

clones examined: 5 of the 6 fields were free from clover. In 5/5 fields in Yarmouth and Digby counties, incidence was 0.7 to 25%, with damage averaging 5.5% for 6100 clones examined. Damage averaged 8.4% for 6500 clones in Westmoreland, Queens, and York counties, where incidence varied from 0.5 to 31% in 9/9 fields. In Kings Co. incidence of 2.3 to 21% and damage of 6.9% was estimated for 13,800 clones examined in 10/10 fields (H.T.S. and A.A.MacN.). In P.E.I. 10% infection of 'Sparkle' was reported from a 25-acre planting, with lesser amounts in 'Redcoat' and 'Cavalier'. 'Sparkle' also showed higher incidence (30%) in a 5-acre field. Most other plantings near Charlottetown contained up to 3% infected plants (C.B.W.). Green petal was also reported in 9/9 plantings in Queen Co., P.E.I., with incidence ranging from 12% to 70%, and damage averaging 34.5% for 3500 clones examined (H.T.S.). Green petal was also found in a number of fields in the lower St. Lawrence region of Quebec, mostly in Kamouraska Co., but it was less severe than in 1966. Striking symptoms were evident during the first 2 weeks of July. Infection levels at other locations surveyed were as follows: La Pocatière: 'Red Coat', 1 field - 20%; 1 field (near the St. Lawrence R.) - free; 'Senator Dunlap', 1 field (3rd crop) - 30%. St. Philippe: 'Red Coat', 1 field (1st

crop) - 5%; 'Sparkle', 1 field - 100%. Rivière Quelle: 'Red Coat', 1 field - free. St. Roch: 1 field - free, 1 field (1st crop) - 30%; 1 field (3rd crop) - 50%. At St. Pacombe green petal appeared suddenly in a field of 'Sparkle' on August 8, and within a few days 80% of the plants showed symptoms. Other records were Ste. Louise: 1 field - 15%; St. Jean: 1 field - 50%; St. Charles: 'Sparkle', 1 field - 100%; 'Red Coat', 1 field (25 acres close to the 'Sparkle' plot) - free. In Bellechasse Co., green petal was not found in 22 fields examined (H.G., L.D.).

WITCHES' BROOM (virus) was reported in one field at Moncton, N.B.; damage was less than 1% (S.R.C.).

CHEMICAL INJURY. At Stanley, N.B., 60% damage was reported in one field where 2,4-D applied the previous fall caused deformed buds and fruit (S.R.C.).

HEAT DAMAGE. In the Lower Fraser Valley, B.C., severe drought conditions during June caused greatly reduced yields in non-irrigated fields; mature and near-mature fruits turned a dark color and were unacceptable to processors. Little permanent damage was done to plants with good root systems (H.S.P.).

DISEASES OF TREES AND SHRUBS

ACER - Maple

ANIHRACNOSE (Gloeosporium apocryptum) caused only light leaf browning on sugar maples (A. saccharum) in N.B. and N.S. during 1967 (G.A.V.S.). In Nfld. 50% of the leaves on a tree at St. John's were attacked by G. apocryptum (O.A.O.).

HYFOXYLON CANKER (Hypoxyylon mammatum) was recorded on A. ginnala at Pontrillis, Sask. (B.C.S.).

NECTRIA CANKER (Nectria cinnabarina) was found on three or four branches of several Norway Maples (A. platanoides) at St. John's, Nfld. (O.A.O.).

TAR SPOT (Rhytisma punctatum) was observed on a specimen of A. macrophyllum at Vancouver, B.C. (H.N.W.T.).

DETERIORATION of roadside maples was most apparent near Sault Ste. Marie, Ont., and in s. Ont. The condition was associated with winter salting of roads (M.J.L.).

CHEMICAL INJURY - Chlorosis and dwarfing of leaves, presumably from herbicide damage, was observed on Manitoba maple (A. negundo) in s. regions of Ont. (M.J.L.).

AESCULUS - Horsechestnut

CANKER (Nectria cinnabarina) affected a tree at St. John's Nfld. (O.A.O.).

AMELANCHIER - Juneberry

RUST (Gymnosporangium spp.) infection was observed at Lamont, Calgary, Wainwright, and Beaverlodge, Alta. (A.W.H.). Severe infection by G. clavariiforme was reported at La Pocatière, Que. and vicinity (H.G.).

CARAGANA - Pea tree

LEAF SPOT (Septoria caraganae). The distribution pattern of this disease differed markedly from that reported in 1966. It was found infrequently around Winnipeg, Riverton, and Swan Lake, Man., and was not reported from the western grasslands of Sask., where it caused severe defoliation in 1966 (B.C.S.).

DIEBACK (Tubercularia vulgaris, Curcubitararia caraganae, and Camptosporium caraganae) was locally severe in shelterbelts in Man. and Sask. and reduced the effectiveness of windbreaks (B.C.S.).

CATALPA

LEAF SPOT (Alternaria sp.). An Alternaria sp. was isolated from material received from Fenwich, Ont. (T.R.D.).

CHAMAEDAPHNE - Leatherleaf

RED LEAF (Exobasidium vaccinii). Light to moderate infection was found on plants growing in a cranberry bog in King's County,

N.S. (C.L.L.).

CRATAEGUS - Hawthorn

FIREBLIGHT (Erwinia amylovora) was reported from 4 locations in the Annapolis Valley, N.S. (C.L.L., R.P.L.).

LEAF SCALD (Fabraea maculata) caused 25-75% leaf drop of C. oxyacantha in many home gardens in Vancouver and in the lower Fraser Valley (H.N.W.T.).

POWDERY MILDEW (Phyllactinia corylea) was observed near Amisk, Alta. (A.W.H.).

FRAXINUS - Ash

ANTHRACNOSE (Gloeosporium aridum) caused only light leaf browning on individual shade trees throughout mainland N.S. (G.A.V.S.).

RUST (Puccinia sparganioides) caused severe foliar browning on white ash ornamentals at South Maitland, Hants County, N.S., and on young nursery stock at Lawrencetown, N.S. Browning at Wolfville was moderate but elsewhere in western N.S. infections were scattered and light (G.A.V.S.).

JUGLANS - Walnut

BACTERIAL BLIGHT (Xanthomonas juglandis). Three cases of bacterial blight were reported on Juglans regia in home gardens in the Fraser Valley, B.C. (D.J.O.).

JUNIPERUS - Juniper

RUST (Gymnosporangium spp.) was reported from Wainwright, Alta. (A.W.H.). G. juvenescens caused spectacular rust development in Saskatoon in mid-June on J. scopulorum following a few days of light rain and high humidity (R.J.L.).

ROOT LESION (Pratylenchus spp.). Root lesion nematodes were present in large numbers in the roots of junipers and caused severe stunting in the Vineland area of sw. Ont. (H.A.O., J.L.T., J.W.P., H.D.F.).

WINTER INJURY. Drought caused damage to junipers at Edmonton, Grande Prairie, Red Deer, and other locations in Alta. (A.W.H.).

LONICERA - Honeysuckle

LEAF BLIGHT (Glomerularia lonicerae) caused severe damage in Hants County, N.S. (C.L.L.).

MAHONIA

RUST (Puccinia pygmaea) on Mahonia aquifolium was reported for the first time from the lower mainland area of B.C. (D.S.MacL.).

MALUS - Ornamental Crab

FIRE BLIGHT (Erwinia amylovora) was slight to moderate on trees in the areas around

Calgary, Cluney, and Brightview, Alta. (A.W.H.).

SCAB (Venturia inaequalis) damage was heavy in the Moncton area of N.B. (S.R.C.).

PANAX

ROOT KNOT (Abrusiochyne hapla) caused heavy galling of the roots of Panax quin ufolius in s.w. Ont. accompanied by severe stunting of the plants and bronzing of the leaves (H.A.O., J.L.T., J.W.P., H.D.F.).

PICEA - Spruce

CYTOSPORA CANKER (Cytospora kunzei) occurred on white and Norway spruce in windbreaks around nurseries and plantations in the Lindsay, Lake Simcoe and Kemptville districts of Ont. (M.J.L.).

WINTER INJURY. Numerous ornamental conifers, predominantly white and Norway spruce were moderately damaged by drought in areas along the north shore of the St. Lawrence River between Montreal and Forestville, and in a few areas of the Eastern Townships and Bellechasse County, Que. (G.B.O.). A range of infection was seen at Wainwright, Vegreville, Camrose, Edmonton, and Two Hills, Alta. (A.W.H.).

PINUS - Pine

SCLERODERRIS CANKER (Scleroderris lagerbergii) a destructive disease of young planted pines was observed in several red and jack pine plantations in s. Que., where it occasionally occurred on more than 60% of the trees (G.B.O.). The disease is prevalent in pine plantations in c. and n.c. Ont. and was observed for the first time in 1967 in the Tweed and Lindsay districts of s. Ont. (M.J.L.).

SALT INJURY. Foliar mortality and discoloration and branch dieback was evident in Ont. along roadsides where salt had been applied and was severe in the s. part of the province (M.J.L.).

WINTER INJURY. Drought was observed throughout Ont. and was more severe than in 1966. Red, Scots, and white pine were more frequently affected but cedars and spruce also showed damage (M.J.L.). Drought caused a varied degree of damage to P. mugo at High Prairie, Alta. (A.W.H.).

POPULUS - Poplar

CYTOSPORA CANKER (Cytospora chrysosperma) was present on hybrid poplars in shelterbelts at scattered locations in Man. and Sask., particularly in s.e. Sask. (B.C.S.). The disease was very prevalent in shelterbelts of trembling aspen and balsam poplar in s. Alta. (H.A.T.). Cankers were observed at Oliver, Aden, Edmonton, and Calgary, Alta. (A.W.H.).

LEAF SPOT (Septoria musiva, stat perf. Mycosphaerella populorum) was observed at Ohaton, Alta.

LEAF AND TWIG BLIGHT (Pollaccia elegans) caused light damage at Scotts Bay, N.S. (C.O.G.).

LEAF BLISTER (Taphrina aurea) was found on 5% of leaves of Lombardy poplar at Freshwater, Placentia Bay, Nfld. (O.A.O.).

SHOOT BLIGHT (Venturia populina) affected trees at Vegreville, Alta. (A.W.H.).

PRUNUS - Native and Flowering Cherries

BLACK KNOT (Apiosporina morbosae) was widespread on pin and choke cherry in Man. Sask., but incidence and intensity were generally low (B.C.S.). Infections were generally mod. to sev. on open-growing cherry throughout Ont. (M.J.L.). Current and previous infections on pin cherry were common and occasionally sev. in the Maritime Provinces (G.A.V.S.). Black knot was also observed on P. padus var. commutata (May-day tree) at Calgary, Alta. (A.W.H.).

SHOT HOLE (Higginsia hiemalis) was recorded on chokecherry at Calais, Alta. (H.A.T.).

POWDERY MILDEW (Podosphaera sp.) was found on P. padus var. commutata at Edmonton, Alta. (A.W.H.).

LEAF CURL (Taphrina deformans) was found on P. amygdalus, flowering almond, at Vancouver, B.C. The disease was last observed in this area in the 1950's but was not reported at that time (H.N.W.T.).

CHERRY BLIGHT (undetermined cause) was more widespread and sev. than in 1966 on pin and black cherry in e. N.B., c. N.S., and P.E.I. (G.A.V.S.).

RHODODENDRON

LEAF SPOT (Mycosphaerella rhododendri) caused a leaf spot and subsequent disfigurement in a home garden at Powell River, B.C. (H.N.W.T.). The specimen (DAOM 117538) was identified by K.A. Pirozynski.

ROSA - Rose

BLACK SPOT (Diplocarpon rosae) infection was abundant in the St. Andrews area of N.B. (S.R.C.). In Saskatoon a specimen was received from a private garden on 'Canada Centennial' rose (R.M.).

RUST (Phragmidium mucronatum) was observed on a wild rose at Vermilion, Alta. (A.W.H.). Phragmidium sp. caused slight damage to cultivated roses at St. John's, Nfld. (O.A.O.).

BACTERIAL LEAF SPOT (Pseudomonas syringae) was found on a specimen received at the Univ. of Sask., Saskatoon (M.D.S.).

POWDERY MILDEW (Sphaerotheca pannosa) caused mod. damage of Fredericton, N.B.

(S.R.C.) and was sev. throughout the season in the Okanagan Valley of B.C., where the disease was prevalent even on relatively resistant varieties despite regular spray programs (M.F.W.). S. sp. was recorded on a rose specimen at Saskatoon, Sask. (R.M.).

SALIX - Willow

TWIG CANKER (Cytospora chrysosperma) caused varying degrees of injury at Lethbridge, Edmonton; Calgary, Lavo, Leduc, and Wetaskiwin, Alta. (A.W.H.). Cytospora sp. was also reported on laurel leaf willow in Alta. (A.W.H.).

WILLOW BLIGHT (Pollaccia saliciperda and Phyalospora miyabeana). In N.S., leaf browning and twig mortality were more sev. than in recent years, particularly in the c. and w. parts of the province where the summer was wet. Willows were severely attacked at Truro, Salem, Kennetcook, and Chester, and in the Annapolis Valley from Grande Pre to Bridgetown (G.A.V.S.).

RUST (Melampsora spp.) was observed at Calgary, Alta. (A.W.H.).

SAMBUCUS - Elder

CROWN ROT (Phytophthora citricola) was reported in Alta. on Red Elder at Edmonton, Sedgewick, Lacombe and Beaverlodge; on Golden Elder at Edmonton and Lethbridge and at Vulcan, Two Hills and Paradise Valley (A.W.H.).

GOLDEN DISCOLORATION (unidentified virus). A virus was isolated from several commercial 'Golden Elderberry' bushes, Sambucus nigra var. aurea, grown in the Okanagan Valley, B.C. The rate of infection in early summer was 100%. Inoculations of Sambucus seedlings reproduced the original "golden" discoloration. Peach and cherry seedlings were highly susceptible to the isolated virus, which is not related to tomato, tobacco or Prunus ringspot viruses or cherry leaf roll virus (A.J.H.).

SORBUS - Mountain Ash

CANKER (Cytospora sp.) was observed at Calgary and Edmonton, Alta. (A.W.H.).

FIRE BLIGHT (Erwinia amylovora) was reported on mountain ash at Edmonton, Bluffton, and Beauwallon, Alta. (A.W.H.) and in the Toronto, Ont. area (M.J.L.).

POWDERY MILDEW (Oidium sp.) heavily infected volunteer seedlings of S. aucuparia growing in peat bogs on Lulu Island, B.C. (H.N.W.T.).

LEAF SPOT (Septoria musiva) caused mod. damage in a nursery bed of European mountain ash at Kemptville, Ont. (M.J.L.).

IRON DEFICIENCY CHLOROSIS. Many cases of chlorosis were observed in Sask. (R.J.L.).

SYRINGA - Lilac

WILT (Verticillium albo-atrum) was sev. at Topsail Pond, Corner Brook, Nfld. (O.A.O.).

TAXUS - Yew

ROOT LESION (Pratylenchus spp.). Severe stunting of conifers occurred in s.w. Ont. These nematodes were present in large numbers in the roots (H.A.O., J.L.T., J.W.P., H.D.F.).

ULMUS - Elm

DUTCH ELM DISEASE (Ceratocystis ulmi). The known limits of distribution of the Dutch elm disease in N.B. did not change greatly in 1967. Infected trees were found for the first time at Jacquet River and

Robinsonville, Restigouche County; Doaktown, Northumberland County; Welsford and Hatfield Point, Queens County; and Hampton, Kings County, N.B. (G.A.V.S.). The recovery of the causal fungus from diseased trees at Sault Ste. Marie, Ont. provided a significant western extension of the known range of the disease (M.J.L.). C. ulmi was not isolated from wilted elms surveyed in the Winnipeg, Man. area in 1967 (B.C.S.).

DIEBACK (Tubercularia nigricans) caused mod. branch tip mortality on several roadside Chinese elms at Toronto, Ont. (M.J.L.).

WILT (Verticillium dahliae). V. dahliae Kleb. was isolated from a wilted elm at St. James, Man. but attempts to isolate a causal organism from other elm trees showing wilt in the Winnipeg area were unsuccessful (B.C.S.).

DISEASES OF HERBACEOUS ORNAMENTALS

ALTHAEA - Hollyhock

RUST (Puccinia malvacearum) was observed at Oromocto, N.B. (S.R.C.).

BEGONIA

POWDERY MILDEW (Erysiphe cichoracearum). An infected plant specimen was received from Mundare, Alta. (A.W.H.).

DELPHINIUM - Larkspur

FASCIATION (Corynebacterium fascians). Three specimens showing sev. symptoms were received from a private garden in Saskatoon, Sask. (R.M.).

GLADIOLUS

FUSARIUM ROT (Fusarium sp.) was widespread in Sask. Damage was slight to mod. and the disease was difficult to control (R.J.L.).

HELICHRYSUM - Strawflower

ASTER YELLOWS (Aster yellows ?virus). Approx. 5% of the plants in the H. bracteatum demonstration plot at U.B.C., Vancouver, B.C. were infected (H.N.W.T.).

IRIS

BLUE MOLD ROT (Penicillium sp.) contributed to the poor stand at Langley, B.C. of forcing iris grown in the greenhouse from bulbs produced on Vancouver Island, B.C. in 1967 (D.J.O.).

LATHYRUS - Sweet Pea

ROOT ROT (Fusarium sp.). Severe root rot was reported at Carleton Place, Ont. (V.R.W.).

LILIUM - Lily

BOTRYTIS BLIGHT (Botrytis elliptica) was reported at Warburg, Alta. (A.W.H.).

ROOT ROT (Fusarium oxysporum f. lilii) caused extensive root damage to R. Palmer's Asiatic Hybrids in Naramata county, Okanagan Valley, B.C. Outwardly the plants appeared healthy (A.J.H.).

PAEONIA - Peony

BOTRYTIS BLIGHT (Botrytis sp.) was isolated from decaying buds at Saskatoon, Sask. (R.M.). B. paeoniae caused infection at Breton, Spruce Grove, and Drumheller, Alta. (A.W.H.).

PARTHENOCESSUS - Woody Climbers

WILT AND LEAF SPOT (Cladosporium herbarum) on Boston ivy (P. tricuspidata) was reported at Hudson Heights, Que. Damage was slight (V.R.W.).

POWDERY MILDEW (Uncinula necator) was observed on Virginia creeper (P. quinquefolia) at Edmonton, Alta. (A.W.H.).

PELARGONIUM - Geranium

BACTERIAL LEAF SPOT (Xanthomonas pelargonii) infection in some shipments of cuttings from California required that up to 20% be discarded on arrival at Vancouver, B.C. (D.J.O.).

PHLOX

POWDERY MILDEW (Erysiphe cichoracearum) was common in garden plantings in the Kentville, N.S. district (C.O.G.) and was observed at Banff, Alta. (A.W.H.).