IV. DISEASES OF FRUIT CROPS

A,, POME FRUITS

APPLE

CROWN GALL (Agrobacterium tumefaciens). Infections in nursery stocks at Kelowna, B. C. were extremely variable, ranging from 1-70%. The average infection in one of the largest nurseries was 5% and in other nurseries, 10-15% (L.E. Lopatecki). It was sev. in a seedling nursery in the University orchard, Fort Garry, Man. (W.C. McDonald). Crown gall affected 25% of 800 Red and Golden Delicious Trees on **E.M.** 7 rootstock in a nursery at Ruthven, Ont. (A.E. Straby).

FIRE BLIGHT (Erwinia amylovora) incidence was high at Edmonton and exceptionally high in the Calgary and Lethbridge areas, Alta. (W. P. Skoropad, R.P. Stogryn). It was epidemic at Saskatoon, Sask., particularly on street plantings of ornamental crabs (R. J. Ledingham). Fire blight caused some damage in the Provincial Nursery at Regina and was present in a nursery at Estevan, Sask, (T. Milisan). Infection was sev. in an abandoned orchard at Fort Garry and it was prevalent on trees in home gardens at Winnipeg, Man. (W.A.F. Hagborg, W.C. McD.). A survey conducted in Aug. showed that at least 15 orchards in Essex Co., Ont. were infected. Some orchards and some varieties, especially Lodi, were seriously affected (J.R. Chard). At Strathroy, Ont., 1000 trees of Cortland were affected in a nursery **(A.E.S.).**

EUROPEAN CANKER (Nectria galligena). Late pruning in an orchard **at** Newcastle, N.B. left bleeding cuts which served as infection courts for the pathogen. Four/95 trees died; half the others suffered killing of limbs (S.R. Colpitts).

ANTHRACNOSE (Neofabraea malicorticis) was seen on young McIntosh trees interplanted in a mature orchard at Seytsn Portage, B.C. (L.E.L.). Two cases of anthracnose on crab apple were observed in the Edmonton, Alta. area (W.P.S.). Pockets of rot developed in a 7000-bu. controlled atmosphere storage at Berwick, N.S. (C.L. Lockhart).

PERENNIAL CANKER (Neofabraea perennans) continued to be widespread in the variety Newtown at Summerland, B. C. (L.E. L.).

BULL" S EYE ROT (Neofabraea perennans) was generally at a low level in stored apples in the Okanagan Valley, B.C. (L.E.L.),

CANKER AND DIEBACK (Phyllostlcta solitaria) caused killing of twigs at Upper Gagetawn where the fungus was fruiting freely at the bases of dead twigs, girdled a tree at Cocagne and killed 2 young trees in an orchard at Shediac, N.B. The pathogen was isolated in each case (K.M. Graham, S.R.C.). This is the first report, to the Survey, of this organism on apple in Canada (D.W. Creelman).

COLLAR ROT (Phytophthora cactorum) caused the death of trees on E.M. 11, E.M. VII, M.M. 104 and M.M. 106 rootstocks in several districts of the Okanagan Valley, B. C. (D. L. McIntosh).

POWDERY MILDEW (Podosphaera Xeucotricha) was prevalent on several varieties in the West Okanagan districts of B.C. Few fruit infections were seen but foliage on new terminal growth of susceptible varieties was severely damaged (D.L. McI.). It was found in nurseries at Richmond, Victoria and Ocean Park, B.C. (Woods, Gibson, Watt).

CALYX-END ROT (Sclerotinia sclerotiorum). Trace infections were seen on McIntosh at Wolfville, N.S. (R. G. Ross).

LEAF SPOT (Sphaeropsis malorum) was found in trace amounts at Gagetown, N.B. No fruit infection was found (S. R. Colpitts)

SCAB (Venturia inaequalis). Abundant and frequent rainfall in April and early May in the Okanagan and Kootenay Valleys, B.C. provided very favorable conditions for apple scab infections. Subsequent application of recommended sprays prevented serious losses (D. L. McI.). Scab was reported from several home gardens in the Vancouver, B. C. area (H.N. W. Toms). It was observed in nurseries at Victoria, Ocean Park and Richmond, B.C. (Woods, Gibson, Watt). It was tr. in a garden at Saskatoon. Sask. (R. J. L.). Scab infection was generally light in commercial orchards in Essex Co., Ont. A heavy infection was seen in an inadequately-sprayed orchard nr. Windsor (J. Rainforth, J. R. C.). Scab was well controlled in s.-w. Que. early in the season but foliage scab was seen in 19/21 orchards examined at Hemmingford and Franklin Center. By 3 Sept. 2 orchards had 15 and 25% scab, respectively, and 5 others had tr.-5%. Heavy rains in Aug, (7.32 in. at Farnham) favored late scab. Eight lots of McIntosh in storage in mid-Nov. had about 10% pin point scab and 1 lot had 20% (R. Desmarteau). Scab was generally well controlled in N.B. (S.R. C.). Some pin point scab developed in storage at Fredricton and Keswick. N.B. (K.M. Graham). Conditions were favorable for the spread and development of scab throughout the growing season in N.S. but well sprayed orchards were clean, Some pin point scab developed before harvest (R.G.R.). Infection was heavy at Bay Roberts, Nfld. (O.A. Olsen).

CHAT FRUIT (virus). Symptoms recurred at Summerland, B.C. in 5 Lord Lambourne test trees affected in 1962. There was no evidence of natural spread, It is still uncertain whether the virus was derived from orchard trees being indexed or from clonal rootstocks on which the test trees were propagated (M.F. Welsh).

DAPPLE APPLE (virus). Severe symtoms were produced on 5 Delicious trees at Kaleden, B.C. as they have been for the past 5 years. Apparently, although symtoms of other virus diseases are strongly affected by seasonal weather conditions, dapple apple is not thus affected (M.F. W.).

LEAF PUCKER (virus). Leaf symptoms on McIntosh were sev. early in the season in all affected orchards in the Okanagan Valley, B.C. Fruit symptoms were mild in some orchards and absent in others (M.F. W.).

RING RUSSETING (virus). Symptoms on Newtown in the Okanagan Valley, B.C. were milder than in any year since the disease was first found (M.F.W.).

RUBBERY WOOD AND FRUIT DISTORTION (virus). A single tree at Summerland, B. C., planted as Golden Delicious but atypical of the variety, was severely affected. The tree had a weeping growth and very rubbery branches, as sev. as the most sev. symptoms observed on Lord Lambourne, the standard indicator variety for the virus. Some fruits had an enlarged, deeply-sunken calyx cup and others had deep dimples on the cheeks. Many fruits were half-size or smaller. If healthy material of this clone can be obtained by heat therapy it may prove to be a new, more sensitive indicator for rubbery wood virus (M.F. W.).

RUSSET RING (virus). Symptoms on some affected Delicious and Golden Delicious trees in the Okanagan Valley, B.C. were unusually mild or absent (M.F.W.).

FRUIT DEFORMITY AND LEAF PATTERN (? virus). About half the fruit of 1 Golden Delicious tree at Penticton, B.C. were rendered culls through the presence of small, russeted hollows, more or less in rings. Leaves formed early in the season displayed bright yellow line patterns. The symptoms do not correspond with those of any disease previously observed or reported (M.F.W.).

FRUIT DISTORTION (? virus) severely affected 3 Delicious trees at Winfield, B.C. Sy-mptoms consisted of numerous dimples and depressions. It is suspected to be of a virus nature (M.F.W.).

ARSENICAL INJURY was sev. on foliage, particularly on the variety Courtland on lighter soils throughout the Annapolis Valley, N.S. Injury occurred where lead arsenate was used in combination with dodine or glyodin (R.G.R.).

BURR KNOT (cause unknown) was sev. on a few seedling trees at Kentville, N.S. (R.G.R.).

CHEMICAL INJURY' (di-nitro) occurred at Woodville, N.S. where di-nitro was applied on Gravenstein as a thinner. White areas occurred on the leaves. These somewhat resembled apple mosaic but had diffuse margins and the areas often coalesced (R.G.R.).

FROST INJURY. A temperature of 19°F on 10 Oct. in many areas on the floor of the Annapolis Valley, N.S. rendered the apple crop still on the trees a complete loss for the fresh fruit market. Loss was estimated at 5% of the entire N.S. crop (R.G.R.).

IRON DEFICIENCY CHLOROSIS was common in apples and other related plants in many areas of Sask, Soil treatment with chelated iron often results in remarkable improvement in plant vigor (R, J.L.). It was apparent on trees at the Provincial Nursery, Regina, Sask. (T. Milasin).

MAGNESIUM DEFICIENCY caused premature fruit drop and sev. defoliation in 15 trees at Oromocto, N.B. It is widespread in trace amounts throughout the province (S.R. C.).

WATER CORE (physiological), The fruit on three trees in a large orchard at Gagetown, N.B. was 100% affected. Trace amounts occurred on other trees (S.R.C.).

PEAR

FIRE BLIGHT (Erwinia amylovora), Infection In the Okanagan Valley, B.C. was the worst for many years. It first appeared as random infections of secondary bloom and continued to spread throughout the summer (L.E. Lopateckf). It caused some injury in a nursery at Regina (T, Milasin). A survey in Essex Co., Ont. in Aug. showed at least 17 orchards to have sl. -mod, infections. The organism was isolated and positively identified (J.R. Chard, Z.A. Patrick).

SOOTY BLOTCH (Gloeodes pomigena) caused a trace of damage on the variety Bartlett at Woodville, N. S. (R.G. Ross),

BROWN ROT (Monilinia fructicola) developed to a limited extent in ripening rooms at a cannery at Penticton, B.C. (L.E.L.).

POWDERY MILDEW (Podosphaera leuctoricha) affected a small percentage of fruits on trees not sprayed for mildew control during bloom in the Okanagan Valley, B.C. Russet patches developed on the skin. Very little foliage or shoot infection was observed (D.L. McIntosh).

CANKER (Physalospora obtusa) was observed an the trunks of several Bartlett trees at Centerville, N.S. (C. L. Lockhart).

FRUIT ROT (Phytophthora cactorum). One crop of Keiffer pears from the 1962 crop in the Niagara Peninsula, Ont. developed about 20% rot in storage (G.C. Chamberlain).

RHIZOPUS ROT (R. nigricans) caused 10-15% damage to a shipment of Barlett pears held in ripening rooms at Penticton, B.C. (L.E.L.).

SCAB (Venturia pirina) was rated 10% in 3 orchards at Burtts Corner, N.B. and was tr, on most trees elsewhere in the province (S.R. Colpitts). It was sev. in unsprayed orchards and tr, in most sprayed orchards in the Annapolis Valley, N.S. (R.G.R.).

FRECKLE PIT (virus). The virus nature of this disease has been established by transmission tests. Symptoms in the Okanagan Valley, B. C. were unusually sev. in 1963 and seem to vary in intensity with weather conditions. No natural spread has been noted (J.M. Wilks).

ANJOU PIT (cause unknown). Symptoms were mild in the Okanagan Valley, B.C. in 1963 and were most commonly seen on young trees and trees with a light crop (J.M.W.).

COTTONY SPOT (insect injury). This disorder, reported to be of unknown etiology, has been shown to be caused by the feeding of the spined stink bug, Euschistus variolarius (J.M.W.).

GREEN STAIN (cause unknown) affected a large percentage of Anjou fruits in the Okanagan Valley, B.C. but symptoms were mild in 1963 (J.M.W.).

IRON DEFICIENCY CHLOROSIS was apparent on pears trees in the Provincial Nursery, Regina, Sask. (T. Milasin).

QUINCE

FIRE BLIGHT (Erwinia amylovora) affected 4/12 trees at Branchton, Ont, (A.E. Straby).

B. STONE FRUITS

APRICOT

BROWN ROT (Monilinia ? demissa) produced an early-season infection of leaves, petioles and twigs of apricot at Osoyoos and Summerland, B.C. There was no evidence of spread to adjacent peaches or cherries. The causal organism, when cultured, appeared identical to M. demissa isolated from adjacent bushes of Prunus virginiana var demissa on which host it has previously been reported (L.E., Lopatecki).

TWIG BLIGHT (Monilinia fructicola) was sev. in 1 orchard at Summerland, B.C. (L.E.L.).

CORYNEUM BLIGHT (Stigmina carpophila). Fruit infections were common in many orchards in the Okanagan Valley, B.C. Unusually wet weather in April and early May favored the disease (D.L. McIntosh).

WILT (Verticillium dahliae) affected a small percentage of the trees at several locations in the Okanagan Valley, B.C. (G.E. Woolliams).

RING POX (virus) is still spreading slowly in the Okanagan and Similkameen Valleys of B.C. Its presence has also been detected in wild Prunus spp. in the Thompson and Fraser Valleys (T.B. Lott).

CHERRY

SHOT HOLE (Higginsia hiemalis). Infection was sev. in a planting at Moncton, N.B. where preventative sprays were begun too late (S.R. Colpitts) and was 10% on Bing cherries at Middleton, N.S. (G.O. Gourley) monderate infections were seen on black cherry trees at Acaciaville, N.S. (L.P. Magasi).

BROWN ROT (Monilinia fructicola) of sweet cherries was first seen in the Okanagan Valley, B.C. on July 5 at Naramata in an orchard equipped with an overhead sprinkler system. It soon became general throughout the Valley with very heavy infections recorded east of Osoyoos Lake, at Okanagan Falls and Naramata, Lighter infections occurred at Oliver, Penticton, Summerland, Peachland, Kelowna and Salmon Arm. Such a general infection of sweet cherries has not occurred before in the Okanagan (L.E. Lopatecki). Some infection occurred in May in the Niagara Peninsula, Ont. but continued dry weather prevented its spread and fruit infection was negligible at harvest (J.H. de Ronde). Brown rot caused about 5% loss at Middleton, N.S. (C.O.G.).

POWDERY MILDEW (Podosphaera clandestina) was mod. on 15,000 nursery trees at Yarrow and sev. on 2000 at Chilliwack, B.C. (Gibson, Watt).

WILT (Verticillium dahliae) caused extensive damage in a young orchard of sour cherries at Kelowna and occurs in most sweet cherry orchards in the Okanagan Valley, B.C. (G, E. Woolliams),

BACTERIAL SPOT (Xanthomonas pruni) caused some damage at the Provincial Nursery, Regina, Sask. (T. Milasin) and was observed on the variety Windsor in the Niagara Peninsula, Ont. (R, S. Willison).

LAMBERT MOTTLE (virus) has almost disappeared in the Okanagan Valley, B.C. (T.B. Lott).

LITTLE CHERRY (virus) was sev, in the Kootenay area, B.C. (J. M. Wilks).

TWISTED LEAF (virus) caused sev. damage to individual trees in some orchards in the Okanagan and Similkameen Valleys, B.C. It continues to spread slowly in these areas (T.B.L.).

NECROTIC SPOTTING AND FRUIT MALFORMATION (? virus) occurred on the variety Windsor nr. Stoney Creek, Ont. Leaf symptoms consisted of necrotic: spotting and shot hole with a slight twisting of laminae and petioles. There was little or no shoot elongation in severely affected trees. Fruit was deformed, showing flat surfaces and depressions. Little, if any, internal browning occurred. The condition was confined to the Windsor variety and there was evidence of spread from tree to tree within the variety. It is suspected to be of virus origin (R, S. W.).

FROST INJURY, Frost in the Niagara Peninsula, Ont. on 24 and 25 May resulted in poor quality sweet cherries at harvest. The white fleshed varieties Napoleon and White Spanish were particularly affected (J.H. de R.).

PEACH

CROWN GALL (Agrobacterium tumefaciens). Losses in the Okanagan Valley, B.C. were well below normal in 1963 (L.E. Lopatecki).

BROWN ROT (Monilinia fructicola). Trace infection was seen in an orchard at Oliver, B.C. in mid-July and a shipment of 2000 boxes at a cannery at Penticton was a complete loss. Subsequent shipments of cannery peaches were dipped or drenched with a Botran (dichloronltro analine)-captan mixture at the packing houses and no further major losses occurred (L.E. L.). Brown rot infection in orchards and in storage was negligible in the Niagara Peninsula, Ont. (J.H. de R.). It was sl, at Kentville, N.S. (C.Q.G.).

RHIZOPUS ROT (R. nigricans) was sev. at Summerland, B.C. in peaches not treated. with Botran as a dip or drench. Losses were as high as 22% (L.E.L.).

LEAF CURL (Taphrina deformans) was recorded in 2 nurseries at Victoria and in 2 at Richmond, B.C. (M. Waseem, Gibson, Watt). It was unusually sev. in the Okanagan Valley B. C, (M. F. Welsh). Specimens were received from Dartmouth and tr. -sl. infections were seen at Kentville, N.S. (K.A. Harrison, C.O.G.).

CANKER (Valsa spp.) is present in most peach orchards in Essex Co., Ont. Although the highest incidence of canker is on 10-15 year old trees, it is also seen on young (2-3 year old) trees (C.D. McKeen).

WILT (Verticillium dahliae) was observed at several locations in the Okanagan Valley, B.C. It is usually most sev. on young trees and may affect from a few to 25% of the trees in an orchard (G.E. Woolliams).

BACTERIAL SPOT (Xanthomonas pruni) affected the varieties Kelhaten and Redhaven in Essex Co., Ont. It was most sev. on young, non-bearing trees. Most Kelhaven trees were defoliated by Sept, (J.R. Chard). Heavy rain fall in the Niagara Peninsula, Ont. in July and Aug. favored infection and spread. Damage was heavy in several localities (J.H. de R.).

PLUM

BLACK KNOT (Dibotryon morbosum) was sev. on 10 trees at St. Jean, Que. (R. Crête) and an 3 trees at Moncton, N.B. (S.R. Colpitts). It was sl. on the variety Magnum Bonum at MacDonald's Corner, N.S. (C. O. Gourley) and sev. on unsprayed trees nr. Charlottetown, P.E.I. where the disease has virtually eliminated the growing of plums and cherries in home gardens (G.W. Ayers), It was sev. on plum trees in the Csrnerbrook and Codroy Valley areas of w, Nfld, (W.J. Carrol).

BROWN ROT (Monilinia fructicola) caused 50% loss of fruit on 3 trees at Newcastle, N.B. (S.R. C.).

PLUM POCKETS (Taphrina communis). Two garden trees at Port Arthur, Ont. were heavily infected (A.E. Straby). It was tr. on Burbank plums at Macdonald's Corner, N.S. (C.O.G.).

BACTERIAL SPOT (Xanthomonas pruni) caused some damage at the Provincial Nursery, Regina, Sask. (T. Milasin) and affected about 30% of the fruit of the variety Santa Rosa in a small planting in Grantham Twp., Ont. (R. S. Willison).

IRON DEFICIENCY CHLOROSIS was apparent on plum trees in the Provincial Nursery, Regina, Sask. (T.M.).

WINTER INJURY resulted in a considerable amount of poor leaf development and bud drop in cold-sensitive fruit trees, particularly plums, in c. Alta. Temperatures dropped suddenly to -30°F following warm weather in Feb. (W.P. Skoropad).

PRUNE

BLACK KNOT (Dibotryon morbosum) caused mod. damage to an unknown variety of prune at La Pocatiere, Que. (H. Gènèreux).

BACTERIAL SPOT (Xanthomonas pruni) caused slight fruit spotting on Stanley prune in an orchard in Gosfield South Twp., Ont. (J.R. Chard).

C. RIBES FRUITS

CURRANT

BLISTER RUST (Cronartium ribicola). Leaves of black currant bearing abundant telia were collected 10 miles north of Indian Head and at 2 locations in Saskatoon, Sask, (C.G. Riley, V. Hildahl). Infection in a garden at Moncton, N.B. was 40% (S.R. Colpitts).

GOOSEBERRY

POWDERY MIILDEW (Sphaerotheca mors-uvae) was mod. on 500 nursery plants at Ste, Dorothée, (A.E. Strahy) and sl. in a garden planting at Abbotsford, Que. (R. Crête).

D. RUBUS FRUITS

RASPBERRY'

CANE GALL (Agrobacterium rubi) affected 5% of the canes of N.Y. 17861 at Kentville, N.S. (K.A. Harrison).

CROWN GALL (Agrobacterium tumefaciens) was tr. on Viking at Kentville, N.S. (K.A, H.).

SPUR BLIGHT (Didymella applanata). An infected speciemen was received from Kamouraska Co., Que. (J. Santerre). A sev. infection was seen at Red Head, N.B. (K.M. Graham, W.B. Collins) and it caused 20% damage at Mavailette, N.S. (C.L. Lockhart).

ANTHRACNOSE (Elsinoë ~~veneta~~). A moderately infected specimen was received from L'Islet Co., Que. (J.S.). It was widespread in home gardens in N.B. and caused a sev. reduction in yield in a small commercial planting at Gagetown, N.B. (S.R. Colpitts). The very heavy infection of canes in the Annapolis Valley, N.S. in 1962 was followed by winter killing. Dry weather prevented a severe outbreak in 1963 (K.A.H.).

LATE LEAF RUST (Pucciniastrum americanum). Infection was 30% in 3 plantings at Gagetown, N.B. with a trace of infection On the fruit (S.R.C.). Fruit infection was sl. in Viking at Kentville and a sev. infection occurred on the same variety in a home garden at Granville Ferry, N.S. (K.A.H., R.G. Ross).

BLUE STEM (Verticillium albo-atrum) was tr. on Viking in a garden planting at Kentville, N.S. (K.A.H.).

LEAF CURL AND MOSAIC (virus diseases) are by far the most serious diseases of raspberries encountered in N.B. Garden plantings especially show infection ranging from tr. -100% (S.R.C.).

E. OTHER FRUITS

BLUEBERRY

CROWN GALL (Agrobacterium tumefaciens) was observed on a single cutting of lowbush blueberry, Vaccinium angustifolium, from Tower Hill, N. B. (K. M. Graham, W, G. Barker). Crown gall, has been frequently reported to the Survey on highbush blueberry, Vaccinium corymbosum. This is the first report of its occurrence on one of the lowbush species (D. W. Creelman). It affected 10% of the plants of the highbush variety Bluecrop at Sheffield Mills, N. S. (C. L. Lockhart, C. O, Gourley).

BLOSSOM AND TWIG BLIGHT (Botrytis cinerea) was common in Charlotte Co,, N.B. and damage ranged from tr. -10% (S.R. Colpitts).

RED LEAF (Exobasidium vaccinii). Slight infections were seen at Avondale, Nfld. (O.A. Olson).

CANKER (Fusicoccum putrefaciens) caused 10% damage to the variety Jersey and a trace of damage to Coville and Burlington In a 20-acre plantation at Sheffield Mills, N.S. Burlington suffered 1% damage at Morristown (C. L. L.).

POWDERY MILDEW (Microsphaera penicillata var vaccinii) caused defoliation in scattered areas in a commercial field of lowbush blueberries at Upper Musquodoboit, N.S. (C.L.L.).

WITCHES' BROOM (Pucciniastrum goeppertianum) was rated tr-2% in most fields checked in Charlotte Co., N.B. but caused little damage (S.R.C.).

CHEMICAL INJURY. Arsenical injury, evident as a scorching of tips and margins of leaves accompanied by some necrotic spotting was seen in a field in Cumberland Co., N.S. Slight defoliation was evident in Sept. (C.L.L.).

WINTER INJURY affected most of the late growth on the highbush variety High Blue at Sheffield Mills, N. S. (C. L.L.).

CRANBERRY

STORAGE ROTS (various organisms). Isolations from rotted berries from Pictou Co., N.S. yielded the following Organisms: Fusicoccum putrefaciens. 16%; Penicillium spp., 21%; Sporonema oxycocci, 3%; Acanthorynchus vaccinii, 2%; Guignardia vaccinii, 1% Sterile breakdown accounted for 36% of the deterioration and 21% of the berries yielded yeasts, bacteria and unidentified mixtures of fungi (K.A. Harrison).

GRAPE

DEAD ARM (Cryptosporella viticola) continues to be serious, particularly on Seibel P0878 in the Niagra Peninsula, Ont. The Sphaeropsis state of Physalospora obtusa and a species of Myxosporium were found associated with the disease (J.H. de Ronde, R.S. Willison).

BLACK ROT (Guignardia bidwellii) was sev. on 5 plants in a nursery at St. Bruno, Que. (Cardinal, Benazet).

FAN LEAF (virus), Mild symptoms of this disease were recognized or suspected on 11 varieties in 4 vineyards in the Okanagan Valley, B.C. (M.F. Welsh). This constitutes the first recorded record of this disease in Canada (D.W. Creelman).

LEAF ROLL (virus). Slight-mod. symptoms were recognized, or suspected, an 9 varieties in 2 of the vineyards included in a survey of the Okanagan and Similkameen Valleys, B.C. Damage was estimated to be slight (M.F.W.). This disease, like fan leaf, has not previously been reported to the Survey (D.W.C.).

DIEBACK AND SHOT-BERRY (boron deficiency) was sev. on the varieties Patricia and Diamond in a large vineyard at Okanagan Mission, B. C. A similar condition was reported by extension personnel in several other vineyards in the Okanagan Valley, Symptoms consisted of superficial blackening of the stems, necrotic pitting in the pith, small deformed leaves at the tips, chlorosis, and tip necrosis, Fruits presented a "shot-berry" or "pumpkins and peas" effect (M.F.W.).

LITTLE LEAF AND CHLOROSIS (zinc deficiency) was sl. -mod. on several varieties in a number af vineyards in the Okanagan Valley, B. C. Typical symptoms were the presence of small leaves at the tips, arrested growth and a creamy yellowing of interveinal tissue (M. F. W.).

STRAWBERRY

GRAY MOLD (Botrytis cinerea) caused slight damage in a garden at Lethbridge, Alta. (F.R. Harper). Blossoms were 60% infected at Young' s Cove, N.B. in June and fruit rot became serious in plantings with heavy foliage at Gagetawn and other provincial centers in July (S.R. Colpitts). All varieties, with the possible exception of Sparkle, developed 25-75% fruit rot at Macdonald' s Corner, N.B. following a week of rainy weather in early Aug. (K.M, Graham, W. B, Collins). Losses ran as high as 64% in some fields in Kings and Annapolis counties, N.S. and the average rate of infection was 20%. The high losses were in inadequately protected plantings (C. O. Gourley). Gray mold rot was general in P.E.I. with losses of up to 10% (C.B. Willis). A light infection was observed at Cormack, Nfld. (O.A. Olsen).

LEAF BLIGHT (Dendrophoma obscurans). Trace infections were seen in 3 fields at Gagetown, N.B. (S.R.C.), on the variety Sparkle at Kentville, N.S. (C.O.G.) and in numerous plantings throughout P.E.I. (C.B. W.).

LEAF SCORCH (Diplocarpon earliana). The new variety Vesper, on trial. at Truro and Kentville, N.S., proved to be highly susceptible to leaf scorch and showed '75% Infection at both trial stations (C.O.G.). Infections of tr. -5% were common in P.E.I. (C.B.W.).

LEAF SPOT (Gloesporium sp.). Trace infections were observed at Morristown, N.S. (C.O.G.).

LEAF BLOTCH (Gnomonia fructicola) was tr. on the variety Vesper at Truro, N.S. (C.O.G.).

LEAF SPOT (Mycosphaerella fragariae) was general and occasionally sev. in N.B. particularly on the varieties Cavalier, Louise and Senator Dunlop (S.R.C.). M, fragariae was isolated from blackened achenes of fruits from St. Stephen, N.B. (K.M.G., C.E. Smith). Late summer and fall infection of new plantings in Kings and Annapolis counties, N.S. reached as high as 25% (C.O.G.). Infections ranged from tr. -20% in P.E.I. where the variety Cavalier seemed more susceptible than others observed (C.B. W.). Moderate - sev. infection occurred on Sparkle at St. John' s West, Nfld. (O.A.O.).

CROWN ROT (Rhizoctonia solani) caused sl. damage to strawberries grown between rows of apple trees at Ange Gardien, Que. (R. Crête).

RHIZOPUS ROT (R, nigricans) rendered unfit for sale a shipment of strawberries left over a weekend at Fredericton, N.B. (S.R, C.).

LEAF SPOT (Septoria aciculosa). Trace infections were seen on Redcoat at Kentville, N.S. (C, O.G.).

POWDERY MILDEW (Sphaerotheca macularis) was tr. on Cavalier at Berwick, N.S. (C. O.G.) and infections ranged from tr. -100%, causing sl. -mod. injury, in P.E.I. (C.B.W.).

WILT (Verticillium albo-atrum) caused sl. damage at Gagetown, N.B. (S.R. C.) and losses of 1-20% of the plants in some fields in Kings and Hants counties, N.S. (C.O.G.).

ROOT ROT (various organisms) continued to cause serious losses in plantings in N.B. (S.R. C,) and caused mod,, -sev. damage to plantings in Queens Co., P.E.I. (C. B.W.).

GREEN PETAL (virus). Infection in the lower St. Lawrence area of Que. was considerably less than in 1962. The varieties Senator Dunlop and Redcoat showed 2% infection at La Pocatiere (H. Gènèreux). Trace infections only were recorded on Sparkle and Catskill in Kings Co., N.S. (K.A. Harrison, C.O.G.). One plantain plant, Plantago sp., at Kentville had symptoms closely resembling those of green petal, The symptoms were not those of aster yellows virus on this host (K.A.H.). In P.E.I. infections, particularly on Sparkle, were rated from tr. -20 70 (C. B.W.).

FROST INJURY. Spring frost killed 60% of the blossom buds in a field at Hartland, N.B. (S.R.C.).

MAGNESIUM DEFICIENCY. Severe symptoms were seen in 2 fields at Gagetown, N.B. Yields were drastically reduced (S.R. C.).