IV. DISEASES OF FRUIT CROPS

A. POME FRUITS

APPLE

FIRE BLIGHT (Erwinia amylovora). There were considerably fewer infections in n. and c. Alta. than in 1961 (W. P, Skoropad). It was sev. in 5/5 plantings at Lethbridge and in 1 at Calgary, Alta, (F.R. Harper, P. E. Blakely). Specimens were received from Indian Head, Regina and Saskatoon, Sask. It is widely prevalent in the province but recently introduced varieties appear to have considerable resistance (R. J. Ledingham), Infections ranged from tr-7%, depending on variety, at Winnipeg, Man. (B. Peturson). Specimens were received from Grand'Mère and Compton, Que. (D, Leblond).

RUST (Gymnospbrangium globosum). Aecia were found on 1 fruit and pycnia on several leaves on crab apple at Fort Garry, Man. (B. P.).

EUROPEAN CANKER (Nectria galligena). Serious trunk damage was present on 15% of the trees in a newly-planted orchard of Spartan and McIntosh at Penticton, B. C. Copper-chromate paint applied late in May appeared to eradicate the disease, Two-year old trees of Spartan at Kelowna were heavily damaged. Canker had apparently been spread by pruning from a few trees infected when received from the nursery (L. E. Lopatecki).

PERENNIAL CANKER (Neofabraea perennans). Very heavy infections of young trees occurred at Kelbwna, B. C. when they were interplanted in a badly cankered mature orchard (L. E. L.).

BULL'S EYE ROT (Neofabraea perennans). was at its lowest ebb for years in the Okanagan Valley, B. C. (L. E. L.).

COLLAR. ROT (Phytophthora cactorum). The rootstocks MM106 and MM 104 in the Summerland, B. C. area, M VII in several districts and M II at Vernon were infected and death of the trees resulted. Losses of M VII stocks in one Vernon orchard were particularly heavy (D. L. McIntosh).

FRUIT ROT (Phytophthora cactorum). A few green fruits of Delicious on one tree at Keremos, B. C. were rotted early in the summer (D. L. McI.).

POWDERY MILDEW (Podosphaera leucotricha). Specimens were received from the Vancouver, B. C. area (H. N. W. Toms). Foliage infection was common on Jonathan, Yellow Transparent and McIntosh in the B. C. Interior (D. L. McI.).

CALYX-END ROT (Sclerotinia sclerotiorum) was found as tr. -1% infections in scattered orchards throughout the Annapolis Valley, N. S. (R. G. Ross),

SCAB (Venturia inaequalis) was mod.-sev. in home gardens in the Vancouver, B. C. area, Less defoliation was reported than in past years; perhaps related to the moist summer (H. N. W. T.). Weather conditibns in the B. C. Interior favored scab development throughout the season but losses were kept at a low level by the timely use of Cyprex sprays (D, L. McI.). No serious infection periods were experienced in Essex Co, , Ont. and scab was practically non-existent in the 1962 crop (J. Rainforth), Infection was very light in the Niagara Peninsula, Ont, Unsprayed trees at St. Catharines had only 4% fruit infection while sprayed plots were completely clean or had less than 1% fruit scab (G. C. Chamberlain). In the Farnham district of Que. there were 10 primary infection periods and a number of secondary ones between 29 April and 24 May. A survey in Aug, showed fruit scab ranging from tr. -90% although most orchards were "commercially clean" (R. Desmarteau). Scab was prevalent and moderate on unsprayed trees in the La Pocatière, Que, region (H. Généreux). Spore discharge was heavy in late May and early June in York, Sunbury and Queens counties, N. B. Spraying kept fruit infection, including pin-point scab, at a low level (S.R. Colpits). The first; spore discharge at Kentville, N. S, was recorded on 4 May and the first infection period 24-25 May. Scab lesions were first found on 7 June. Another infection period occurred 31 May - June 1 followed by 3 more in June. In July, 3 infection periods of 11 1, 51 and 74 hours occurred in the first half of the month followed by 5 additional infection periods in the latter half. Wet periods continued to occur frequently during Aug. and Sept. The rainfall for July, Aug, and Sept. was 5, 14, 6. 38 and 6. 37 in. respectively. In general, despite the extremely wet conditions, growers obtained good control of scab although considerable late scab developed in some orchards. Unsprayed fruit was a total loss (R, G. R.). Numerous infection periods occurred in P. E. I. and scab was generally sev. in Queens Co. (G. W, Ayers).

MOULDY CORE (various fungi) was sev. in a crop of Red Delicious at Sheffield Mills, N. S. Rotting of the core was extensive, reaching sometimes almost to the exterior. Fruit surface was distorted (R. G. R.).

CHAT FRUIT (virus), The occurrence of chat fruit virus, suspected earlier in Lord Lambourne test trees was confirmed at Summerland, B, C. in 1962. Three of the 5 affected trees had served for indexing of trees in local plantings. It is uncertain whether the virus was derived from them or from imported clonal rootstocks (M. F. Welsh, F. W. L. Keane, J. May).

MOSAIC (virus). One affected Fameuse tree was found at St. Paul Abbotsford, Que. The entire tree showed typical symptoms (R. D.).

PUCKER (virus), Symptoms on McIntosh at Kelowna and Summerland, B. C. were the most severe experienced to date. Further south in the Cawston district there were no fruit symptoms on affected trees (M. F. W. , F. W. L. K. , J. M.). Typical symptoms were observed on a single branch of a McIntosh tree at St. Catharines, Ont. (G. C. C.).

RING KUSSETING (virus). Symptoms on Newtown in the Oliver, B.C. district where blossoming and fruit ripening are early were unusually severe whereas symptoms further north were mild. This may possibly indicate that symptom severity is determined by seasonal weather conditions during a single short period in fruit development. Orchard surveys provided additional evidence of spread of the disease (M. F. W. , F. W. L. K. , J. M.).

RUSSET RING (virus), recognized in thousands of trees in Washington State was found for the first time in B. C. in a single Delicious tree at Summerland, B. C. The affected tree bore limbs of both Delicious and Golden Delicious and symptoms were evident in fruit of both. This tree has served as a scion source for over 100 young trees in the same orchard (M.F. W.).

DECLINE (? virus) is sev. in commercial crabapple varieties top worked on Hyslop bodystocks in several orchards in the Okanagan Valley, B. C. The bodystocks of abbut 150 trees show mod. -sev. stern pitting and one-third to one-half are in decline. The foliage of the topworked variety turns light green or yellow and terminal growth ceases. In the following season the leaves are frequently small and light-colored and no terminal growth occurs. 'The tree is frequently dead by the end of the second season, Patches and pockets of necrotic tissue develop in the bark of the interstock. Transmission tests are underway at Summerland (M. F. W., F. W. L.K., J. M.).

TRUNK PITTING (? virus). The variety Canada Baldwin has had considerable use as a hardy bodystock in B. C. and Washington, the stocks being propagated in B. C. nurseries. Large, deep pits in the Canada Baldwin trunks, first found in Wash. several years ago, were found in young trees at Winfield, B. C. in 1962. In experimental trees at Summerland the abnormality has appeared on 6 trees inoculated with stem pitting and rubbery wood viruses but not in 3 uninoculated check trees (M. F. W. , F. W. L. K. , J. M.).

CORKY CORE (boron deficiency) affected the entire crop of 11 trees of the Hume variety at St. Benoit, Deux Montagnes Co. , Que. (R. D.).

CHEMICAL INJURY (dichlone). McIntosh trees at Farnham, Que. were significantly affected after 3 years treatment with dichlone at 1/4 lb. /100 gal. at 4x concentration at a gallonage varying from 35-70 gal, /acre. Leaves showed chlorosis in the form of yellowish, undefined spots accompanied by slight marginal curling and stunting. Annual shoot growth was reduced and the general appearange of the trees indicated a lack of vigor (R. D.).

FROST INJURY. Temperatures of 26. 5 - 32°F between 8-15 May caused characteristic wrinkling, curling and reduction in size of cluster bud leaves in the Farnham, Que. district (R. D.).

HAIL DAMAGE. A severe hail storm in the Essex - Blytheswood - Wheatly area of s. -w. Ont. caused some damage to apples (J. R.). Hail in

s.-w. Que damaged 100% of the crop on 1500 trees at Ste. Madeleine, 80% on 500 trees at Mont St. Gregoire and 70% of a large crop at Franklin Center. Smaller losses were sustained in other crops at Franklin Center, An orchard of 225 McIntosh trees at St. Hilaire showed 25% of the crop damaged (R. D.).

WINTER INJURY was extensive in n. and c. Alta. (W. P. S.). At St. Hilaire, Que. about 100 trees suffered breaking-off and splitting of heavily-loaded limbs as the result of extreme low temperatures in 1957 and 1958. At Farnham, in an orchard under observation since 1958, 60/1200 trees suffered irretrievable loss from the breaking-off of main limbs (R.D.). Apple trees in many commercial orchards in N.B. continue to die as a result of sev. winter conditions in 1959-60 (S.R. C.).

MAGNESIUM DEFICIENCY was sev, in an orchard at St. Hilaire, Que., affecting 50 trees. Defoliation, early maturity and fruit drop occurred (R. D.).

STORAGE SCALD (physiological). Samples of severe scald affecting 30% of Northwest Greenings were received at St. Catharines, Ont. (G. C. C.).

SUNSCALD caused sev, damage to young apple trees at Morden, Man. The necrotic areas were invaded by fungi (J.A. Hoes). Ten mature Melba trees were affected at Rougemont, Que. Numerous extended but superficial cankers were formed on the trunks and main limbs. The cambium and sapwood were, however, intact (R. D.).

PEAR

FIRE BLIGHT (Erwinia amylovora) was particularly heavy on Bartlett on the bench area between Penticton and Naramata, B.C. where leaves had been lacerated By hail. No early blossom infection was seen. At Summerland, infection in 1 orchard spread from a tree infected the previous season to all trees in the orchard (L.E. Lopatecki). A minor incidence was observed on Aartlett in Colchester Twp., Essex Co., Ont. (R. N. Wensley). A few affected twigs of Flemish Beauty were seen at St. Catharines, Ont. (G. C. Chamberlain).

TRELLIS RUST (Gymnosporangium fuscum) is well established in a localized area in Victoria, B.C. and was also found at Oak Bay, 7 miles from the main center of infection. Rust on individual trees affected from tr. -100% of the leaves. A light but general infection was found extending over an area of one-half a square mile at Chilliwack on the B. C. mainland (W. R. Foster).

FRUIT ROT (Phomopsis ?ambiqua Trow.). The organism was consistently isolated from rot lesions in Bartlett and Sheldon pears held for processing at Kentville, N.S. About 10% of the fruit was infected with 1-5 lesions per fruit (C. L. Lockhart).

DIEBACK (Physalospora obtusa) was sev. on Clapp's Favorite and Bartlett in an orchard at Falmouth, N. S. Most trees were affected with up to one-eighth of the limbs destroyed, The trees were crowded and had had very heavy applications of chicken manure. The conidal stage (Sphaeropsis malorum) was identified by R. H. Arnold at Ottawa (R. G. Ross),

FRUIT ROT (Phytophthora cactorum). Frequent and heavy rains in Sept. were a factor in the development of this rot at St. Catharines, Ont. Approximately 20% of 1 crop of Kieffer were affected (G. C. C.). It affected 12% of the crop of Clapp's Favorite from one orchard at Hantsport, N. S. Rot developed in the ripening room of a cannery. A trace infection was seen in an orchard in Annapolis Co, , N. S. (C. L. L.).

POWDERY MILDEW (Podosphaera leucotricha). Specimens of infected foliage from newly-planted trees were received from Yarmouth, N. S. (R. G. R.).

BLAST (Pseudomonas syringe) occurred on a single garden tree at Windsor, Ont. (D. W. Creelman).

FRUIT ROT (Rhizopus nigricans) affected 30% of Kieffer pears in used, half-bushel containers held in ripening rooms at St. Catharines, Ont. (G. C. C.).

SCAB (Venturia pirina). Specimens were received from Vancouver and White Rock, B. C. (H. N. W. Toms). Incidence was much lower than normal in the Niagara Peninsula, Ont. Light scab developed on 12% of unsprayed fruit at St. Catharines and on less than 1% of sprayed fruit (G. C. C.). Trees in York and Sunbury counties, N. B. were heavily infected (S. R. Colpitts).

ANJOU PIT (cause unknown) was found only in a few isalated areas in the Okanagan Valley, B. C. in 1962. Where the condition occurred it affected up to 80% of the fruit (J. M. Wilks). The entire crop of 2/10 Anjou trees in a planting at St. Catharines, Ont. was deformed and severely pitted (G. C. C.).

COTTONY SPOT (cause unknown) was severe in 1 Bartlett orchard at Penticton, B.C. Fruits generally show little or no external symptoms and develop small patches of white, cottony tissue under the skin. At Penticton considerable surface pitting was evident (J. M. W.).

FRECKLE PIT AND GREEN STAIN (cause unknown). Symptoms were very mild in 1962. Orchard surveys over a 3-year period indicate no spread of the condition and transmission tests to date have yielded negative results (J. M. W.).

CHEMICAL INJURY (2,4-D). Severe symptoms developed on 40 trees at Hantsport, N. S. following the application of a herbicide to a nearby lawn. Fruit failed to set (K.A. Harrison).

B. STONE FRUITS

APRICOT

CORYNEUM BLIGHT (Stigmina carpophila) caused serious fruit losses in several orchards in the B. C. Interior in 1962. Weather conditions were favorable for infection soon after the initiation of fruit formation (D. L. McIntosh).

VERTICILLIUM WILT (V. dahliae) was prevalent in some orchards in the Okanagan Valley, B. C. slight in others .but absent from most (G. E, Woolliams).

CHERRY

LEAF SPOT (Higginsia hiemalis) was sev. in 2 small plantings nr. Moncton, N. B. (S. R. Colpitts). It caused 90% defoliation of Bing at Middleton, N. S. (C. O. Gourley) and 100% defoliation of Montmorency nr. Charlottetown, P. E. I. (G. W. Ayers).

BLACK KNOT (Dibotryon morbosum) was sev. on many trees in York and Sunbury counties, N. B. (S. R. Colpitts).

BROWN ROT (Monilinia fructicola). Blossom infection was rated at 60% on Bing and Lambert in the Lower Arrow Lake district of B. C, Little or no fruit rot developed (L. E. Lopatecki). Infection on the early blooming Black! Tartarian and Elkhorn was extremely limited in the Niagara Peninsula, Ont, The later varieties Bing, Windsor, Napoleon, Yellow Spanish and Schrnidts were unaffected (G. C. Chamberlain), Two sour cherry hybrids at Fredericton, N. B. showed extensive twig blight infections (K. M. Graham).' Losses in sprayed orchards in Kings and Annapolis counties were about 10% of the fruits (C. O. G.).

COLLAR ROT (Phytophthora cactorum) killed several large Lambert trees in an orchard at Oyama, B. C. The bark was infected above ground level (D. L. McI.).

BACTERIAL CANKER (Pseudomonas syringae) severely damaged young trees in a planting on Lulu Island, B. C. (H. N. W. Toms).

VERTICILLIUM WILT (V. dahliae) was found in several sweet cherry orchards in the Okanagan Valley, B. C. Usually only occasional trees are affected in any one orchard but in 2 orchards in the Westbank district the majority of the trees were affected. It was also found for the first time in B. C. affecting sour cherry at Kelowna. About 10% of the trees in one corner of a Montmorency orchard were involved, some being severely affected (G. E. W.).

LITTLE CHERRY (virus). Moderate-severe symptoms were seen on Bing and Lambert throughout the Creston Valley, B.C. Damage was estimated at 50-60% (J.M. Wilks).

CRACKING was severe and general on early cherries in Kings Co., N. S. following an extended rainy period (K.A. Harrison).

PEACH

CROWN GALL (Agrobacteriuni tumefaciens). The extent of infection of peach nursery stock in the Kelowna, B. C. district was vastly more than normal, One nursery lost approximately 40,000 trees, or 90% of the total planting (L.E. Lopatecki).

BROWN ROT (Monilinia fructicola). Infection was limited to a few fruits at Summerland, B. C. (L.E.L.). Incidence in the Niagara Peninsula, Ont. was much below normal. After 10 days in common storage only about 15% rot developed on Vedette and Elberta at St. Catharines (G.C, C.). Losses.. were insignificant in Kings Co., N. S. (C. O. Gourley).

RHIZOPUS ROT (R. nigricans) appeared somewhat earlier than usual in cannery peaches in the Okanagan Valley, B. C. and was mostly limited to fruit shipped from the southern areas of the Valley. The amount of rot was variable, depending on the grower lot and maturity (L. E, L.).

CORYNEUM BLIGHT (Stigmina carpophila) caused serious fruit losses in several orchards in the B. C. Interior. Weather conditions soon after the initiation of fruit formation were favorable for infection (D, L. McIntosh).

LEAF CURL (Taphrina deformans). Slight infections occurred on unsprayed trees and infection was tr. on sprayed trees at Kentville, N. S. (K. A. Harrison, C. O.G.).

CANKER (Valsa cincta). More than 80% of 250 young Envoy trees were infected at Harrow, Ont. on arrival from a nursery. Many branches bore several cankers and dieback was common. A survey of Essex Co. orchards in late June showed canker to be prevalent on all varieties. Degree of infection was variable (R. N. Wensley).

HAIL DAMAGE was severe in mid-June on 6-year old trees in 5 blocks in Mersea Twp. Essex Co., Ont. Wood was bared along the full length of trunks and branches. Gumnosis was abundant on limbs and scaffolding. A survey in Aug. showed that the lacerations on small branches were partially healed and dry. Little evidence of ensuing canker was found in this isolated planting though both Valsa leucostoma and V. cincta were present with the first species being the most prevalent. The fungi were found most frequently on June Elberta and Early Elberta (R. N. W,).

PLUM

BLACK KNOT (Dibotryon morbosum). Infection was heavy on old plantings in the Vancouver, B. C. area, especially on Nicomen Island (H. N. W. Toms), Specimens were received from St. Clet, Soulange Co. and Ile aux Coudres, Charlevoix Co., Que. (D. Leblond). Black knot continues to be a problem in non-commercial plantings in N. B. (S.R. Colpitts). New knots formed despite earlier pruning of an orchard at Tupperville, N. S. (K. A. Harrison). Unsprayed trees required extensive pruning for black knot removal at Charlottetown, P. E. I. (G. W. Ayers). Black knot is endemic on native species of Prunus in Nfld. and cultivation of susceptible plums is practically impossible (O. A. Olsen).

PLUM POCKETS (Taphrina communis) was sev. on 4 trees at Sanford, Man, (B, Peturson) and tr. on Burbank at Upper Dyke, Kings Co., N.S. (G. O. Gourley).

WINTER INJURY was extensive in n. and c. Alta. The trees did not harden off properly in the fall of 1961 (W. P. Skoropad).

PRUNE

BLACK KNOT (Dibotryon morbosum). Infection was heavy on Stanley Prune at Wentworth, Ont. 'causing twig and branch dieback (G. C. Chamberlain).

RUST (Tranzschelia discolor) was collected on trees from a nursery at' Yarrow, B. C. (H. N. W. Toms).

HEAT SPOT. Specimens on Fellenberg prune were received from several areas in the Niagara Peninsula, Ont. (G. C. C.).

C. RIBES FRUITS

CURRANT

BLISTER RUST (Cronartium ribicola) was sev. and caused premature defoliation at Trois Pistoles, Que. (D. Leblond) and it was equally sev. on red currants at Kentville, N. S. (K. A. Harrison).

GOOSEBERRY

CLUSTER CUP RUST (Puccinia caricis). Infection was rated at 65% in 2 plantings at Berthier, Montmagny Co., Que. (D. Leblond, G. Ola'h).

POWDERY MILDEW (Sphaerotheca mors-uvae) Severely infected specimens were received at Saanichton, B. C. (R. G. Atkinson). It caused extensive damage to several bushes in a garden at St. Catharines, Ont. (G. C. Chamberlain). Specimens were received from Trois Pistoles, Que. (D. L.) and an 80%

infection was seen in Kamouraska Co., Que. (J. Santerre). Fruit was 50% infected on several plants at Botwood, Nfld. (O.A. Olsen).

D. RUBUS FRUITS

BLACKBERRY

CROWN GALL (Agrobacterium turnefaciens) was sev. on both wild and cultivated blackberries at Mahone Bay and Kentville, N. S. (C. O. Gourley).

RASPBERRY

CROWN GALL (Agrobacterium tumefaciens). Infections were found in all plantings examined in Kings and Annapolis counties, N. S. It is evident that stringent measures will be necessary in order to control this disease under local conditions (K. A.' Harrison).

FRUIT ROT (Botrytis cinerea). Moderate **losses** were sustained in the first picking at Abbotsford, Langley and Yarrow, B. C. (H. N. W. Toms).

GRAY-MOLD WILT (Botrytis cinerea) caused mod. damage at Ste Foy and St. Antoine de Tilley and was sev. at Baie St. Paul, Que. (D. Leblond, G. Ola'h). At Truro, N. S., 75% of the canes in a planting of new varieties and crosses were so badly affected that it was likely that they would not survive. The field involved has a history of sev. outbreaks of this disease. Ten % of the canes were affected in a 2-acre field at Chester Basin, N.S. (K.A.H.).

SPUR BLIGHT (Didymella applanata). Eight/8 plantings visited in Que. averaged 30% infection. Plantings were located at Quebec City; St. Evariste Village, Frontenac Co.; L'Ange Gardien, Ile d'Orléans, St. Laurent, Montmorency Co.; St. Antoine de Tilly, Lotbinière Co.; Pont Rouge, Portneuf Co., and Baie St. Paul, Charlevoix Co. (D. L., C. O.). One planting in Kamouraska Co., Que. was 80% infected (J, Santerre). It was present in Kings' Co., N. S. but was not as sev. as in 1961 (K. A. H.).

ANTHRACNOSE (Elsinoé veneta) caused 20% damage in 2/8 plantings surveyed in Que. (D. L., G. O.) and 10% damage in an unsprayed planting nr. Moncton, N. B. (S. R. Colpitts). Weather conditions in Kings, Hants and Annapolis counties, N. S. were very favorable for spread of anthracnose and many plantings suffered severe outbreaks (K. A. H.).

YELLOW RUST (Kuehneola uredinis) was collected on Rubus laciniatus, the cut-leafed blackberry, at Lulu Island, B. C. (H. N. W. Toms).

WESTERN YELLOW RUST (Phragmidium ruhi-idaei) was sev. in a planting at Baie St. Paul, Que. (D. L.).

LATE LEAF RUST (Pucciniastrum americanum). A heavy infection was seen at Caplan, Que. (D. L.). Fruit infections on Viking were not as common as usual in Kings Co., N.S. but by Oct. this variety was partially defoliated (K. A. H.). Viking was severely attacked in Queens Co., P. E. I. and fruit infections were as high as 80%. Rainfall and humidity during July and Aug. were high, favoring infection (G. W. Ayers).

LEAF SPOT (Septoria rubi). Infection was heavy on foliage in a garden at Prince George, B.C. (H. N. W. T.) and sev. at Port Morien, N. S, (C. O. Gourley).

POWDERY MILDEW (Sphaerotheca macularis), Viking was 35% infected in a planting at La Pocatière, Que. (J.S.). Sev, infections were seen on leaves and fruit of some varieties and breeding lines at the Research Station, Kentville, N. S. (K. A. H.).

BLUE STEM (Verticillium albo-atrum). In 1961, a planting of Viking at Kentville, N. S. had 2% infection. The affected plants were rogued and burned, The same planting in 1962 had less than 1% infection. It is possible that careful rogueing may afford an effective means of control (K. A, H.).

MOSAIC (virus) was common in plantings in N. B. Infections ranged from tr. -75% in non-commercial plantings (S. R. C.).

E. OTHER FRUITS

BLUEBEKRY

CROWN GALL (Agrobacterium tumefsciens). Ten % of the highbush plants in an experimental planting at Sheffield Mills, N. S. were severely affected (C. O. Gourley).

TWIG AND BLOSSOM BLIGHT (Botrytis cinerea) was tr. in lowbush fields in Kings Co. and less than 1% on the highbush varieties Pioneer, Jersey and others at Kentville, N. S. (C. L. Lockhart).

CANKER (Fusicoccum putrefaciens) was tr. on highbush varieties at Barss Corner, Kentville and Digby, N. S. (C. L. L.).

TWIG AND BLOSSOM BLIGHT (Monilinia vaccinii-corymbosi) was tr, in lowbush fields in Charlotte Co., N. B. (S. R. Colpitts).

WITCHES BROOM (Pucciniastrum goeppertianum) occurred in trace amounts in all fields surveyed in Charlotte Co., N. B. (S. R. C.). A single plant of the highbush variety Kenlate was infected at Kentville, N. S. (C. L. L.).

LEAF RUST (Pucciniastrum myrtilli) infection at Frizzleton and Craignish, Inverness Co., N. S. was rated mod.-sev. in lowbush fields in Sept. (C. L. L.).

CHEMICAL INJURY. A heavy side dressing of ammonium nitrate applied to newly-set highbush plants at Digby, N. S. caused injury and eventual death to about 5% of the plants (C. L. L.).

FROST INJURY caused extensive dieback of highbush canes on Lulu Island, B. C. about 3 months after a February freeze (H. N. W. Toms). Injury to the variety Blueray was tr. at Barss Corner, N. S. (C. L. L.).

GRAPE

FRUIT ROT (Botrytis cinerea) was sev. in a small home greenhouse at New Westminister, B. C. (H. N. W. Toms).

DEAD ARM (Fusicoccum viticola). The variety Seibel 10878 in a large vineyard at Stamford, Ont. showed 25-35% trunk infections. The disease was also found in the same planting on Seibel 7053, Fredonia and Concord in amounts ranging from 5-15% (G. C. Chamberlain).

DOWNY MILDEW (Plasmopara viticola) was less prevalent than usual in the Niagara Peninsula, Ont. Light infections were seen affecting 15.6% of the clusters in a planting of President and 10% of Seibel 7053 (G. C. C.).

POWDERY MILDEW (Uncinula necator) occurred in varying degrees on European varieties and hybrids at the Research Station, Summerland, B. C. (C. E. Woolliams). It was prevalent throughout the Niagara Peninsula, Ont. and spread rapidly in late Aug. and in Sept., especially on French hybrid varieties. Some hybrids had clusters completely infected with cracking of berries. Infection was common on the Seibel varieties, occurring on foliage, canes, fruit stems and berries. Light to moderate infections were seen on Agawam, Delaware, Concord, Elvira, Foch and Pineau Blanc (G. C. C.).

FROST INJURY. Frost on 19 May caused 25-50% damage to grapes in the Niagara Peninsula, Ont., killing buds and shoot growth. In one lowlying area a temperature of 22°F killed 100% of the shoots of the variety Canada Muscat (G. C. C.).

HAIL DAMAGE occurred in localized areas in the Niagara Peninsula, Ont. causing splitting and bruising of up to 25% of the green berries (G. C. C.).

STRAWBERRY

CROWN ROT (Armillaria mellea). Rhizomorphs were found in seedlings in plots at Agassiz, B.C. The land had been newly cleared (H.S. Pepin).

GRAY MOLD (Botrytis cinerea) was present, but not serious, in most fields in the Gagetown, N.B. area (S.R. Colpilts). Infections of up to 12% were recorded in spray plots at the Research Station, Kcntvillc:, N.S. Reports were received of growers obtaining only one or two pickings in unsprayed plantings (C. O. Gourley). Gray mold was general and caused substantial losses to growers in P.E.I. Losses of 30-40% of the fruit were recorded at Dromore, Queens Co. (G.W. Ayers).

LEAF AND PETIOLE BLIGHT (Dendrophoma obscurans) was sev. on Sparkle at Fredericton, N.B. It caused sunken lesions up to 1 inch in length at the bases of petioles (K.M. Graham). It was found as trace infections on the hulls, but seldom on the foliage of several varieties at Kentville and Morristown, N.S. (C.O.G.).

LEAF SCORCH (Diplocarpon earliana). A sev. infection was seen at Ste. Foy, Que. (D. Leblond).

LEAF BLOTCH (Gnomonia fructicola) affected 6-10% of the hulls of several varieties at Kentville, N.S. A lesser amount of fruit rot occurred (C. O.G.).

LEAF SPOT (Mycosphaerella fragariae). Several heavy infections were seen in the vicinity of Guelph, Ont. (D.W. Creelman). It was generally sev. on Senator Dunlop in N.B. (S.R.C.) and infection was 25% on Sparkle at Bras d'Or, N.S. (C. O.G.). It developed rapidly in unsprayed fields in July and Aug. in P.E.I. Cavalier seemed particularly susceptible (G.W. A.). Slight infections occurred on most plants at the Exp. Farm, St. John's West, Nfld. (O.A. O.).

LEAF SPOT (Phyllosticta fragariicola) caused numerous whitish spots accompanied by a reddening of the leaves at Grande Baie, nr. Chicoutimi, Que. It was generally severe. (D.L.). This may be a stage of Mycosphaerella fragariae (D.W.C.).

LEAF SPOT (Septoria aciculosa) could be found in trace amounts on old leaves in most plantings in Kings Co., N.S. (C. O.G.).

POWDERY MILDEW (Sphaerotheca macularis) was sl. on Cavalier at Kentville and Chester Basin, N.S. (C. O.G.). Infections were light in Queens Co., N.S. in contrast to the heavy infections in the dry summers of 1960 and 1961 (G.W.A.).

WILT (Verticillium spp.). A home garden at Summerland, B. C. was affected by V. dahliae (G. E. Woolliams). Infection by V. albo-atrum was sev., infecting 60% of the plants in a 2-acre field of Redcoat at St. Léonard, Nicolet Co., Que. (J. Rinquet). A low area in a field of Sparkle at Gagctown, N.B. was infected. The field had formerly been potato land and it is felt that much of the so-called winter injury to strawberries in N. B. stems from infection by V. albo-atrum since potatoes figure so prominently in the rotation (S. R. C.). Grenadier and Sparkle were infected on former potato land at Lower Jemscg, N. B. (K. M. G., W. B. Collins). At Kentville, N. S. Redcoat was more severely affected by V. albo-atrum than was Cavalier in a new planting. Forty % of the plants were infected in a field at Port Williams and 10% of those in a 4-acre field at Melvern Square, N. S. (C. O. G.).

ROOT ROT (various organisms) caused 207% damage in a field at Portage la Prairie, Man, (B. Peturson) and was present in most fields surveyed in N. B. (S. R. C.).

GREEN PETAL (virus). Senator Dunlop was so seriously affected at La Pocatière, Que. that it did not bear fruit. The variety Quatre Saisons was also severely affected. Other varieties showed a lesser degree of infection (H. Généreux). Trace amounts were found throughout the strawberry growing areas of Queens Co., N. B. Rogueing and spraying for insect control have kept its incidence relatively low (S. R. C.). Catskill and Sparkle were 57% infected at Kentville and Berwick, N. S. (C. O. G.). Infection in Queens Co., P. E. I. ranged from tr. -40%. In many cases first, second and third year crops were equally affected. The heaviest infection seen was at Tryon (C.B. Willis).

WITCHES BROOM (virus), Five-10% of the plants showed symptoms in a 1-acre field at Lévis, Que. (J. Rinquet). A new planting of Cavalier at Hampstead, N.B. was 55% infected (S. R. C.).

WINTER INJURY. Low temperature injury to buds resulted in imperfect berries and poor plant growth in Carleton Co., N.B. In some plantings damage was estimated at 60% (S.R.C.). Plants at Yarmouth, N. S. failed to survive the winter, It is thought that infection by Verticillium was at least partially responsible, The organism was readily obtained from moribund plants in the spring (C. O. G.).