DISEASES OF VEGETABLE CROPS

BEAN

LEAF SPOT (Ascochyta? bolthauseri) was severe in a planting of kidney beans at Ste. Foy, Que. (D. L.). The occurrence of this pathogen has not been previously reported to the Survey although its presence in B. C. has been recorded elsewhere (D. W. C.).

GRAY MOLD (Botrytis cinerea) affected 30% of the crop in 7 fields at Florenceville, N.B. at harvest. Almost all infections originated from floral parts which had fallen and adhered to the pods. Light blossoming fields and late plantings had only a trace of infection (S. R. C.).

ANTHRACNOSE (Colletotrichum lindemuthianum). Trace to 7% infections were seen in 7/14 fields in the Florenceville and Gagetown districts of N. B. The higher infections were in small plantings and home gardens (S. R. C.).

ROOT ROT (Fusarium spp., Rhizoctonia solani). What may have been a moderate attack by the fungus complex at Cloverdale, B. C. was intensified by drought and failure of the remaining roots to supply adequate water. Symptoms on pole beans were severe by early August (H. N. W. T.). Infection by F. solani was severe throughout southwestern Ont. and especially so in Lambton and Middlesex Counties. Affected plants appeared to recover somewhat by late season and the main effect of the disease was to cause late flowering and maturity (J. H. H.). A survey in August in s.w. Ont. showed 11/61 fields to be affected by root rot, usually in patches in the fields. Severity was generally slight but some plants were severely infected and yields in certain fields would be reduced. It was observed in 'Seaway' and 'Sanilac' but not in 'Saginaw' or 'Michilite' (V.R.W., M.D.S.). Root rot caused by R. solani affected beanplantings in home gardens in P.E.I. to a moderate degree. Cold, backward spring weather favored its development (J.E. C.).

HALO BLIGHT (Pseudomonas phaseolicola) was moderate in 3 fields grown for processing nr. Taber, Alta. (F.R. H.). Infection ranged up to 60% in 11/14 small plantings examined in N. B. No damage was observed in 2300 acres grown for processing (S.R.C.).

SCLEROTINIA WILT (Sclerotinia sclerotiorum). Trace amounts were reported on young pole beans in the lower Fraser Valley of B. C. (H.N. W. T.). It caused losses, late in the season, in Huron, Perth, Elgin and Kent Counties, Ont. Its severity in Lambton and Middlesex Counties was mitigated by the reduced growth of plants as the result of drought and root rot (J.H. H.). Wilt was observed in s. w. Ont. in 10/30 fields of 'Sanilac' and 13/26 fields of 'Seaway' surveyed. Infection in individual fields ranged from a few to 50% of the plants. Yields were expected to be considerably reduced. This was the most important disease encountered in the bean crop in 1965 (V. R. W., M. D. S.). Specimens were received from Nipissing, Ont. with the observation that most of a home planting was lost (J. B. J.). Trace infections were seen in 2/7 crops examined at Florenceville, N. B. (S. R. C.) and it was trace on 'Tendercrop' in a garden at Kentville, N. S. (K. A. H.).

RUST (Uromyces phaseoli). Trace amounts were seen in pole beans in late August at Cloverdale and Queensborough, B. C. A light, late infection is usual in dry summers on the B. C. coast (H.N. W. T.). It was prevalent throughout a field of several acres at Vernon, B. C. The foliage and, to a lesser extent, the pods were affected (G. E. W.).

COMMON BLIGHT (Xanthomonas phaseoli). Specimens were received from Calgary, Stettler and Edmonton, Alta. (A. W. H.). It was rarely encountered in early-season surveys in s. w. Ont. but was more prevalent by mid-season, particularly in Essex and Kent Counties (J.H. H.). An August survey of fields in s.w. Ont. revealed bacterial blights in 27/61 fields. Infection ranged from trace amounts to 100% of the plants. Yields in totally-infected fields could be reduced 50%. & phaseoli var. fuscans was the organism most frequently isolated followed by & phaseoli and Ps. phaseolicola in that order. Only 3/24 fields sown with Michigan-grown seed were infected in contrast to 24/37 fields from Ontario-grown seed (V.R.W., M.D.S.).

CURLY TOP (beet curly top virus) affected the young terminal leaves of most of the plants in a commercial crop of several acres of 'Bluelake' at Vernon, B.C. Infection occurred late in the season (G.E. W.).

COMMON MOSAIC (bean mosaic virus) was observed in commercial fields of bush beans in the Vernon, B. C. area (G.E. W.).

BEAN YELLOW MOSAIC (bean yellow mosaic virus) was found in bush beans in the Vernon, B. C. area (G.E. W.).

CHEMICAL INJURY. Drift of the herbicide atrazine from an adjacent corn field killed all the bean plants in a field at Jemseg, N. B. (S. R. C.).

SUNSCALD affected several acres of snap beans for processing at Laprairie, Que. (R.C., L. J. C.). About 10% damage to upper foliage was seen in 3/7 fields examined at Florenceville, N. B. (S. R. C.).

BEET

LEAF SPOT (Cercospora beticola) was observed in a 5-acre field of beets at Port Williams, N. S. (A. A. MacN.).

SCAB (Streptomyces scabies). Trace amounts were seen on 'Detroit Dark Red' in a garden planting at Kentville, N. S. (K. A. H.).

BROCCOLI

BORON DEFICIENCY. Injury was severe in a planting at Chilliwack, B. C. Flower heads, stems and leaf petioles were covered with light-brown, corky lesions. Some splitting of the outside of petioles occurred but no internal splitting, which is usual with boron deficiency, was observed (H.N.W.T.). It was observed in 3 crops at Florenceville, N.B. where the condition was followed by soft rot (S. R. C.).

BRUSSELS SPROUTS

WHIPTAIL (molybdenum deficiency) was observed in trace amounts in 2/11 fields examined at Rogersville, N. B. (S. R. C.).

CABBAGE

DOWNY MILDEW (Peronospora parasitica). Infection was 70% in one field at Cole Harbour, Halifax Co., N.S. Traces were seen in other fields at Cole Harbour and at Addington Forks, Antigonish Co. and Second Peninsula, Lunenburg Co., N.S. (A.A.MacN.).

BLACKLEG (Phoma lingam). Several cultivars at St. John's West, Nfld. were slightly damaged by a 10% infection (O.A. O.).

CLUB ROOT (Plasmodiophora brassicae). Infection ranged from trace to 75% in 4/11 fields examined at Oromocto, N. B. (S.R. C.). Trace infections were seen at River Hebert, Cumberland Co. and at Brentwood, Colchester Co., N. S. Infections of 75-100% were recorded at Bras d'Or, Cape Breton Co. and at Heatherton and Addington Forks, Antigonish Co., N.S. (A.A.MacN.). Infections were generally light in eastern Nfld. (O. A. O.).

WIRE STEM AND BOTTOM ROT (Rhizoctonia solani). Severe infections caused heavy losses in seedbeds at Cole Harbour, Halifax Co. Losses from bottom rot were about 5% in the field at Falmouth. Hants Co., N. S. (A. A. MacN.).

BLACK ROT (Xanthomonas campestris). One row of an unknown variety was 100% infected at Heatherton, Antigonish Co., N.S. The main variety in the field was unaffected (A. A. MacN.).

CARROT

LEAF BLIGHT (Alternaria dauci). Infection was rated 6-tr./13 fields surveyed in s.w. Que. (T.S., R. C.) and was 30% in 1/9 fields at Oromocto, N.B. (S.R.C.). A. dauci along with Cercospora carotae affected up to 100% of the plants in crops at 4 locations in Cape Breton Co., N. S. where no protective fungicides had been used. Trace infections only were seen in Kings Co. where protective fungicides had been applied (A.A.MacN., K.A.H., C.O.G.).

LEAF BLIGHT (Cercospora carotae). Trace infections were seen in 5/13 fields examined in s.w. Que. (T.S., R. C.).

ROOT-KNOT NEMATODE (Meloidogyne hapla). Damage, in a plot known to be heavily infested at Ste. Clothilde, Que., was only slight in both 1964 and 1965 (T.S., R. C.).

STORAGE ROT (Sclerotinia sclerotiorum). Specimens were received from Plamondon, Fort Saskatchewan, Edmonton and Winterburn, Alta. in November (D.S.). This rot, in conjunction with gray mold and bacteria caused an 8% loss at Oromocto, N. B. (S.R.C.) and very slight losses in washed carrots at Grand Pré, N. S. (A. A. MacN.).

ASTER YELLOWS (aster yellows virus) caused slight damage in a 60-acre planting at Rosemary, Alta. (F.R. H.). Damage was estimated at 10-35% in 9 fields examined at Oromocto, N. B. (S.R. C.). Infection was rated trace at Harbour Center, Antigonish Co. and at Cole Harbour, Halifax Co.; 5% at Old Barns, Colchester Co. and Minudie, Cumberland Co.; slight at Berwick, Kings Co. and severe at River Hebert, Cumberland Co., N. S. (A.A. MacN., K. A. H.). Infection was 45% on 'Touchon' and damage was severe at O'Leary, P. E. I. (G.W. A.).

CAULIFLOWER

DOWNY MILDEW (Peronosporaparasitica). Trace infections were seen at Cole Harbour, N.S. (A.A. MacN.).

CLUB ROOT (Plasmodiophora brassicae). Moderate to severe injuryoccurred in a field nr. Windsor, Ont. (J.R.R.) and infection was trace at Brentwood, Colchester Co., N. S. (A.A. MacN.).

WIRE STEM (Rhizoctonia solani). Plants at Spirit River, Alta. were heavily infected (A.W. H.).

DAMPING-OFF (Rhizoctonia solani) caused the loss of 80% of the seedlings in hot frames at Yarmouth, N. S. (A. A. MacN.).

BLACK ROT (Xanthomonas campestris) caused 3% loss in 1/11 fields examined at Oromocto, N. B. (S.R.C.).

BORON DEFICIENCY, followed by a breakdown of head tissues was responsible for trace-30% losses in 7/11 fields examined at Oromocto, N.B. (S.R.C.).

CELERY

LEAF SPOT (Cercospora apiicola). An extremely heavy infection of the cultivar 'Utah 5270' in a 2-acre field at Cole Harbour, N. S. caused a 50% reduction in yield. Eight % of the plants were affected on 23 July and by harvest in mid-Sept. all plants bore heavy infections; the outer leaves were completely dead and the outer petioles bore many lesions. No protective fungicides were used (A. A. MacN.).

BACTERIAL BLIGHT (Pseudomonas apii). Infection was rated 3-tr./10 fields examined in s.w. Que. In experimental plots at Ste. Clothilde it was trace on 'Utah D-5' and 'Utah 5270' and slight on 'Utah 10-B' and 'Utah 1611' (T.S., R.C.).

PINK ROT (Sclerotinia sclerotiorum). Traces were seen in 3/10 fields surveyed in s.w. Que. (T.S., R.C.).

ASTER YELLOWS (aster yellows virus). One of ten fields examined in s.w. Que. had a trace of infection (T.S., R. C.).

MOSAIC (cucumber mosaic virus). Infections were rated 2-tr./10 fields in s.w. Que. (T.S., R.C.).

CHICORY

ROOT ROT (Sclerotinia sclerotiorum). Lesions were prevalent on chicory roots for forcing in Gosfield South Twp., Essex Co., Ont. Loss was estimatedat 10-12% (J.R.C., C.D. McK.).

CUCUMBER

LEAF BLIGHT (Alternaria cucumerina) was severe on 'Ashley Hybrid' at Ladner, B. C. by mid-Sept. 50% of the plants in 900 feet of row weredying, This is the first report from coastal B. C. of real damage caused by this pathogen. A. tenuis has occasionally been a nuisance in smaller plantings. The pathogen was determined by J.W. Groves (H.N. W.T.). The season was very favorable for the disease in N. S. and foliage of the cultivars 'Marketer', 'Armour', 'Highmoor' and 'Burpee Hybrid' was destroyed early in Kings, Antigonish and Cape Breton Counties (A.A.MacN., K.A.H., C.O.G.). It was also heavy, affecting 50% of the leaves, in a greenhouse crop at Horton, N. S. (A. A. MacN.).

GRAY MOLD (Botrytis cinerea). Specimens of rotted fruit were received from Edmonton, Alta. (A.W.H.). Gray mold was prevalent in greenhouse crops in s.w. Ont. Damage was difficult to estimate since blossom infection reduced the set in many houses (J.R.R.).Trace infections were seen in 23/31 fields examined in the Sheffield area, N. B. (S.R.C.).

SCAB (Cladosporium cucumerinum) was reported on pickling cucumbers on Lulu Island and from home gardens in the Vancouver, B. C. area (H.N.W. T.). Infection was heavy on 'Saticoy Hybrid' in a 2-acre planting nr. Burlington, Ont. Forty % of the fruits were scabbed by 23 July (C. B. K.). A severely scabbedfruit was received from Ottawa, Ont. (D.W.C.) and it was severe at Lotbiniere, Que. where stems and leaves as well as fruit bore heavy infections (D. L.). It was especially troublesome in all parts of N.B. in 1965 and 36/40 fields examinedhad trace-100% infections (S. R. C.). Up to 50% of the fruits of 'Straight 8' and 'Marketer' were affected in N. S. 'Highmoor' was affected only at Addington Forks, Antigonish Co. Resistant cultivars stood up well and no scab was seen on either 'Highmoor' or 'Armour' until they were defoliated by leaf blight (A.A.MacN., K. A. H.).

POWDERY MILDEW (Erysiphe cichoracearum) was prevalent anddifficult to control inboth field and greenhouse crops in s.w. Ont. Maneb sprays or dusts gave some degree of control but it was far from satisfactory (J.R. R.).

ROOT ROT (Fusarium sp.). Specimens were received from several small plantings on Lulu Island, B. C. It was intensified by a relatively dry summer (H.N.W. T.).

ANGULAR LEAF SPOT (Pseudomonas lachrymans) was reported from Edmonton (A. W. H.) and caused moderate "damage in a planting at Coaldale, Alta. (F.R.H.). Trace infections were seen on leaves and fruit at Saskatoon (R. J. L.) and it was found affecting 50% or more of the plants in 38/40 fields examined in N. B. (S.R. C.).

ROOT ROT (Rhizoctonia solani) caused moderate damage in a planting at New London, P.E.I. (J.E.C.).

SCLEROTINIA ROT (Sclerotinia sclerotiorum) was observed in commercial greenhouse crops at Summerland, B. C. (G.E. W.) and caused 3% loss in 1/3 fields examined at Oromocto, N. B. (S.R. C.).

LEAF SPOT (Septoria cucurbitacearum) affected the old leaves on all plants in a garden at Yarmouth, N.S. (A.A.MacN.). This is the first report, to the Survey, of this pathogen on cucumbers (D.W. C.).

MOSAIC (cucumber mosaic virus) was reported from Edmonton, Alta. (A.W.H.). A few fields of the slicing cucumber 'Marketer' nr. Chatham, Ont. suffered some damage. Large aphid populations were observed in the affected fields (J.R. R.). Infections were general and severe throughout Que. Its high incidence seemed to be related to unusually cool nights. Specimens were received from Neuville, Beauport, St. Isidore, St. Elphege and La Tuque (D. L.).

DIE-BACK (physiological) caused 50-90% damage in 6/6 fields examined on Ile Jesu, Que. Tissues at the leaf margins dried out and in many cases runners did not form. Low temperatures, drought and strong winds seemed responsible (L. J. C.).

EGGPLANT

WILT (Verticillium dahliae) occurred in all commercial plantings of 'Black Beauty' in the Vernon district, B.C. (G.E.W.). In 2 fields at Harrow, Ont. 80-90% ,of the plants were infected at the time of first harvest (C. D. McK.).

LETTUCE

GRAY MOLD (Botrytis cinerea) was recorded, usually in trace amounts, in 7/11 fields examined in 3 N. S. counties. Infection was significant only at Abercrombie, Pictou Co. where it reached 5% (A.A. MacN.).

DOWNY MILDEW (Bremia lactucae) was rated 3-tr. 1-sl./6 fields surveyed in s.w. Que. (T.S., R.C.). It appeared early at Cole Harbour, N. S. and by mid-Sept. all plants in most fields were infected (A. A. MacN.).

MARGINAL LEAF BLIGHT (Pseudomonas marginalis) was found for the first time in s.w. Que. where trace infections were seen in 2/6 fields surveyed (T.S., R.C.). It has previously been reported from Ont. and Man. (D.W. C.).

BOTTOM ROT (Rhizoctonia solani) caused minor damage in 4/6 fields examined in s.w. Que. (T.S., R. C.).

DROP (Sclerotinia sclerotiorum). Five % of the plants of a green heading type lettuce were killed in early May in a market garden nr. Vancouver, B. C. The cause of death of another 6.5% could not be determined. In another area drop was responsible for 10.7% of 34% of the lettuce plants killed. Little rotation was practiced in either case (H.N. W. T.). Small amounts of drop were seen in 3/6 fields surveyed in s.w. Que. (T.S., R. C.). Damage was estimated at 1% in fields at Cole Harbour and Grand Pré, N.S. (A. A. MacN.).

ASTER YELLOWS (aster yellows virus). Infection in experimental plots in Man. ranged up to 50%. No survey was made of commercial fields (C. C. G.). Traces of infectionwere found in 4/6 fields examined in s.w. Que. (T.S., R. C.) and in 2/3 fields at Oromocto, N. B. (S.R. C.). No aster yellows was found in early-season surveys in N.S. but it increased with later plantings (A. A. MacN.). It caused severe damage in 'Great Lakes' at Charlottetown, P. E. I. (G. W. A.).

MOSAIC (lettuce mosaic virus). Traces were seen in 2/6 fields examined in s.w. Que. (T.S., R.C.).

TOBACCO NECROSIS (tobacco necrosis virus). Roots of 10 lettuce plants picked at random from 3 fields nr. Winnipeg, Man. were assayed on cowpea and common bean and all were found to be infected with TNV. This virus is known to be widespread but it usually causes little or no visible damage on lettuce. Some brown lesions caused by the virus were observed on some of the roots (C. C. G.).

TIP BURN (physiological) was observed in 12 fields surveyed in 5 N. S. counties. Damage ranged from trace-20%. It was usually light up to the harvest stage and severe on over-mature heads (A.A. MacN.).

MINT

RUST (Puccinia menthae). Infection was slight in a small planting nr. Abbotsford, B.C. (H.N.W.T.).

MUSKMELON

SUDDEN WILT (cause undetermined). Two 4-acre fields of Fusarium-resistant muskmelons at Leamington, Ont. showed a sudden wilting of the foliage about 10 days to 2 weeks before harvest. The conditionis thought to be induced by low temperatures (C.D. McK.).

ONION

PURPLE BLOTCH (Alternaria porri) was rated 1-tr. 2-sl./24 fields examined in s.w. Que. (T.S., R.C.).

NECK ROT (Botrytis allii). Up to 30% of the large bulbs of a 120-ton crop from muck soil at Cloverdale were infected. The grower had not followed the recommended heat-curing program (H.N. W.T.). Some neck rot had developed on onions in storage in the Okanagan Valley, B. C. by November (G.E. W.). Infections of up to 20% were found in several bags of onions from the muck soil area of s.w. Que. Commercial storage firms reported losses ranging upwards to 40-60% from neck rot and bacterial soft rot (R.C.). Specimens were received from local market sources in Quebec City, Que. (D.L.). Losses averaging 25% were incurred in a commercial storage at Waterville, N.S. They varied from 5-50% in different parts of the storage. Some of the infection may have followed frost damage which was evident on a few of the bulbs at harvest (A.A. MacN.).

LEAF FLECK (Botrytis cinerea). Trace infections were seen in 2/24 fields examined in s.w. Que. (T.S., R. C.) and infection was severe in a field at Neuville, Portneuf Co., Que. (D.L.). Traces were seen in 1/3 fields observed at Maugerville, N.B. (S.R. C.), slight infections at Canning and Harbour Center and a severe infection at Cole Harbour, N. S. (A. A, MacN.).

LEAF BLIGHT (Botrytis squamosa). Infections were rated 8-tr. 2-sl./24 fields surveyed in s.w. Que. (T.S., R. C.).

SOFT ROT (Erwinia carotovora), combined with neck rot, Botrytis allii, was responsible for losses of up to 60% in commercial storages in s.w. Que. (R.C.).

BASAL ROT (Fusarium oxysporum f. cepae) caused heavy losses in spring-planted onions, especially to hybrid onions, in the Okanagan Valley, B. C. The hybrids have proven to be very susceptible to this organism in the. B.C. Interior in contrast to the open-pollinated cultivars which exhibit much more resistance (G. E. W.). Damage was estimated at 10% in a 1-acre planting at Rougemont, Que. (R.C.).

DOWNY MILDEW (Peronospora destructor). Inadequately sprayed crops in the Okanagan Valley, B.C. suffered some losses (G. E. W.). It was also observed at Neuville, Que. (D. L.).

PINK ROOT (Pyrenochaeta terrestris) was rated 1-tr. 1-sl./24 fields surveyed in s.w. Que. (T.S., R. C.).

WHITE ROT (Sclerotium cepivorum) occurred on fall-planted onions at Oliver, B.C. (G.E.W.). This disease, not observed in the muck soil areas of s.w. Que. since 1962 was rated 2-tr. 4-sl. 3-mod./30 fields examined. No explanation can be offered of the means by which soils in this area have become infested since neither sets nor transplants are used in the muck soil areas (T.S., R.C.).

SMUT (Urocystis magica). Infection was 30% in bunching onions in a market garden nr. Vancouver, B.C. (H.N.W.T.). It occurred in most crops in the Kelowna, B.C. district but it was generally well controlled through seed treatments or the use of chemically-treated clay granules added to the seed furrows (G.E.W.). Smut was rated 1-tr. 1-sl./24 fields surveyed in s.w. Que. (T.S., R.C.).

LEAF DAMAGE (wind, hail, etc.) was moderate in 5/25 fields examined in s.w. Que. (T.S., R.C.).

PEA

ASCOCHYTA BLIGHT (Ascochyta pisi). Affected specimens were received from Edmonton, Ponoka and Maple Creek, Alta. (A.W.H.).

POWDERY MILDEW (Erysiphe polygoni). Specimens were received from Vegreville, Maple Creek, Lacombe, Queenstown and Ponoka, Alta. (A.W.H.). Infection was widespread in Sask. (R.J.L.) and slight on 10% of the plants in a field of 'Century' on the Experimental Farm, Ottawa, Ont. (V.R.W.). It was general in N.B. but not severe as it appeared late (S.R.C.) and was severe on old foliage at Minudie, Cumberland Co., N.S. (A.A.MacN.).

WILT (Fusarium oxysporum f. pisi) was absent or occurred in trace amounts only in wilt-susceptible and wilt-resistant cultivars in plots at Lethbridge, Taber and Scandia, Alta. (F.R.H.).

MYCOSPHAERELLA BLIGHT (Mycosphaerella pinodes). A few plants were infected in a 1-acre field of 'Century' at Ottawa, Ont. (V.R.W.).

SEEDLING BLIGHT (Pythium spp.). Emergence of plants from untreated seed in plots was 15% at Taber and 50% at Lethbridge, Alta. Emergence from seed treated with captan and other fungicides was 90-95% (F.R.H.)

ROOT ROT (Pythium spp., Fusarium spp., Rhizoctonia solani). Infection was trace to slight in a field nr. Chilliwack, B.C., especially in low-lying patches. The condition was intensified by dry weather (H.N.W.T.). It was moderate in test plots at Taber and Lethbridge and trace in a field nr. Vauxhall where peas had not previously been grown (F.R.H.). Rhizoctonia root rot affected pea plantings in home gardens in P.E.I. It was favored by cold, backward spring weather (J.E.C.).

LEAF SPOT (Septoria pisi). Infection was 3%, mostly on the lower leaves, in a 1-acre field of 'Century' at Ottawa, Ont. (V.R.W.).

RUST (Uromyces fabae). A few plants of 'Century' were infected at Ottawa, Ont. (V.R.W.). It is common on peas in N.S. but appears late and does little damage. A planting at Minudie, Cumberland Co. was 100% infected (A.A.MacN.).

ENATION MOSAIC (pea enation mosaic virus) affected a few plants in a 1-acre planting of 'Century' at Ottawa, Ont. (V.R.W.).

STREAK (pea streak virus) was seen on a few plants of field peas at Ottawa, Ont. (V.R.W.).

PEPPER

WILT (Verticillium dahliae). Infections ranging from trace to 10% of the plants occurred in a number of commercial plantings in the Okanagan Valley, B.C. (G.E.W.). All fields in the Harrow-Leamington area of Ont. had trace to slight infections. Virtually all the plants of 'Vinequeen', 'Lincoln Belle' and 'Staddon's Select' were infected in an 8-acre field at Harrow (C.D.McK.).

BLOSSOM-END ROT (physiological). Drought was responsible for an unusually high incidence of blossom-end rot at Kentville, N.S. (K.A.H.).

POTATO

EARLY BLIGHT (Alternaria solani) was more prevalent than usual in central B.C. and the Cariboo. Some crops of 'Warba' and 'Norland' were killed down before the end of August (N.M.). It was rated 15-sl. 2-mod./79 seed fields in n. Alta. and 26-sl.-mod. 4-sev./114 in s. Alta. (R.P.B., R.P.S.) and it was observed at Ponoka, High Prairie, Stony Plain, Drumheller and Calgary, Alta. (A.W.H.). Incidence was sl.-mod. in most potato fields in Sask. (R.J.L.) and slight infections only were seen in Man. and n.w. Ont. (D.J.P.). Ratings were 15-sl. 2-mod. 2-sev./47 fields inspected in e. Ont. (G.E.B.F.), It was more prevalent in Que. than in 1964, mainly in the Chicoutimi area and northwest of Montreal. Infection was rated 225-sl. 31-mod. 9-sev./858 seed fields (G.E.). The disease was particularly noticeable on the Fredericton seedlings F5317, F5636, F6112, F5858, F6130, F6133 and F6103 at Les Buissons, Saguenay Co., Que. (H.G.). Infection was heavy and defoliation occurred in the early potato growing areas of N.B. (S.R.C.). A few moderate infections were seen on 'Keswick' and 'Norland' in Kings Co. and on 'Irish Cobbler' in Cumberland Co., N.S. (R.C.L.). Slight to moderate infections were seen in a few fields in P.E.I. (G.C.R.) and in the Conception Bay area of Nfld. (O.A.O.).

GRAY MOLD (Botrytis cinerea) caused trace amounts of damage in a low, wet area of a field at Grand Falls, N.B. (S.R.C.).

BLACK DOT (Colletotrichum coccodes) was observed at Wainwright, Alta. (A.W.H.) and was severe in a fourth crop field of potatoes at Ste. Famille, Ile Orleans, Que. (D.L.). One field of 11 acres in Kings Co., N.S. was dead by 1 Sept. and damage from

black dot in the county in many instances reached 10%. It was most severe in 'Kennebec' and 'Netted Gem' with 'Green Mountain' also affected. In one instance 'Katahdin' growing adjacent to infected 'Netted Gem' was not affected (A.A.MacN., K.A.H., C.O.G.).

BACTERIAL RING ROT (Corynebacterium pedonicum) occurred in only 3/193 seed fields in Alta. (R.P.B., R.P.S.) but ring rot was identified in table stock in Alta. as follows: 52 specimens from Lethbridge, 27 from Edmonton, 11 from Brooks and 4 from Calgary (A.W.H.). Four seed fields were rejected in Man. (D.J.P.) as were 98/858 in Que. (G.E.). Three seed fields of 'Arran Victory' were rejected in N.S. where 10 fields of table stock were also affected (R.C.L.). Incidence in P.E.I. increased over 1964 and 22/4,466 fields and 30 contact fields involving a total of 628 acres were rejected (G.C.R.). It was widespread in Nfld. with symptoms most severe in 'Arran Victory' (O.A.O.).

BLACKLEG (Erwinia atroseptica). Incidence decreased considerably from 1964 levels in all districts of B.c. (N.M.) but increased considerably in Alta. particularly on heavier soils (R.P.B., R.P.S.). Specimens were received from a number of Alta. districts (A.W.H.). Nine seed fields were rejected in Man. and 73% of the fields in n.w. Ont. showed trace infections (D.J.P.). More blackleg than usual was seen in the Guelph, Ont. district where 11 seed fields were rejected and 7 reduced to Certified grade (J.W.G.). Ratings were 19-tr./47 fields in e. Ont. (G.E.B.F.). Incidence increased slightly in Que. where 558/858 fields were affected. However, fewer than half as many fields were rejected as in 1964 (G.E.). Infection ranged from trace to 18% in 4/11 fields examined at Jemseg and Evendale, N.B. (S.R.C.) and was rated 47-tr./210 seed fields in N.S. (R.C.L.). Incidence dropped markedly from 1964 levels in P.E.I. where ratings were 1,312-sl. 930-mod. 49-sev./4,466 seed fields. There were 85 rejections compared with 271 in 1964 (G.C.R.). Infected plants could be found in practically all potato fields in e. Nfld. A green, soft rot of stems was also found but its connection with blackleg is uncertain (O.A.O.).

SOFT ROT (Erwinia carotovora). Reports of damage to 'Norland' were received throughout the shipping season in B.C. (E.F.).

DRY ROT (Fusarium spp.). Affected specimens were received from Edmonton, St. Lina and Vermillion, Alta. (A.W.H.). It was seen in a few lots, mostly in 'Keswick', at bin inspection in Que. (G.E.). F. sambucinum f. 6 caused slight damage in a field at Vernon River, P.E.I. (G.W.A.).

WILTS (Fusarium spp., Verticillium albo-atrum) were found in 16 fields, mostly in 'Kennebec', in the lower Fraser Valley, B.C. Five were rejected (E.F.). Ratings were 4-tr./79 seed fields in n. Alta. and 50-sl./114 in s. Alta. (R.P.B., R.P.S.) and 50% of the fields inspected in Man. showed traces of wilts (D.J.P.). Wilts were more prevalent than usual in the Guelph district (J.W.G.), specimens were received from home gardens in the Ottawa area (J.B.J.) and 3/47 seed fields in e. Ont. showed trace infections (G.E.B.F.). Verticillium wilt increased considerably over 1964 levels in Que. and was most prevalent in 'Kennebec' (G.E.). It was rated 35-tr.-sl./210 fields in N.S. with 3 fields rejected. The cultivars most affected were 'Kennebec', 'Sebago', 'Red Pontiac' and 'Irish Cobbler' (R.C.L.). Wilts were more prevalent than in 1964 in P.E.I. with ratings being 532-sl. 246-mod. 2-sev./4,466 fields inspected (G.C.R.).

GOLDEN NEMATODE (Heterodera rostochiensis) was found in June in a small planting of 'Warba' potatoes on the Saanich Peninsula of Vancouver Island, B.C. Subsequent surveys of approximately 10,000 acres showed about 100 acres to be infested, all in the immediate vicinity of the original infestation. No golden nematodes were found in areas of the mainland surveyed. Surveys are continuing, quarantine measures have been applied and steps to eradicate the nematode have been taken (W.R.O., W.P.C.).

RHIZOCTONIA (Pellicularia filamentosa). Ratings were 121-sl. 96-mod. 9-sev./263 seed fields in B.C. (E.F.). It increased in severity in n. Alta. where it was rated 28-sl. 11-mod./79 fields. In s. Alta. ratings were 91-sl.-mod./114 fields (R.P.B., R.P.S.). Slight infections were seen in 8% of the fields inspected in Man. (D.J.P.) and it was slight in 5/27 bin lots examined in e. Ont. (G.E.B.F.). Incidence increased over 1964 levels in Que. and infections were rated 220-sl. 26-mod. 5-sev./251 seed fields (G.E.). The seedling F5606, now licensed as the cultivar 'Grand Falls' was 90% infected and damage was severe in plots at Les Buissons, Que. (H.G.). Slight infections were noted in N.B. (S.R.C.) and a few severe infections were seen in N.S. (R.C.L.). The stem canker phase of the disease caused moderate yield losses in e. Nfld. (O.A.O.).

LATE BLIGHT (Phytophthora infestans) was seen in a few seed crops on Vancouver Island, B.C. (E.F.) and in 2/47 fields in e. Ont. where infection resulted in slight tuber infection (G.E.B.F.). In Que. it was rated 21-sl. 6-mod./858 fields but it was held in check by weather conditions and the use of topkillers. Some tuber rot was found in bin inspections (G.E.). Scattered trace infections were seen in table stock fields throughout Que. (H.G.). It was not found in commercial fields in N.B. (S.R.C.) and incidence was the lowest in 39 years in N.S. where it occurred only in coastal areas (R.C.L., K.A.H.). Traces only were seen in Nfld. (O.A.O.).

BROWN ROT (Pseudomonas solanacearum E.F. Smith). An extensive shipment of potatoes from Bermuda was found to be breaking down on arrival at Halifax, N.S. Temperatures had been high on the wharf at Hamilton and had increased during shipment. Losses, estimated at 10%, were checked as soon as temperatures were reduced (K.A.H.).

LEAK (Pythium ultimum) caused an estimated 35% loss in a field that was wet in late summer at Compton, Que. (L.J.C.), was severe on 'Kennebec' in poorly drained fields at La Pocatikre (C.A.) and was seen in 2 lots during bin inspection (G.E.). A

grower-shipper at Hunter River, P.E.I. sustained a considerable loss as a result of digging and grading during unseasonably warm weather. The crop required regrading (J.E.C.).

POWDERY SCAB (Spongospora subterranea). Slight to moderate infections were seen in 4 lots at bin inspection in Que. (G.E.) and slight infections occurred on 'Green Mountain' at La Pocatikre (H.G.). Infection was 20% on 'Kennebec' and 7% on 'Avon' in a plot trial in N.S. (R.C.L.).

COMMON SCAB (Streptomyces scabies). Slight infections were seen on all cultivars in central B.C. and the Cariboo region (E.F.). Incidence was lower than usual in n. Alta. but most smooth-skinned cultivars bore slight infections in s. Alta. (R.P.B., R.P.S.). Damage was slight in 4/47 bins examined in e. Ont. (G.E.B.F.). Infection was rated 250-sl. 10-mod. 3-sev. in bin inspections in Que. with infections largely confined to the northeastern portion of the province (G.E.). In plots at La Pocatikre, Que. where lime had been applied in previous years, 'Green Mountain', 'Teton', 'Urgenta' and 'Norgleam' had over 50% scab whereas 'Huron', 'Avon', 'Cherokee' and 'Norland' had less than 2% (H.G.). Infection was heavy in a 2-acre fieldat Jemseg, N.B.(S.R.C.) and at Harbour Center, N.S. (A.A.MacN.). It was generally more prevalent than in 1964in N.S. (R.C.L.), P.E.I. (G.C.R.) and Nfld. (O.A.O.).

WART (Synchytrium endobioticum). Severe infections in infested soils caused moderate to heavy losses in c. and e. Nfld. June was wet and cool favoring severe infections on early-planted crops. The remainder of the growing season was dry but wart damage was unexpectedly heavy in all but fields planted at the end of June (O.A.O.).

LEAF ROLL (virus). Some current-season infection was seen in the B.C. interior and on Vancouver Island (E.F.). Ratings in Alta. were 61-tr. 9-sl. 2-mod. 3-sev./193 fields (R.P.B., R.P.S.). Infection was slight in 20/47 fields in e. Ont. (G.E.B.F.) and it was found in 197/858 fields in Que. Sixteen seed fields were rejected (G.E.). Leaf roll was the most important virus disease in N.S., affecting 93/210 fields (R.C.L.). Ratings in seed fields in P.E.I. were 304-sl. 13-mod. 72-sev./4,466 (G.C.R.).

MOSAIC (virus) was found in 12/47 fields inspected in e. Ont. (G.E.B.F.) and in 497/858 fields in Que. where it caused the rejection of 102 (G.E.). Trace to slight infections occurred in 77/210 fields in N.S. where 'Fundy' was the cultivar most affected (R.C.L.). Its incidence in P.E.I. was half the level reached in 1964. Ratings were 153-sl. 92-mod. 75-sev./4,466 fields and 43 fields were rejected (G.C.R.).

PURPLE TOP (aster yellows virus) was reported in a number of fields in N.S. (R.C.L.) and was trace-10% in a few fields in P.E.I. where 'Sebago' was more affected than other cultivars (G.C.R.).

SPINDLE TUBER (virus). Slight amounts were seen in 4 plantings of 'Netted Gem' in s. Alta. (R.P.S.). Five seed fields were rejected in Man. (D.J.P.) and one in e. Ont. (G.E.B.F.). It was recorded in 1 field and 3 bin lots in Que. (G.E.) and in 5/210 fields in N.S. (R.C.L.). It was rated 144-sl. 72-mod. 88-sev./4,466 fields in P.E.I. (G.C.R.).

STREAK MOSAIC (virus). The Fredericton seedling, F6151 was severely infected in plots throughout Que. Other seedlings, such as F6027, F6205 and F6223 were also affected and produced tubers with a surface necrosis (H.G.).

WITCHES BROOM (virus). Traces were found in 18/59 fields inspected in the Cariboo district of B.C. but it was virtually absent elsewhere in the province (E.F.). It was seen in 1 field of 'Warba' in s. Alta. (R.P.S.).

BLACK HEART (physiological), Specimens of affected P.E.I. tubers were received from Sydney, N.S. The damage is thought to have occurred in transit (K.A.H.).

FROST INJURY was slight in 12/27 bin lots examined in e. Ont. (G.E.B.F.). Injury was seen in 90% of the bin lots inspected in Que. Average damage was about 5% but was 40-50% in some lots. Most of the injury was the result of an early frost on 25 Sept. and a heavy frost on 6 Oct. The districts most seriously affected were the lower St. Lawrence and Lake St. John (G.E.). Frost injury in plots at La Pocatière, Que. ranged from 1-50% dependingon the seedling or cultivar. 'Katahdin' and 'Kennebec' suffered the most injury and crops harvested after 7 Oct. averaged 50% damage (H.G.).

GIANT HILL (genetic) was slight in 5 fields of 'Netted Gem' in s. Alta. (R.P.S.)and was occasionally seen in N.S. (R.C.L.).

INTERNAL BLACK SPOT (physiological) was seen in 2 seed crops in the interior of B.C. (E.F.).

LIGHTNING INJURY killed plants in an oblong patch in a field at Centerville, N.S. (A.A.MacN., K.A.H.).

MAGNESIUM DEFICIENCY was seen in a few fields in Essex Co., Ont. 'Avon' seemed more susceptible to this disorder than did 'Irish Cobbler' or 'Cherokee' (J.R.R.).

STEM STREAK (manganese toxicity) was seen in a number of potato fields in P.E.I. Soil samples from affected fields usually gave a pH reading below 5.0, providing favorable conditions for manganese toxicity (J.E.C.).

SUNBURN. Damage was slight in 18/27 bins examined in e. Ont. (G.E.B.F.). Heavy fall rains in n.e. Que. washed soil from ridges and exposed tubers to light and air. Exposed tubers were damaged by both sunburn and early frost (D.L.).

PUMPKIN

POWDERY MILDEW (Erysiphe cichoracearum) was general on foliage, late in the season, in the Okanagan Valley, B.C. (G.E.W.).

RADISH

DOWNY MILDEW (Peronospora parasitica). Infections were rated 1-tr. 3-sl./7 fields examined in s.w. Que. This disease was first observed in 1962 in the area but had not been seen again until 1965 (T.S., R.C.).

ROOT ROT (Rhizoctonia solani). A trace was found in a field of early radish at Cole Harbour, N. S. (A.A.MacN.).

BACTERIAL LEAF SPOT (Xanthomonas vesicatoria var. raphani). Ratings were 1-tr.2-sl./7 fields examined in s.w. Que. (T.S., R.C.).

RHUBARB

LEAF SPOT (Ascochyta rhei). Infection was moderate in a nursery at Merrickville, Ont. (A.E.S.). A heavily infected specimen was received from Amherst, N.S. (A.A.MacN.).

ANTHRACNOSE (Colletotrichum erumpens) was reported from Red Deer, Alta. (A.W.H.). A specimen, with reports of heavy infections, was received from Notre Dame du Nord, Temiscamingue Co., Que. (J.B.J.).

RED LEAF (cause unknown). Specimens were received from Castor, Didsbury, Heisler and Vermillion, Alta. At Castor, 25% of the plants were affected (A.W.H.).

RUTABAGA

DOWNY MILDEW (Peronospora parasitica) was severe in almost all fields in L'Islet Co. (D.L.) and moderate infections were seen in L'Islet and Kamouraska Counties, Que. (H.G.). Infection was slight at Berwick and Port Williams, N.S. (A.A.MacN.) and at St. John's West, Nfld. (O.A.O.).

CLUB ROOT (Plasmodiophora brassicae). In loamy soil at St. Eugene, Que., 'Laurentian' showed 40% infection, mostly of secondary roots whereas 'York' was free of disease (H.G.). 'York' showed high resistance in plots at Oromocto, N.B. Some other cultivars were 80% infected (S.R.C.). Club root is a problem in N.S. in areas where successive crops of susceptible plants are grown. Infection is escaped by using a 5-year rotation. 'York' and 'Chignecto' show resistance inmost parts of the province although small clubs were found on all 'York' plants at the Research Station, Kentville (A.A.MacN., C.O.G.). 'Laurentian' was slightly affected at Argyle Shore, P.E.I. (G.W.A.).

SKIN SPOT (Rhizoctonia solani) was severe in 1/3 fields examined in Fredericton Junction, N.B. (S.R.C.). Both 'York' and 'Laurentian' had moderate infection at Kentville, N.S. (K.A.H.). The condition was present in most rutabaga fields in P.E.I. The lesions are mostly superficial but they will develop rapidly under poor storage conditions and render roots unsaleable (J.E.C.).

BROWN HEART (boron deficiency) caused severe losses in a 10-acre plantingat Chicoutimi (D.L.) and caused slight to moderate damage to 'Laurentian', particularly in loamy soils, at La Pocatikre, Que. (H.G.). All roots in a planting at Argyle Shore, P.E.I., in which no boron had been applied with the fertilizer, were severely affected by brown heart and water core (J.E.C.).

DROUGHT. Specimens received from Papineau Co., Que. showed marginal leaf necrosis and accompanying information indicated wilting and eventual death of half the plants in a 3-acre field. Drought conditions were severe at the time (D.W.C.).

SPINACH

DOWNY MILDEW (Peronospora farinosa (Fr.) Fr. = P. spinaciae Laub.). Loss was 40% in May in closely-planted early spinach in a market garden nr. Vancouver, B.C. The rate of infection was probably higher but some of the crop was saved by stripping older, lightly-infected leaves. Later plantings did not seem to be affected (H.N.W.T.). It affected half the plants in a fall-grown crop for processing at Vernon, B.C. (G.E.W.).

SQUASH

DRY ROT (Fusarium roseum). Losses of 'Buttercup' squash were 10% in 2 storages at Port Williams, N.S. 'Hubbard' was unaffected. Most infections originated at the stem-end of the fruit (A.A. MacN.).

LEAF SPOT (Septoria cucurbitacearum). Heavy infections were seen on 'Buttercup' squash in Kings and Lunenburg Counties, N.S. Some early foliage died but the overall crop was not seriously reduced (A.A.MacN., K.A.H.).

SWEET CORN

SMUT (Ustilago maydis). One specimen was received from Moose Jaw, Sask. (R.J.L.), one from L'Acadie, Que. (R.C.) and one from Cardigan, P.E.I. (J.E.C.).

BACTERIAL ROT (pathogen undetermined). A bacterial soft rot involving husks, ears and eventually the stalks was observed at Ladner and Matsqui, B.C. It seemed to be associated with overhead irrigation (H.N.W.T.).

TOMATO

EARLY BLIGHT (Alternaria solani) caused considerable damage to foliage in the Vernon, B.C. area and ,slight to moderate damage in the more southerly portions of the Okanagan Valley (G.E.W.). A heavily infected specimen was received from Nicolet, Que. (D.L.). It continues to be the most serious disease of tomato in N.B. where infections ranged from trace to 70% in 30/31 fields surveyed. Little fruit rot was found but heavy defoliation greatly reduced yields (S.R.C.). Infections were severe in several fields in Kings Co., N.S. following irrigation. They were moderate to severe on foliage and fruits of 'Quebec 5' and 'Fireball' in Pictou Co. Infections were also

seen in Cumberland, Colchester and Antigonish Counties (A.A.MacN., C.O.G.).

ALTERNARIA ROT (Alternaria tenuis) caused a considerable loss of fruit, especially during the latter part of the picking season, in the Vernon area of B.C. Infection usually took place through growth cracks (G.E.W.).

GRAY MOLD (Botrytis cinerea) was much more prevalent than usual in fall greenhouse crops in s.w. Ont. Damage was extensive where control measures were less than adequate (J.R.R.). Average damage was 5% in 7/13 fields surveyed in N.B. (S.R.C.). Canker caused by gray mold killed 2-5% of the plants in greenhouse plantings in Kings Co., N.S. Fruit losses in field crops were less than 2% (K.A.H., A.A.MacN.).

LEAF MOLD (Cladosporium fulvum) was responsible for some damage in commercial greenhouse crops in the Okanagan Valley, B.C. (G.E.W.). In s.w. Ont., 1965 was the worst year for leaf mold since the introduction of susceptible cultivars into the area. Nearly all fall greenhouse crops of the cultivars 'Ohio WR-7' and 'Ohio WR-25' had trace to severe infections (J.R.R.). Moderate to severe infections were seen in 6 greenhouses at Grand Pré, Falmouth and Clifton, N.S. Damage was difficult to assess but it was estimated losses in the late crop of 'Tuck Queen' were in the vicinity of 15% (A.A.MacN., K.A.H.).

ANTHRACNOSE (Colletotrichum coccodes). Losses from fruit rot were high, late in the season, in the Okanagan Valley, B.C. It occurred throughout the Valley but was more prevalent in the northern than in the southern area (G.E.W.). Dry weather in N.S. suppressed its development but fruit losses of 10 and 20% were recorded at Kentville (K.A.H.).

BACTERIAL CANKER (Corynebacterium michiganense), Breeding material at the Experimental Farm, Morden, Man. had 5% of the plants infected. The pathogen was probably seed-borne (J.A.H., R.Z.). It has been a problem in greenhouse crops in s.w. Ont. for a number of years and its intensity varies greatly from year to year. It was more widespread in 1965 than in the last 20 years, particularly on the 'Ohio' cultivars. A previously unobserved type of fruit symptom was in evidence. Losses of up to 20% were estimated in a few ranges. The source of the inoculum, whether seed or soil, was not determined (C.D.McK., J.R.R.).

LATE BLIGHT (Phytophthora infestans) was seen only as a trace infection in 1/31 fields examined in N.B. (S.R.C.) and none was seen or reported in the 1965 crop in N.S. (K.A.H.)

BUCKEYE ROT (Phytophthora parasitica) was seen in one fall greenhouse crop in s.w. Ont. There was strong evidence of soil splashed on the fruit (J.R.R.).

STEM ROT (Sclerotinia sclerotiorum) caused some damage in commercial greenhouses at Summerland, B.C. (G.E.W.) and trace amounts were seen at Kentville, N.S. (K.A.H.).

LEAF SPOT (Septoria lycopersici). Specimens, with information indicating a severe infection, were received from Taschereau, Abitibi Co., Que. (D.L.).

WILT (Verticillium spp.) occurred throughout the Okanagan Valley, B.C. on strains and cultivars of tomatoes susceptible to V. dahliae (G.E.W.). Traces were seen in a few spring greenhouse crops in s.w. Ont. (C.D.McK.). 'Stokesdale' was 100% infected with V. albo-atrum at the Research Station, Kentville, N.S. The crop was light but wilt symptoms were not too obvious until the stems were cut (K.A.H.).

DOUBLE STREAK (potato virus X and tobacco mosaic virus) was more prevalent than usual in field and greenhouse crops in s.w. Ont. (J.R.R.) and it occurred in a greenhouse crop at Bras d'Or West, N.S. (A.A.MacN., K.A.H.).

MOSAIC (tobacco mosaic virus) was observed in both field and greenhouse crops throughout the Okanagan Valley, B.C. (G.E.W.) and in spring and fall greenhouse crops in s.w. Ont. (J.R.R.). Infection was estimated at 2% in a 5-acre field at St. Cesaire, Que. (R.C.). It was present in all greenhouse crops examined at Grand Pré and Falmouth, N.S. and was responsible for an estimated 10% reduction in crop. Some fruits were also downgraded because of blotchy ripening (K.A.H., A.A.MacN.).

SHOESTRING (cucumber mosaic virus) was present in a few crops in s.w. Ont. (J.R.R.).

BLOSSOM-END ROT (physiological) was less prevalent than usual in Sask. Slight damage only was recorded (R.J.L.). Damage was rated trace-10% in 7/31 fields examined in N.B. (S.R.C.). Its incidence was high in greenhouses in N.S. in May. Reports and specimens from field crops in August indicated up to 20% losses. Some rain and cooler weather in late August checked its further development (K.A.H.). Dry conditions in P.E.I. favored incidence of blossom-end rot (J.E.C.).

BLOTCHY RIPENING (physiological) was quite common in fields in the Montreal, Que. area in 1965 (R.C.).

BORON DEFICIENCY. This deficiency was serious enough to affect the yield and fruit quality in 1 field and 2 greenhouse crops at Kentville and Falmouth, N.S. The diagnosis was confirmed by soil and tissue analyses (K.A.H.).

CHEMICAL INJURY (hormone-type symptoms). Twenty acres of processing tomatoes in s.w. Ont. sprayed from the same supply tank showed hormone injury. Loss of production in the early cultivars was slight but production of later ones, 'Roma' and 'ES-24' was substantially reduced. The mislabeling of a container of insecticide appeared to be to blame (J.R.R.).

GROWTH CRACKS, for the second consecutive year, were more prevalent than normal in s.w. Ont. Fruit, during much of the season, rotted on the vine if not picked within a short time of ripening (J.R.R.). Losses in some N.B. fields were heavy. Up to 40%

loss of marketable fruit occurred in some cases (S.R.C.).

MAGNESIUMDEFICIENCY. Mild symptoms were observed in 2 fall greenhouse crops in s.w. Ont. (C.D. (McK.).

MANGANESE TOXICITY. Moderate to severe injury due to excess manganese was frequently encountered in greenhouse crops in Essex Co., Ont. Tissues analyses showed manganese levels as high as 2500 ppm (J.R.R.).

SMOKE INJURY. Malfunction of the fan on the draft of a coal-fired boiler resulted in severe injury to half of a 1-acre greenhouse planting in s. w. Ont. Severe necrosis of the tops of plants resulted in the loss of 3 to 4 sets of fruit **(J.R.R.).**

TOP NECROSIS (genetic) occurred in a yield trial of 'Erie Cross BB' at Kentville, N.S. late in the season. This is a prominent necrosis that is easily recognized and it affects the late yield of this cultivar (K.A.H.).

DISEASES OF FRUIT CROPS

A. Pome Fruits

APPLE

COTTONY MOLD (Alternaria spp.). The term, cottony mold, refers to a superficial mold growth over fruit, containers and walls of cold storages where humidity is high. The main organisms involved are species of Alternaria. No damage is done to the fruit but cleaning is difficult and is impossible at the stem and blossom ends. The condition is present in many new cold storages and was observed in 1965 at Oliver and Osoyoos, B. C. (L.E.L.).

FRUIT SPOTTING (Alternaria sp.) caused heavy damage in 1 grower's crop in storage at Osoyoos, B.C. Lesions were black and about $\frac{1}{4}$ inch in diameter. A species of Alternaria could be recovered from the underside of skin lesions (L.E.L.).

BLACK MOLD [Aureobasidium pullulans (de Bary) Arn. = Pullularia pullulans (de Bary) Berkh.). Specimens received from St. Hilaire, Que. had a superficial blackmold which was confined to the stem end of the fruit. At the stage when the fruit was examined there appeared to be no rotting of the fruit but the stems separated easily and the fruit was rendered unsightly. The fungus was determined by S.J. Hughes (P.K.B.).

FROG-EYE LEAF SPOT (Botryosphaeria obtusa) caused considerable spotting on 'Idared' in an orchard nr. Harrow, Ont. The orchard had been heavily damaged by fire blight in 1964 (C.D.McK.).

STORAGE ROT (Botrytis cinerea) was found affecting 'Red Delicious', 'McIntosh' and 'Newtown' in 3 packing houses at Kelowna, B. C. Most of the rot was centered around the blossom and stem ends but some fruits were completely rotted by the end of 1964. This condition has apparently been present for some years but since no surface mycelium or spores are produced the inspectors have been recording it as 'storage breakdown'. It was also seen in 'Delicious' from controlled atmosphere storage at Oliver, B. C. in May. Lenticel spotting was evident and some fruits were completely rotted. Incidence was low (L.E.L.).

CANKER (Cytospora sp.). Specimens were received from Two Hills and from Three Hills, Alta. (A.W.H.).

FIRE BLIGHT (Erwinia amylovora). Infections in current season's shoots and in blossoms were found in small numbers in several orchards in the Okanagan Valley, B. C. Damage in 1965 was negligible (D.L.McI.). It was prevalent in the Edmonton district and was reported from 17 other localities in Alta. (A.W.H.). Fire blight infections were general on apple and crabapple in Saskatoon, Sask. (R.J.L.) and its incidence in Man. was low, judging from the low number of specimens received for identification (W.A.F.H.). It developed rapidly in early June in Essex Co., Ont. but progressed slowly thereafter. Its incidence was much lower than in 1963 and 1964 (J.R.C.). Fire blight recurred in s. w. Que. in 1965. At Franklin Center, Huntingdon Co., it was found on 'Astrakhan', 'Lobo', 'Northern Spy', 'Cortland', 'Yellow Transparent' and 'McIntosh'. At St. Grégoire, Iberville Co., 200 young trees of 'Quinte' were severely affected (R.D.). Damage was severe in a small orchard at St. Hilarion, Charlevoix Co., Que. (D.L.).

STORAGE ROT (Gloeosporium spp.). G. perennans caused a blossom-end rot, early in the storage season, on 'Newtown' at Summerland, B.C. Typical bull's-eye rot symptoms developed later but incidence was much lower than usual (L.E.L.). Losses from storage rots in Dec. 1964 were 10% at Coldbrook, N.S. Gloeosporium album was responsible far 40% of the rots and G. malicorticis for 20% (C.L.L.).

CORAL CANKER (Nectria cinnabarina) was responsible for moderate die-back of new growth of 'Rome Beauty' at Morristown and 'Gano' at Sheffield Mills, N.S. The organism appeared to infect through the previous season's fruit scars (R.G.R.).

EUROPEAN CANKER (Nectria galligena) was severe at Westbank and Penticton, B. C. At Westbank, 40 trees, mostly 'McIntosh', had to be removed from one orchard (L.E.L.). Damage was light in 7/67 orchards visited in N. B. (S.R.C.).

PERENNIAL CANKER (Neofabraea perennans). Extension of existing cankers was 2-4 times normal in the Okanagan Valley, B. C. in 1965 and development persisted much later into the summer. Many cankers were treated too soon and spores were pro-