IV. DISEASES OF FRUIT CROPS

APPLE

SCAB - Venturia inaequalis (Cke.) Winter
(Fusicladium dendriticum (Wallr.) Fuck.)

B.C.- Scab was fairly general on Vancouver island on all varieties of apples. McIntosh, Northern Spy and Fameuse were most severely diseased, while Yellow Transparent and Duchess were less heavily scabbed.

Scab was severe in the Lavington district; 75% of the fruit on unsprayed trees of McIntosh were infected. It was not so severe on other less susceptible varieties, some even being free of scab. In the Salmon Arm district, where scab was severe in 1932, it caused only slight infection this year. McIntosh showed little scab and the fruit infections were of the "pin point" type. Scab was first noted on the leaves on June 16. In the Kelowna district scab was general on McIntosh, but the disease was not severe.

In the Kootenay Lake area the following counts give evidence of the prevalence of scab in different parts of the district and the benefits of spraying: At Nelson, McIntosh, unsprayed, of 168 apples on a tree all were scabby and none were of marketable size; sprayed, an average of over 1,000 apples per tree were grown, a marked reduction in set on the unsprayed trees is evident; at Sunshine Bay, McIntosh unsprayed, of 282 apples on one tree, 67.7% were scabby; sprayed, over 1,000 apples per tree were produced, of which 2 to 10% were scabby; at Queens Bay, Rome Beauty, on one unsprayed tree there were 115 apples, all scabby, entire crop filled ¼ of an apple box; sprayed trees of similar age and size in the same orchard bore 1,300 to 2,300 apples per tree; Cox Orange, unsprayed 490 apples, of which 46.5% were scabby; at Boswell, McIntosh, one unsprayed tree produced 2,477 apples, of which 58.8% were scabby; Cox Orange, unsprayed, 408 apples of which 25% were scabby, most of the lesions were small and were healed over at picking time. Although a glance at the map would suggest that weather conditions would be somewhat similar throughout the Kootenay Lake area, marked variation in the severity of apple scab in the orchards along the Lake may be seen by comparing the light infection at Boswell, near the southern end of the Lake with those at Nelson, Willow Point and Queens Bay along the West Arm. This variation appears to be correlated with a difference in rainfall. (J.W. Eastham)

	Monthly Rainfall						
	April	May	June	July	Aug.	Sept.	Average of
Boswell	1.05	1.40	2.24	.98	1.03	1.48	18 years
Nelson	1.56	2.19	2.61	1.46	1.44	1.84	31 "

Near Burton in the Arrow Lakes district an unsprayed McIntosh

tree bore 754 apples, of which 99.2% were scabby.

Ont.- Scab was markedly less severe this year than in 1932, in Lincoln county. Unsprayed McIntosh trees showed heavy infections, 100% of the fruit being scabby. In sprayed orchards, 0 to 10% of the fruit were scabby. (G.C. Chamberlain)

Que.- Apple scab was very prevalent in 1933 in western Quebec on the two important varieties, McIntosh and Fameuse. Even orchards, which are usually free from scab, did not escape. The reason was that on two occasions, two important sprays were delayed on account of rain, when ascospore discharge took place.

The first period was just before the pink spray and sepal infections were the result; the second came at the end of the blooming period and resulted in spreading the spots to the side of the fruits. At the same time, ascospore discharge continued and numerous leaf infections occurred. In orchards, where the advanced green-tip spray was not applied, 50% of the fruits were scabbed near the calyx end, while in those which were protected by this spray, only 10% of the crop became infected. On account of the unusually dry weather during early summer, secondary infection was of no importance. On the other hand, cool weather accompaned by rain at the end of August and the beginning of September favoured heavy late infection in nearly all orchards. Only those, which were sprayed about August 16 as recommended by the Spray Service, were relatively free from this infection. (Fernand Godbout)

In Kamouraska and L'Islet counties little scab infection was observed in sprayed orchards; in many, even traces could not be found. On the other hand, scab was more or less prevalent on the leaves and fruits on all unsprayed trees. Infection ranged from 25 to 100%. The disease was less severe this year on account of the dry season and probably the amount of initial infection was reduced by the destruction of the perithecia during the successive freezing and thawing of last year's leaves when the ground was bare in January and February. (C. Perrault)

N.B.- Scab was severe on unsprayed trees of McIntosh and Fameuse in York, Sunbury and Queens counties. First ascospore discharge was observed on May 17. Late infection occurred on MacIntosh and Fameuse at the Experimental Station, Fredericton; 10 to 15% of the fruit was affected.

N.S.- Ascospore discharge was light throughout the spring season and very little scab was present till after Sept. 1. Severe late infection occurred during September and October, up to 100% of the fruit being affected in some orchards. However, very little scab developed in those orchards receiving a late Bordeaux spray in July. (J.F. Hockey)

P.E.I.- Scab caused slight to severe damage on MacIntosh in Queens county, but where spray was applied according to schedule scab outbreaks were insignificant.

FIRE BLIGHT - Bacillus amylovorus (Burr.) Trev.

B.C.- Fire blight was general on Spitzenburg and King varieties at Penticton and Summerland, but the damage was not severe. A slight amount of the disease was observed at Salmon Arm.

A culture of bacteria isolated from fire blight infections on a pear tree growing at Saanichton was received at Ottawa from Mr. W. R. Foster of that Laboratory. The organism was identified as Bacillus amylovorus. (H. N. Racicot).

Sask.- Although fire blight was only reported for the first time in Saskatchewan in 1932 (Can. Plant Div. Survey 12:61), it was present in epidemic form not only at Saskatoon, but also in southern Saskatchewan. Both blossom and twig infection was severe in the University orchards, Saskatoon, where whole branches were killed. These trees are mostly crab apples. In 3 widely scattered gardens in Saskatoon, the owners reported their crab apple trees were badly affected.

Man.- Fire blight caused a serious twig blight of seedlings at Morden.

Ont.- Fire blight was quite general in Lincoln county, being observed on Greening, Duchess and McIntosh. It was apparently more prevalent than usual. Severe blossom infection was reported on McIntosh from Cornwall and a correspondent from Alfred reports that his whole orchard of Wealthy is affected by fire blight, which is causing great injury.

Que.- Fire blight was less prevalent this year in Quebec than in 1932. It was present in all the apple growing districts, but in many orchards only a trace was present or it was entirely absent. The smaller amount of disease was due largely to dry weather during mid-summer, but the more careful removal of infections by growers probably was a factor.

Fire blight was more prevalent in the Abbotsford and the Chateauguay districts than in the others. At Abbotsford both blossom and twig blight were severe in 2 orchards on Alexander, Switzer, Winter Arabka and other Russian varieties and on trees of other varieties adjacent to these. Twig blight was present in 16 other orchards and absent in 12. In the Chateauguay district a moderate amount of twig infection occurred in June, but the dry weather checked any further spread. Twigs were moderately infected in one block of large Fameuse trees at Hemmingford, and in 3 orchards, which were adjacent to a few neglected, severely blighted trees, at Franklin Centre. Blossom blight was severe in one and present in a few other young orchards in the Freleighsburg-Cowansville district. Fire blight was severe in one orchard of mixed varieties in Sherbrooke county and one in Megantic. (H.N. Racicot)

Fire blight was severe on Alexander, resulting in the loss of some trees, and caused twig infection on Fameuse and McIntosh at Macdonald College. It was reported to be severe at Richmond

and Hudson Heights.(R.F. Suit)

In Kamouraska county fire blight was severe in 2 small orchards and traces were present in 3 others. (C. Perrault)

P.E.I.- Fire-blight may be found in any uncared-for orchard in this province. All the McIntosh trees in an orchard in Queens county were destroyed by it. (R.R. Hurst)

BLACK ROT - Physalospora obtusa (Schw.) Cke.

Stevens (Mycologia 25:536. 1933) has shown that the perfect stage of the organism causing black rot should be called Physalospora obtusa (Schw.) Cke. For the imperfect stage as it occurs on apple, I would suggest that the name Sphaeropsis Malorum Peck be retained. (I.L. Conners)

Sask.- A trace of black rot was found on the upper dead limbs of a half dead tree in the University orchard, Saskatoon. The fungus may have been secondary, the trees have suffered considerably from winter killing.

Ont.- Extensive black rot cankers on the limbs of Northern Spy were sent from Aldershot to the St. Catharines Laboratory.

N.B.- A trace of black rot was found on the fruit in an orchard in Queens county.

N.S.- Black rot was very common on Astracken at Kentville and was present on several other varieties following arsenical injury to the calyx end of the fruits. (J.F. Hockey)

RUST - Gymnosporangium clavipes Cke. & Pk.

Que.- Apples were almost free from rust infection this year in Kamouraska county, not only in orchards, which were sprayed, but also in those which were not This is in marked contract to 1932 when in some unsprayed orchards, up to 65% of the fruit were affected. (E. Campagna)

CROWN GALL - Pseudomonas tumefaciens (Sm. & Towns.) Dugg.

N.S.- Crown gall was found on 10 trees of Juane de Metz out of 200 set out in 1931 at Kentville.

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

B.C.- Powdery mildew was fairly general on all varieties, particularly King and Gravenstein at Saanichton. It caused no appreciable loss.

ANTHRACNOSE - Pezicula malicorticis (Jacks.) Nannf.
(Cryptosporiopsis malicorticis (Cordley) Nannf.)

B.C.- Yellow Transparent was severely affected by anthracnose in the Fraser valley.

CROWN ROT - Non-parasitic

B.C.- Crown rot was serious in many orchards in Kelowna, Penticton, Summerland and Vernon districts.

TWIG BLIGHT - Cytospora sp.

Sask.- Cytospora was found fruiting in abundance on a newly-dead branch in the University orchard, Saskatoon. The branch was 8 ft. long and had been killed after it was budded.

TWIG BLIGHT - Nectria cinnabarina (Tode) Fr.

P.E.I.- Traces of twig blight were present on wild trees along the roadside in Queens county.

SUN SCALD - Non-parasitic

B.C.- Sun scald was general throughout the Kelowna, Summerland, Penticton and Olive districts. Although this summer was not exceptionally hot, rapid changes took place from cool cloudy days to clear hot weather.

BITTER PIT - Non-parasitic

B.C.- Bitter pit was general in the Okanagan valley but the damage was not severe.

CORKY CORE - Non parasitic

B.C.- Corky core appears to be increasing in the Summerland and Penticton districts, where it is general and serious.

N.B.- Corky core affected 50% of the McIntosh and 100% of the Fameuse apples in one orchard in Sunbury county, the damage was severe.

BITTER PIT or BLOTCHY CORK - Non-parasitic

N.S.- Up to 50% of the fruit of Stark were affected in the orchards on sandy shallow soil near Middleton. The disease is present to some extent throughout the Annapolis valley on Stark, Twenty Ounce Pippin, Baxter, Baldwin and some other varieties. It is of the blotchy cork type, which appears in the fruit in the orchard and not the true "bitter pit" found in storage. (J.F. Hockey)

DROUGHT SPOT

B.C.- Drought spot is apparently on the increase in the Summerland and Penticton districts, where it is general and serious. It was also reported from Salmon Arm.

Ont.- Greening apples affected with drought spot or bitter pit were received from Burlington at the Ottawa Laboratory.

Que.- Seedling apples affected with drought spot or bitter pit were received from Argenteuil county at the Ottawa Laboratory. All the apples on one tree were said to be so affected.

N.S.- Drought spot was observed in the fruit at Kentville a few days after petal fall in trees on the fertilizer plots, which had received heavy applications of lime or lime phosphate. Over 60% of the fruit was affected on some trees.

INTERNAL CORK (Including Corky Core) - Non-parasitic

N.S.- Internal cork was common at Kentville in the fruit on the fertilizer plots, where lime was applied with other elements or alone. A trace was present on the plots receiving complete fertilizer and lime. Gravenstein and McIntosh were the varieties affected.

Wolf River and Gravenstein were also affected in commercial orchards on sandy shallow soils receiving nitrogen fertilizer only. (J.F. Hockey).

STORAGE PIT - Non-parasitic

N.S.- Storage pit was found affecting up to 10% of the fruit of Cox Orange in storage Dec. 1933. Lower percentages were affected in a few other varieties.

SOFT SCALD - Non-parasitic

Ont.- A small quantity of Northwest Greening apples held in cold storage in Lincoln county were useless on account of soft scald in January. The fruit were somewhat immature when picked.

GREY MOULD ROT - Botrytis sp. (B. cinerea group)

B.C.- A few McIntosh apples were affected with grey mould rot, while they were still on the tree about Salmon Arm and Kelowna in October. About 1% of the fruit were similarly rotted, at Vernon and Lavington.

PINK ROT - Tricothecium roseum Lk.

Que.- Pink rot was common chiefly on Fameuse following late scab infection in Jacques Cartier county. The damage was slight.

P.E.I.- In October 1% of the McIntosh fruit was affected with pink rot in Queens county.

HAIL - Non-parasitic

B.C.- Exceptionally heavy hail fell in parts of Summerland and Penticton districts accompanied in some places by a gale. The result was that in some orchards all the apples were reduced to the lowest grade on account of skin cuts and bruises. Hail damage occurred in 500 acres of orchard in Penticton and 100 in Summerland.

FROST - Non-parasitic

B.C.- An early fall frost accompanied by snow was experienced throughout the Okanagan valley before late fall and winter varieties had been picked. Actual freezing of the fruit resulted in a very slight loss, but it caused a great many of the McIntosh apples to fall from the tree in some districts and the snow broke many trees. (J.C. Roger).

WINTER INJURY - Non-parasitic

Que.- Most orchards suffered the loss of a few trees killed

by frost in Kamouraska and L'Islet counties. In the Experimental Station orchard, Ste. Anne de la Pocatière, 6 trees were killed outright and 8 others were half or partially dead. Winter conditions were very unfavourable for apple trees.

APRICOT

CANKER - Valsa ?cincta Fr.

Ont.- A canker was found on a young apricot tree, which was surrounded by peach trees in an orchard in Lincoln county. From it was isolated a "white" Cytospora, the cause of peach canker. (R.S. Willison)

UNEVEN FRUIT DEVELOPMENT - Cause unknown

B.C. - Fruit showing uneven development were received from Wilsons Landing and some were seen in an orchard at Summerland.

DROUGHT SPOT - Non-parasitic

B.C.- Drought spot was general in the Summerland and Oliver districts, but the damage was not severe.

BLACKBERRY

ORANGE RUST - Gymnoconia Peckiana (Howe) Trotter

Ont.- Orange rust was very prevalent and severe in a plantation of Kittatinny in Lincoln county, 60% of the new growth was affected. In one of Eldorado, 10% of the plants were rusted. This plantation was rogued to prevent the rust from spreading.

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

Que.- Septoria leaf spot moderately to severely infected 6 plants of Ancient Briton at Macdonald College.

CHERRY

SHOT HOLE - Higginsia hiemalis (Higg.) Nannf.
(Cylindrosporium hiemalis Higg.)

P.E.I.- Shot hole caused slight to severe damage in all 3 counties on both cultivated and wild cherries.

BLOSSOM BLIGHT - Sclerotinia cinerea Schroet.

B.C.- About 50% of the blossoms were blighted in some orchards on Vancouver island.

GREY MOULD ROT - Botrytis sp. (B. cinerea type)

B.C.- Grey mould rot caused considerable damage to sweet

cherries in the Nelson district. The fruit was affected before it was ready to be picked.

BLACK KNOT - Dibotryon morbosum (Schw.) Theiss. & Syd.
Ont.- Black knot was very prevalent in all neglected orchards of sour cherries in Grey county.
N.B.- Black knot was common in York, Sunbury and Queens counties.
P.E.I.- Black knot infection was very heavy on wild cherries in Prince county; the damage was severe, some trees being killed. Frequent outbreaks of black knot were also reported from orchards in Queens county.

WITCHES' BROOM - Taphrina Cerasi (Fuck.) Sadeb.
B.C.- Leaves on one limb of a 3-year old Bing cherry tree were diseased by Taphrina Cerasi. (H.R. McLarty)

DIE-BACK - Non-parasitic
B.C.- Die-back was prevalent and serious in those parts of the Penticton and Summerland districts, where cherries are grown.

SPLITTING - Non-parasitic
B.C.- Splitting was very serious this year in Penticton, Summerland and Oliver districts, but it was most severe on the Bing variety, which was ready for harvest when several rain showers occurred.

SCAB - Cladosporium carpophilum Thum.
Ont.- From 20 to 25% of the fruit was spotted by scab in orchards of sour cherry in Grey county.

GUMMOSIS - Cause unknown
P.E.I.- Gummosis, probably a form of winter injury, affected 50% of the trees on a fruit farm at Southport. The damage to the individual tree varied from slight to severe.

CRANBERRY

FALSE BLOSSOM - Non-parasitic
N.S. - False blossom appeared in a number of cranberry bogs in the Annapolis valley in 1933. The disease was recognized from specimens sent to Dr. H. J. Franklin. In communicating this discovery, Dr. N.E. Stevens stated that it is the most serious disease of cranberry known in the United States. The yield of the bogs in New Jersey has fallen 30% since 1923, a decline that Dr. Stevens believes to have been chiefly, if not solely, due to the false blossom disease (cfr. Phytopath 23:984. 1933). (I. L. Conners)

GALL - Synchytrium Vaccinii Thomas

N.S.- Specimens of cranberry affected by gall were received from Port Mouton by Mr. K. A. Harrison of the Kentville Laboratory. The identification was verified at Ottawa.

CURRANT

WHITE PINE BLISTER RUST - Cronartium ribicola Fischer

Ont.- Blister rust caused severe defoliation in a row of 50 plants of Black Victoria by July 27 in Simcoe county.

Que.- Blister rust was prevalent at Macdonald College. Black currants were severely infected by August 5, and completely defoliated by August 18. Red currants were somewhat less heavily rusted and were defoliated on Sept. 10.

N.B.- Blister rust was common on wild and cultivated currants in York, Westmoreland, Queens and Sunbury counties.

P.E.I.- This rust was widespread in the province and was severe in all gardens, where black currants were grown. Defoliation followed heavy infection. It is also fairly common on wild currant. Late infections were observed at Charlottetown.

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

Alta.- A light infection of this leaf spot was reported from Edmonton.

P.E.I.- Septoria leaf spot was heavy in a garden in Queens county and moderate at the Experimental Station, Charlottetown, on cultivated currants.

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

Alta.- Moderate to severe infections of powdery mildew were common on currants in zone 10.

Sask.- Black and red currants respectively were moderately and slightly affected by powdery mildew in the University gardens, Saskatoon. Although it is present every year, it was not as severe as usual.

GOOSEBERRY

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

Ont.- Fruits affected with powdery mildew were received from Dryden. It was reported that powdery mildew was prevalent in a garden in Kent county.

CLUSTER-CUP RUST - Puccinia Pringsheimiana Kleb.

Man.-This rust was rather injurious both at Winnipeg and Morden, probably because of the damp spring.

GRAPE

BLACK ROT - Guignardia Bidwellii (Ell.) Vial. & Rav.
B.C.- Black rot caused considerable damage to the fruit on several vines of Seedless grapes at Saanichton.

DOWNY MILDEW - Plasmopara viticola (Berk. & Curt.) Berl. & de Toni
Que.- A slight infection of downy mildew was seen on Aug. 1, at Macdonald College.

POWDERY MILDEW - Uncinula necator (Schw.) Burr.
(Oidium Tuckeri Berk.)
B.C.- A few plants were affected by powdery mildew near Victoria.

LOGANBERRY

ANTHER and STIGMA BLIGHT - Haplosphaeria deformans Syd.
B.C.- Anther and stigma blight was fairly general on Vancouver island; it caused much damage.

CROWN GALL - Pseudomonas tumefaciens (Sm. & Towns.) Dugg.
B.C.- Crown gall was found heavily infecting a patch of loganberry near Victoria.

SEPTORIA LEAF SPOT - Mycospaerella Rubi Roark
(Septoria Rubi West.)
B.C.- This leaf spot was fairly general on loganberry on Vancouver island.

NECTARINE

POWDERY MILDEW - Sphaerotheca pannosa (Wallr.) Lév.
B.C.- Nearly all the leaves on the terminal growth of the nectarine trees growing at the Experimental Station, Summerland, were affected with powdery mildew.

PEACH

SCAB - Cladosporium carpophilum Thum.
Ont.- From 15 to 20% of the fruit were scabbed on Aug. 17 in one orchard of Rochester in Lincoln county.

LEAF CURL - Taphrina deformans (Berk.) Tul.
B.C.- Leaf curl was found on Elberta in the Laboratory orchard, Summerland. It has also been observed at Penticton. This disease is only found occasionally in the Okanagan valley and never more than a few leaves per tree are attacked.
Ont.- Leaf curl was first observed on May 13 in Lincoln county. It was particularly noticeable on Elberta, but it was also found on South Haven, Rochester, and June Elberta. On

unsprayed trees up to 100% infection was present, while on those, which were sprayed, infection was uncommon and slight.

Que.- A few peach trees, growing at Franklin Centre were moderately infected by leaf curl.

N.S.- Leaf curl almost completely deformed the foliage of the two trees at Kentville.

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

B.C.- Powdery mildew has become increasingly severe each year in the Summerland and Oliver districts, and in a few orchards, where the trees are closely planted, the loss of fruit was considerable in 1933.

Ont.- In one orchard of Elberta in Lincoln county the fruit were severely infected by powdery mildew, and in consequence were blemished. The leaves were only lightly infected.

PEACH CANKER - Valsa sp. (tentatively V. cincta Fr.)

Ont.- In the orchards under observation in Lincoln county, a large number of incipient cankers were found in the vicinity of the buds. These lesions suggested that the fungus had entered via the leaf scar rather than through the bud. Many cases were observed especially in nursery stock where a twig had been killed and the canker had spread into the main branch. The organism was isolated from such lesions. Also a number of cases were seen where invasion had taken place through a grafting or pruning wound, improperly made. Where the top of the stock was removed some of the grafts were girdled. (R.S. Willison)

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

Ont.- Owing to the warm dry weather in the early part of the season in Lincoln county, little rot developed on the early varieties, which are usually affected. However, weather conditions became very favourable for the disease and for the rapid maturing of the fruit. In consequence, brown rot soon became epidemic, and caused losses as high as 30% of the fruit, especially in mid-season varieties, such as South Huron and Vidette. The total loss was estimated to be 400 tons. It was the worst outbreak of brown rot in 12 years and was considered by some growers to be the worst ever experienced. (G.C. Chamberlain & R.S. Willison)

COLLAR INJURY - Non-parasitic

Ont.- About 20% of the trees were girdled at the ground level and killed in an orchard in Lincoln county on account of late cultivation the previous year.

PEAR

FIRE BLIGHT - Bacillus amylovorus (Burr.) Trev.

B.C.- Fire blight usually infected pears but slightly in the

Penticton and Summerland districts. Some varieties, such as Flemish Clapp, may occasionally be seriously affected.

Ont.- Fire blight was noticed in many pear orchards in Lincoln county. In a 5 year orchard containing 2,000 trees of Bartlett and Anjou, 50% of the trees were severely damaged, many branches being killed.

SCAB - Venturia pyrina Aderh.

B.C.- Scab was observed on Flemish Beauty pears at Salmon Arm.

Que.- Scab was present in nearly all orchards of susceptible varieties in western Quebec. The percentage of infection depended upon the spray schedule employed.

P.E.I.- A trace of scab was seen on 2 trees at the Experimental Station, Charlottetown.

DROUGHT SPOT - Non-parasitic

B.C.- Drought spot was severe only on a few trees in one orchard, although it may be found in both the Penticton and Kelowna districts.

BLACK END ROT - Non-parasitic

B.C.- Black end rot is severe on a few trees scattered in many orchards in the Penticton and Oliver districts.

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

B.C.- Powdery mildew was general, but not severe in all pear orchards of the Summerland and Penticton districts.

LEAF BLIGHT - Entomosporium maculatum Lév.

P.E.I.- Leaf blight damaged young pear trees at Brackley Beach.

PLUM

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

B.C.- Although black knot has been found on both Vancouver island and the lower mainland, up to the present it has not been a serious disease. Very few growers attempt to control the disease by pruning out the galls. (Wm. Newton)

Que.- A correspondent in Chateauguay county reported that his trees were badly affected with black knot, a specimen of which was submitted. All trees in uncared-for orchards in Kamouraska county are affected, many being killed. Fortunately these orchards are very small and are gradually disappearing.

N.S.- A trace of the conidial stage of the black knot fungus was collected in June at Kentville.

P.E.I.- Black knot was observed on several varieties in orchards in Queens county; severe infections being present on

Damson at Montague. The disease is prevalent in uncared-for orchards.

PLUM POCKETS - Taphrina Pruni (Fuck.) Tul.
Man.- Plum pockets was abundant early in the season but dry weather checked secondary infections. (G.R. Bisby)
Que.- Plum pockets destroyed all the plums in one orchard in Two Mountains county.
P.E.I.- A heavy infection of plum pockets was reported on a few trees in Queens county.

BROWN ROT - Sclerotinia americana (Worm.) Nort. & Ezek.
Ont.- Brown rot was reported to have destroyed all the fruit on one tree at London.
Que.- About 70% of the fruit were affected by brown rot in a few trees at Chateauguay Basin. Rotted specimens were received from Hudson Heights and Beaurepaire, Que.
N.B.- Most of the fruit of Victoria Burbank were infected with brown rot in an orchard in Kings county. The trees bore a heavy crop of bloom and many blossoms as well as the fruit were affected.
P.E.I.- A trace of brown rot was observed in an orchard in Queens county.

SHOT HOLE - Higginsia prunophorae (Higg.) Nannf.
(Cylindrosporium prunophorae Higg.)
P.E.I.- Shot hole caused slight to severe defoliation depending on the variety infected in several orchards in Queens county.

SCAB - Cladosporium carpophilum Thum.
Que.- Plums affected by scab were sent from Athabaska to the Ottawa Laboratory.

FIRE BLIGHT - Bacillus amylovorus (Burr.) Trev.
Sask.- A few diseased twigs were found on plum trees growing next to severely diseased apple trees in the University orchard, Saskatoon; the damage was negligible. (T.C. Vanterpool)
Man.- Fire blight was found for the first time on plum in Manitoba, when it was collected on Prunus nigra at Dauphin in August.

SEEDLING BLIGHT - Cause unknown
Sask.- Rhizoctonia mycelium was present on the base of blighted seedlings in the University gardens, Saskatoon.

HAIL INJURY - Non-parasitic
Man.- Many plums in the College orchard, Winnipeg, developed brown sterile spots after a small hail storm. (G.R. Bisby)

RASPBERRY

SPUR BLIGHT - Didymella applanata (Niessl) Sacc.

B.C.- Spur blight was fairly general in a few Cuthbert patches on Vancouver island.

Ont.- Spur blight was severe on Herbert and also present on Viking specimens received from Ryland at Ottawa.

Que.- Spur blight was not nearly so severe this year as it was in 1932. It was present in all plantations of Herbert throughout the province, and in a few of these, it was severe. It was also observed in decreasing amounts on: Latham, Cuthbert, Newman, Brighton, Viking and Newburg. In a varietal plantation at Macdonald College spur blight was found as follows: on Hailsham, very severe on both stems and leaves; on Herbert, severe; on Golden Queen, Sunbeam, Cayuga and Norfolk Giant, moderate to severe; on Latham, Devon, Lloyd George, Cuthbert and Beaumfort Seedling, moderate; on Goliath, trace to moderate; on Viking, trace; and on Queen Alexandra, none. A trace was also present on the black raspberry, McDermids Seedling 17. (H.N. Racicot)

P.E.I.- Spur blight is widely distributed in the province; slight to heavy infections occurred on Viking and Cuthbert.

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

B.C.- A slight infection of Septoria leaf spot was found on a few plants on Vancouver island.

Alta.- Sunbeam was heavily infected in the University garden, Edmonton.

Ont.- Some canes of Newman from Martintown were found infected with Rhabdospora Rubi Ell.

Que.- In a varietal plantation at Macdonald College, the varieties were infected as follows: Queen Alexandra and Devon, severe; Lloyd George, moderate to severe; Herbert, moderate; Viking, Goliath and Cuthbert, trace; Latham, Golden Queen, Hailsham, Sunbeam, Cayuga, Norfolk Giant and Beaumfort Seedling, none.

MOSAIC - Virus

B.C.- Mosaic was fairly general in raspberry plantations on Vancouver island and the lower mainland. An average of 2.3% of the plants were affected with mosaic in a 15 acre field of Latham in the Kelowna district. Mosaic was also observed at Salmon Arm.

Alta.- Leaf roll and mosaic lightly infected the one variety, Sunbeam, in the University garden, Edmonton.

Ont.- Mosaic was found commonly in commercial plantations, particularly those of Cuthbert and Viking varieties. Percentage of infection varied from 5 to 75%. The symptoms of the disease were greatly masked by high temperature this summer, but late in the season much faint mottling could be detected in the new growth. In certified plantations a trace to 2% of mosaic was

present. (G.C. Chamberlain)

Que.- A slight amount of mosaic was present in nearly all the Newman plantations, the highest percentages observed being 4 and 10% respectively. One plantation of Columbian showed 10% infected and one of King, 100%. The latter variety shows considerable tolerance to mosaic as this plantation has been infected since 1926 and is still yielding well under heavy applications of fertilizer each year. Mosaic was also observed in Cuthbert, Latham, Newman 20, Brighton and wild raspberries. In a varietal plantation at Macdonald the following percentages of mosaic were recorded: Latham and Sunbeam, 100%; Golden Queen, 90%; Cayuga, 60%; Norfolk Giant, 20%; Viking, 2%; Herbert and Devon, trace; Queen Alexandra, Hailsham, Goliath, Lloyd George and Beaumfort Seedling, none.

N.B.- Mosaic was common in plantations in Gloucester, York, Sunbury and Westmoreland counties.

N.S.- In a plantation in Pictou county, 1% of the Latham and 0.5% of the Viking plants were affected with mosaic. A Viking plantation was similarly affected in Colchester county.

P.E.I.- Mosaic was common and heavily infected some plantations.

LEAF CURL - Virus

Ont.- Leaf curl is not an important disease in Norfolk county, but 2% of the plants were affected with leaf curl in a plantation of Cuthbert. A specimen of Cuthbert affected with leaf curl was received from Perth.

Que.- A trace of leaf curl was observed in one plantation each of Cuthbert, Viking and Newman 20. In a varietal plot at Macdonald College leaf curl was observed as follows: Cayuga, 30%; Cuthbert and Hailsham, 5%; Viking, Queen Alexandra, Devon and Herbert, trace; Latham, Golden Queen, Goliath, Lloyd George, Norfolk Giant and Beaumfort Seedling, none.

ANTHRACNOSE - Elsinoe veneta (Burkh.) Jenkins
(Gloeosporium venetum Speg.)

Que.- Anthracnose was present in 50% of the Newman plantations inspected and was far less severe than in 1932, only a trace to moderate infections being present. It was also observed on Cuthbert, King, Latham, Viking and Herbert. In a plantation at Iberville on both Newman and Viking the canes were severely infected only at their tips as infection had taken place when the canes had resumed growth, after the mid-season drought. In a varietal plot at Macdonald College the following percentages of anthracnose were noted: Queen Alexandra, Devon and Lloyd George, severe; Sunbeam, moderate; Viking and Latham, slight; Hailsham, Cayuga, Cuthbert and Herbert, trace; Golden Queen, Goliath, Norfolk Giant and Beaumfort Seedling, none. Native wild black raspberry, Rubus occidentalis L., grown for breeding stock at Macdonald College was moderately to severely infected.

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

B.C.- A few old patches of Cuthbert were rather severely infected with cane blight in the Fraser valley.

Ont.- Canes showing blight were received from Essex county. The correspondent stated that 95% of the canes were similarly affected. Specimens of cane blight on Newman were received from Martintown.

Que.- Specimens of cane blight were sent from Montreal to Macdonald College.

BLUE STRIPE WILT - Verticillium sp.

Ont.- Wilt was found on Herbert in York county at one end of a new plantation. The land in this part had been the previous year in potatoes, which had shown considerable wilt. The other end of the plantation was free of disease. (D.F. Putnam)

Wilt was causing the death of 5% of the canes in a plantation of Viking and Cuthbert in Lincoln county. (G.C. Chamberlain)

On the current-year's canes of Cuthbert at St. Catharines, there were found whiteish areas commonly superficial on the "blue stripe", and embedded in the bark tissues on this area were innumerable fungous bodies corresponding closely in size and structure to the micre-sclerotia of V. Dahliae. In England I have observed this stage in nature on dead canes in late winter, but never on green canes in the fall. (R.V. Harris)

Que.- A few plants affected with blue stripe wilt were found in Viking plants at Macdonald College. The identity of the disease was confirmed by Dr. R.V. Harris. These plants were grown from stock, which had originated at Vineland, Ont. Apart from a doubtful record from Rimouski county in 1926, this is probably the first record of this disease in Quebec. (H.N. Racicot)

ASCOSPORA CANE SPOT - Ascospora Ruborum Zeller

Ont.- Canes of Newman from Martintown were found infected with Hendersonia Rubi West., the imperfect stage of the above fungus. (F.S. Thatcher)

YELLOW RUST - Phragmidium Rubi-idaei (DC.) Karst.

B.C.- Yellow rust was fairly general on most varieties in the Fraser valley and on Vancouver island. Cuthbert appears to be the most susceptible.

Alta.- Yellow rust was observed at Millet in zone 10.

LATE YELLOW RUST - Pucciniastrum americanum (Farl.) Arth.

Ont.- Late yellow rust was prevalent in a plantation of Viking in late September; the damage was a trace.

POWDERY MILDEW - Sphaerotheca Humuli (DC.) Burr.

Alta.- Raspberries were moderately infected with powdery mildew in zone 10 and at the Experimental Station, Lethbridge.

Man.- Powdery mildew, caused by S. Humuli var. fuliginea (Schlecht.) Salm., developed early at the Agricultural College, Winnipeg, but it did not become especially serious.

Ont.- Powdery mildew was very prevalent on Latham, an extremely susceptible variety, in a plantation in Wentworth county; the plants were severely stunted.

CROWN GALL - Pseudomonas tumefaciens (Sm. & Towns.) Duggar

Ont.- Fifteen to 20% of the Viking plants were affected with crown gall in a plantation in Lincoln county.

Que.- A trace of crown gall was found in a plantation of Newman in Laval county. On account of the drought in July and early August, diseased plants dried up.

P.E.I.- Crown gall was found on a single Herbert plant in a plantation in Queens county.

SAND CHERRY

BLIGHT - Coryneum Beijerinckii Oud.

Sask.- Blight spots were found on the leaves, stems and fruit of sand cherry in the University orchard on July 21.

POWDERY MILDEW - Podosphaera Oxyacanthae (DC.) de Bary

Sask.- Powdery mildew heavily infected sand cherry from July onward, at Saskatoon.

PLUM POCKETS - Taphrina ?communis (Sadeb.) Gies.

Alta.- Sand cherries affected with plum pockets were observed at Ryley.

STRAWBERRY

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

B.C.- Leaf spot was fairly general on Vancouver island and in the Fraser valley. Infection was slight to moderate.

Que.- Leaf spot moderately infected strawberries in western Quebec.

N.B.- Leaf spot was common in York and Queens counties.

N.S.- Leaf spot was more or less prevalent in Colchester, Kings, Halifax and Pictou counties. In one patch of Senator Dunlop in Colchester county, 50% of the leaves were infected.

POWDERY MILDEW - Sphaerotheca Humuli (DC.) Burr.

Ont.- A trace of powdery mildew was found on May 31st in a planting of Glen Mary in Lincoln county.

P.E.I.- In a 3-acre plantation of Senator Dunlop in Queens

county the plants failed to produce marketable berries on account of powdery mildew. The berries did not colour and remained small in size.

ROOT ROT - Cause undetermined

Alta.- Specimens and reports from Athabasca and Cardston indicate that this root rot is common and severe. An undetermined fungus was isolated.

?XANTHOSIS - Virus

Ont.- An outstanding case was observed in June on a farm at Stamford. The owners complained of a marked falling off in recent seasons of the vigour of their stock of the Parson's Beauty variety, culminating in the present serious state of affairs when the prospects of even a barely economic crop appeared to be remote. It was found that the majority of the plants were at this time exhibiting unmistakable, although not distinctly defined, symptoms resembling those of the "Xanthosis" disease of Plakidas and of the "Yellow-edge" disease in England. Later the disease was successfully transmitted (by grafting methods) from typical plants from this plantation to healthy Royal Sovereign plants, the index variety used in England. The latter subsequently developed leaf symptoms which hitherto have been indistinguishable from those of the "Yellow-edge" disease occurring on this variety in England. This is the only case I have observed during the year in which, on the sole basis of the occurrence of leaf symptoms, virus attack could be diagnosed as a major cause of a deterioration of serious economic significance. In the late fall the same plantation was re-examined, and at this time it was impossible to distinguish the characteristic Xanthosis symptoms. (R.V. Harris)