IV. DISEASES OF FRUIT CROPS

A. POME FRUITS

APPLE

FIRE BLIGHT (Erwinia amylovora) was common in the Edmonton area, Alta. (A.W. Henry, W.P. Campbell). Diseased material from Weyburn and Saskatoon, Sask., was seen. Fire blight was not conspicuous this year; the season was wet but the temperatures low. The disease is less prevalent than formerly as susceptible varieties are being replaced by resistant ones (T.C. Vanterpool). After a lapse of several years when fire blight was not observed in s.w. Que. it suddenly made its appearance and was found rapidly spreading in some orchards about Hemingford and Franklin Centre. The varieties most affected were Yellow Transparent, Golden Russet, St. Lawrence and Fameuse. Active cankers were present on limbs and main branches and numerous blossom clusters were infected. In the infected orchards the disease was restricted to groups of 20-50 trees, but prompt action should be taken to clear up the outbreaks (L. Cinq-Mars). A sl. infection was seen at St. Joachim, n. Gaspe Co., Que. (H. Genereux).

RUST (Gymnosporangium clavipes). Very few affected apples were seen in the Annapolis Valley, N.S., despite plentiful inoculum on the juniper (J.F. Hockey).

BROWN ROT (Monilinia fructicola) affected scattered fruits injured by insects in an orchard at St. Catharines (G.C. Chamberlain).

BLACK ROT (Physalospora obtusa). Sl. affected leaves were collected by C. Perrault at Montmagny, Que.; it was also observed at the Station, Ste Anne de la Pocatiere (H. Genereux). A sl. general infection was noted at harvest on Cortland throughout a large orchard at Woodville, N.S. (D.W. Creelman).

POWDERY MILDEW (Podosphaera leucotricha). Several affected twigs were received from the City Gardens, Vancouver, B.C. (I.C. MacSwan). The disease affected a few terminal shoots in the laboratory orchard, St. Catharines, Ont. (G.C. Chamberlain). Twig infections were prevalent on young trees obtained from a nursery at Port Burwell, Ont., and planted out at Southport, P.E.I. On 100 McIntosh trees, 74% showed one or more twig infections and on a few trees practically all the foliage was attacked. On 200 Cortland the infection was 30% and on 200 Crimson Gravenstein 21%. Some trees may not survive (J.E. Campbell).

ROOT-LESION NEMATODE (Pratylenchus penetrans Cobb). A 30% infection was found on East Malling VII and IX root stocks at Keating, B.C.; damage appeared sl. (J.E. Bosher).

excellent control was obtained by 2 applications of Puratized followed by applications of Orthocide (R. R. Hurst).

MOSAIC (virus) affected 4 Cortland trees in a 2-acre block in an orchard at Sheffield Mills, N. S.; two trees were bearing an apparently normal crop (J. F. Hockey).

BITTER PIT (non-parasitic) caused mod. damage to a crop of Northern Spy grown at Nanaimo, B. C. (W. Jones).

CHLOROSIS (?iron deficiency) was conspicuous this year in crabapple trees in Sask. The cold wet season probably reduced the availability of iron and possibly nitrogen (T. C. Vanterpool). An occasional tree was affected in the Winnipeg area, Man. (J. E. Machacek).

MAGNESIUM DEFICIENCY. About 50 young McIntosh trees in an orchard at Frelighsburg, Que., bore sev. burned leaves, clearly indicating magnesium deficiency (R. Desmarteau). Sev. foliage symptoms of magnesium deficiency were noted in the spray plots at Cambridge, N. S. The disorder was most sev. on plots sprayed with ferbam where up to 80% of the foliage was affected (J. F. Hockey). Magnesium deficiency was mod. in 3 large orchards on McIntosh, Cortland and Delicious at Southport, P. E. I. (J. E. Campbell).

SILVER LEAF (non-parasitic). Two young McIntosh trees were seen at Knowlton, Que., where the foliage showed the characteristic symptoms of silver leaf. No Stereum purpureum was found, but each tree bore a canker at the crown (R. Desmarteau).

SPRAY INJURY. McIntosh apples received from Easton's Corners, Ont. showed injury from arsenicals as described by W. C. Dutton (Mich. Spec. Bull. 218. 1932) (H. N. Racicot). Considerable yellowing and drop of leaves occurred in a block of Delicious in an orchard in Haldimand Co.; captan was used after an application of sulphur. Severe fruit russet occurred after application of Nirit in the cover spray in the plots at St. Catharines. The injury was so sev. that the fruits were unmarketable. The Nirit supplied in 1954 contained trace elements including small amounts of copper. Injury did not occur in Que., where the same material was used (G. C. Chamberlain).

STIPPIN (non-parasitic) affected almost the entire crop of 8 Red Spy trees in an orchard at Stoney Creek, Ont. (G. C. Chamberlain).

WATER CORE (non-parasitic) was reported to have affected most of fruit on a Strawberry tree; specimens received from London, Ont. (G. C. C.).

WINTER INJURY. About 100 trees mostly McIntosh were badly cankered and dying as a result of frost injury in previous years in a 1000-tree orchard at Wickham West, Drummond Co., Que. The site of the

orchard is not the best and for this part of Que. only hardy varieties should be planted (L. Cinq-Mars).

PEAR

FIRE BLIGHT (Erwinia amylovora). Some twig and spur blight was observed in a young Bartlett orchard at Jordan, Ont. No reports of sev. infections were received this year (G.C. Chamberlain). A sl. infection was observed in a young home orchard in Queens Co., P.E.I. The disease had killed one tree in the orchard, which was set out in 1953. It is believed the disease was present in the nursery stock when planted (J.E. Campbell).

SOOTY BLOTCH (Gloeodes pomigena) was reported quite common on pears held in storage for processing in the Niagara Peninsula, Ont. The fruit was apparently clean when harvested, but its appearance was considerably marred by the blotch when the pears were removed from storage for processing (G.C. Chamberlain).

BROWN ROT (Monolinia fructicola) was on pear fruits injured by insects in Lincoln, Ont. The high incidence of brown rot on stone fruits may account for the appearance of this pathogen on pome fruits in 1954 (G.C.C.).

ROT (Phytophthora cactorum) destroyed 15-20% of the Kiefer pears (see Plate 1, fig. 3, p. 100) held in common store for processing in Lincoln Co., Ont. As a result of heavy rains in early and around the middle of October, containers of fruit were exposed to splashing and flooding, which carried the spores from the soil to the fruit. Fluctuating temperatures during storage provided conditions favourable for the development of rot. Fruit on low heavily laden branches also became infected (G.C.C.). The pathogen was first identified in Canada in 1919 by H.T. Gussow (Agr. Gaz. Canada 6:951-952. 1919), who isolated it from decaying pear fruits received from Kentville, N.S. It was first reported in the United States by H.H. Whetzel and J. Rosenbaum (Phytopathology 6:89-90. 1916); the senior author observed it in July 1915, causing a rot of half-grown apples on trees in his garden at Ithaca, N.Y. (I.L.C.).

PEAR BLAST (Pseudomonas syringae) killed about 75% of the bloom in one orchard and a trace of the disease was present in several others in the Saanich peninsula, B.C. In one nursery large cankers were present in twigs and branches of 4% of the trees. The disease first attracted the writer's attention in 1953, when it caused an epidemic of blossom and twig blight. Often several neighboring spurs are killed with the result that there are barren regions on the branches. There is considerable evidence that the disease has been present on pear for several years although rarely could it have been as destructive as in 1953 (W.E. McKeen). In 1932, F.M. Clara (Science 75:111. 1932)

described Pseudomonas utiformica as the pathogen of a new pear disease. The organism had been isolated from pear cankers supposedly affected by fire blight at Ithaca, N.Y., June 1931. The name, pear blast, was first used by H.R. Rosen (Phytopathology 22:23-24. 1932) for a blossom blight of pears he found in Arkansas. The same name was used by H.E. Thomas and P.A. Ark (Calif. Agr. Exp. Sta. Bul. 586. 1934) for the disease in California. E.E. Wilson (Hilgardia 10:213-240. 1936) was apparently the first to show that the pathogen was best referred to Pseudomonas syringae (I.L.C.).

SCAB (Venturia pirina) was rather heavy on 20% of the fruit in a Bartlett orchard at Ridgeville, Ont. (G.C. Chamberlain). Infection was sev. on young trees in a nursery at Ottawa (H.N. Racicot). Scab caused a 50% loss of crop on unsprayed Bartlett trees at Kentville, N.S. (C.O. Gourley).

STONY PIT (virus). The crop of 2 Anjou trees, in Lincoln Co., Ont., infected by this virus were badly pitted and unsaleable (G.C. Chamberlain).

QUINCE

RUST (Gymnosporangium clavipes) affected about 2% of the fruit at the Station, Kentville, N.S. (C.O. Gourley).

B. STONE FRUITS

APRICOT

CORYNEUM BLIGHT (Clasterosporium carpophilum) was mod. on leaf specimens received from Oshawa, Ont. (H.N. Racicot).

BLOSSOM BLIGHT (Monilinia fructicola) destroyed 20-30% of the blossoms in an orchard in sod in Lincoln Co., Ont.

BLIGHT. A disease resembling fire blight killed a few branches on many apricot trees in an orchard at Leamington, Ont. (C.D. McKeen).

CHERRY

BLACK KNOT (Dibotryon morbosum) sev. infected trees in several areas in Nfld. (G.C. Morgan).

FRUIT ROT (Glomerella cingulata) was rather prevalent on fruit on trees along the Lower St. Lawrence, Que. About 60% of the cherries collected from a tree after the leaves had fallen were affected; typical conidia of this fungus were present. Another 15% were affected by brown rot (Monilinia fructicola) and 25% were sound except for pinhead spots. These unharvested cherries had a strong bitter taste (D. Leblond, D.B.O. Savile).

LEAF SPOT (Higginsia hiemalis) was very sev. causing premature defoliation of cherry trees along the Lower St. Lawrence from Mont Joli to Rivière du Loup, the area surveyed (D. Leblond). Leaf spot affected 10% of the leaves and caused some defoliation of several sour cherry varieties at Tupperville, N.S. Bing and Napoleon sweet cherries in the same orchard showed 20% infection and 5% defoliation on 25 July (C.O. Gourley).

BROWN ROT (Monilinia fructicola) caused complete loss of crop on unsprayed Napoleon trees in the laboratory orchard, St. Catharines, Ont. Regularly sprayed trees suffered a 1-2% loss. The disease was prevalent and sev. in many sweet cherry orchards particularly in the Grimsby area or elsewhere when the spray program had been inadequate. On 17 May, counts were made of stem rot on unsprayed trees in the laboratory orchard; percentage infected were: Black Tartarian 11.5, Windsor 15.2, Bing 15.3, Yellow Spanish 21.0, Governor Woods 22.0, and Napoleon 31.0 (G.C. Chamberlain). Some 1-2% of the fruits of both sour and sweet cherries were affected at the Station, Kentville, N.S. (C.O. Gourley).

POWDERY MILDEW (Podosphaera oxyacanthae). A mod. infection was present on young Montmorency trees closely planted at St. Catharines, Ont. (G.C. Chamberlain).

WITCHES' BROOM (Taphrina cerasi). A mod. infection was seen on Bing trees in a home orchard near Victoria, B.C. (W. Jones).

PEACH

CANKER (Cytospora leucostoma) caused sl. damage to trees of Early Red Fire in an orchard at Grand Pre, N.S. (C.O. Gourley).

SCAB (Fusicladium carpophilum). A tr.-5% infection was present on most varieties in an orchard at Tupperville, N.S. A leaf spot caused by this fungus affected about 10% of the leaves, causing dark spots up to 1/2 in. in diameter, at Avondale (C.O. Gourley).

BROWN ROT (Monilinia fructicola) was very troublesome on harvested fruit in the Niagara Peninsula and Essex and Kent counties, Ont. The following percentages of rot were recorded after the fruit was held one week; at Harrow, Elberta 65.8; at St. Catharines, Fisher 75, Yellow Swan 78, Rochester 80, Veteran 82, Red Haven 85, and Marigold 95. In a survey of peaches in cold store rot varied from 5 to 100% after 10 days. Differences in the amount of rot were due to source and spray program followed. (G.C. Chamberlain). Brown rot infection varied from a tr.-2% in peaches at Wolfville and Tupperville, N.S. (C.O. Gourley).

POWDERY MILDEW (Sphaerotheca pannosa). A sl. infection caused some blemish on fruit of the early variety Marigold in an orchard at

Niagara-on-the-Lake, Ont. (G.C. Chamberlain).

LEAF CURL (Taphrina deformans) was very common in Vancouver and on the Lower Mainland. Nearly every tree was affected to some degree. Most trees were mod.-sev. infected, resulting in defoliation and the development of a second set of leaves. (I.C. MacSwan). About 90% of all terminal growth of 6 unsprayed Elberta trees in an orchard in Lincoln Co., Ont., was sev. affected. Where the dormant sprays were properly applied, the disease was well controlled (G.C. Chamberlain). Infections from tr. to 2% were present in most peach orchards in Kings, Annapolis and Hants counties, N.S. (C.O. Gourley).

BACTERIAL BLIGHT (Xanthomonas pruni). A 1% infection was seen on Early Red Fire in an orchard at Grand Pre, N.S. (C.O. Gourley).

X-DISEASE (virus) and WESTERN X-DISEASE (virus). In reporting the transmission of western X-disease virus by the leafhopper, Colladonus montanus (Van D.), H.R. Wolfe (Plant Dis. Reptr. 39:298-299. 1955) remarks that "insect transmission of western X-disease . . . is being regularly obtained with the leafhoppers Colladonus geminatus (Van D.) and Scaphytopius acutus (Say), and has been demonstrated with Fieberiella florii (Stal) and Keonolla confluens (Uhl)." In 1954 R.M. Gilmer (Plant Dis. Reptr. 38:628-629. 1954) was able to report that Colladonus clitellarius (Say) was a vector of X-disease in New York State. According to H.H. Thornberry (Plant Dis. Reptr. 38:412-413. 1954) this leafhopper is also implicated as a vector in Illinois. As the distribution and prevalence of these leaf hoppers in Canada may be of interest to readers of this Report, this information is included here through the kindness of Dr. Bryan P. Beirne of the Systematic Entomology Unit, Entomology Division, Ottawa. Colladonus clitellarius: widely distributed and locally common in s. Ont. and s. Que.; C. geminatus and C. montanus: widely distributed and locally abundant in s. B.C., the latter species especially so in dry regions; Fieberiella florii: Niagara peninsula, Ont. - introduced from Europe; Keonolla confluens common and widely distributed, sometimes very abundant locally especially on Salix, in s. B.C.; Scaphytopius acutus: Alaska and B.C. up to 4500 ft., N.W.T., Alta., Sask., Man., Que., N.S., and P.E.I. (I.L.C.).

POTASH DEFICIENCY. About 80% of the trees in an orchard of Golden Jubilee in Lincoln Co. Ont., were affected. The trees were thin with very unthrifty growth. Terminal growth was spindly, foliage colour poor, leaves rolled, and margins red and necrotic. Test of soil gave no reaction for potash (G.C. Chamberlain).

PLUM

BLACK KNOT (Dibotryon morbosum) was reported as follows: infection sl. on Gold at the Station, Saanichton, B.C. (W. Jones); small

knots on 20 plum trees in a 3-year-old orchard on Lulu Island; sev. infection on most trees in the Yarrow district in the Fraser Valley (I.C. MacSwan); mod. infection of 8 Stanley prunes at St. Catharines, Ont.; considerable damage in a nursery of 2-year-old trees at Bowmanville (G.C. Chamberlain); mod.-sev. in small plantings in York Co. (C.B. Kelly) and Leeds Co. (H.N. Racicot). At St. Jacques de Prairie, Que., 19/24 trees from an Ont. nursery infected the following year. (E. Lavallee); present on a tree in a Montreal garden and on chokecherry at Contrecoeur (P. Duval); sev. infection in a planting at Fredericton, (S.R. Colpitts) and at Bathurst, N.B. (H.N.R.); heavy on a small Burbank orchard at Grand Pre, N.S. (C.O. Gourley) and in several gardens at Grand Falls, Lethbridge and Topsail, Nfld.; wild cherries along highway near Grand Falls heavily infected (G.C. Morgan).

SHOT HOLE (Higginsia prunophorae) was heavy on trees in a nursery at Rougemont and on trees at Wickham West, Que. (R. Crete).

BROWN ROT (Monilinia fructicola) affected 1% of the Burbank fruit in the Station orchard, Kentville, N.S. (C.O. Gourley). Noted at Southport, P.E.I. (J.E. Campbell).

PLUM POCKETS (Taphrina spp.) was heavy on the few fruit that had set on a tree in a garden at Burnaby, B.C. (G.R. Thorpe). Diseased specimens received from only one place in Sask. in 1954 (R.J. Ledingham). All fruits on two trees were affected in a garden in York Co., N.B. (J.L. Howatt).

PRUNE DWARF (virus). Although one Burbank tree at the Station, Kentville, N.S., showed foliage symptoms throughout the tree, it bore a good crop of fruit (C.O. Gourley).

GUMMOSIS (?non-parasitic) was again observed in the orchard at Southport, where it was found in 1953 (P.D.S. 33:96). A hard lump of gum which may exude in part is formed under the skin of the fruit (J.E. Campbell).

SAND CHERRY

BROWN ROT (Monilinia fructicola) caused the death of twigs and rotted green fruit at Ste Agathe, Man. (J.E. Machacek).

POCKETS (Taphrina flavorubra) was reported to have affected all the fruit on a "bush cherry" at Rosseau, Ont.; specimens received (H.N. Racicot).

C. RIBES FRUITS

CURRANT

WHITE PINE BLISTER RUST (Cronartium ribicola) was sev. on leaves of black currant received from Mindemoya, Ont., and Carillon, Que. (H.N. Racicot). This rust caused heavy defoliation of black currant bushes at St. Prime whereas red currant was much less sev. affected (L.J. Coulombe). Blister rust was recorded on both black and red currants at the Station, Kentville, N.S. A heavy infection was recorded in one planting of black currant in Queens Co., P.E.I. (J.E. Campbell) and on the demonstration plots at Bay Robert, Nfld. (G.C. Morgan, H.N. Racicot).

ANTHRACNOSE (Drepanopeziza ribis) heavily spotted the foliage of white currants at Rimouski, Que. (D. Leblond).

RUST (Puccinia caricina) was found on red currant in the University plots, Edmonton, Alta. (W.P. Campbell). Sev. affected fruits were received from 2 places in s.e. Sask. (R.J. Ledingham).

POWDERY MILDEW (Sphaerotheca moss-uvae). A mod. infection on Red Lake at the Station, Saanichton, B.C. (E.R. Hall, W. Jones). Sl.-mod. infections in several plantings at Lethbridge and on currant specimens from Red Deer, Alta. (M.W. Cormack). Powdery mildew killed 60% of the young growth on the blister-rust-resistant black currants Coronet and Crusader at the Station, Kentville, N.S., whereas the infection was about 20% on the ordinary black currants Kerry, Clipper and Victoria (C.O. Gourley).

GOOSEBERRY

ANTHRACNOSE (Drepanopeziza ribis) mod. infected Oregon Champion in a nursery at Lulu Island, B.C. (W. Touzeau, W. Jones). A 25% infection caused sl. defoliation of Clark at the Station, Kentville, N.S. (C.O. Gourley).

WHITE PINE BLISTER RUST (Cronartium ribicola). A tr. infection was found on Poorman, Captivator and Fredonia at the Station, Kentville, N.S. (C.O.G.).

SEDGE RUST (Puccinia caricina) was reported on cultivated gooseberries at Ponoka and Edmonton, Alta., and on wild gooseberries at Evansburg, (W.P. Campbell, A.W. Henry). Affected specimens received from Cornwall, Ont. (H. N. Racicot). A tr. observed on Captivator at the Station, Kentville, N.S. (C.O. Gourley).

POWDERY MILDEW (Sphaerotheca moss-uvae) was sev. on a few bushes in a home garden near Victoria, B.C. (W. Jones). It was heavy

on the new growth of Poorman at the Station, Kentville, N.S. (C.O. Gourley). A sl. infection on the young fruit was seen at Southport, P.E.I. (J.E. Campbell).

D. RUBUS FRUITS

BLACKBERRY

CANE GALL (Agrobacterium rubi) usually causes very little damage to Himalaya blackberry in the Saanich Peninsula, B.C., but in 1954 it killed some plants and the others were unproductive. A period of cold weather when the temperature dropped suddenly in the winter 1953-54 was probably the cause of the disease becoming sev. (W.E. McKeen).

RUST (Kuehneola albida) was found affecting the canes of Thornless blackberry (Rubus laciniatus) at Abbotsford, B.C. The plants were originally imported from the United States (R. Stace-Smith). This rust has been rarely collected but it was reported on R. ?allegheniensis and R. ?canadensis from Berthierville, Que., in 1931 (P.D.S. 11:124) and probably occurs on blackberry more frequently than these few collections indicate (I.L.C.).

LOGANBERRY

CROWN GALL (Agrobacterium tumefaciens) affected 25% of the plants in an acre planting on Lulu Island, B.C. (I.C. MacSwan).

SEPTORIA LEAF SPOT (Mycosphaerella rubi). Infection was general and many of the leaves were very sev. infected in plantings on the Saanich Peninsula, B.C. The disease causes considerable damage annually (W.E. McKeen).

ROOT ROT (Phytophthora sp. Pythium spp., Rhizoctonia solani) was prevalent and caused considerable damage in some plantings on the Saanich Peninsula, B.C. (W.E. McK.).

ROOT-LESION NEMATODE (Pratylenchus sp.). Medium to large populations of a root-lesion nemotode were found in the roots of Thornless loganberry plants imported from Olympia, Wash. (J.E. Bosher).

DRY BERRY (cause unknown). The damage caused by dry berry varied from planting to planting but it was estimated that 10% of the crop was destroyed in the Saanich Peninsula, B.C. (W.C. McKeen).

WINTER INJURY. A few fields in the Saanich peninsula, B.C. suffered sev. injury as a result of a sudden cold spell after a mild fall and in these plantings crop was reduced by 50%. The injury was most sev. in plantings where an abundance of nitrogen had been applied (W.E. McK.).

RASPBERRY

CROWN GALL (Agrobacterium tumefaciens). Nearly every plant was affected in a 1/2 acre planting at Bolton West, Que. (E. Lavallee).

GREY MOULD WILT (Botrytis cinerea). A few small canes were seen in a Viking planting at Kentville, N.S.; the typical elongated sclerotia were present (K.A. Harrison). Grey mould affected about 20% of fruit in a Viking planting in Kings Co. (J.F. Hockey).

SPUR BLIGHT (Didymella applanata). A mod. infection was seen in a planting at Brandon, Man. (J.E. Machacek). Sev. diseased canes of Cuthbert and Latham were received from North Bay, Ont. A tr. infection was present on material from Trafalgar (H.N. Racicot). Spur blight was observed in about 25 plantings in the Montreal district, Que.; it was more sev. than usual (E. Lavallee). Infection was sev. in a planting at Montmagny (C. Perrault). Spur blight was present in most plantings examined in N.S. Infection was tr.-100%, av. 25%. One sev. infected young Newburg planting at Berwick was 60% defoliated (C.O. Gourley).

ANTHRACNOSE (Elsinoe venata) must have been sev. in a planting at Cardinal, Ont. as the fruits were drying up on the infected pedicels that were received (H.N. Racicot). Infection was sev. on new canes of Trent in a nursery near Levis, Que. (J. Ringuet). A few tips of the young shoots were sev. infected in a new planting of Milton at Kentville, N.S. Several older plantings of susceptible varieties have been discarded as unsuitable for N.S. (K.A. Harrison). A sl. infection was noted in a garden planting of Lloyd George at Keppoch, P.E.I. (J.E. Campbell). Infection was heavy on a small Taylor planting at Topsail and mod. on one of Viking at Manual, Nfld. (G.C. Morgan).

CANE BLIGHT (Leptosphaeria coniothyrium) was noted on canes, probably affected by winter injury, from Powassan, Ont. (G.C. Chamberlain).

YELLOW RUST (Phragnidium rubi-idaei). Mod. infection on the lower leaves in a Washington planting at Salmon Arm, B.C.; loss nil (I.C. MacSwan). Infection was very light this year on Washington in the Lower Fraser Valley. A light infection was also observed on the wild blackcap (Rubus leucodermis) on Saturna Island (R. Stace-Smith). Specimens collected at Billings Bridge, Ont. (C.B. Dalton, J.A. Parmelee).

LATE YELLOW RUST (Pucciniastrum americanum) was reported as heavy in a planting of Latham at Iroquois, Ont. (H.N. Racicot). This rust was observed on Newburgh, Gatineau, Viking and Ottawa, but not on Trent in plantings at Berwick, N.S.; it caused some premature defoliation in the more sev. infected plantings (C.O. Gourley).

POWDERY MILDEW (Sphaerotheca humuli). The perfect stage, which is not common about Vancouver, B.C., was collected on the salmonberry (Rubus spectabilis) in Stanley Park (H.N.W. Toms).

GREEN MOSAIC (virus) was sev. throughout a 2-acre planting of mixed varieties at Salmon Arm, B.C. Mosaic was common in Washington plantations on the Lower Mainland, but spraying against aphids in a year unfavourable for their build-up kept the disease in check (I.C. MacSwan). Some 3% of the plants showed sev. mosaic in a Latham planting at Lower St. Mary's, N.B. (D.J. MacLeod). A tr. was seen in Ottawa, Viking and Chief in plantings at Berwick, N.S. (C.O. Gourley). Sl. infection in 2 Latham plantings at Topsail, Nfld. (G.C. Morgan).

WINTER INJURY caused considerable damage in plantings at St. John's, Topsail and Manuels, Nfld. (G.C. Morgan).

E. OTHER FRUITS

BLUEBERRY

BLOSSOM and TWIG BLIGHT (Botrytis cinerea and Monilinia vaccinii-corymbosi) infected a tr.-100% of the plants in the fields at Tower Hill, Charlotte Co., N.B. Vaccinium myrtilloides, V. angustifolium and its varieties were affected. Damage ranged from the killing of single blossom or leaf clusters to the wilting of stems and complete defoliation. No estimate of the loss was attempted. In 1954, B. cinerea was more prevalent than the Monilinia, (I.V. Hall). The disease was present in a field near Kentville and in several fields near Parrsboro, in Cumberland Co., N.S. (J.F. Hockey).

WITCHES' BROOM (Calyptospora goeppertiana) was very prevalent in newly burned blueberry fields adjacent to woods near Musquodoboit, N.S. Scattered plants were affected in old fields in Cumberland Co. (J.F. Hockey) and a 1-5% infection was recorded in a field near Bridgewater (D.W. Creelman).

RED LEAF (Exobasidium vaccinii) was present in all areas visited in N.S. In a few fields 25-30% of the plants were affected but in most infection was less than 1%. On sprout plants, the symptoms persisted until late September (J.F. Hockey).

CANKER (Godronia cassandrae) affected 3 plants in a patch of 50 plants in Kings Co., N.S. (J.F. Hockey).

LEAF RUST (Pucciniastrum vacciniorum) caused some late-season defoliation on one-year-old sprout plants in fields in Kings Co., N.S.; tr. infections were seen near Bridgewater (J.F.H., D.W.C.).

LEAF SPOT (Ramularia effusa). A tr. infection was observed on V. angustifolium at Italy Cross, Lunenburg Co., N.S. (D.W.C.).

CRANBERRY

END ROT (Godronia cassandrae, Fusicoccum putrefaciens). A grower from Auburn, Kings Co., N.S. brought in on 11 Jan. 1955 a sample of rotting berries from a lot that was not keeping well. When the berries were cultured 80% yielded F. putrefaciens. This figure of end rot is over twice as high as that found in U.S. berries (K.A. Harrison).

GRAPE

DEAD ARM (Fusicoccum viticola) affected 30% of the vines and caused sev. damage in a Concord vineyard at Milton, Ont. In many vines the disease had advanced along the vine, causing extensive trunk lesions, which would result in the loss of much bearing wood. In the Niagara peninsula, dead arm is present to some extent in all older vineyards. There was a low incidence of the shoot-lesion phase in 1954 (G.C. Chamberlain).

BROWN ROT (Monilinia fructicola). A scattered infection was seen on berries of Seibel 9110 injured by the berry moth in a vineyard at St. Catharines, Ont. Later the rot spread to affect a large part of each cluster (G.C.C.).

DOWNY MILDEW (Plasmopara viticola) affected about 10% of the vines of Fredonia, causing the destruction of the fruit clusters, in a vineyard at St. Catharines, Ont. Infection was also considerable on vines of Seibel 7053 and sl. on Van Buren (G.C.C.). The disease was apparently heavy in a small unsprayed planting at Seelys Bay; probably the crop would be a total loss. These vines were also mod. injured by 2,4-D (H.N. Racicot). Downy mildew affected a small garden planting at St. Jean, Que. (R. Crete).

POWDERY MILDEW (Uncinula necator) was common late in the season in vineyards in the Niagara peninsula, Ont. A mod. infection was recorded in one Concord vineyard in Lincoln Co. (G.C. Chamberlain). A grower in Annapolis Co., N.S., claimed sev. loss from powdery mildew on muscat grapes being grown under glass; specimen received (J.F. Hockey).

POTASH DEFICIENCY. Marked symptoms of potash deficiency were apparent in many vineyards of different varieties in the Niagara peninsula, Ont. In one vineyard the variety Buffalo was mod. defoliated (G.C.C.).

STRAWBERRY

GREY MOULD (Botrytis cinerea). Rot of fruit was reported to be of little importance in the Vineland-Jordan district, Ont., especially in

vigorous plantings and where they were irrigated. Rot affected 5-10% of the fruit in a Premier planting in Lincoln Co. (G.C. Chamberlain). Grey mould caused a 1-2% loss of berries in plantings of Premier, Senator Dunlap, etc. in Kings Co., N.S. (C.O. Gourley). Captan gave excellent control of the disease (J.F. Hockey).

GANGRENE (Botrytis cinerea, etc.). Damage was sev. in Premier, mod. in Senator Dunlop and sl. in King at the Station, Normandin, Que. (L.J. Coulombe).

LEAF BLIGHT (Dendrophoma obscurans) mod. infected Fragaria virginiana at the Station, Kentville, N.S. (G.O. Gourley).

LEAF SCORCH (Diplocarpon earliana). Tr. infections were present on specimens received from Breslau, Ont., and Stanstead, Que. (H.N. Racicot). Infection was very light on commercial varieties in N.S. throughout the season (C.O. Gourley).

PETIOLE BLIGHT or LEAF BLOTCH (Gnomonia fructicola) was sev. on specimens received from Breslau, Ont., and Stanstead, Que. (H.N. Racicot). A tr. was seen on Senator Dunlop in Kings Co., N.S. (C.O. Gourley).

LEAF SPOT (Mycosphaerella fragariae). Sev. infection in a garden at Brandon, Man. (J.E. Machacek). Infection sev. on specimens from Verner, and tr. at Breslau, Ont., and Stanstead, Que. (H.N. Racicot). In a variety trial at Deschambault, leaf spot was sev. on Louise, sl. on Valentine and Senator Dunlop, and absent on Premier, Dresden and Catskill (J. Ringuet). A mod. infection of Senator Dunlop was recorded in June at Gagetown, N.B. (S.R. Colpitts). Leaf spot was first observed in Kings Co. N.S., on 20 May. Weather was ideal for the spread of the disease and by fall unprotected plantings were 100% infected. Captan was especially effective in controlling the disease (C.O. Gourley). A sl. infection was noted on Senator Dunlop in a planting in Queens Co. P.E.I., in early June (J.E. Campbell).

RED STELE (Phytophthora fragariae) affected 30% of plants in a poorly-drained 1-acre planting of Premier in Lincoln Co., Ont. (see Plate 1, fig 4, p. 100). Many of the plants in the affected spots were destroyed. Source of plants unknown. This was the first definite occurrence of red stele in the Niagara peninsula (G.C. Chamberlain).

FRUIT ROT (Rhizopus sp.) affected scattered fruits in a planting, Queens Co., P.E.I. (R.R. Hurst).

POWDERY MIDLEW (Sphaerotheca humuli) infection was quite heavy on the foliage in the Saanich peninsula, B.C. When the disease is sev. on the foliage the berries are also affected causing a reduction in the grade. Spraying with a combination of sulphur and captan reduced

infection and resulted in brighter fruit (W. Jones). A sl. infection was noted at the Station, Kentville, N.S. (C.O. Gourley).

WILT (Verticillium ?dahliae). Up to 50% of the plants were affected and caused considerable damage in plantings in the Saanich peninsula, B.C. The disease lowers productivity of the plants and shortens the life of the planting. In one field no marketable berries were harvested in 1953. The disease apparently has been present for some time (W.E. McKeen). A single wilted plant was seen in a garden at Sillery, Que. (D. Leblond).

DEGENERATION (virus). Many of the plants were affected in 2 Senator Dunlop nurseries in Bellechase Co., Que. The plants were smaller than normal and showed symptoms resembling crinkle or those of witches' broom. The nurseries were condemned to prevent the spread of the disease (J. Ringuet).

JUNE YELLOWS. In 2 Premier plantings in Lincoln Co., Ont., almost all the plants showed yellows on the new leaves. In one planting Premier plants from a different source were normal and free of yellows. The affected plantings were both from the same source and showed yellows in 1953 (G.C. Chamberlain). June yellows affected 90% of the plants in a planting of Louise in Kings Co., N.S. (C.O. Gourley).

ROOT ROT (cause undetermined) affected the plants over a considerable area in a planting at Brandon, Man. (J.E. Machacek). Root rot caused mod. damage to a Senator Dunlop planting in Queens Co., P.E.I. Roots were blackened, with very few side roots and root hairs present. Isolations yielded a variety of organisms (J.E. Campbell).

?LOW TEMPERATURE INJURY. Collapse of British Sovereign plants during hot weather has become general in plantings in the Fraser Valley, B.C.; this collapse has caused sev. economic loss to many growers. More and more growers are discarding British Sovereign for the Northwest variety. The cause of the trouble is uncertain, but it has been attributed to low temperature injury to the crowns. (I.C. MacSwan, W.R. Foster).