IV. DISEASES OF FRUIT CROPS

A. POME FRUITS

APPLE

STEM-END ROT (Botrytis cinerea). About 30% of a lot of Delicious apples in a Winnipeg, Man. store were found to be infected, principally at the stem end. (J.E. Machacek)

LEAF SPOT (Coniothyrium pirinum) varied from slight to severe at Morden, Man. (W.L. Gordon)

DIE-BACK (Cytospora ambiens) severely damaged 16 two-year-old crab trees at Katrine, and caused moderate damage to some trees in the Winnipeg district, Man. (J.H. Craigie)

FIRE BLIGHT (Erwinia amylovora) attacked small twigs on most trees of Wealthy in an orchard near Grand Forks; it caused the death of a few twigs of up to 1% of the trees in some orchards in the Chester area, B.C. (G.E. Woolliams). Moderate to severe damage again occurred in the orchard at the Experimental Station, Lethbridge, Alta., and many trees were removed and destroyed (M.W.C.). Blight was severe and general at Morden, Man. (W.L. Gordon). A scattered infection caused killing of twigs in Lincoln Co., Ont. (G.C. Chamberlain). Specimens were received from Allandale, Ont. (L.T. Richardson). Fire blight was prevalent in many orchards throughout Ont. (J.E. Howitt). Fire blight was severe in gardens in the Ottawa district owing to abundant spring rains and the presence of neglected, susceptible crabs and ornamentals. Fire blight was abundant in Quebec, the weather in many districts being comparable to that of the Ottawa district (see The Weather and Its Influence on Plant Diseases) (D.B.O. Savile). Specimens were received from Aylmer, Courcelles, Pointe Claire, Sherrington, St. Stanislas de Kostka, and Ste. Genevieve (H.N. Racicot and L.T. Richardson). A specimen was sent in from Montreal, the owner stating that the tree was very badly diseased (J.E. Jacques). At Abbotsford, Que., fire blight was more common than in recent years, causing slight to moderate damage; the infection was rather uniformly scattered, which suggested that considerable blossom infection had occurred, with bees carrying the bacteria from blossom to blossom and the abundant rains of May and June causing the initial infection of blossoms from hold-over cankers and the later twig infections. It may be noted that Aronia melanocarpa, in a small swamp at Abbotsford well removed from all orchards, was inoculated with E. amylovora in 1934; although no conspicuous cankers were formed, considerable blossom and spur blight occurred, the organism was readily recovered, and the disease persisted through 1936; in 1943 the swamp was re-visited and abundant spur blight was found. Direct infection of apple from Aronia is unlikely, as the latter flowers later, concurrently with mountain ash; but Aronia may serve to distribute the disease over wide areas where other hosts are lacking. (D.B.O. Savile)

SOOTY BLOTCH (Gloeodes pomigena) was seen on Snow and Greening, associated with aphid outbreaks, in various parts of the Niagara Peninsula. (G.C. Chamberlain)

RUST (Gymnosporangium clavipes). Traces were found on McIntosh and Cortland in the Laboratory orchard, St. Catharines, Ont. (G.C. Chamberlain). Only traces were found in N.S.; it was seen on Delicious and Rome Beauty at Kentville. (J.F. Hockey)

FLY SPECK (Leptothyrium Pomi) was common on unsprayed fruit at Kentville, N.S. (J.F. Hockey)

TWIG BLIGHT (Nectria cinnabarina). Up to 6% of fruit spurs were found affected in a few trees of Rome Beauty at Berwick, N.S.; it was also seen on Ben Davis and Gano (J.F. Hockey). A trace was seen on McIntosh in Queens Co., P.E.I. (R.R. Hurst)

ANTHRACNOSE (Neofabraea malicorticis) was common in small, neglected orchards on Vancouver Island, B.C. and caused moderate damage. (W. Jones)

FROG-EYE SPOT (Phyllosticta limitata) caused minor damage to Snow in Northumberland Co., Ont. (G.C. Chamberlain)

BLACK ROT (Physalospora obtusa). A scattered infection was found in the experimental spraying block at Guelph, Ont. (G.C. Chamberlain)

CROWN ROT (Phytophthora Cactorum). No change was seen in the general picture in the Okanagan Valley, B.C. About 2% of the trees are affected to some degree. (R.E. Fitzpatrick)

POWDERY MILDEW (Podosphaera leucotricha). Some cases were seen in the Okanagan Valley, B.C., of severe winter killing of twigs that had been infected in 1942; otherwise powdery mildew caused no commercial damage. (R.E. Fitzpatrick)

BROWN ROT (Sclerotinia fructicola) was found on McIntosh at Guelph, Ont., mostly on mature fruits damaged by scab or insect injury. (G.C. Chamberlain)

SILVER LEAF (Stereum purpureum). Moderate silver leaf and rotting occurred in the University orchard, Edmonton, Alta. (M.W.C.). A moderate infection was seen on some trees at Morden, Man. (J.E. Machacek)

PINK ROT (Trichothecium roseum) was found at St. Catharines, Ont.,following heavy scab infection (G.C. Chamberlain). It was severe on McIntosh in Queens Co., P.E.I. (R.R. Hurst)

SCAB (Venturia inaequalis) was fairly general on Vancouver Island and the lower mainland, B.C., but caused less damage than in 1942 (W. Jones). Some orchards in the Grand Forks area showed much scab, probably owing to inadequate spraying; in the northern part of the Okanagan valley scab was not a serious factor and little damage occurred where sprays were applied (G.E. Woolliams). A moderate infection occurred in the University orchard, Edmonton, Alta. (A.W. Henry). Scab was light to heavy on some leaves at Morden, and moderate at Ste. Agathe, Man. (W.L. Gordon)

Scab was prevalent in the Brighton district, Ont., owing to wet weather interfering with spraying; Baxter was very severely scabbed. In the Laboratory orchard, St. Catharines, scab was epidemic; foliage infection ranged from 7 to 80% at the end of July; fruit infection ranged from 16 to 100% at harvest in different spray plots; average in sprayed plots was 39%. Heavy rains of May 17 to 18 and 22 to 23 promoted heavy primary infection (G.C. Chamberlain). A specimen was received from Maxville, Ont. (L.T. Richardson). In many unsprayed orchards in Ont., fruit was 100% scabby. It may be noted, however, that the best growers secured 90 to 98% clean fruit despite the unfavourable weather. (J.E. Howitt)

Scab was unusually severe throughout Quebec, frequent rain making it difficult for growers to apply their sprays and keep new growth covered. The smaller branches in one young, unsprayed orchard were heavily cankered by scab (C. Perrault). By the end of July some growers at Abbotsford, Que., were applying their seventh spray, but despite this there was already some fruit infection, especially on Melba, which seems to be even more susceptible than McIntosh. Eventually some growers applied eight full sprays on late varieties, which meant spraying on almost every fine day, but this intense effort was justified when the fruit was graded. Very little scabby fruit was found from adequately sprayed orchards; but other growers suffered heavy grading losses from this cause. (D.B.O. Savile)

In the St. John River valley, N.B., ascospores were not mature until May 25, during full pink bud development. Initial ascospore discharge occurred on June 3, during full bloom, and primary foliage infection was recorded on June 16. High temperatures from July 9 to 13, inclusive, temporarily checked the fungus. However, excessive rain throughout the season and luxuriant foliage development greatly favoured the occurrence of late scab on the fruit. (S.F. Clarkson)

In N.S., ascospores were mature by the end of April, and were discharging freely in early May, when buds were at the green tip stage. Several periods of heavy ascospore infection occurred before full bloom and before adequate spraying could be done. Continuous conidial infection was possible throughout the summer, owing to exceptional weather conditons. Growers who started to spray early and maintained a good cover produced 90% clean fruit. The N.S. calendar (two 5-15-100 Bordeaux delayed-dormant and pre-pink sprays, followed by three iron-sulphate--lime-sulphure or three flotation sulphur applications) continues to give best results. A sixth spray, of 3-10-100 Bordeaux, in seasons such as 1943 prevents late scab infections. In the 1943 spray experiments Fermate gave better scab control than dry wettable sulphurs. (J.F. Hockey)

MOSAIC (?virus). A well defined mosaic was seen on three trees of Bethel at the Experimental Station, Fredericton, N.B.; a striking leaf-mottling also occurred on one tree of Macoun; and a seedling produced at the Station showed mottling and crinkling and considerable dwarfing. (D.J. MacLeod)

BITTER PIT (non-parasitic) caused slight damage to Northern Spy and Cox's Orange at the Experimental Station, Sidney, B.C. (W. Jones)

DROUGHT SPOT, CORKY CORE and DIE-BACK (boron deficiency). Losses from this cause have been almost eliminated in B.C. See, however, under Pear. (H.R. McLarty)

LEAF SCORCH (cause unknown). As in the past two years, leaf scorch, though present in the Okanagan Valley, B.C., did no serious damage. (R.E. Fitzpatrick)

MAGNESIUM DEFICIENCY severely damaged McIntosh in Queens Co., P.E.I. (G.C. Warren)

MEASLES (cause unknown) caused severe cankering on several young seedlings at Kentville, N.S. (J.F. Hockey)

SPRAY INJURY. No damage was seen or reported in 1943 in the Okanagan Valley, B.C. (R.E. Fitzpatrick). Stem end blackening and fruit scald was attributed to sulphur sprays and high temperature in York Co., Ont. (G.C. Chamberlain). Severe spray injury was seen on McIntosh in Queens Co., P.E.I. (R.R. Hurst)

WATER CORE (non-parasitic) slightly affected King at the Experimental Station, Sidney, B.C. (W. Jones)

WINTER INJURY followed the pruning of Fameuse trees at Whitby, Ont., in November and December. The bark of the trunks split and lifted away from the wood. Similar injury was reported from the Brighton district. (G.C. Chamberlain)

PEAR

FIRE BLIGHT (Erwinia amylovora) was epidemic in a number of young Bartlett orchards in Lincoln and Welland Counties, Ont. In one orchard of 250 trees, 200 were so badly affected that it was thought impractical to try to save the orchard. Heavy pruning and cultivation in 1943 contributed to the severity of the attack. Blight was common in the Niagara Peninsula, after being of minor importance for ten years. (G.C. Chamberlain)

FRUIT ROT (Phytophthora Cactorum) cause a brown rot of the entire fruit in specimens sent in from Kentville, N.S. (J.F. Hockey)

POWDERY MILDEW (Podosphaera leucotricha) was present in the Okanagan Valley, B.C., but was not serious. (R.E. Fitzpatrick)

SCAB (Venturia pyrina). Infection was slight to moderate on Vancouver Island, B.C. (W. Jones). Unusually large lesions were found on D'Anjou fruit near Oliver, Okanagan Valley, B.C., but damage on the whole was negligible (R.E. Fitzpatrick). Scab was conspicuous on Flemish Beauty in the Niagara Peninsula, Ont., infection averaging 15% and the fruit being malformed and with extensive lesions (G.C. Chamberlain). Flemish Beauty was severely scabbed in Queens Co., P.E.I. (R.R. Hurst)

STONY PIT (virus) was observed in Bosc plantings in the Okanagan Valley, B.C.; relatively few fruit on most trees were visibly affected. (R.E. Fitzpatrick)

BLACK END (cause unknown) was present to some extent, especially on Bartlett, in most plantings in the Okanagan Valley, B.C. (R.E. Fitzpatrick)

DIE-BACK (boron deficiency). In an orchard near Westbrook, B.C., where the grower had not made a borax application, severe loss resulted from dying-back of the limbs. (H.R. McLarty)

QUINCE

RUST (Gymnosporangium clavipes) caused a trace of injury in Kings Co., N.S. (G.W. Hope)

B. STONE FRUITS

APRICOT

CORYNEUM SPOT (C. Beijerinckii). Some true Coryneum spot was found in one or two orchards in the Okanagan Valley, B.C. In some other orchards the leaf and fruit spot that occurred seemed to be due to other causes; but this type of spot was less common than in 1942. (H.R. McLarty)

CHERRY

CORYNEUM SPOT (C. Beijerinckii) was severe on fruit and leaves of some trees in the Boswell district, B.C. (H.R. McLarty)

BLACK KNOT (Dibotryon morbosum). Specimens were received from Charlevois Co., Que., and Tracadie, N.B. (L.T. Richardson, H.N. Racicot)

LEAF SPOT (Higginsia hiemalis). Four to ten per cent infection was recorded on Montmorency in the Niagara Peninsula, Ont., resulting in some defoliation. Generally leaf spot was of minor importance. (G.C. Chamberlain)

POWDERY MILDEW (Podosphaera Oxyacanthae) caused stunting of twig growth on Montmorency in Lincoln Co., Ont. (G.C. Chamberlain)

BROWN ROT, BLOSSOM and TWIG BLIGHT (Sclerotinia fructicola and S. laxa). Blossom and twig blight due to S. laxa caused slight damage on Vancouver Island, B.C. (W. Jones). As high as 28% blossom blight due to S. fructicola was seen on Montmorency in Lincoln Co., Ont. Spraying experiments in the Laboratory orchard, St. Catharines, Ont., gave the following results: In the variety Yellow Spanish unsprayed trees showed 28% blossom blight, sulphur-sprayed trees showed 7 to 10%, and copper-sprayed trees showed 11 to 16%; in the variety Schmidt's Bigarreau unsprayed trees showed 20 to 30% fruit rot, and sprayed trees averaged 8% (G.C. Chamberlain). Deitt et al (Phytopath. 33:1212. 1943) have recently demonstrated the occurrence of S. laxa in Wisconsin, but it has not yet been observed in Ont.

MASKED VIROSIS. An apparently healthy tree of Black Eagle, intended for use in virus symptomatology studies at St. Catharines, Ont., was found to contain a virus which caused a streak necrosis and finally a die-back of young peach shoots. An Elkhorn cherry, also selected as healthy, was found to carry a virus suggestive of prune dwarf when indexed on peach. (R.S. Willison)

NECROTIC LEAF SPOT (virus). Counts in three orchards in the Niagara Peninsula revealed 21, 33, and 42% infection. (G.C. Chamberlain)

TATTER LEAF (virus). Twenty-three per cent of the trees in a mixed orchard in Lincoln Co., Ont., were found to be infected. A few infected trees of Tartarian were found in a second orchard. (G.C. Chamberlain)

YELLOWS (virus) was found in 8 orchards inspected in the Niagara Peninsula, infection varying from 25 to 50% (G.C. Chamberlain)

ROOT and CROWN INJURY (wet soil). Severe killing of fruit trees in the Niagara Peninsula resulted from the heavy rains in the fall of 1942 and the excessive moisture of the spring of 1943, especially on heavy or poorly drained soils; the bark at and below ground level was killed. Losses were estimated as follows: peach, 15% (265,000 trees); sweet cherry, 5% (5,400 trees); sour cherry, 4% (8,520 trees); plums, less than 1% (G.C. Chamberlain). An independent survey by Mr. C.B. Kelly yielded similar estimates: peach, 15%; sweet cherry 5 to 6%; sour cherry 4 to 5%. Mr. Kelly also suggests low temperature as a contributory factor; with saturated soil, sub-surface temperatures would certainly tend to be abnormally low.

PEACH

POWDERY MILDEW (Sphaerotheca pannosa) was present but caused little damage in the Okanagan Valley, B.C. (R.E. Fitzpatrick)

BLOSSOM BLIGHT and BROWN ROT (Sclerotinia fructicola). Peaches bloomed late in May, in the Niagara Peninsula, Ont., during showery weather that hindered spraying. Three orchards in Lincoln Co. showed from 8 to 50% blossom blight. Both early and late varieties were affected. Ground treatments considerably reduced the incidence of blossom blight. Brown rot caused considerable damage, but less than the amount threatened by the heavy blossom blight; both drier weather and the increasing use of summer sprays contributed to checking rot. (R.S. Willison)

LEAF CURL (Taphrina deformans) was widely distributed in gardens on Vancouver Island and the lower mainland, B.C. (W. Jones). Leaf curl was virtually absent from commercial plantings in the Okanagan Valley, B.C. (R.E. Fitzpatrick). Rainy spring weather in the Niagara Peninsula, Ont., made it necessary to use every favourable opportunity for spraying, in order to control leaf curl. Some growers reported that Bordeaux mixture failed to control the disease, but late or skimpy spraying was generally to blame. Leaf curl was more prevalent than for several years (R.S. Willison). It was epidemic in some orchards where spraying was late (G.C. Chamberlain). Wet soil made it impossible to spray early in some orchards; the rainy spring showed how few excellent spray jobs are done in the Niagara Peninsula (C.B. Kelly). Leaf curl caused almost complete defoliation in many orchards in the Niagara and Essex districts, Ont. (J.E. Howitt)

BACTERIAL BLIGHT (Xanthomonas pruni) affected 90% of Elberta trees in Lincoln Co., Ont. Trees bordering the lake were most seriously affected, with 75 per cent defoliation by August 28; most other trees showed from 5 to 20 per cent defoliation. (G.C. Chamberlain)

WESTERN X DISEASE (virus). The orchards in the Okanagan Valley, B.C., first mapped in 1940, were again examined. New infections ranged up to 1.8% and averaged 0.5%. In general symptoms were not spectacular, being about as pronounced as in 1942. No new infections occurred in the three orchards that showed the greatest increases in 1942. A larger number of trees that previously showed symptoms failed to do so in 1943, but the foliage of some of these was thin. Some of the latter trees bore basal sprouts with characteristic symptoms. A tree that had shown typical symptoms for three years showed only a fine, bright yellow netting on many leaves. The results of the survey are shown in the following table:-

		Southern Districts#	Northern Districts##
Total trees		3051	257
Diseased trees --	newly infected	15	0
	repeat*	70	0
	non-repeat**	30	0
	total visible	85	0
	% visible	2.8	0.0
	total with non-repeat	118	0
	% with non-repeat	3.9	0.0

\# Osoyoos, Oliver, and Okanagan Falls.
* Symptoms visible in 1943 and earlier.
Summerland and Peachland.
** Symptoms visible previously but absent in 1943.

A rapid survey of 3,762 trees in orchards north of the known affected areas failed to reveal the disease. (T.B. Lott)

X DISEASE (virus). The second survey of orchards in Niagara Twp., Lincoln Co., Ont., revealed only slight increases of infection. One block increased from 5% to 5.3%, and another from 8.4 to 10%; in orchards where the incidence was low increases of about 0.1 to 0.3% were recorded. (R.S. Willison, G.C. Chamberlain)

BORON DEFICIENCY. The general use of boron throughout the Okanagan Valley, B.C., has eliminated this trouble in stone fruits generally and none was encountered this year. (H.R. McLarty)

ROOT and CROWN INJURY (wet soil). See under Cherry.

SPRAY INJURY. Arsenical sprays caused no damage this year in the Okanagan Valley, B.C. (R.E. Fitzpatrick). Compare P.D.S. 22:85.

WINTER INJURY. Killing of fruit buds of all varieties of peaches occurred in the Niagara Peninsula as a result of the low temperatures of Feb. 14 and 15, 1943. The damage varied from complete in Fonthill and Winona districts (min.-20°F.) to 30% in the central districts (min.-10 to -14°F.) (G.C. Chamberlain). Dr. D.L. Bailey suggests that the wet fall prevented proper hardening of the trees; he also points out that in recent years there has been a tendency to plant peaches on land that is not suited to them.

PLUM

SHOT HOLE (Cercospora circumcissa) was severe on the lower leaves of Opata at Brandon, Man. (W.L. Gordon)

BLACK KNOT (Dibotryon morbosum) affected a few trees in a neglected orchard at Bradner, B.C. (W. Jones). A moderate infection of Stanley prune was seen in Lincoln Co., Ont. This variety seems to be quite susceptible. Knots were commonly found on large branches and occasionally on the trunks of trees (G.C. Chamberlain). A specimen was received from Leskard, Ont. (L.T. Richardson). Black knot was prevalent in districts where plums are not grown commercially in Ont.; in such districts it seems to be increasing annually. (J.E. Howitt)

POWDERY MILDEW (Podosphaera Oxyacanthae) was severe on suckers from the bases of some trees at Mordon, Man.; first record on this host in Man. (J.E. Machacek)

BLOSSOM BLIGHT and BROWN ROT (Sclerotinia fructicola). Blossom blight was not extensive in Lincoln Co., Ont. In the Laboratory orchard, St. Catharines, the following percentages were recorded: German Prune, 14%; Imperial Epineuse, 8%; Imperial Gage, 6%; Lombard, 1%; Yellow Egg, 21%. Brown rot in the same orchard was recorded on the check trees as follows: German Prune, 9%; Imperial Epineuse, 15%; Imperial Gage, 16%; Italian Prune, 20%; Monarch, 50%; Reine Claude, 7%; Yellow Egg, 19%. (G.C. Chamberlain)

Brown rot was injurious in many parts of Ont.; the crop was a total loss where susceptible varieties were unsprayed (J.E. Howitt). Specimens were received from Tecumseh (L.T. Richardson). Very heavy losses from brown rot occurred in Queens Co., P.E.I., especially in late September. (R.R. Hurst)

BLOSSOM and TWIG BLIGHT (Sclerotinia laxa). A light infection occurred at the Experimental Station, Sidney, B.C.; it was less prevalent than in 1942. (W. Jones)

PLUM POCKET (Taphrina communis). Specimens were received from Billings Bridge, Ont., and Breakeyville, Que. (H.N. Racicot). A very heavy infection occurred in one orchard in P.E.I., and reports were received from elsewhere (R.R. Hurst). T. Pruni (Fckl.) Tul. was found on a few plum trees in an orchard at Courtenay, B.C. (W. Jones). Dr. W.W. Ray, after examining this specimen, writes: "The asci of specimen 14077 are indeed rather long, and their length, it would seem to me, would exclude the fungus from my concept of Taphrina communis.

Although I have never made an extensive study of T. pruni, the asci of this fungus are reported to be as much as 60 microns long, and I found the asci in your specimen as long as that. I strongly suspect that your fungus is T. pruni." It may be noted that this is the only Canadian collection of T. Pruni in the Herbarium. All specimens so labelled that have been critically examined, have proved to be T. communis. Moreover, most, if not all of the early records of T. Pruni in the P.D.S. are likewise referable to T. communis. (I.L. Conners)

RUST (Tranzschelia Pruni-spinosae) was common on plum foliage in the fall at the Experimental Station, Sidney, B.C., but caused negligible damage. (W. Jones)

BACTERIAL BLIGHT (Xanthomonas pruni) caused scattered fruit spotting in Lincoln Co., Ont. (G.C. Chamberlain)

CHLOROSIS and DWARFING (cause unknown). An orchard of Reine Claude in Lincoln Co., Ont., has a number of trees that have been growing poorly for several years, are noticeably stunted, and show short current year's growth; foliage was yellowish and inclined to be papery. Although fertility was somewhat low, soil tests disclosed no definite deficiencies. Some have been indexed to check for the presence of a virus. (R.S. Willison)

DEFOLIATION and FRUIT DROP (cause unknown). Trees in several Italian Prune orchards in Lincoln Co., Ont., showed considerable defoliation and fruit drop in August. Many of the remaining leaves were yellowish, yellow between veins, mottled, or with marginal scorching. There was a tendency toward leaf-rolling. (R.S. Willison)

GUM SPOT (cause unknown) was unusually prevalent in the northern Okanagan Valley, B.C. (R.E. Fitzpatrick)

ROOT and CROWN INJURY (wet soil). See under Cherry.

SPRAY INJURY. Much of the leaf spotting on prunes that has occurred during the last three years in the Okanagan Valley, B.C., is now thought to be due to soap and arsenic sprays. Injury was not generally severe this year, but in one orchard complete defoliation followed the application of nicotine and soap. (R.E. Fitzpatrick)

SAND CHERRY

SHOT HOLE (Cercospora circumcissa) was heavy on Champa at Brandon, Man. (W.L. Gordon)

C. RIBES FRUITS

CURRANT

WHITE PINE BLISTER RUST (Cronartium ribicola) was extremely heavy on black currants in the Ottawa district, Ont., most bushes being almost completely defoliated. Red currants were moderately to heavily rusted (D.B.O. Savile). A heavily rusted specimen was received from St. Lambert, Que.

(H.N. Racicot). Traces of rust were seen in a number of gardens in P.E.I., and a heavy infection in one (R.R. Hurst). A.W.S. Hunter and M.B. Davis (Proc. Amer. Soc. Hort. Sci. 42:467. 1943) have recently made a preliminary report on the progress made at the Division of Horticulture, Ottawa, in the breeding of black currants resistant to blister rust. A number of promising seedlings were obtained and one of these, a Kerry x R. ussuriense hybrid is being increased for distribution under the name Ottawa 381; it is hoped that it will be possible to supply nurseries with limited material by the fall of 1944, but it will be several years before it is available to the public.

ANTHRACNOSE (Drepanopeziza Ribis) caused moderate damage in the Courtenay district, B.C. (W. Jones). It was severe at Morden, Man., on red and white currants. (W.L. Gordon)

SEPTORIA LEAF SPOT (Mycosphaerella Grossulariae) was moderate at Gimli, and slight to severe at Morden, Man. (W. L. Gordon). A trace was seen in P.E.I. (R.R. Hurst)

LEAF SPOT (Phyllosticta Grossulariae Sacc.) caused slight damage to white currants in a garden in the Courtenay district, B.C. (W. Jones). First Canadian record of this fungus.

CLUSTER CUP RUST (Puccinia Pringsheimiana) slightly infected one red currant bush at Winnipeg, Man. (J.E. Machacek)

POWDERY MILDEW (Sphaerotheca mors-uvae). A severe infection occurred at Edgerton, Alta. (L.E. Tyner). A moderate, general infection was found at Morden, Man. (W.L. Gordon). A specimen was received from Bowsman River, Man. (L.T. Richardson)

GOOSEBERRY

ANTHRACNOSE (Drepanopeziza Ribis) caused considerable leaf spotting and defoliation at Saulnierville, N.S. (J.F. Hockey)

SEPTORIA LEAF SPOT (Mycosphaerella Grossulariae). A trace was found on all varieties at Lacombe, Alta. (M.W. Cormack). Infection was moderate at Morden, Man.; a slight to moderate infection also occurred on wild gooseberry under cultivation. (W.L. Gordon)

CLUSTER CUP RUST (Puccinia Pringsheimiana) moderately infected a small area of a commercial planting in Digby Co., N.S. (J.F. Hockey)

POWDERY MILDEW (Sphaerotheca mors-uvae) was heavy on many bushes at Morden, Man. (W.L. Gordon). It caused moderate leaf scorch and defoliation and serious marring of fruit in Lincoln Co., Ont. (G.C. Chamberlain). Twenty-five per cent of the fruit was spoiled and many twigs were stunted in a garden at Abbotsford, Que. (D.B.O. Savile). Mildew was very severe on leaves, fruit and twigs of unsprayed bushes in Annapolis Co., N.S.; good control was effected with lime-sulphur sprays (J.F. Hockey). A mild outbreak occurred in a garden at Charlottetown, P.E.I. (R.R. Hurst)

D. RUBUS FRUITS

BLACKBERRY

ANTHRACNOSE (Elsinoe veneta). A light, general infection occurred on leaves and petioles at Morden, Man. (W.L. Gordon)

RASPBERRY

CROWN GALL (Agrobacterium tumefaciens). A Latham planting in Peel Co., Ont., showed 20% crown gall, but the canes appeared to have made good growth in spite of a general infection of roots and crowns (G.C. Chamberlain). In P.E.I. one Viking planting showed 60% infection, and the disease was reported from four other locations. (R.R. Hurst)

LEAF SPOT (Ascochyta sp.). A trace of spotting on a leaf at Morden, Man., yielded an Ascochyta with spores 7.5-12 x 3 microns. (W.L. Gordon)

CANE BLIGHT (Botrytis cinerea) caused considerable damage in Ottawa seedlings at the Agricultural College Farm, Truro, N.S. (J.F. Hockey)

SPUR BLIGHT (Didymella applanata). All varieties at Lacombe, Alta., were slightly infected (M.W. Cormack). A light infection was seen on some canes at Morden, Man. (W.L. Gordon). A 15% infection in a Latham plantation in Middlesex Co., Ont. caused extensive cane lesions and bud killing (G.C. Chamberlain). A specimen was received from Bedford, Que. (L.T. Richardson). Spur blight severely damaged Viking in several localities in P.E.I. (R.R. Hurst)

ANTHRACNOSE (Elsinoe veneta). A moderate, patchy infection occurred on Rideau, at Morden, Man.; a heavy infection also occurred on some black raspberries (W.L. Gordon). Anthracnose was prevalent on Taylor, which is very susceptible, in Middlesex Co., Ont., and caused stunting. (G.C. Chamberlain)

KILLING OF CANES (Fusarium avenaceum). Dead canes of Indian Summer received from Eburne, B.C., showed orange spore masses in cracks. (L.T. Richardson; det. W.L. Gordon)

SEPTORIA LEAF SPOT (Mycosphaerella Rubi). A trace occurred on wild raspberry under cultivation at Morden, Man.; a moderate infection occurred on Rideau, and a light infection on O-275 (W.L. Gordon). The disease was general on Latham in Middlesex Co., Ont., and caused slight defoliation; close planting and woods favoured development (G.C. Chamberlain). A specimen was received from Spanish, Ont. (H.N. Racicot)

YELLOW RUST (Phragmidium Rubi-idaei). Aecia were seen in May on leaves of Cuthbert in coastal B.C. This rust is usually present on susceptible varieties such as Cuthbert and Viking; but growers are increasing the acreage of Washington, which has, so far, proved resistant (W. Jones). Yellow rust was general on Cuthbert in the Brantford district, Ont., (DAOM 14099) causing some defoliation late in the season. (G.C. Chamberlain)

LATE YELLOW RUST (Pucciniastrum americanum). A light, general infection occurred on wild raspberries under cultivation at Morden, Man.; slight amounts also occurred on O-275 and Viking, but less than in 1942 (W.L. Gordon). Severely rusted fruits were received from Clarence, Ont., with no information as to variety or extent of infection (H.N. Racicot). Aecia were developed on Picea canadensis on June 16 at Springhill, York Co., N.B., near a large plantation of Viking and Newman. The owner claimed that 3,000 quarts, out of 9,000 quarts of Viking picked, were unsaleable because of rust. The cost of harvesting is seriously increased by the time required in selecting healthy fruit. A grower at Dorchester, N.B., claimed to have lost 10 crates out of 35 from rust (S.F. Clarkson). Several cases of late rust were reported in P.E.I., but there was no serious damage. (R.R. Hurst)

POWDERY MILDEW (Sphaerotheca Humuli). Specimens were received from Frenchmans Butte, Sask. (H.W. Mead). A 75% infection occurred in a nursery planting of Latham in Hastings Co., Ont., causing severe stunting. About 35% infection occurred in a nursery planting of Latham in Welland Co., causing some stunting (G.C. Chamberlain). Heavily mildewed cane tips were received from Osgoode, Ont. (H.N. Racicot)

WILT (Verticillium alboatrum). A severe infestation spreading inward from one side of a small plantation at Digby, N.S., killed 10 to 12% of the canes. (J.F. Hockey)

DECLINE (virus) is fairly general in Cuthbert plantings on Vancouver Island and the lower mainland, B.C. The symptoms are as described by S.M. Zeller and A.J. Braun (Phytopath. 33:156-161. 1943). The main symptom is a gradual deterioration of cane and root growth over a period of years. (W. Jones)

LEAF CURL (virus). One per cent of Cuthbert in a plantation in Welland Co., Ont., was infected. (G.C. Chamberlain)

MOSAIC (virus). In the variety trial plots at the Experimental Farm, Agassiz, B.C., 50% of the plants of Ottawa O-275 were infected, while all plants of the remaining varieties, namely, O-201, O-263, O-271, O-277, Gatineau, Madawaska, Rideau, Trent, and Washington, were free from this disease (W. Jones). Some plants at Winnipeg, Man., were severely affected (J.E. Machacek). One per cent of Cuthbert and Ottawa in a nursery in Wentworth Co., Ont., were infected. It was found on Latham in a second nursery. Mosaic was also found on Ottawa at Goderich and Stayner. A Cuthbert planting in Welland Co. showed 15% infection (G.C. Chamberlain). A trace of mosaic was found in a plantation in Sunbury Co., N.B. It was common on wild red raspberries in Sunbury, York and Carleton Counties (D.J. MacLeod). Traces were found on Viking and Cuthbert in Queens Co., P.E.I. (R.R. Hurst)

CHLOROSIS (excess lime) was seen in some plants at Winnipeg, Man. (J.E. Machacek)

E. OTHER FRUITS

BLUEBERRY

CANKER (Godronia Cassandrae). Specimens of New Giant from Eburne, B.C., with the Fusicoccum putrefaciens stage in good fruit, were received with the statement that the plants were dying every day (H.N. Racicot, L.T. Richardson). A specimen was also received from B.C. through J.W. Eastham, but the exact origin is not known (I.L. Conners). Previously reported from Que.

FIG

TWIG BLIGHT (?Botrytis cinerea) was prevalent on a few trees at the Experimental Station, Sidney, B.C. Botrytis sp. of the cinerea type was isolated from diseased tissue. (W. Jones)

GRAPE

DEAD ARM (Fusicoccum viticola) was seen on Concord in several vineyards in Lincoln Co., Ont., infection averaging 2%; seemingly more prevalent than for several years. (G.C. Chamberlain)

BLACK ROT (Guignardia Bidwellii) caused considerable losses on Niagara and Concord in poorly sprayed vineyards in Lincoln Co., Ont. (G.C. Chamberlain). Similar observations were made by Prof. J.E. Howitt.

DOWNY MILDEW (Plasmopara viticola) was moderately severe on Agawam in Lincoln Co., Ont., causing some shelling of fruit and leaf scorch; mildew was heavy on unsprayed grapes in the Ottawa district, Ont. It was abundant on wild Vitis vulpina by July 1. See also under Vitis in Diseases of Ornamental Plants. No mildew could be found on the grapes at the Central Experimental Farm, where aeration was good and spraying was adequate. (D.B.O. Savile)

PINEAPPLE

FRUIT ROT (?Penicillium sp.). All the fruit in a store at Winnipeg, Man., were soft and oozing. Penicillium was fruiting in cracks and between segments. (J.E. Machacek)

STRAWBERRY

GREY MOULD (Botrytis cinerea). Losses up to 20% were seen in plantings in the Berwick district, N.S. (J.F. Hockey). Late in the picking season many plantations in P.E.I. showed a little of this trouble. (R.R. Hurst)

LEAF SPOT (Mycosphaerella Fragariae). A moderate infection was found at the Experimental Station, Lacombe, Alta. (W.C. Broadfoot). At Morden, Man., a moderate infection occurred on Louise and Meighen; less on other varieties, and much less generally than in 1942 (W.L. Gordon). Leaf spot was moderately heavy in Lincoln Co., Ont. (G.C. Chamberlain). Traces were seen on Senator Dunlap in Queens Co., P.E.I. (R.R. Hurst)

POWDERY MILDEW (Sphaerotheca Humuli). A light infection occurred on Senator Dunlap in Queens Co., P.E.I. (R.R. Hurst)

WITCHES BROOM (virus). A few infected plants were found in a patch of Premier at Berwick, N.S. (J.F. Hockey)

JUNE YELLOWS (?virus). A planting of Premier in Lincoln Co., Ont., showed 2% infection; newly set out plants were markedly retarded in growth (G.C. Chamberlain). A trace was seen on Dick in P.E.I. (R.R. Hurst)

ROOT ROT (cause unknown) was common in commercial plantings on Vancouver Island and the lower mainland, B.C., and caused considerable damage. (W. Jones)