DISEASES OF FRUIT CROPS

APPLE

SCAB - *Venturia inaequalis* (Cke.) Wint.

B.C.-

Scab was particularly severe in the Kootenay district this year. In three orchards the percentages of fruit infected by actual count were as follows: Fameuse 18 per cent, Winter Banana 40, and McIntosh 48. The Fameuse and Winter Banana trees were sprayed four times while in the McIntosh orchard the trees were sprayed five times, the first spray being based on ascospore maturity. In Vancouver island, however, the damage was not as severe as in 1929 although the losses were large. In the northern part of the Okanagan valley only one half of one per cent of the fruit were scabbed.

Man.-

Scab was reported from one locality only, near Winnipeg. Seventy-five per cent of the leaves on some trees were infected. The fruit was also scabbed.

Ont.-

Scab was slightly more prevalent than in 1929 in the Niagara peninsula although hot, dry weather checked the spread of the disease. Unsprayed orchards were severely damaged. Ascospore discharge did not take place until May 1, when it was general and well marked. The dry weather of the previous two weeks had prevented early discharge although the asci were mature.

Que.-

Severe infection of Fameuse was reported in an unsprayed orchard in Jacques Cartier county. From observations made at the Experimental Farm and the School of Agriculture, Ste. Anne de la Pocatière, the infection on the different varieties was estimated as follows: Alexander, Gano, Golden Russett and Milwaukee 5 per cent; Duchess, Greening and Melba 10 per cent; Transparent and Wealthy 15 per cent; St. Lawrence 20 per cent; Wolf River 25 per cent; Baxter and Fameuse 30 per cent; and McIntosh 65 per cent. In two orchards in Rouville and Iberville counties and in the orchard at the Experimental Farm, Lennoxville, where careful spraying has been practiced, only infections varying from a trace to slight developed on the leaves or fruit.

N.B.-

Scab was general although not as severe as in 1929. Approximately 400 trees in seven orchards, representing several varieties, showed an infection of 20 per cent. Pin point scab was observed in severe form in two orchards on Oct. 8.

N.S.-

First ascospore discharge occurred on May 15-16. The first

conidia appeared on the leaves on June 5. On June 20, well sprayed orchards showed less than one per cent of scab while unsprayed orchards showed 10 to 70 per cent. By Oct. in sprayed orchards, fruit infection varied from 0 to 20 per cent while in unsprayed orchards infection varied from 40 to 100 per cent. More scab was present in the western part of the Annapolis valley than the eastern.

P.E.I.-

This disease occurs annually in P.E.I. causing serious injury to the fruit. In all orchards with the exception of two, where careful spraying was practiced, apple scab was very destructive rendering otherwise splendid orchards useless.

FIRE BLIGHT - Bacillus amylovorus (Burr.) de Toni

B.C.-

Fire blight occurred on several varieties in the Okanagan valley, mostly, however, on Spitzenburg. One per cent of the trees of all varieties were infected. The disease was not positively identified on Vancouver island or the lower Fraser valley.

Man.-

In the orchard at the Man. Agricultural College, Winnipeg, 50 per cent of the trees were infected. The disease was also prevalent at Morden.

Ont.-

Fire blight was more prevalent this year than in 1929, particularly as a twig blight. In one orchard of crab apple trees fire blight progressed down the branches causing the death of large portions of the trees.

Que.-

Fire blight was severe in Quebec in 1930. It occurred in epidemic form in many orchards. It was particularly prevalent in four out of the eight apple growing districts of western Quebec, and it was reported from scattered localities throughout the province.

At. St. Hilaire, there was a trace of both twig and blossom blight, while it was slightly more prevalent at Rougemont. In the Frelighsburg district, where there are mostly only young orchards, a trace of twig infection was generally present. In a few cases where there was an old farm orchard near the young trees, it was more severe. On Montreal island it was severe in one orchard on crab apple trees, and moderate on Fameuse, while a trace occurred on most of the other varieties. In general, it was present, mostly as twig blight, in all orchards.

Abbotsford was the most severely affected district, and the disease was mostly in the form of blossom blight. Counts in one

orchard showed 98 per cent blossom blight on Winter Arabka, 70 per cent on Wealthy, 40 per cent on Fameuse, 15 per cent on Russet, and a trace on Duchess and Yellow Transparent.

Fire blight was present in every orchard in this district, varying from a trace to severe. In one group of six Alexanders, there were 2 per cent of blossom blight and a trace of twig blight on June 26. On August 13, twig blight had become severe. In a block of Fameuse near these Alexanders there were 15-20 per cent blossom blight and a trace of twig infection, while in another block of Fameuse farther away there was only a trace of twig blight. Queen's Choice crabs, Flemish Beauty pears and one tree of Clapp's Favorite pears showed no blight on June 26, while on August 13, the crabs were severely affected with twig infection, the Flemish Beauty showed a trace, and the Clapp's Favorite pear tree was so severely affected that it subsequently died.

In the Hemmingford-Franklin district, blossom blight was general, but severe only in the vicinity of susceptible varieties of apple, such as Alexanders, or of pear. In one block of Alexanders about 30 years old there were 90 per cent blossom blight and a trace of twig infection.

Twig blight was general throughout the Chateauguay-Woodlands district, varying from moderate to severe, being severe in about 25 per cent of the orchards. Twig blight was also severe in a number of orchards at St. Joseph du Lac, but being of patchy occurrence on account of the orchards being isolated one from another. At Oka, the orchards are mostly those of the Oka Agricultural Institute, and on account of thorough pruning for blight control, only a trace occurred.

Specimens of twig blight of apple were sent in from Garthby, Wolfe county, and Mr. Perrault reported from 3 to 5 per cent blight in three orchards in Bellechasse county, and a trace in Kamouraska county. Late twig infection occurred on a few varieties of apple trees at Lennoxville (H.N. Racicot).

N.B.-

Only one tree, moderately infected, was observed in York county.

BLACK ROT - *Physalospora Malorum* Shear (*Sphaeropsis Malorum* Berk.)

Sask.-

The greater part of one crab apple tree in the University orchard, Saskatoon, was killed by black rot, while slight infections occurred on several others.

Que.-

In one orchard, one per cent infection was reported on McIntosh in Kamouraska county.

Apple

N.B.-

Fifteen per cent of the trees at the Experimental Station, Fredericton, were severely affected with black rot.

PERENNIAL CANKER - Gloeosporium perennans Zeller & Childs

A careful survey of the Okanagan valley concluded on May 31, 1930, showed the following percentages of trees affected, whether the infection was light or severe: north Okanagan 6.8 per cent, central Okanagan 21.7 per cent and south Okanagan 0.14 per cent. The number of trees in each section is practically the same.

CORKY CORE - Non-parasitic

Corky core caused heavy losses in the Okanagan valley, B.C. Fruit from affected trees are unfit for shipment. The estimated loss of fruit and the percentage of trees affected were as follows: central Okanagan 100,000 boxes, 22 per cent of the trees, south Okanagan and Similkameen 25,000 boxes, 8 per cent of the trees.

RUST - Gymnosporangium spp.

Que.-

Rust on apples was reported from Kamouraska county.

N.S.-

Very little rust was reported on apples this year. The rust was identified as Gymnosporangium germinale (Schw.) Kern.

MISCELLANEOUS DISEASES

DIE BLACK and CANKER - Cytospora sp.

Cytospora, sometimes along with Physalospora, was plentiful on dead limbs at Saskatoon, Sask. It possibly followed winter or drought injury, as the summer and autumn of 1929 were exceedingly dry.

FROST and DROUGHT INJURY - Non-parasitic

The leaves of crab apple trees were severely injured in the University orchard, Saskatoon, Sask., the leaves dying and becoming discolored from the edges inwards. The effect on the trees this season was probably slight. The injury may have been due to frost or drought, as seven degrees of frost were registered on August 31, while, on the other hand, the trees are thickly planted and the past two seasons were both dry.

In Nova Scotia the injury from frost was most pronounced.

in low sections. The tips of the leaves were browned and some of the opening buds were injured. There were 4 to 9 degrees of frost on May 11, and 1 to 5 degrees on May 14.

DROUGHT SPOT and DIE-BACK - Non-parasitic

The average estimated damage from drought spot was 5 per cent in south Okanagan and Similkameen valleys, B.C., and 8 per cent in central Okanagan. In some districts within these areas as high as 20 per cent of the trees were affected.

The damage from die back was estimated to be 6 per cent in north Okanagan, 3 per cent in central Okanagan and 2 per cent in south Okanagan and Similkameen.

FROST RING - Non-parasitic

Late spring frosts caused much injury to the fruit principally of the Wealthy variety at Kamloops, B.C., it was estimated that 5 per cent of the fruit was damaged. Frost ring was equally heavy on Joanathan at Yale, B.C.

WINTER INJURY - Non-parasitic

Most of the young trees in all varieties were badly affected in B.C. by winter injury causing 7 per cent of the young trees to be damaged.

WATER CORE - Non-parasitic

One hundred per cent of the apples were affected with water core in the Trenton variety in the Experimental Farm orchard, St. Anne de la Pocatiere and 10 to 20 per cent in St. Lawrence in two orchards in l'Islet county.

POWDERY MILDEW - Podosphaera leucotricha (Ell. & Ev.) Salm.

Powdery mildew caused no commercial damage this year in B.C., nor has it been of any importance for the last two years. Periodically however, it causes a loss of as much as 100 per cent of the crop.

Very slight damage was caused to the tips of a few twigs in Lincoln county, Ontario.

BITTER PIT - Non-parasitic

Northern Spy is most subject to this disease in B.C., although other varieties may occasionally be found affected. A loss of 10 per cent of the crop was reported this year from the Okanagan valley.

Bitter pit losses were observed in N.S. in the following

varieties: Starks, 0 to 25 per cent, a total loss in some orchards there the crop was light; Greening and Blenheim, 0 to 5 per cent; and Baldwin, a trace.

ANTHRACNOSE - Neofabraea malicorticis (Cordley) Jackson

Anthracnose was confined in the Okanagan valley, B.C., to one district in the northern section, where one per cent of the trees were affected. The disease was general on Vancouver island and in the lower Fraser valley, where the damage is always severe unless control measures are practiced. It is probably the most important disease in apple orchards on the coast.

CROWN ROT - Non-parasitic

It was estimated that 2 per cent of the trees in all varieties were affected with crown rot in southern and central Okanagan districts, B.C. In some orchards as high as 75 per cent of the trees were injured.

TWIG BLIGHT - Nectria cinnabarina (Tode) Fr.

Twig blight was quite abundant in one orchard in N.S., following picking injuries of the previous year. It was most severe on Ben Davis and Rome Beauty.

EUROPEAN CANKER - Nectria galligena Bres.

From trees observed in two orchards in York county, N.B. The disease is widespread and quite serious in old orchards.

INTERNAL BREAKDOWN - Non-parasitic

This disease was found mostly in Jonathan and Grimes Golden varieties at Okanagan, B.C., causing about 5 per cent damage in the stored crop.

SOOTY BLOTCH - Gloeodes pomigena (Schw.) Colby

In unsprayed orchards in Kings county, N.S., 40 per cent of the fruit was affected, while in regularly sprayed orchards infections varied from a trace to 2 per cent. The damage was slight.

FLY SPECK - Leptothyrium Pomi (Mont. & Fr.) Sacc.

In Kings county, N.S. as much as 90 per cent of the fruit was affected with fly speck on unsprayed trees of the Wellington variety, while 0 to 5 per cent was marked on sprayed trees.

ARMILLARIA ROOT ROT - Armillaria mellea Fr.

A block of about 20 trees consisting of McIntosh, Delicious, Winesap and Winter Banana were attacked by Armillaria in a nursery at West Vancouver, B.C., but the trees were apparently not seriously injured. Armillaria is not common in B.C. and this is the first case of nursery infection recorded.

PINK ROT - Tricothecium roseum Link

Pink rot is an important disease in P.E.I., causing the decay of stored apples as the fruit are commonly affected with scab and are therefore susceptible to the rot.

CRINKLE CORK - Non-parasitic

Several specimens were found in one orchard in Kings county, N.S. It appears to be similar to Brooks and Fisher's "York Spot" or "Hollow Apple". This disease is apparently caused by drought.

APRICOT

DROUGHT SPOT

Drought spot caused a loss of 1.5 per cent of the crop in all varieties of apricot in the southern Okanagan valley, B.C.

BLACKBERRY

ORANGE RUST - Gymnoconia Peckiana (Howe) Trotter

B.C.-

Orange rust occurred locally on Vancouver island and the lower Fraser valley.

Ont.-

In a plantation in Lincoln county a trace of rust was found on May 27. The rust pustules were forming, but none were yet open.

N.B.-

A single specimen was sent to the Laboratory from Kings county.

N.S.-

Orange rust was very prevalent on wild blackberries, clumps having as many as 60 per cent of their shoots affected.

CANE BLIGHT - Leptosphaeria Coniothyrium (Fuck.) Sacc.
(Coniothyrium Fuckelii Sacc.)

Cane blight was general on Vancouver island and in the lower Fraser valley. The damage, however, was insignificant.

BLUEBERRY

WITCHES' BROOM - Calyptospora columnaris (Alb. & Schw.) Kühn.

This disease was found on cultivated blueberries in Kings county, N.S.

CHERRY

SHOT HOLE - Coccomyces hiemalis Higgins
(Cylindrosporium hiemalis Higgins)

B.C.-
Shot hole occurs sporadically, causing much defoliation in the southern Okanagan section.

Ont.-
Shot hole was of no importance on cherries this year.

N.B.-
Only one specimen was obtained in York county.

N.S.-
There was not as much defoliation in 1930 as there was in 1929, although the disease was moderately abundant in Kings and Annapolis counties. Where the trees were sprayed the disease was well controlled.

P.E.I.-
The disease infected 80 per cent of the leaves causing severe defoliation in Queens county.

POWDERY MILDEW - Podosphaera Oxyacanthae (Fr.) de Bary

Powdery mildew was severe on sand cherries in small areas of the University orchard, Saskatoon, Sask.

BROWN ROT - Sclerotinia americana (Worm.) Nort. & Ezekiel

B.C.-
Brown rot was very destructive on Vancouver island and the lower Fraser valley. On Vancouver island as high as 80 per cent of the fruit was infected in some orchards.

Ont.-
The first recorded appearance of the disease on the fruit was made on June 28. The infection was light.

BLOSSOM BLIGHT - Sclerotinia cinerea Schroet.

Significant damage resulted from blossom blight on

Vancouver island. This disease was also present on prunes.

ARMILLARIA ROOT ROT - Armillaria mellea Fr.

In a block of 5 year old Byngs at Kootenay Lake, B.C. nearly every tree was affected with Armillaria root rot and the affected trees were either dead or dying. The trees had been planted less than a year after the land had been cleared of bush, which had consisted chiefly of deciduous trees - aspen, birch and alder. The disease has been observed before in the past few years, but only an occasional older tree has been killed.

CORYNEUM BLIGHT - Coryneum Beijerinckii Oud.

Coryneum blight was severe on sand cherries in the University orchard, Saskatoon, Sask.

DROUGHT SPOT - Non-parasitic

Drought spot caused only very slight damage on all varieties in the southern Okanagan valley, B.C.

BARK INJURY - Cause undetermined

A Cladosporium was present in the epidermis, but not the deeper tissues of several cherry twigs sent to the Laboratory from Winona, Ont. Isolations were made from the twigs, but inoculations were not carried out. (R. S. Willison)

BLACK KNOT - Dibotryon morbosum (Schw.) Theiss. & Syd.

Black knot was moderate to severe on wild cherries in Queens county, P.E.I. Many young trees are destroyed each year by this disease, which is widespread over the province.

CRANBERRY

RED LEAF - Exobasidium Vaccinii (Fuck.) Woron.

This disease was found on wild cranberry in Digby county, N.S. causing red tips on the shoots.

CURRANT

WHITE PINE BLISTER RUST - Cronartium ribicola Fischer

B.C.-

White pine blister rust was general in the lower Fraser valley. Black currants were frequently severely affected.

Ont.-

Considerable rust was present on black currants 2 to 3 miles from the nearest known pine infections near Guelph, Ontario. In Carleton county, rust could be found on susceptible wild Ribes wherever it was looked for.

Que.-

Rust was first observed at Hull, Que., on both black and red currants on June 5. A part of the primary pustules were still unbroken. The bushes were in a garden about 250 yards from an infected pine hedge. The source of infection was probably much closer as the garden was in the shadow of a small grove of mature white pines. From the ground no rust was visible on these trees. White pine blister rust was present everywhere in the Gatineau district on wild Ribes. Susceptible species were invariably rusted.

In Laval county a patch of cultivated black currants were completely rusted and almost totally defoliated. These bushes had produced no crop for several years.

N.B.-

White pine blister rust was widespread throughout the province on both cultivated and wild Ribes. On the Experimental Farm, Fredericton, red and black currants were heavily rusted, especially the latter species.

N.S.-

All the leaves of black currants were infected in a small garden in Colchester county.

P.E.I.-

A light infection occurred late in Queens county. The damage was nil.

SEPTORIA LEAF SPOT - Mycosphaerella Grossulariae (Fr.) Lindau (Septoria Ribes Desm.)

Ont.-

This disease was common and caused early defoliation of unsprayed bushes in southern Ontario.

N.B.-

A moderate infection of Septoria leaf spot was observed on the Experimental Farm, Fredericton.

P.E.I.-
A light infection was reported in Queens county.

GLOEOSPORIUM LEAF SPOT - Pseudopeziza Ribis Kleb.
Gloeosporium Ribis (Lib.) Mont.

A slight infection was observed in a small garden plantation in Colchester county, N.S.

POWDERY MILDEW - Sphaerotheca mors-uvae (Schw.) Berk.

B.C.-
Powdery mildew was general on Vancouver island and in the lower Fraser valley. Losses were very heavy in many localities.

Alta.-
The disease was common and frequently severe. It was reported from Edmonton, Lethbridge, Olds, Red Deer and Lacombe.

Sask.-
Powdery mildew was troublesome on black currants at Hillside.

TWIG CANKER - Nectria cinnabarina (Tode) Fr.

Twig blight was not common at the Experimental Farm, Kentville, N.S. However, black currants are not grown extensively.

GOOSEBERRY

WHITE PINE BLISTER RUST - Cronartium ribicola Fischer

Ont.-
Wild gooseberries were found rusted in Carleton and Leeds counties. On the leaves borne on the old wood the individual infections were usually small, but on the new shoots they were numerous and large, frequently involving half the leaf surface of the large vigorous leaves.

Que.-
Rust was reported from Rouville and Kamouraska counties and the Quebec district. The leaves were covered with rust.

N.B.-
Rust was widespread on cultivated and wild gooseberries on the Experimental Farm, Fredericton; 75 per cent of the leaves were heavily infected.

Gooseberry

GLOEOSPORIUM LEAF SPOT - Pseudopeziza Ribis Kleb.
(Gloeosporium Ribis (Lib.) Mont. & Desm.

Traces of this leaf spot were observed in Queens county, P.E.I.

SEPTORIA LEAF SPOT - Mycosphaerella Grossulariae (Fr.) Lindau
(Septoria Ribis Desm.)

Septoria leaf spot caused some defoliation at Edmonton and Lethbridge, Alta. Although this disease was not generally important this year in Nova Scotia, a rather severe infection occurred soon after harvest time in one patch in Kings county.

POWDERY MILDEW - Sphaerotheca mors-uvae (Schw.) Berk.

Powdery mildew was severe, causing a loss of 75 per cent of the crop at the Experimental Station, Summerland, B.C.

It was also reported as common and often severe in Alberta.

GRAPE

DEAD ARM - Cryptosporella viticola Shear
(Fusicoccum viticolum Redd.)

Dead arm was about as prevalent in 1930 as in 1929, in the Niagara peninsula, Ontario. The leaf symptoms of the disease were very marked this spring. In one vineyard in Lincoln county, 25 per cent of the vines were infected. The affected arms were dying.

BLACK ROT - Guignardia Bidwellii (Ell.) Viola & Ravaz.

A trace was found on the leaves of Campbell's Early in Lincoln county, Ont.

CHLOROSIS - Non-parasitic

Chlorosis was reported in Lincoln county, Ont. The grapes colored prematurely, did not size well and the leaves turned yellow. The disease was confined to the Worden variety.

PEACH

SCAB - Cladosporium carpophilum Thüm

Scab was very prevalent in the Niagara peninsula, Ont. on early varieties such as Rochester, St. John and Greensboro; later varieties were very free. On Aug. 12, in an orchard, in Lincoln county 60-65 per cent of the fruit were scabbed while Elberta was free from infection.

Peach

LEAF CURL - Taphrina deformans (Berk.) Tul.

Leaf curl was general and severe on Vancouver island, B.C. The disease was rare this season in the Niagara peninsula, Ont. Infections were scattered and appeared late in the season. On the other hand leaf curl was unusually prevalent and severe in 1929.

WILT - Verticillium spp.

Verticillium wilt caused partial defoliation of several trees in a 4 year old orchard at the Laboratory of Plant Pathology, St. Catharines, Ont. In a 3 year old orchard of Elberta in Lincoln county 10 per cent of the trees were affected, the infection showing on one side or one limb of the diseased trees. The resulting defoliation of the affected limbs stimulated the affected twigs to produce new buds.

POWDERY MILDEW - Sphaerotheca pannosa (Wallr.) Lév. var. Persicae Woron.

Traces of powdery mildew were found on all varieties in southern Okanagan valley, B.C.

BROWN ROT - Sclerotinia americana (Worm.) Nort. & Ezekiel

B.C.-

Brown rot was reported from Vancouver island and the lower Fraser valley. Infection was severe at the Experimental Station, Saanichton.

Ont.-

From observations made in the old orchard of the Laboratory farm, St. Catharines, it was found that a large number of incipient cankers were present on the smaller fruit-bearing twigs. These cankers originated from the pedicels that bore rotted fruit in 1929. In many cankers the disease had spread down the smaller laterals girdling and killing the larger branches. (R. S. Willison) For 1930 apothecia were first observed on May 16, in Lincoln county. Brown rot was of no importance in 1930 either as a blossom blight or as a fruit rot.

CANKER - Cytospora spp.

In 1929 in a 3 year old orchard at the Laboratory farm, St. Catharines, Ont. containing 330 trees, one wound was marked on each tree for further observation. Of the 330 wounds, 234 were due to pruning, 84 due to mechanical injury and 12 due to other causes, chiefly winter injury. In the summer of 1930 when these wounds were examined it was found that 36 or about 9 per

cent had developed cankers due to Cytospora sp., as far as known. Of the pruning wounds not healed in the fall of 1929, 13 per cent became cankered, of those caused by mechanical injury 5 per cent were cankered and of wounds from other causes 15 per cent produced cankers. The estimated damage was 10 per cent. (R. S. Willison)

PEAR

FIRE BLIGHT - Bacillus amylovorus (Burr.) de Toni

B.C.-

Fire blight occurred chiefly on Barletts, although it was observed on all varieties in the Okanagan valley, B.C. Ten per cent of the trees were injured.

Ont.-

Fire blight was general and severe this year being more prevalent than usual particularly as a twig blight. In one orchard of Barletts in Lincoln county, 25 per cent of the twigs were killed by fire blight and in another orchard the trunk of one tree in a block of 50 was half girdled.

Que.-

Although there was a slight amount of fire blight on pear in 1929 none was found on the several varieties examined in Rouville county by June 26. However, by this date the disease had appeared on apple. (See discussion of fire blight on apple).

SCAB - Venturia pyrina Aderh.

B.C.-

Scab was general on Vancouver island and in the lower Fraser valley. Losses were severe, unless control measures were practiced.

Ont.-

The appearance of conidia on twig lesions was first recorded on May 21, on badly cankered twigs of Flemish Beauty in Lincoln county.

Que.-

In one orchard in Rouville county, 40 per cent of the leaves of Clapp's Favorite were infected, with an average of 2 infections per leaf on June 26. A few leaves were nearly covered and already turning yellow. The subsequent damage was probably considerable.

P.E.I.-

One hundred per cent of the fruit of Flemish Beauty was infected, rendering the fruit useless.

DROUGHT SPOT - Non-parasitic

An average loss of 6 per cent of the fruit in all varieties was caused by drought spot in the southern and central Okanagan districts, B.C.

BLOSSOM END ROT - Non-parasitic

This disease occurs mostly on trees set out about 10 years ago in the southern Okanagan district.

POWDERY MILDEW - Podosphaera leucotricha (Ell. & Ev.) Salm.

Three per cent of the fruit of all varieties were damaged in the southern Okanagan valley, B.C.

ANTHRACNOSE - Neofabraea malicorticis (Cordley) Jackson

Anthracnose was general on Vancouver island and in the lower Fraser valley, B.C. Losses were severe unless control measures were practiced.

PLUM

BLACK KNOT - Dibotryon morbosum (Schw.) Theiss. & Syd.

Ont.-

Black knot was slightly more prevalent this year especially in neglected orchards, where it has become very destructive. Reine Claude has proven to be very susceptible.

Que.-

In one orchard of 75 trees in Laval county, 100 per cent of the branches were severely damaged. No fruit has been produced and the trees will ultimately be killed. It was claimed that the infection was worse this season although all the knots were cut out last year.

N.B.-

A slight infection was observed on one tree in the Experimental Farm orchard, at Fredericton.

N.S.-

Damage ranging from 3 to 10 per cent was reported on susceptible varieties from Kings county.

Plum

FIRE BLIGHT - Bacillus amylovorus (Burr.) de Toni

Fire blight was reported on plums from Port Haney, B.C. and Stanstead county, Que.

PLUM POCKETS - Exoascus Pruni Fuck.

All the trees in the Agricultural College orchard, Winnipeg, Man. were infected with plum pockets. Although most of the trees had only a small percentage of the fruit diseased, some had as high as 90 per cent destroyed. This disease was also present at Morden, Man.

SILVER LEAF - Stereum purpureum Fr.

Only 3 or 4 trees attacked by silver leaf were observed this year in Kings county, N.S.

BROWN ROT - Sclerotinia americana (Worm.) Nort. & Ezekiel

Brown rot was general on Vancouver island and in the lower Fraser valley, B.C. This disease was also present on prune.

Thirty-five per cent of the fruit were destroyed by brown rot in a garden containing 6 trees at Aylmer, Que.

SHOT HOLE - Coccomyces prunophorae Higgins
(Cylindrosporium prunophorae Higgins)

Shot hole was heavy at Winnipeg, Man. On some trees 100 per cent of the leaves were severely affected.

Shot hole caused considerable defoliation of German Prune and Magnum Bonum in Queens county, P.E.I. Ninety per cent of the leaves were infected.

DROUGHT SPOT - Non-parasitic

Ten per cent of the crop, which is not large, was affected with drought spot in the southern Okanagan district, B.C.

RASPBERRY

SPUR BLIGHT - Didymella applanta (Niessl) Sacc.

Alta.-

A light infection of spur blight was reported from Edmonton

and Lethbridge, Alberta.

Man.-

At the Experimental Farm, Morden a 50 per cent infection was observed on Latham, Hubert and Viking varieties. The disease is also present, to a small extent, throughout that district.

Que.-

Only traces of spur blight were found in 6 plantings of Newman and one of Viking, in Rouville and Nicolet counties, while 3 plantings of Herbert in St. Maurice and Rouville counties were moderately to heavily infected. In the more severe infections all the canes were discolored for 2 to 2½ feet from the ground. The disease was more severe in the older plantations.

N.S.-

Spur blight was in general less severe this year than in 1929, especially in young plantations, which were practically free from disease. In old patches of Herbert in Kings, Annapolis and Digby counties up to 60 per cent of the canes were slightly infected.

P.E.I.-

Spur blight is an important disease in this province. Viking seems least susceptible.

MOSAIC AND LEAF CURL - Virus Diseases

B.C.-

Five per cent of the plants were affected with mosaic in the Okanagan valley.

Alta.-

Mosaic caused moderate damage in the University gardens, Edmonton.

Ont.-

Mosaic affected 100 per cent of the plants in several plantations at Collingwood. Leaf curl and mosaic were general in a plantation in Lincoln county.

Que.-

Infections varying from a trace to 4 per cent were reported from 12 plantations of Newman scattered in several counties. The disease was worse in old plantations. Herbert was free from mosaic. In one plantation it was growing next to diseased Newman. Two per cent of the plants of Viking were affected in one planting. A single plant of Newman affected with leaf curl was found in one plantation in Rouville county.

Raspberry

N.B.-
Thirty per cent of the plants were affected with mosaic in the Experimental Station plantation at Fredericton, while leaf curl was observed on 3 per cent of the plants.

N.S.-
In Kings county no mosaic was observed on Herberts and only 3 per cent of the Viking plants were affected. Roguing has kept the disease well in check in young plantations. Mosaic affected 75 per cent of the plants of an unknown variety in a planting in Colchester county.

P.E.I.-
Mosaic was responsible for the destruction of many promising plantations. Viking was practically free.

ANTHRACNOSE - Plectodiscella veneta Burkh.
(Gloeosporium venetum Speg.)

Anthracnose was general on Vancouver Island and in the lower Fraser valley, B.C. causing significant damage.

In Joliette and Nicolet counties, Que., a trace of anthracnose was observed on Newman raspberries, while in Yamaska, L'Assomption, Rouville, Iberville and Quebec counties infections ranging from 50 to 100 per cent were reported on the same variety. In Iberville county Herbert raspberries growing next to diseased Newmans were free from anthracnose. In heavy infections as much as 10 per cent of the new shoots had their tips killed by the disease, stunting their growth. Vikings showed a trace in Rouville county.

Anthracnose was severe on the upper third of the canes, causing a die back on the fruiting canes, in Digby county, N.S.

SEPTORIA LEAF SPOT - Mycosphaerella Rubi Roark
(Septoria Rubi West.)

One hundred per cent of the leaves were infected on Herbert raspberries in Hull, Rouville and St. Maurice counties, Que. Infection caused premature defoliation, but as it did not take place until late in the season the damage was usually slight.

Sixty per cent of the leaves were infected, causing severe defoliation in Digby county, N.S. Leaf spot is not prevalent in a young thrifty patch adjoining the infected section.

CANE BLIGHT - Leptosphaeria Coniothyrium (Fuck.) Sacc.

Cane blight was general on Vancouver island and in the lower

Fraser valley, B.C. causing significant damage.

Only two specimens of cane blight were found on the Experimental Station plantation at Fredericton, N.B.

In a plantation of Herbert in Digby county, N.S. the plants that were sprayed in 1929 and pruned early showed infections varying from 0 to 25 per cent, while 75 per cent of the canes were affected in the unsprayed sections.

BLUE STEM WILT - Verticillium ovatum Berkeley & Jackson

This disease was more prevalent than usual in Ontario, especially on Viking variety, infection ranging from 2 to 10 per cent.

MISCELLANEOUS DISEASES

KUEHNEOLA RUST - Kuehneola uredinis (Lk.) Arth.
Rust attacked 40 per cent of the leaves in a plantation of Viking in Kings county, N.S. causing the leaves to dry up. Infections were also found on late fruit.

POWDERY MILDEW - Sphaerotheca Humuli (DC.) Burr.
Raspberry mildew was abundant on certain varieties at Edmonton, Alberta.

PHRAGMIDIUM RUST - Phragmidium imitans Arth.
Infection from rust was general and the damage was significant on Vancouver island and in the lower Fraser valley, B.C.

CROWN GALL - Pseudomonas tumefaciens (E.F. Sm. & Towns.) Dugg.
General on Vancouver island and in the lower Fraser valley, B.C. causing insignificant damage.

BACTERIAL FLOWER BLIGHT
A flower blight caused by bacteria, was general on Vancouver Island and the lower Fraser valley. The organism appears to be an undescribed species (W. R. Foster).

STRAWBERRY

LEAF SPOT - Mycosphaerella Fragariae (Schw.) Lindau
(Ramularia Tulasnei Sacc.)

Sask.-
A heavy infection of this leaf spot was reported from St. Gregor.

Man.-
The only report of leaf spot in Manitoba was from a field near

Winnipeg, where 75 per cent of the plants were infected.

Ont.-
A heavy infection of leaf spot was reported from Lincoln county.

Que.-
Heavy infections of 60 to 100 per cent were reported on several varieties of strawberries from Quebec, L'Assomption and Terrebonne counties.

N.B.-
Leaf spot of strawberry was widespread and quite important in New Brunswick. A moderate infection was reported from the Experimental Station, Fredericton.

P.E.I.-
This disease was not common this year and therefore of no importance.

POWDERY MILDEW - Sphaerotheca Humuli (DC.) Burr.

Powdery mildew was first observed in a planting in Lincoln county, Ont, on June 3. At this date the damage was slight. In another planting observed June 14, the plants were heavily infected. Bordeaux dust had failed to check the disease and the foliage was burned up and crisp. The dust may have possibly accentuated the burning.

BLACK ROOT - Cause undertermined

Twenty to forty per cent of the plants were affected with black root in two plantings of Premier, in Lincoln county. The disease was especially noticeable on young suckering plants. Many of the affected plants were dead.

GRAY MOULD - Botrytis cinerea Pers.

Gray mould was present on Vancouver island, B.C.
Botrytis was usually found associated with a destructive rot of strawberries in P.E.I.

MOSAIC - Virus

Seventy-five per cent of the plants were affected with mosaic in a planting of Premier in Lincoln. This is the first time this disease has been noticed on Premier. The plants were turning yellow and dying.

Strawberry

CROWN ROT - Corticium Solani (Prill. & Del.) Bourd. & Galz.

Crown rot was found occasionally on Vancouver Island, B.C. causing slight damage.