DISEASES OF TREES AND SHRUBS*

ACER - Maple

ANTHRACNOSE (Gloeosporium apocryptum) was severe on 225 maples in a nursery at Manotick, moderate on 40 trees of A. ginnala in a nursery at Osgood and was moderate, associated with drought injury on 3 trees in a home planting at L'Orignal, Ont. (A.E.S.). Affected specimens were received from St. Fabien, Rimouski Co., Que. (D.L.).

CORAL CANKER (Nectria cinnabarina). Twenty-five trees of a 90-tree consignment of A. saccharinum var. laciniata that entered Canada from Belgium in 1965 were dead or dying from canker infection in a nursery at Galt, Ont. (A.E.S.). Damage to A. rubrum was moderate to severe at Cornerbrook (J.H.) and 10% of the trees of A. platanoides on a property at St. John's, Nfld. were affected (O.A.O.),

LEAF SPOT (Phleospora platanoidis Petr.) affected all the foliage of a planting of young A. platanoides at Grand Pré Park, N. S. (C.O.G.).

TAR SPOT (Rhytisma spp.). R. punctatum affected maples at Ponoka, Alta. and R. acerinum caused slight infections on A. saccharinum in a nursery at Bromptonville, Richmond Co., Que. (J.R.).

DETERIORATION (adverse environmental conditions). This condition, caused by a number of factors, was generally less conspicuous in southern Ontario in 1965 than in recent years but the percentage of trees affected remains high, particularly along hard-surfaced roads (B.W.D.). Winter conditions and severe drought periods early in the season in Que. probably accounted for the rapid deterioration and death of maple trees along Route 2 from Trois Rivières to Quebec City and from Quebec City to Rivière du Loup as well as along Route 3 from Quebec City to Nicolet (G.B.O.). Sugar maples in L'Islet village were dying out but the cause is as yet undetermined (H.G.). A die-back of red and sugar maples was general throughout P.E.I. and was alsoobserved in N. S. (J.E.C.).

FROST INJURY. Winter frosts were probably responsible for the root mortality observed on several dying maple trees at Charny and St. Nicholas, Lévis Co., Que. Late spring frosts also caused considerable injury to maple foliage in many districts. Other trees and shrubs, particularly Lombardy poplar, Japanese barberry and snowberry were severely injured. Root mortality also occurred in ornamental apple, oak and elm trees (G.B.O.).

LEAF SCORCH (cause unknown). This physiogenic condition was prevalent on shade and roadside trees, especially sugar maple, in most districts of southern Ontario. Other deciduous trees affected were elm, beech and basswood (B.W.D.). Leaf scorch was pronounced by midsummer on roadside maples in Quebec City and vicinity (G.B.O.).

AESCULUS - Horsechestnut

LEAF BLOTCH (Guignardia aesculi) was severe on A. hippocastanum at Pugwash and Wallace, Colchester Co. and moderate at Merigomish, Greenhill and Dufferin, Pictou Co., N. S. (L.P.M., G.A.V.S.).

AME LANCHIER

RUST (Gymnosporangium sp.) was observed on A. sp. at Three Hills, Alta. (A.W.H.).

BROWN ROT (Monilinia amelanchieris) affected cultivated Saskatoon berries and wild A. spp. at Whitelaw, Alta. where it has been present on trees transplanted from the wild for at least 3 years. It was also observed at Beaverlodge, Alta. and in the Dawson Creek, B. C. area (W.P.S., A.W.H.).

ARBUTUS - Madrona

FROST INJURY. Foliage of A. menziesii was badly browned in the Vancouver area and to a lesser extent on Vancouver Island, B.C. Early summer defoliation was about 30% (H.N.W.T.). Injury from frost and low winter temperatures was severe on ornamental trees and shrubs in many parts of B.C., particularly in the lower Fraser Valley. Broad-leaved evergreens were the most seriously affected (A.C.M.).

BERBERIS - Barberry

ROOT-KNOT NEMATODE (Meloidogyne hapla). Five/50 shrubs of the cultivar 'Sheridan Red' of B. vulgaris were visibly affected in a nursery at Islington, Ont. (A.E.S., M.W.).

BETULA - Birch

CANKER (Cytospora sp.) affected B. alba pendula at Edmonton, Alta. (A.W. H.).

TWIG BLIGHT (Melanconium bicolor) occurred on 10/40 trees of B. alba pendula in a nursery at Kabaska Falls in n. w. Ont. According to Mrs. R.H. Arnold, who confirmed the identification, this may be the conidial state of Melanconis stilbostroma (Fr.) Tul. **(A.E.S.).**

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* The diseases reported in this section are mainly those of shade trees and ornamental shrubs, although occasional reference is made to diseases of native forest trees. For a more comprehensive report of tree diseases in Canada the reader is referred to the Annual Reports of the Forest Insect and Disease Survey published by the Canada Department of Forestry, Ottawa, Ontario.

CASTANEA - Chestnut

CHESTNUT BLIGHT (Endothia parasitica) was severe on sweet chestnut trees, C. dentata, throughout the Lake Erie district, Ont. (B.W.D.).

CHAMAECYPARIS - Cypress

ROOT ROT (Phytophthora cinnamomi) caused the death of or severe injury to 41/45 Lawson cypress shrubs in a garden in Victoria, B. C. (R.G.A.).

CORNUS - Dogwood

LEAF SPOT (Septoria cornicola). Affected specimens were received from a nursery at Calgary, Alta. (F.R.H.).

COTONEASTER

SILVER LEAF (Peniophora cinerea (Fr.) Cooke) was observed in a shrub at Edmonton, Alta. The fruiting basidiomycete associated was determined by Dr. M.K. Nobles, Ottawa (A.W.H.).

WINTER KILLING was severe on C. spp. on the B. C. coast and in the lower Fraser Valley. Many shrubs were killed to the ground (H.N.W.T.).

CRATAEGUS - Hawthorn

LEAF SCALD (Fabraea maculata). Infection continues to be heavy on older trees in west and north Vancouver, B. C. The amount of defoliation is frequently over 50%. The lack of adequate spray equipment among home owners hinders any attempt at control (H. N. W. T.).

FORSYTHIA - Golden Bells

STEM GALL (Phomopsis sp.). Two twigs with 10 galls present were received from Chester, N. S. (K.A.H.).

FRAXINUS - Ash

ANTHRACNOSE (Gloeosporium aridum). Specimens of affected F. pensylvanicum were received from Montreal. One tree, among several planted as street trees, was affected (D.W. C.). Infection was severe on a few ash trees at Cheverie, Hants Co., N.S. (L.P.M., G.A.V.S.).

RUST (Puccinia sparganioides) caused moderate damage to several shade trees of F. americana at Wolfville, N. S. (L.P.M., G.A.V.S.).

SUNSCALD CANKERS affected 500 fast-growing, thin-barked saplings in a nursery at Ste. Thérèse, Que. White ash was only slightly affected but heavy damage occurred on the cultivar 'Marshall's Seedless' (A.E.S.).

HYDRANGEA

POWDERY MILDEW (Erysiphe polygoni) affected 60% of the foliage of a bush at Fredericton, N.B. (S.R.C.).

OEDEMA (excess water). Specimens were received from Roberval, Chicoutimi and Notre Dame du Lac, Que. (D.L.).

JUNIPERUS - Juniper

RUST (Gymnosporangium spp.). A single bush of J. scopulorum was infected by G. bethelii at Deep Cove on the Saanich Peninsula and about 50 plants of J. communis var. suecica, 3-4 feet in width, were severely infected by G. clavariaeforme at Pitt Meadows in the lower Fraser Valley, B. C. Both rusts were determined by W.G. Ziller (R.G.A.). Unidentified Juniperus species were found infected by G. juniperi-virginianae at Ottawa, Ont. and Montreal, Que. In both cases pycnia of a rust, presumably the same species, were found in the vicinity. According to J.A. Parmelee, both records represent extensions in the known geographic range of the rust (A.E.S.).

TWIG BLIGHT (Phomopsis juniperovora) occurred on J. chinensis var. pfitzeriana and J. sabina var. tamariscifolia at Whonock in the lower Fraser Valley, B. C. (R.G.A.).

LARIX - Larch

FROST INJURY. Both European and Siberian larch suffered frost damage at the Kananaskis Forest Experiment Station, Alta. (J.A.B.).

LONICERA - Honeysuckle

TWIG BLIGHT (Diplodia ? lonicerae). A Diplodia, possibly the above species, was found fruiting on branches of L. tatarica at Sillery, Que. (D.L.).

LEAF BLIGHT (Herpobasidium deformans) was abundant on honeysuckle shrubs in a nursery at St. Nicholas, Que. (G.B.O.). Infection was rated 4-sl. 9-mod. 2-sev. in nurseries inspected in Que. in 1965 (J.R.).

POWDERY MILDEW (Microsphaera penicillata) was observed on shaded honeysuckle hedges at Sillery (D.L.) and was rated 3-sl. 5-mod. in nurseries inspected in Que. (J.R.).

MALUS - Ornamental Crab

FIRE BLIGHT (Erwinia amylovora) was less general than in 1964 in the Lethbridge, Alta. area (F.R. H.). It has become widespread in Saskatoon, Sask. where many ornamental Malus spp. used in boulevard plantings have become affected (R.J.L.). Several trees were severely affected in Quebec City and vicinity (G.B.O.).

BRANCH CANKER (Botryosphaeria obtusa) affected young and old trees at St. Lambert, Que. (A.E.S.).

SCAB (Venturia inaequalis). Infection was severe on a large number of ornamental Malus trees in a nursery at St. Nicholas, Que. (G.B.O.). Heavy infections were seen at Fredericton, N.B. (S.R.C.).

PICEA - Spruce

NEEDLE RUST (Chrysomyxa weirii). Heavily infected specimens were received from Buck Lake, Leduc and Bluffton, Alta. (A.W.H.).

CANKER (Cytospora ?kunzei). Branch cankers were common on P. pungens in Quebec City, Que. (G.B.O.).

BUTT ROT (Polyporous tomentosus) was responsible for windthrow of white spruce, P. glauca, in windbreaks at several points in the Lake Simcoe district, Ont. (B.W.D.).

SALT DAMAGE. Crowns of roadside white spruce and most pine species were severely browned by salt spray in the Sault Ste. Marie, Cochrane, Swastika and Parry Sound districts of Ont. (B.W.D.).

PINUS - Pine

NEEDLE RUST (Coleosporium asterum). Light infections were seen on a specimen tree of P. resinosa in Ottawa, Ont. (A. E. S.) and specimens were received from Ste. Foy, Que. (D.L.).

BLISTER RUST. An infected branch was received from Ottawa, Ont. Infection apparently came from Ribes spp. in an abandoned nursery nearby (H.S.T.).

NEEDLE BLIGHT (Dothiostroma pini Hulbarry) continued to be the major problem in exotic pine plantations on Vancouver Island, B.C. (A.C.M.). Pinus sylvestris in the Kananaskis Valley, Alta. was severely affected (J.A.B.) and it caused slight damage to ornamental trees of Austrian pine, P. nigra in St. John's, Nfld. (J.H.).

ROOT ROT (Fomes annosus) was found, for the first time in s. e. Ont., in a 40-year-old mixed plantation of jackpine, P. banksiana, and red pine, P. resinosa, in the Northumberland County Forest (B. W.D.).

BROWN-SPOT NEEDLE BLIGHT (Scirrhia acicicola (Dearn.) Siggers) caused severe damage to jackpine and lodge pole pine, P. contorta var. latifolia in a plantation nr. Brandon, Man. (J. G. L.).

CHEMICAL INJURY (sulfur dioxide fumes). Damage, characteristic of that caused by SO_2, was observed in the vicinity of Marysville, south of Kimberly, B. C. Severe browning and light mortality of lodgepole pine, ponderosa pine and western larch occurred (A.C.M.). Damage was very light on all tree and shrub species examined in the vicinity of a smelter at Thompson, Man. except in a small area a few miles south of the smelter where moderate damage occurred to the foliage of jackpine and trembling aspen (J.G.L.).

WINTER DRYING occurred in scattered areas but was occasionally severe on most coniferous species throughout Ont. (B.W.D.). It was also severe on many ornamental conifers in Montreal, Drummondville, Quebec City, at numerous localities in the lower St. Lawrence district and at Caplan, Que. (G.B.O.). Severe winter drying was observed in a hedge of Pinus sylvestris. at Amherst Point, N.S. (L.P.M., G.A.V.S.).

PLATANUS - Sycamore

ANTHRACNOSE (Gloeosporium nervisequum) is well established on sycamore in boulevard and park specimens in Saanich Municipality, B. C. Damage from defoliation and twig cankers was more severe in 1965 than previously seen (W.R.O.). It caused considerable defoliation on southern Vancouver Island early in the spring (W.R.F.).

POPULUS - Poplar

CANKER (Cytospora chrysosperma). A survey of the decline and death of aspen growing in bluffs in the parkland region of Alta. indicated that grazing combined with the 1962 drought had weakened and predisposed trees to attack by C. chrysosperma (J.A.B.). It was reported, in some cases as causing considerable damage, from Coronation, Morinville, Nanton, Ryley, Three Hills and Vauxhall, Alta. (A.W.H.).

CANKER (Dothichiza populea) caused an estimated 25% damage to P. nigra italica in a nursery at Spencerville and moderate damage to 1000 trees of the same species at Richmond Hill, Ont. (A.E.S.).

CANKER (Hypoxylon pruinatum) was common on aspen in the parkland region of Alta. (J.A.B.).

RUST (Melampsora medusae) was observed on poplars at Vulcan, Alta. (A.W.H.).

RUST (Melampsora occidentalis). Infections were moderate and widespread in shelterbelt and ornamental plantings in s.w. Alta. by mid-August (F.R.H.).

CANKER (Septoria musiva). Affected specimens were received from Jean Cote, Vulcan, Donalda, where 18% of the trees were affected and Smoky Lake, Alta. where 5% of the trees showed basal cankers (A.W.H.).

YELLOW LEAF BLISTER (Taphrina populina). Ornamental plantings of P. tremuloides were slightly infected at Bishop's Falls, Nfld. (J.H.).

PRUNUS - Native and Flowering Cherries

BLACK KNOT (Apiosporina morbosa (Schw.) Arx = Dibotryon morbosum (Schw.) Theiss. & Syd.). Collections were obtained on most Prunus species throughout Ont. In the Geraldton, White River, Lindsay and Sault Ste. Marie districts, up to 80% of P. pensylvanica trees were infected in many localities. It also caused significant damage in a domestic plum orchard on St. Joseph Island in the Sault Ste. Marie district (B.W.D.). A heavy infection was seen on P. serotina at La Patrie, Compton Co. (G.B.O.) as well as on P. virginiana in a nursery at Ste. Thérèse, Terrebonne Co., Que. Infections were common, but light, on P. pensylvanica throughout the Maritime Provinces (L.P.M., G.A.V.S.) and were heavy on native Prunus spp. in the St. John's area, Nfld. (O.A.O.).

WITCHES' BROOM (Taphrina weisnerii (Rathay) Mix = T. cerasi (Fckl.) Sadeb.). Up to 12 brooms per tree were seen on 50% of P. serotina trees over a half-acre block at Sackville, N.B. (L.P.M., G.A.V.S.).

WINTER KILLING. Many hedges of Prunus laurocerasus were killed to the ground in coastal B.C. and the lower Fraser Valley by the extreme low temperatures prevailing in December, 1964 (H.N.W.T.).

PSEUDOTSUGA - Douglas Fir

NEEDLE CAST (Rhabdocline pseudotsugae) caused considerable damage to Christmas tree stands of P. taxifolia in the East Kootenay region of B. C. (A.C.M.).

QUERCUS - Oak

ANTHRACNOSE (Gloeosporium quercinum) caused slight to moderate browning on newly-planted trees of Q. borealis in Queen's Co., N.B. and in Annapolis and Kings Counties, N.S. (L.P.M., G.A.V.S.).

RHAMNUS - Buckthorn

CROWN RUST (Puccinia coronata). Infection was slight on 10 trees in a nursery at Waterdown and on one on the Experimental Farm, Ottawa, Ont. (A.E. S.).

RHODODENDRON

GRAY MOLD (Botrytis cinerea). Trace infections were seen on the foliage of a unknown cultivar at Kentville, N. S. (C.O.G.).

LEAF SPOT (Diplodina eurhododendri) affected 5% of the foliage of a young planting at Grand Pré, N. S. (C.O.G.).

LIME-INDUCED CHLOROSIS caused the loss of $500 worth of rhododendrons on one property at Victoria, B. C. The lime content of the soil was very high and all the leaves of some of the plants were yellow (W.R.F.).

RIBES - Flowering Currant

ANTHRACNOSE (Drepanopeziza variabilis) appeared in August in a 150-foot hedge of R. alpinum in Ottawa, Ont. Infection was generally trace to slight but was severe in one section of the hedge near a coniferous tree where humidity was high. Specimens for identification were also received from the Ottawa area (D.W.C.). Infections were rated 6-sl. 5-mod. 3-sev. on alpine currant in nurseries in Que. (J.R.).

ROSA - Rose

CROWN GALL (Agrobacterium tumefaciens) occurred on 12/90 bushes in a garden in Vancouver, B.C. where none had appeared before. Infection may have followed winter injury (H.N.W.T.).

CANKER (Coniothyrium fuckelii) affected 15% of the plants of Rosa multiflora in a 1-acre block being grown for understock at Hornby, Ont. It progressed rapidly during hot weather in July (A.E.S.).

CANKER (Cytospora ambiens) was severe on roses at Ste. Foy, Que. (D.L.).

BLACK SPOT (Diplocarpon rosae). A heavy infection was seen at St. Andrews, N.B. (S.R.C.) and another in a nursery at Yarmouth, N.S. (A.A.MacN.). It developed later and was less severe in P.E.I. than in 1964 but certain floribunda cultivars suffered moderate damage (G.W.A.).

RUST (Phragmidium sp.) was observed at St. Albert, Alta. (A.W.H.).

POWDERY MILDEW (Sphaerotheca pannosa) which had been severe on garden roses in 1963 and 1964 and difficult to control on susceptible cultivars was not apparent, even on unsprayed roses, in the Okanagan Valley, B. C., until early September, 1965. Severe sub-zero weather in December, 1964 had killed all bushes to ground level (M.F.W.).

WINTER KILLING. Climbing roses were killed to the ground by extremely low temperatures in December, 1964 in coastal B. C. and the lower Fraser Valley (H.N.W.T.).

SALIX - Willow

CROWN GALL (Agrobacterium tumefaciens). A specimen bearing large galls was received for diagnosis from Montreal, Que. (D.W.C.). One of six trees in a lawn at Duberger, Que. was killed and three others badly affected but still alive (D.L.).

CANKER (Cytospora chrysosperma) affected a tree of S. laurifolia at Leduc, Alta. (A.W.H.) and 20/40 trees of the same species at St. Laurent, Que. Another tree at Drummondville, Que. was killed by the disease (A.E.S.).

TWIG BLIGHT AND CANKER (Diplodina salicis West.). An infected specimen was received from Notre Dame du Lac, Que. with fruiting bodies of a Diplodina, probably D. salicis (D.L.). It is generally considered that D. salicis West. belongs to the same life cycle as Discella carbonacea Berk. & Br. According to H. Butin (Phytopath. Z. 32: 339-415. 1958.) the perfect state of D. carbonacea is Cryptodiaporthe salicella (Fr.) Petrak which equals C. salicina (Curr.) Wehm. (D.W.C.).

WILLOW BLIGHT (Pollacia saliciperda). In N.B., leaf browning was severe in a hedge at Ste. Anne, Madawaska Co. and moderate at several locations in Madawaska, Northumberland, Victoria and Sunbury Counties. In N.S., the disease was severe at West River, Antigonish Co. and moderate in parts of Inverness, Antigonish, Guysborough, Pictou, Hants and Kings Counties. In P.E.I. browning was moderate nr. Tignish, Prince Co. (L.P.M., G.A.V.S.).

SAMBUCUS - Elder

CROWN ROT (Pythium sp.). Affected specimens were received from Carstairs, Edmonton, Leduc and St. Paul, Alta. A phycomycete previously isolated from Sambucus showing similar symptoms (Can. Plant Dis. Surv. 45: 75. 1965.) appears to be a species of Pythium, according to D.L. McIntosh (A.W.H.),

LEAF SPOT (Septoria sambucina) was observed on Sambucus sp. at Sexsmith, Alta. (A.W.H.).

SORBUS - Mountain Ash

FIRE BLIGHT (Erwinia amylovora). Affected specimens were received from Claresholm, Edmonton and St. Paul, Alta. (A.W.H.) and from Winnipeg, Man. (W.A.F.H.).

DIE-BACK AND CANKER (Leucostoma massariana (de Not.) Höhn. (Valsa m. de Not.). Specimens were received from Val d'Or, Que. The amount of

damage to S. americana was stated to be extensive although it is suspected that prior winter injury was a factor. Both perfect and imperfect states of the fungus were in good fruit. Although this is the first report to the Survey, Mrs. R. H. Arnold states that Kern (Phytopath. Z. 40: 303-314.1966.) refers to collections on Sorbus from Percé and Anse Pleureuse, Que. The organism is close to Valsa cincta but is considered separate on the basis of host affinities (D.W.C.). The same organism caused slight damage to 100 trees of S. aucuparia in a nursery at Fabreville, Que. (A.E.S.).

CORAL CANKER (Nectria cinnabarina) caused a shoot blight of mountain ash at Nevon, Alta. (A.W.H.).

SPIRAEA

CORAL CANKER (Nectria cinnabarina) caused a die-back of spiraeas at Ste. Foy, Que. The affected twigs were covered with a black mold, Fumago sp. (D.L.).

SYMPHORICARPOS - Snowberry

POWDERY MILDEW (Microsphaera diffusa). Specimens on S. albus were received from Chateau Richer, Montmorency Co., Que. (D.L.).

SYRINGA - Lilac

POWDERY MILDEW (Microsphaera penicillata). White lilacs were heavily infected in a garden in Ottawa, Ont. Standard purple cultivars in the same garden were less seriously affected (D.W.C.). Infection was rated 2-sl. 3-mod. 1-sev. in nurseries inspected in Que. (J.R.).

SHOOT BLIGHT (Phytophthora citricola Sawda.) was observed at Athabaska, Brooks, Edmonton, Rosebud and Sundre, Alta. The pathogen was determined by D. L. McIntosh (A.W.H.). Phytophthora syringae (Kleb.) Kleb. was reported (Can. Plant Dis. Surv. Ann. Rept. 20: 98. 1941) from La Pocatikre, Que. by R.O. Lachance. According to Waterhouse (C. M. I. Misc. Publ. No. 12. pp. 1-120. 1956.), these two species are distinct (D.W.C.).

BACTERIAL BLIGHT (Pseudomonas syringae). Specimens were received from Didsbury and Red Deer (A.W.H.) and it was found in 2 garden plantings at Lethbridge, Alta. (F.R.H.).

ULMUS - Elm

DUTCH ELM DISEASE (Ceratocystis ulmi). The known distribution in Ont. was extended to the Sudbury district. Infected trees were found as far west as Spanish on the mainland and on Manitoulin Island (B.W.D.). Known distribution in N.B. did not change greatly in 1965. Its occurrence at St. Andrews, 15 miles from the nearest known infection at Milltown, represents the greatest extension (L.P.M., G.A.V.S.).

DIE-BACK (Cytospora sp.) affected 2/25 trees of U. parvifolia at Fort William, Ont. Infection was probably secondary following undetermined injury (A.E.S.).

LEAF SPOT (Gnomonea ulmea) caused slight damage to U. parvifolia in a nursery at Campbell's Bay, Ont. (A.E.S.).

CORAL CANKER (Nectria cinnabarina) was responsible for moderate to severe damage to U. pumila at Cornerbrook, Nfld. (J.H.).

TWIG BLIGHT (Tubercularia ulmea). Affected specimens were received from Loretteville, Que. (D.L.).

CHEMICAL INJURY. Spray drift of 2,4-D caused moderate to severe injury to several young elm trees at Ste. Foy, Que. (G.B.O.).

DISEASES OF HERBACEOUS ORNAMENTALS

ALTHAEA - Hollyhock

RUST (Puccinia malvacearum) was observed in the Okanagan Valley, B. C. (G.E.W.) and at Edmonton and Sangudo, Alta. (A.W.H.). Affected specimens were received from East Angus, Que. (D.L.).

AQUILEGIA - Columbine

POWDERY MILDEW (Erysiphe polygoni) occurred generally throughout the Okanagan Valley, B. C. late in the summer (G.E.W.).

BEGONIA

POWDERY MILDEW (Erysiphe cichoracearum). Specimens were received from Levis, Que. (D.L.).

BACTERIAL LEAF SPOT (Xanthomonas begoniae). Infected leaves were received from Ormiston, Sask. in October (D.W.C.).

SPOTTED WILT (virus) affected 5% of the begonias in a greenhouse at Yarmouth, N.S. All leaves of affected plants showed ringspot symptoms (A.A.MacN.).

CALENDULA

SMUT (Entyloma polysporum). All plants in a planting at Wolfville, N.S. were infected. Infections in early June will cause death before fall. Later infections disfigure the foliage but plants will continue to flower (K.A.H.).

CALLISTEPHUS - China aster

WILT (Fusarium oxysporum f. callistephi). Infected specimens were received from Edmonton and Stony Plain, Alta. (A.W.H.).

ASTER YELLOWS (aster yellows virus). Infection was rated 25% in a home garden at Port Morien, N. S. (A.A.MacN.).

CHRYSANTHEMUM

VASCULAR DISCOLORATION (Ascochyta chrysanthemi Stev.). Most plants in a propagator's greenhouse at Leamington, Ont. had reddish-brown discolored vascular tissues at the stem bases. A. chrysanthemi was isolated, often in association with Pectobacterium carotovorum var. chrysanthemi (J. H. H.). This represents a new record for Canada (D.W.C.)