted these plants and stated that he believed it to be Spotted Wilt. No experiments have been made to confirm his diagnosis. While the disease resembles spotted wilt, the rings are more faint and not so widely bordered as photographic illustrations suggest. (G. C. Chamberlain)

DELPHINIUM - Larkspur

Powdery Mildew (Erysiphe Polygoni) was severe on specimens received from Renown, Sask. Several large plants were apparently killed by July 31 at Macdonald College, Que.; all leaves were completely covered with cleistothecia. (I.H. Crowell)

Mosaic? Mosaic-like symptoms were observed on about 80% of King Arthur plants grown from imported seed at Edmonton, Alta. (G.B. Sanford)

Crown Rot (Sclerotinia sclerotiorum) infected a few plants, but those affected were killed in a garden in Queens Co., P.E.I.

DIANTHUS

Rust (Uromyces caryophyllinus) affected about 80% of the plants of carnation, D. caryophyllus, in a commercial greenhouse at Hanley, B.C., and caused moderate damage; the disease is quite common in greenhouses. A severe infection occurred in the University greenhouses, Winnipeg, Man.

Foot Rot. Odd plants of pink, D. chinensis, were killed at Winnipeg, Man.; isolations yielded Fusarium Scirpi var. acuminatum and F. spp. of the elegans section. (W.L. Gordon)

GLADIOLUS

Scab (Phytomonas marginata). A trace of scab was present in the 7 plantings inspected on Vancouver Island, B.C.; the plantings average an acre apiece (R. Hastings). Several plantings were slightly affected at Edmonton, Alta. About 75% of the corms of the 1938 crop from several gardens at Kentville, N.S., showed scab lesions when they were examined before planting this spring (K.A. Harrison). Occasional lesions were seen on several lots at Charlottetown, P.E.I.

Hard Rot (Septoria Gladioli). A trace was seen in one planting of the 7 inspected on Vancouver Island, B.C. (R. Hastings). Hard rot was seen on an occasional plant in Queens Co., P.E.I.

Dry Rot (Sclerotinia Gladioli). An average of 0.5% of the corms were affected in 7 plantings in Vancouver Island, B.C.

Bacterial Blight (Phytomonas gummisudans). About 1% of the plants were moderately affected in a planting at Lacombe, Alta.

Corm Rot. A trace of two different corm rots were noted at Winnipeg, Man. From a soft corm rot Fusarium Solani and F. ?oxysporum v. Gladioli were isolated, while from a reddish rot F. Scirpi var. acuminatum was cultured. (W.L. Gordon)

Yellows (Fusarium sp.) was much less common in the Winnipeg area, Man., than in 1937. (J.E. Machacek)

Yellows (Cause unknown) was present in practically all varieties about Charlottetown, P.E.I. The varieties of Picardy and Bagdad were planted with or without disinfection in pots of sterilized or unsterilized soil. In addition some of the pots received small quantities of the minor elements. Yellows was present under all conditions of the experiment. Yellowing of the leaves seems to be associated in most cases with poor root development.

GODETIA

Rust (Pucciniastrum pustulatum was light at Saskatoon, Sask. on G. amoena.

HYDRANGEA

Powdery Mildew (Oidium sp.) was general on a pink variety in a commercial greenhouse in Victoria, B.C. (W. Jones)

IRIS

Leaf Spot (Heterosporium gracile). Infection was slight in 2 out of 7 plantings of bulbous iris inspected on Vancouver Island and the Fraser Valley, B.C. (R. Hastings). On rhizomatous iris, leaf spot was general causing slight to severe damage to the foliage on Vancouver Island and in the Fraser Valley, B.C.; found at several points in Alta. and damage was severe in at least 2 gardens at Edmonton; severe on 7 and light on 2 varieties in the Horticulture Department plantings at Saskatoon, Sask.; an early and severe infection on many varieties at Winnipeg, Man., slight at Morden and slight to severe at Brandon; light infection at Kentville, N.S.; and infection slight to severe in Queens Co., P.E.I.

Rhizome Rot (Erwinia carotovora) destroyed several plants at Senneville, Que.; the trouble was present in a few plants last year (I.H. Crowell). Soft rot affected one clump at Wolfville, N.S.; infection was associated with borer injury. (R.J. Baylis)

Ink Disease (Mystrosporium adustum). A trace was usually found in 2-year-old plantings on Vancouver Island and in the Fraser Valley, B.C. (R. Hastings)

Eelworm (Ditylenchus dipsaci) slightly infected 4 out of 7 large plantings in B.C. (R. Hastings)

LATHYRUS ODORATUS - Sweet Pea

Powdery Mildew (Microphaera diffusa) was fairly prevalent in P.E.I.

Streak (?virus) caused moderate to severe damage in a planting at Lethbridge, Alta. It was observed fairly commonly in Queens Co., P.E.I.

Mosaic (virus). Traces were seen in a planting in Queens Co., P.E.I.; the leaves of the affected plants were yellowish, curled and mottled. The peduncles were short and the flowers showed colourless streaks. (R.R. Hurst)

Root Rot (Fusarium sp.) about 2% of the plants were killed in a garden at Edmonton, Alta. (M.W. Cormack). Wilt and root rot affected a few plants at Saskatoon, Sask.

LILIUM - Lily

Blight (Botrytis elliptica). Observations were made on the occurrence of blight in a private garden at Agassiz, B.C. No blight was seen on Lilium Brownii, L. japonicum, and L. Maximowiczii, infection was slight on L. cernuum, L. Henryi, L. princeps, L. pumilum, L. speciosum, L. sulphureum and L. tigrinum; moderate on L. regale; and severe on L. aurantiacum, L. candidum, L. Davidii, L. elegans, L. testiceum, L. umbellatum, and L. Willmottiae (W. Jones). Blight infection was severe on L. alutaceum and L. philadelphicum at Brandon, Man. It was also severe on a few plants of Lilium candidum in Queens Co., P.E.I.

Rust (Puccinia Sporoboli Arth.). A single aecial pustule was found on Lilium princeps var. Geo. C. Creelman, Winnipeg, Man., July 2, 1939. This appears to be the first definite record of this rust in Man. (J.E. Machacek and A.M. Brown)

LOBELIA

Damping-Off (cause unknown) caused a 90% loss in flats in a greenhouse at Gordon Head, B.C. (W.R. Foster)

LONICERA - Honeysuckle

Blight (Glomerularia Lonicerae) was reported to be severe in a nursery in Kings Co., N.B. (J.L. Howatt)

MATTHIOLA - Stock

Damping-Off (Rhizoctonia Solani) affected 5% of the plants in several flats of M. incana annua, Ten Weeks Stock, at Kentville, N.S. (D.W. Creelman)

NARCISSUS

Smoulder (Botrytis narcissicola) is always present on Vancouver Island, B.C., in the early varieties, causing at least 10% damage; the disease was negligible in the late varieties. (R. Hastings)

Leaf Scorch (Stagonospora Curtisii). A trace was found in the majority of plantings on Vancouver Island and in the Fraser Valley, B.C. (R. Hastings)

Mosaic (virus) affected about 1% of the plants in plantings on Vancouver Island, B.C. (R. Hastings)

Grey Streak (virus) affected 3% of the plants on the average in the same plantings. (R. Hastings)

Eelworm (Ditylenchus dipsaci) caused slight damage in B.C.; it was found in 6 out of 15 plantins (55 acres) on Vancouver Island, B.C., and in 2 out of 20 plantings (25 acres) in the Fraser Valley. (R. Hastings)

NEMESIA

Yellows (virus). Infection was general at Brandon, Man.

NIGELLA - Love-in-a-Mist

Foot Rot destroyed scattered plants at Morden, Man.; isolations yielded Fusarium spp. (W.L. Gordon)

PAEONIA - Peony

Blight (Botrytis Paeoniae) was slight at the Station, Sidney, B.C., and was less prevalent then in 1938 probably on account of the dry weather in the early spring. The disease was moderate at the Agassiz Farm (W. Jones). Bud blight and crown rot were prevalent and caused severe damage in a large planting at Edmonton, Alta. Bud blight caused slight damage at Saskatoon, Sask. Blight was severe, as a crown rot on some plants of P. officinalis and P. tenuifolia at Morden, Man., while it was generally slight on the leaves. Bud and crown rot was severe on P. tenuifolia at Winnipeg, while a trace of bud rot occurred in other varieties. Blight was less prevalent than last year in York Co., N.B., due to lack of rain in the spring and summer; some blight developed after the blooming period at the Fredericton Station (S.F. Clarkson). Blight was very destructive at the Station, Charlottetown, P.E.I., and diseased specimens were brought in from Souris, Borden and Summerside. (R.R. Hurst)

Ring Spot (virus). A few plants were severely damaged and many others were slightly affected in a large planting at Edmonton, Alta.

Ring Spot caused slight damage at Saskatoon, Sask., and a trace of infection was reported from Brandon and Morden, Man. A single affected plant was observed in a garden in Lincoln Co., Ont.

Leaf Blotch (Cladosporium Paeoniae) was slight at Agassiz, B.C.

Lemoine's Disease severely affected a few plants at Edmonton, Alta.

PELARGONIUM - Geranium

Leaf Curl (virus) was present in several gardens at Victoria, B.C.; the ornamental value of the geraniums was reduced considerably. (Wm. Newton)

PENTSTEMON

Leaf Spot (Ramularia sp.) moderately infected the leaves of some plants of P. grandiflorus at Morden, Man.

PHLOX

Powdery Mildew (Erysiphe Cichoracearum). Traces were found in Queens Co., P.E.I.

PHYSOSTEGIA

Wilt (Sclerotinia sclerotiorum) caused serious damage in a clump of P. virginiana rosea compacta in the perennial border at Kentville, N.S. (J.F. Hockey)

PYRUS - Apple

Fire Blight (Erwinia amylovora). A diseased specimen of flowering crab was received from Toronto, Ont. (F.S. Thatcher)

RHAMNUS - Buckthorn

Rust (Puccinia coronata). Aecia were found on June 23 at Fredericton, N.B. About 400 large buckthorn bushes were located in York and Charlotte

counties this year; some were small trees (S.F. Clarkson). Aecia were observed on June 22 at Kentville, N.S. (D. Creelman). The aecial stage was abundant at Charlottetown, P.E.I., this year. (R.R. Hurst)

About 300 bushes of R. Frangula growing in a rough pasture were infected by P. coronata on June 22. The aecia were used to inoculate Cartier and Victory oats, but the results were negative. Several grasses growing within 100 yards of the bushes were examined for telia on Oct. 22, but without success. (J.L. Howatt)

RHODODENDRON

Leaf Spot (Diplodina eurhododendri) was found at Courtenay, B.C. (W.R. Foster)

Leaf Spot (Pestallozia sp.) caused slight damage to a few shrubs in a nursery at Victoria, B.C. (W.R. Foster)

RIBES - Currant

Septoria Leaf Spot (S. aureum) was moderate on the lower leaves of Ribes odoratum at Muenster, Sask.

Powdery Mildew (Sphaerotheca mors-uvae) caused moderate damage to Ribes odoratum at Saskatoon, Sask.

ROSA - Rose

Rust (Phragmidium spp.) was severe on Banshee and light on Betty Bland at Saskatoon, Sask. It was severe on some varieties at Morden, Man. A specimen of rose affected by P. speciosum was received from Montreal, Que. (H.N. Racicot). The aecial stage of P. speciosum was collected on wild rose at Kentville, N.S. (D.W. Creelman)

Crown Gall (Phytomonas tumefaciens). Several 3-year-old hybrid tea plants died in a planting in Lincoln Co., Ont., and were found to be heavily galled (G.C. Chamberlain). Crown gall was very severe on a plant of Dorothy Perkins at Charlottetown, P.E.I. The galls reached some distance above ground; the plant was saved by careful pruning. Several other cases were reported. (R.R. Hurst)

Powdery Mildew (Sphaerotheca Humuli). A slight infection was reported on some plants at Brandon, Man. Powdery mildew was very common and most serious on the Ramblers, Crimson and Dorothy Perkins, and also on hybrid teas and perpetuals in Lincoln Co., Ont. (G.C. Chamberlain). Powdery mildew became rather severe late in the season on Paul Scarlet, Crimson Rambler, and Dorothy Perkins at Charlottetown, P.E.I. Several other cases were reported. Sulphur dusting seems to be beneficial. (R.R. Hurst)

Black Spot (Diplocarpon Rosae) infection was moderate and general at Morden, Man., while it was moderate on some varieties at Brandon. Black spot again disfigured hybrid teas to a marked extent about Guelph, Ont., this year. Several rose gardens were observed where the bushes were almost completely defoliated by it before fall (J.E. Howitt). A serious outbreak of black spot occurred in gardens in Lincoln county during the cool evenings and rains of August. Hybrid teas and hybrid polyanthas were defoliated. This is the first time I have noticed Poulsen Polyantha severely attacked (G.C. Chamberlain). Black spot occurred commonly in gardens at Fredericton and Saint John, N.B.

Slight to moderate damage resulted from defoliation (J.L. Howatt). The disease caused slight to moderate damage in P.E.I. on many varieties. (R.R. Hurst)

Cercospora Leaf Spot (Mycosphaerella rosicola B.H. Davis) Cercospora rosicola Pass.) infection was slight and general at Brandon, Man., while only a trace occurred on some plants at Morden.

Mosaic (virus) was recorded at Saskatoon, Sask.

Die-Back (Valsella sp.?). Last year's stems on 2 bushes of R. Helenae were killed either by winter injury or by this fungus at Saskatoon, Sask.

SALPIGLOSSIS

Foot Rot. Odd plants were dead due to a foot rot at Morden, Man.; isolations yielded Fusarium spp. (W.L. Gordon)

SAMBUCUS

Leaf Spot (Septoria sambucinum). A slight infection was observed at Brandon, Man., on Sambucus sp.

SYRINGA - Lilac

Powdery Mildew (Microsphaera Alni) was reported from N.B. and P.E.I.

Grey Mould (Botrytis cinerea) caused slight damage to the leaves and twigs of lilac in Saint John Co., N.B. It is associated with Blight (Phytomonas Syringae). (S.F. Clarkson)

Blight (Phytomonas Syringae) caused slight to severe damage in York and Saint John counties, N.B. The young shoots were blackened and many were killed by the disease. This year blight was first noted on June 12. In general, blight is favoured by a wet spring, when the leaves become infected. During the summer, if the weather is dry, the blight spots become corked off and fall out and the disease spreads no further. (S.F. Clarkson)

TAGETES - Marigold

Wilt. Scattered plants were infected at Brandon, Man. Isolations yielded a Fusarium sp. (W.L. Gordon)

TROPAEOLUM - Nasturtium

Eelworm (Ditylenchus dipsaci) was found at Vancouver, B.C., in 2 shipments of T. polyphyllum from Haarlem, Holland, 25% and 100% of tubers respectively being affected. This is the first report of its occurrence on the above host. (R. Hastings)

TULIPA - Tulip

Fire (Botrytis Tulipae) caused severe damage (5-20% loss of bulbs) in 10 plantings out of 30 inspected on Vancouver Island and the Lower Mainland, B.C. The disease was severe in all plantings that had not been rogued and in two-thirds of those where the roguing had been done poorly and late, while in only one planting out of 17, where the roguing had been done well did the loss of bulbs exceed 0.5% and in 10 plantings the loss was not over 0.1%. A scattered infection was seen in the Laboratory beds, St. Catharines, Ont. Fire was general on many varieties in P.E.I.; damage was most severe in old plantings. (R.R. Hurst)

Break (virus) increased in 2 plots of tulips of Harry Veitch and Whistler at the Station, Sidney, B.C., from 12% and 30% in 1938 to 20% and 60% respectively in 1939; these plots were not rogued. On the other hand, in plots which have been rogued consistently for 5 years, no break appeared in the current year. In commercial plantings, where roguing has been practised, break has been practically eliminated.

Topple (non-parasitic). A "break over" occurred in forced tulips in a greenhouse, Winnipeg, Man. The stem broke over when the colour began to appear in the perianth. This "break over" was apparently due to a hollow-stem condition half way up the stem. About 25% of the plants of Couronne d'Or and 10% of Wm. Pitt and Ibis were affected. (J.E. Machacek)

The trouble described above appears to be Topple, which occurs in forced tulips and only rarely out of doors. The early varieties, especially the doubles, are very apt to suffer from this trouble, but it also occurs in certain Darwin varieties.

Sorauer attributed this condition to over rapid forcing. Later, excessive atmospheric humidity or wide variations of temperature in the greenhouse were blamed. More recent work suggests that any factor which tends to disturb the normal development of the young flower bud is likely to predispose the plants to topple. The general recommendations for the control of the trouble is to keep the temperature and humidity of the houses as low as possible and to avoid wide and rapid variations in temperature. (F.L. Drayton)

Sclerotinia Bulb Rot (S. sp.). Specimens affected by this destructive bulb rot were received from Sherbrooke and Chateauguay, Que., and were collected in a garden at Westmount. Frequently newly planted bulbs decay before they develop roots or shoots. Affected narcissi were also collected in this garden (See also P.D.S. 18:110)

Tulips collected at Strawberry Vale, B.C., showed lesions and sclerotia on the stem at the ground line, and only the occasional bulb was partially decayed. The fungus appears to be distinct from but closely allied to the above species. (F.L. Drayton)

Root Rot (Apparently Cylindrocarpon radicicola). A severe root rot causing extensive damage developed in tulips grown in the garden of the Laboratory, Winnipeg, Man. Isolations yielded predominantly Cylindrocarpon radicicola. Fusarium Poae was also isolated. The disease was most destructive to Flamingo, Herman Schlegel, van der Neer, and Fred Moore. (W.L. Gordon)

Bulb Rots. The following organisms were isolated from various rots of tulip bulbs at Winnipeg, Man.: Fusarium Scirpi var. acuminatum, F. redolens, F. sp. (Elegans section), Penicillium sp., and Rhizoctonia Solani. (W.L. Gordon)

A Leaf-Tip Decay occurred to a slight extent in tulips at Winnipeg, Man.; isolations, when they were made, yielded Fusarium Scirpi var. acuminatum and F. redolens. (W.L. Gordon)

VIOLA

Rust (Puccinia Violae) was general on plants in a garden at Agassiz, B.C. A heavy infection was recorded at Kentville, N.S.

Powdery Mildew (Sphaerotheca Humuli var. fuliginea) was reported on pansy from Hibbard and Preeceville, Sask.

YUCCA

Leaf Spot (Coniothyrium concentricum) infection was heavy at Kentville, N.S., causing the leaf tips to dry up and the plants to appear unsightly. (D.W. Creelman)

ZINNIA

Wilt (Fusarium Solani var. Martii) affected from 5-25% of the plants in some plantings in the Okanagan district, B.C., while in other plantings the disease was absent. The causal organism has been compared with authentic cultures of the above and appears to be an undescribed form of this species. (G.E. Woolliams)

Foot Rot infected odd plants of Z. linaria at Brandon, Man.; isolations yielded Fusarium spp. (W.L. Gordon)

Leaf Mottle (virus). A virus was isolated from Z. elegans. It was found to be sap transmissible to Datura Stramonium, Nicotiana Tabacum (Samsun), and Capsicum annuum, in which it produced a vein clearing, followed by a diffused interveinal mottle. In N. Tabacum slight ring spots were produced on the lower leaves. In C. annuum there was a slight unevenness and an upward rolling of the top leaves. The virus does not appear to be sap transmissible to Lycopersicon esculentum, Solanum nodiflorum, and Lycium barbatum. The symptoms on the zinnia are a diffused pallid interveinal mottle involving the whole leaf blade. The foliage and flowers of affected plants were reduced in size and the flowers failed to develop their normal colour, ranging from a faded red to a pale green. In a few cases the flowers finally assumed a rusty appearance. (D.J. MacLeod)