DISEASES OF VEGETABLE CROPS

BEAN

LEAF SPOT (Alternaria tenuis). Bean leaves injured by blowing sand or by other means showed about 2% infection in a field at Auburn, N.S. (C. O. G.).

GRAY MOLD (Botrytis cinerea). Of 11 fields examined in N. B., 2 at Florenceville and Pokiok suffered 1-2% damage (S. R. C.).

ANTHRACNOSE (Colletotrichum lindemuthianum) was observed at Crooked Creek, Alta. (A. W. H., D. S.). Two 3-acre fields of yellow beans in the Kingsville, Ont. area were lightly infected and up to 5% of the **podshadtobediscardedwhengraded** (C. D. McK.). Infection was seen in 5/11 fields examined in N.B. Beans for processing had only trace infections but at Pokiok 31 acres of the 'Soldier' variety for dry bean production were 90% infected (S. R. C.).

ROOT ROT (Fusarium solani, Rhizoctonia solani). Fusarium root rot caused a significant reduction in plant growth in almost all fields in Ont. but the effect on yield is not known (J.H. H.). Rhizoctonia root rot caused 20% damage in a field previously planted to potatoes at Florenceville, N.B. Plants from deep-planted seed were the most seriously affected (S. R. C.).

HALO BLIGHT (Pseudomonas phaseolicola) was severe in a field nr. Bow Island and in another at Coaldale, Alta. (F.R. H., P. E. B.). Moderate damage was seen at Abernathy, Sask. (R. J. L.). Slight to moderate infections occurred in some 200 acres of canning beans in Rouville Co., Que. In 100 acres examined in the St. Martin area, the average damage was rated at 10% and was mostly confined to the leaves (R. C., V. R. W.). Infections ranged from trace -14% in 4/7 fields examined in the Millville and Gagetown areas of N. B. (S. R. C.). Localized infections developed in an 11-acre field of 'Harvester' at Caanan, N. S. Roguing of the diseased areas and dry weather kept losses at a low level. (C. L. L.). 'Jacob's Cattle' beans were 100% infected in a field at Morristown, N.S. The crop was a complete loss (C. O. G.).

WILT AND STEM ROT (Sclerotinia sclerotiorum) caused significant losses in about 5% of the white bean fields in s.w. Ont. (J.H. H.). Slight damage was seen in a field at Jemseg, N. B. (S.R. C.) and **loss** of 25% or more of the plants occurred in a 7-acre field of 'Tendergreen' at Aylesford, N. S. (C. O. G.).

COMMON BLIGHT (Xanthomonas phaseoli). Infections were seen at Fort Vermilion, Smoky Lake and Stony Plain, Alta. (A. W. H., D. S.). A moderate leaf infection was seen at Saskatoon. Sask. (R. M.). Significant losses from bacterial blight, probably common blight, occurred in about 5% of the white bean fields in s. w. Ont. (J.H. H.).

FUSCOUS BLIGHT (Xanthomonas phaseoli var. fascans). A survey of 965 acres of white beans in Ont. representing 27 seed stocks revealed the following: All foundation plots produced from Michigan breeder 'Sanilac' and 'Seaway' seed were free of blight. Two / 15 registered seed stocks representing their second increase in Canada and 3/12 certified seed stocks representing their third increase in Canada showed traces of blight (M. D. S., V. R. W.). See Sutton and Wallen, Can. Plant Dis. Surv. 46. p. 143, 1966 (Ed.).

BLOSSOM DROP (?excess nitrogen) occurred in a field at Levis, Que. that had had a heavy application of fresh manure (D. L.).

BORON TOXICITY caused heavy damage in a field at Jemseg, N. B. A boron-containing fertilizer had been mistakenly applied at seeding (S. R. C.).

BRONZING (caused undetermined) occurs in almost all plantings of white beans in s.w. Ont. about 10 days before normal senescence and defoliation. The symptoms resemble sunscald except that they are not restricted to the leaves on the surface of the crop's canopy. There is also a resemblance to symptoms of weather fleck, caused by air pollution, except that adjacent fields are commonly found in which only one had affected plants. The non-affected fields have invariably been planted somewhat later than the alfected ones. The condition is also common in lima beans (J.H. H.).

CHEMICAL INJURY. 2, 4-D injury was seen in a field at Grande Prairie, Alta. (A. W. H., D. S.).

BEET

SCAB (Streptomyces scabies) was observed in a garden planting at Sackville, N. B. (S. R. C.).

CHEMICAL INJURY. 2, 4-D injury was seen on beets in a planting at St. Paul, Alta. (A. W. H., D. S.).

BRUSSELS SPROUTS

BLACK ROT (Xanthomonas campestris) caused minor losses in a field grown from untreated seed at Rogersville, N. B. (S. R. C.).

WHIPTAIL (molybdenum deficiency). Damage averaged 2% in 2/7 fields examined at Rogersville, N. B. (S. R. C.).

BROAD BEAN

CHOCOLATE SPOT (Botrytis cinerea) was seen on the Experimental Farm, Fort Vermilion, Alta. (A. W. H., D. S.).

CABBAGE

LEAF SPOT (Alternaria brassicae, A. brassicicola). Trace to slight infections developed in experimental plots at L'Acadie, nr. St. Jean, Que. (R. C.).

CLUB ROOT (Plasmodiophora brassicae) continues to be a problem in the Lower Fraser Valley of B. C. in fields with a past history of the disease. Rotation is not always practiced and some cultural practices used tend to perpetuate large amounts of inoculum (H. N. W. T.). Trace to 7% infections were seen in 3/11 fields examined at Maugerville and Sheffield, N.B. (S.R. C.).

BOTTOM ROT (Rhizoctonia solani) caused 15% losses in a field at Maugerville, N.B. (S.R.C.).

DAMPING OFF (Rhizoctonia solani) killed 40% of the seedlings started in an outside bed at Norton, N. B. (S.R. C.).

SCLEROTINIA ROT (Sclerotinia sclerotiorum) caused some damage at Sangrudo and Winterburn, Alta. (A. W. H., D. S.). Infection in experimental plots at Ste. Clothilde, Que. was less than 1% (R. C.) but losses of 30% were experienced in a field of late winter cabbage at Maugerville, N. B. (S. R. C.).

BLACK ROT (Xanthomonas campestris). Moderate infections were seen in a small field nr. Taber (F.R. H.) and it was reported at Cranford and Lethbridge, Alta. (A. W. H., D.S.).

BORON DEFICIENCY was responsible for the breakdown of 80% of the heads in a field at Sheffield, N.B. (S. R. C.).

OEDEMA (unbalanced water relationships) affected 15% of the cabbages in a field at Norton, N. B. (S. R. C.).

WHIPTAIL (molybdenum deficiency) affected 60-75% of the plants at Pleasantview in the Notre Dame Bay region and at Cartyville in western Nfld. Half-grown plants of early varieties showed yellowing, stunting and cupping of leaves aggravated as well by warm, dry weather. Spraying with a molybdate solution and subsequent rainfall partially corrected the condition (O.A. O.).

CARROT

LEAF BLIGHT (Alternaria dauci). Moderate infections were prevalent in late fields in the LaSalle area nr. Windsor, Ont. (C. D. McK.). Infections were rated 7-tr. 9-sl. 4-mod. 1-sev./22 fields surveyed in s. w. Que. Four of the fields, in which rotation had not been practiced, showed infection as early as 23 June (T. S., R. C., L. M. T.). Trace to slight infections were seen in all 7 fields examined in N. B. (S.R. C.) and only trace infections were found in growers' fields in N. S. (C. O. G.).

BLACK ROT (Alternaria radicina) caused minor damage to stored carrots at Port Williams, N.S. (C. O. G.).

GRAY MOLD ROT (Botrytis cinerea) was observed at Ponoka, Alta. (A. W. H., D. S.).

LEAFBLIGHT (Cercospora carotae). Infections in fields ins. w. Que. were rated 9-tr. 9-sl. 2-mod./22 (T.S., R. C., L.M.T.). In Kings Co., N.S. it was 3-tr./6 (C. O. G.).

ROOT-KNOT NEMATODE (Meloidogyne hapla). Infection was extremely high in two 4-acre fields at Nictaux West, Annapolis Co., N. S. In one field, 80% of the carrots were unsaleable and in the other, 60% (C. L. L.). This nematode has not previously been reported on carrots from N. S. (Ed.).

STORAGE ROT (Sclerotinia sclerotiorum). S. sclerotiorum in association with Candida kruzei (Cast.) Berkh. has been established as the cause of a storage rot of carrots in the Edmonton, Alta. area (D. S.). See Stelfox, Can. Plant Dis. Surv. 46:146. 1966 for discussion (Ed.). Affected specimens were received from Lotbiniere, Que. (D. L.). S. sclerotiorum associated with Botrytis cinerea caused a breakdown in a harvested crop at Sheffield, N.B. This grower practices continuous cropping of carrots. Losses at harvest were estimated at 12% (S.R. C.). A light infection was present on a crop harvested from muck soil at Aylesford, N. S. (C. O. G.).

ASTER YELLOWS (aster yellows virus) was observed on farms at Alexandria and Pemberton, B. C. (H. N. W. T., N. S. W.). Slight infections were seen in the Saskatoon, Sask. area, The disease seems to be increasing in Sask. (R. J. L.). Severe infections, up to 75% in some fields, occurred throughout the LaSalle muck soil areas in Essex Co., Ont. (J.R. C., C. D. McK.). It was rated 12-tr./22 fields in s. w. Que. (T.S., R.C., L.M.T.) and infections were widespread in N. B., the most severe being one of 35% at Sackville (S. R. C.). Three to 5% of the plants were affected in fields at Lethbridge and Musgravetown in the Bonavista Bay district of Nfld. (O.A. O.).

CAULIFLOWER

CLUB ROOT (Plasmodiophorabrassicae). Traces were seen in a crop at Sheffield, N. B. (S.R. C.).

BORON DEFICIENCY was thought responsible for the breakdown of 10% of the heads in a field at Sheffield, N.B. (S.R. C.).

MAGNESIUM DEFICIENCY affected a few plants at the Experimental Farm, St. John's West, Nfld. (O.A. O.).

CELERY

EARLY BLIGHT (Cercospora apiicola). Trace amounts were found in 3/12 fields surveyed in s. w. Que. (T.S., R.C., L.M.T.).

ROOT-KNOT NEMATODE (Meloidogyne hapla) occurred in trace amounts in 1/12 fields surveyed in s.w. Que. (T.S., R. C., L.M. T.) and on roots of plants in a greenhouse at St. Isadore, Que. (A. E. S.).

BACTERIAL BLIGHT (Pseudomonas apii) was more prevalent than usual in s.w. Que. with infections ranging from trace to moderate (T. S., R. C., L.M.T.).

PINK ROT (Sclerotinia sclerotiorum) caused traces of damage in 2/12 fields surveyed in s.w. Que. (T.S., R.C., L.M.T.).

LATE BLIGHT (Septoria apii). One/12 fields in s.w. Que. showed traces of damage (T.S., R. C., L. M. T.).

ASTER YELLOWS (aster yellows virus) was found in trace amounts in 9/12 fields surveyed in s.w. Que. (T.S., R.C., L.M.T.).

MOSAIC (virus). Traces were seen in 5/12 fields examined in s.w. Que. (T.S., R. C., L. M. T.).

BORON DEFICIENCY caused minor losses in a field in s.w. Que. (T.S., R.C., L.M.T.).

MANGANESE DEFICIENCY occurred in trace amounts in 7/12 fields surveyed in s.w. Que. (T. S., R.C., L.M.T.).

CHINESE CABBAGE

ASTER YELLOWS (aster yellows virus). A severe infection was seen in a planting at Saskatoon, Sask. (G.A.P., T. C.V.).

CUCUMBER

LEAF SPOT (Alternaria cucumerina) developed early in Aug. at Ladner, B. C. but did not develop to the serious proportions it did in 1965 (H. N. W. T.). Infections ranging from trace to severe were seen in plantings in Kings Co., N. S. (C. O. G.).

GRAY MOLD (Botrytis cinerea). Both stem canker and blossom infection became serious in a few spring greenhouse crops in Essex Co., Ont. (C. D. McK.). It was present in trace to moderate amounts on fruits in 7/37 fields examined in the Maugerville and Sheffield districts of N. B. It could have followed scab infection (S. R. C.).

SCAB (Cladosporium cucumerinum) affected about 5% of the fruits of a slicing variety in a planting nr. Steveston, B. C. A pickling variety in the same field was unaffected (H. N. W. T.). A severe infection at St. Roch, L'Islet Co., Que. caused the loss of 25% of the fruit (H. G.). Scab was seen in 22/37 fields surveyed in N. B. in August. Infections in individual plantings ranged from trace to 70% although resistant varieties stood up well (S. R. C.). Traces were seen at Kentville, N. S. (C. O. G.).

POWDERY MILDEW (Erysiphe cichoracearum) developed on a greenhouse crop at Rogersville, N. B. but damage was light since cropping was nearly completed (S. R. C.).

ANGULAR LEAF SPOT (Pseudomonas lachrymans) was reported from High Prairie and Edmonton, Alta. (A. W. H., D. S.). Infections were rated trace to 10% in 29/37 plantings examined in N. B. (S. R. C.).

MOSAIC (cucumber mosaic virus). In plots at Acadie, Que., 'Ashley', 'Hybrid Ashley', 'Palomar' and 'Windermore' were severely diseased, 'High Mark II' and 'Exposition' were slightly affected and 'Challenger' showed only traces of infection. A field at St. Jean was completely destroyed (L. J. C.). Mosaic was severe in fields at St. Foy and Neuville, Clue. in August (D. L.). Trace to severe infections were seen in 11/37 fields examined in N. B. (S. R. C.).

CHEMICAL INJURY. 2, 4-D injury completely destroyed a planting at Oromocto, N. B. (S. R. C.).

OEDEMA (improper water relationships). Specimens were received from Ste. Angele de Laval, Nicolet Co., Que. (D. L.).

EGGPLANT

ANTHRACNOSE (Colletotrichum gloeosporioides Penz. = Gloeosporium piperatum Ell. Ev.). Specimens were received from a local market in Quebec City, Que. There was no information as to where the crop was grown (D. L.). This organism has not previously been reported on eggplant in Canada but was reported once on sweet pepper from s.w. Ont. (Ed.).

WILT (Verticillium dahliae) was seen in most plantings in the Okanagan Valley, B. C. (G. E. W.). Moderate to severe infections were seen in 4 fields in Essex Co., Ont. Because of the high incidence of wilt in recent years very few fields were planted to eggplant (C. D. McK.).

LETTUCE

RUST (Puccinia extensicola). Older leaves of both head and leaf lettuce in greenhouses and out of doors. were moderately infected in two of three market gardens and in one private garden visited in June at Saskatoon, Sask. (F.T., R.M.).

BOTTOM ROT (Rhizoctonia solani) caused minor damage in market gardens on muck soil nr. Vancouver, B. C. from May to early June (H. N. W. T.). It affected 2% of the plants in experimental plots at Ste. Clothilde, Que. (R. C.).

DROP (Sclerotinia sclerotiorum) killed up to 3% of the plants in the early crop on muck soil market gardens nr. Vancouver, B. C. Rotation is not practiced. The mid-season crop seems less susceptible

(H. N. W. T.). Damage was 20% in a field at Maugerville, N. B. on land in continuous truck garden crop production for the last 16 years (S. R. C.).

ASTER YELLOWS (aster yellows virus). Trace infection was seen in 1/12 fields examined in s. w. Que. (T. S., R. C., L.M. T.) and 3-5% infection occurred in experimental plots at Ste. Clothilde (R.C.). Up to 4% infection was seen in 2/6 fields visited at Maugerville, N.B. (S. R. C.).

BIG VEIN (lettuce big-vein virus). Symptoms resembling big vein have been noticed for several years in market gardens on muck soil in the Vancouver, B. C. area, mainly on the early crop. Seed of the variety 'Penn Lake' was grown in pots in the greenhouse in soil taken from beneath affected plants. Some of these seedlings showed chlorosis and a type of parallel venation indicating transmission of this soil-borne virus (R. S. S.). This is the first record of big vein from B. C. All earlier reports have been from s. w. Ont. with the exception of one from Que. (Ed.).

TIPBURN (physiological) affected 95% of the plants of the variety 'Imperial' in a field at St. Philip's, nr. St. John's, Nfld. The condition became apparent just as the heads were coming to full size (O.A. O.).

MUSKMELON

POWDERY MILDEW (Erysiphe cichoracearum) became prevalent near the end of harvest in two fields at Leamington, Ont. (C. D. McK.).

SUDDEN WILT (cause undetermined), Sudden wilting of foliage occurred in 3 fields totalling 13 acres at Leamington, Ont. The condition developed in fusarium-resistant varieties and in fields that had been planted to melons every second year for ten or more years. Considerable root rot was associated with the trouble (C. D. McK.).

ONION

PURPLE BLOTCH (Alternaria porri). Infections were rated 4-tr. 3-mod./22 fields examined in s. w. Que. (T.S., R.C., L.M.T.).

NECK ROT (Botrytis allii) affected a small percentage of the crop in the Okanagan Valley, B. C. Open pollinated varieties were more susceptible. Warm, dry weather during harvest kept losses at a less than normal level (G. E. W.). Some infection was seen at St. Albert, Alta. (A. W. H., D.S.). Losses of 8% occurred in onions stored at Maugerville, N. B. (S. R. C.). Onions grown in muck soil and stored at Waterville, N. S. suffered slight losses. The same grower had a 40% loss in 1965 (C. O. G.).

LEAF BLIGHT (Botrytis squamosa) was rated 6-tr. 8-sl. I-mod. 1-sev./22 fields surveyed in s. w. Que. (T.S., R. C., L.M. T.). Onions in storage at Sherrington, Que. showed 20% rot by mid-January. There was a defect in the curing process after the onions were stored (L. J. C.).

BASAL ROT (Fusarium oxysporum f. cepae) caused the loss of 10/500 tons of onions at Cloverdale, B. C. The estimated value of the crop lost was 11-12 thousand dollars (H.N. W.T.). Losses in the Okanagan Valley ranged from 5-50% in individual crops. Losses were heaviest in hybrid varieties (G. E. W.). Symptoms of basal rot appeared suddenly in Spanish onions after heavy rain in mid-July in Essex Co., Ont. Losses in some fields were 10-15% (J.R.C.). The disease was more prevalent than usual in s. w. Que. (T. S., R. C., L.M. T.).

SOUR SKIN (Pseudomonas cepacia Burkh.) was found in a 6-lb. package of cooking onions from bulk storage at Leamington, Ont. It was not serious. (C. D. McK.). This disease has not been previously reported in Canada. The U. S. D. A. Index of Plant Diseases lists it as occurring in N. Y. (Ed.).

PINK ROOT (Pyrenochaeta terrestris). From 50-90% of the bulb crop in most fields in the Okanagan Valley, B. C. showed slight to severe pink root infection (G. E. W.). Trace infections were seen in 1/22 fields examined in s. w. Que. (T.S., R. C.. L.M.T.).

WHITE ROT (Sclerotium cepivorum). Some diseased bulbs were found on fall-seeded 'Sweet Spanish' onions in a field nr. Kelowna, B. C. The affected field had previously been planted with fall-grown transplants originating at Walla Walla, Washington (G. E. W.). There was considerably less white rot encountered in s. w. Que. than in 1962 and 1965 when July temperatures were much lower than normal (T.S., R.C., L.M.T.).

SMUT (Urocystis magica) was seen in most fields in the Kelowna, B. C. area (G. E. W.) and traces were found in 6/22 fields surveyed in s. w. Que. (T. S., R.C., L.M.T.).

PEA

LEAF AND STEM SPOT (Ascochyta pinodella). Trace infections occurred on leaves and stems of plants in Experimental plots at Kentville, N. S. (C. O. G.). Infections occurred in several fields of peas for processing in P. E. I. (W. L. S.).

GRAY MOLD (Botrytis cinerea) was observed in a planting of Rocky Mountain House, Alta. (A. W. H., D. S.).

POWDERY MILDEW (Erysiphe polygoni). Foliar infection was 100% in a planting on Lulu Island, B. C. in early October (H.N. W. T.). It was observed at Hairy Hill and Wainwright, Alta. as well as at Macklin, Sask. (A. W. H., D. S.). Moderate infections

were seen at Saskatoon, Sask. (R. J. L.). Varying degrees of infection were seen throughout N. B. in Aug. but losses were light because the pea crop was past its peak (S. R. C.).

WILT (Fusarium oxysporum f. pisi) destroyed a 10-acre field at Canning, N. S. (C. O. G.).

ROOT ROT (Fusarium spp., Pythium spp., Rhizoctonia solani) caused moderate damage in several garden plots at Lethbridge, Alta. (F.R. H.). Fusarium sp. was responsible for slight damage at Yorkton, Sask. (R. J. L.) and losses in early-planted gardens in the Moncton, N. B. area ranged from 8-35% (S. R. C.).

DOWNY MILDEW (Peronospora pisi). Large patches in a 5-acre field at Medford, N. S. were severely infected. Affected plants didn't mature (C. O. G.).

BACTERIAL BLIGHT (Pseudomonas pisi). Trace infections were seen at two locations in a 1-acre verification trial at Cobden, Ont. (V. R. W.).

ROOT AND STEM ROT (Rhizoctonia solani) affected 75% of the plants in a 3-acre field at Welsford, N. S. causing severe losses. R. solani was the predominant organism isolated (C. O. G.).

RUST (Uromyces fabae). Traces were seen throughout a 1-acre field at Cobden and on 'Improved Laxton's Progress' in Nepean Twp., Ont. (V. R. W.). A late infection caused little damage in a planting at Chatham, N.B. (S. R. C.).

PEPPER

STEM CANKER (Botrytis cinerea) caused stunting of a few plants in a garden at Lethbridge, Alta. (P. E. B.).

WILT (Verticillium dahliae) was found in most commercial plantings in the Okanagan Valley, B. C. with infection ranging from 1-10% (G. E. W.). All fields in the Harrow-Leamington area, Ont. were infected and the incidence of wilt ranged from 10-90%. Losses were heavy in some fields (C. D. McK.).

BLOSSOM-END RQT (physiological) affected up to 10% of the fruit in Okanagan Valley, B. C. fields (G. E. W.). Minor damage occurred in a planting at Sheffield, N. B. (S. R. C.).

POTATO

EARLY BLIGHT (Alternaria solani). Nearly all fields in the Cariboo and Interior regions of B. C., except those of 'Netted Gem' showed some infection. One crop of 'Norland' was completely dead by early July (R. J. N.M.). It was reported from many areas in Alta. (A. W. H., D.S.). Infections were rated 16-sl. 9-mod./87 seed fields in Sask. (B. H. W.). Ratings were 228-sl. 30-mod. 7-sev./889 seed fields in Que. occurring mainly in the Chicoutimi and Lake St. John areas where it occurred in 58% of the 208 fields inspected and caused some decrease in yield (G.E.). Many of the seedlings under test at Les Buissons, Que. were susceptible. The seedling 'F-6368' was severely infected wherever it was grown (H. G.). It appeared at maturity in most fields in the early potato producing area at Jemseg, N.B. but caused little loss (S. R. C.). Jnfections were generally trace in N. S. (R. C. L.).

BLACK DOT (Colletotrichum coccodes) was seen occasionally in seed fields in N. S. but not to the same extent as in 1965 (R. C. L.) and traces were encountered in a few fields in Kings Co. in Sept. (C. O. G.).

RING ROT (Corynebacterium sepedonic-um) was found on one farm in the Cariboo region, B. C. (R. J. N. M.). Trace to slight infections were found on 35% of the farms surveyed in the Lethbridge and Calgary areas, 24.2% of those in the Edmonton area and 22.9% of those in the Brooks area of Alta. (A. W. H., D. S.). It was detected at Saskatoon, Rosthern, Fairy Glen and Langham, Sask. (R. J. L.). Incidence was (extremely high in Man. in 1966. Only 686/2500 acres entered for certification were free of the disease. Large quantity importations of seed and inadequate sanitary measures are probably responsible for the increase in ring rot in 1965 and 1966 (R. C. Z., C. W.W.). It was detected in 23/26 samples of seed stock and in 40/48 samples of table stock received at Winnipeg for diagnosis (W. A. F. H.). Ringrot was found on one farm in the Guelph, Ont. area (J. W. G.) and caused the rejection of 73/899 seed fields in Que. (G. E.). Infected specimens were received from Montmorency, Levis, Portneuf and Matane counties, Que. (D. L.). Five/370 seed fields were rejected in N. S. and infection ran as high as 20% in some table stock fields (R. C. L.). There was a marked decrease in incidence in seed crops in P. E. I. in 1966 (J. E. C.).

BLACKLEG (Erwinia atroseptica) was found in all areas of B. C. but was serious only in the Pemberton district (R. J. N. M.). It was commonly found in all parts of Alta. (A. W. H., D. S.) and presented a serious problem in s. Alta. (F. R. H.). Infection was seen in 39/87 seed fields in Sask., mainly in the n. e. portion of the province (B. H. W.). Its incidence was variable but generally light in the early potato crop in the Harrow-Leamington district of Ont. (C. D. McK.). It was found in 539/889 fields in Que. Although less prevalent than in recent years, it was still responsible for 53 rejections (G. E.). Blackleg caused the complete breakdown of a lot in storage at Jemseg, N. B. (S. R. C.). It was found in 76/370 seed fields in N. S. and caused the rejection of five (R. C. L.). Its incidence in P. E. I. was considerably higher than in 1965. More than twice as many fields were rejected (J.E. C.) and although general in Nfld, infection rarely exceeded 2% (O.A. O.).

SOFT ROT (Erwinia carotovora) was encountered in several field and garden plantings in s. Alta. Lenticel rot was found in one crop of 'Netted Gem' at Taber (F.R. H.). Losses were heavy in the crop of a 6-acre field of 'Sebago' in storage at Harrow, Ont. Infection developed around the lenticels of tubers that were not sufficiently mature at harvest (C. D. McK.).

DRY ROT (Fusarium spp.) was seen at Lacombe, Kelsey, Star and Beiseker, Alta. (A. W. H., D.S.). A slight infection was observed in plots at Winnipeg, Man. (W. A. F. H.). Losses of 2-10% were common, mostly in 'Keswick' and 'Cherokee', in the stored 1965 crop at shipping points in Que. It was also seen in a few bin lots, mostly of 'Keswick', in the 1966 crop (G. E.). A few specimens infected by F. sambucinum f. 6 and F. coeruleum were received for diagnosis at Kentville, N. S. In most cases infection followed bruising or cracking (C. O. G.). Dry rot was seen in a number of crops in P. E. I., particularly in early-harvested 'Sebago'. Two successive dry summers seem to have contributed to its higher incidence (J.E.C.).

VIOLET ROOT ROT (Helicobasidium purpureum Pat. stat. perf. of Rhizoctonia crocorum (Pers.) DC. ex Fr.) was found in a field of 'Kennebec' in P. E. I. (J.E. C.). It has been previously been reported on potato only from B. C., Sask., Alta. and Ont. (Ed.).

SILVER SCURF (Helminthosporium solani). Slight infections were noted in many potato lots at spring shipping inspections (G. E.).

RHIZOCTONIA (Pellicularia filamentosa). Infections were general throughout B. C. and it caused considerable damage in the Cariboo district. The overall ratings in the province were 125-sl. 45-mod. 18-sev./258 fields (R. J. N. M.). It was reported from Cordondale, Viking, Didsbury, Camrose, Strathcona and Innisfree, Alta. (A. W. H., D. S.) and was seen in most seed fields in Sask. (B. H. W.). Incidence in the Guelph, Ont. area was at normal levels (J.W. G.). Rhizoctonia was present in most lots inspected in the spring with, some moderate to severe infections occurring in the Lower St. Lawrence district, particularly in 'Green Mountain' and 'Keswick'. Ratings in the 1966 seed crop were 177-sl. 15-mod. 3-sev./889 fields. It was recorded in 125/386 bin lots inspected (G. E.). Incidence was low in field inspections in N. S. but some slight infections were seen at bin inspection (R. C. L.). It was common in P. E. I. on tubers of early-maturing varieties, particularly 'Irish Cobbler' (J.E. C.). Infections were generally slight to moderate in Nfld. The stem canker phase is the most frequent symptom expression (O.A. O.).

PINK ROT (Phytophthora erythroseptica) occurred on 'Kennebec', 'Norgold Russet', and 'Netted Gem' at several coastal points in B. C., sometimes associated with late blight in tubers. Although the damage was less than 1%, the cost of labor for regrading in storage was considerable (N. S. W.).

LATE BLIGHT (Phytophthora infestans) was seen in B. C. only on the Lower Mainland and in the Pemberton area. Tuber rot was severe in some lots (R. J. N. M.). Light infections occurred at Winterburn and on the western outskirts of Edmonton, Alta. (A. W. H., D. S.) and there were a few minor outbreaks in the Guelph, Ont. area (J.W. G.). Losses from tuber rot in the 1965 crop in storage in Que. were 1-2% and field incidence in 1966 was considerably less than for many years, being observed in only 41/889 fields inspected. Its first appearance was three weeks later than in 1965. Tuber rot was seen in 25/386 bin lots (G. E.). Infected tubers were received from Montmorency, Portneuf and Matane counties (D. L.). Late blight was virtually absent from N. B. and P E I. for the third successive year (S.R. C., J. E. C.). A trace of late blight tuber rot was reported from Colchester and Cape Breton counties, N. S. (R. C. L., C. O. G.). The disease was well established in most areas of e. Nfld. by 23 Aug. and some fields suffered up to 70% defoliation. Tuber rot was serious in 'Green Mountain'. Late blight was not reported from w. Nfld. (O.A. O.).

LEAK (Pythium ultimum) was found in 2 lots of 'Kennebec' at spring shipping inspection and in 25/386 bin lots inspected in Que. in the fall of 1966. It was most prevalent and severe in 'Green Mountain' (G. E.). It was severe in a small planting of 'Golden Russet' in wet soil at La Pocatière, trace on 2 seedling lines at L'Assomption and severe on 'Green Mountain' in storage at Cacouna, Temiscouata Co., Que. (H. G.). It caused 25% loss in 'Cherokee' interplanted in a young 10-acre orchard at Melvern Square, N. S. Tubers broke down within a week of harvest (C. O. G.). Traces were found in storage in P. E. I. (J. E. C.).

POWDERY SCAB (Spongospora subterranea) was seen in a few lots in Que. Slight to moderate infections were recorded on 'Green Mountain' and on some seedlings at La Pocatikre, (G. E., H. G.).

COMMONSCAB (Streptomyces scabies) was seen in B. C. only in the Cariboo district (R. J. N. M.). It was found in many localities in n. Alta. (A. W. H., D. S.) but its incidence was lower than normal in Sask. (B. H. W.). Common scab was found in all areas of Que. but was most prevalent in the Lower St. Lawrence, Chicoutimi and Lake St. John areas. Incidence was rated 210-sl. 45-mod. 11-sev./386 seed fields. A few infections were rated 20-40% (G. E.). A large crop in Bagot Co., Que. was 90% infected (H. G.). It was widespread and occasionally severe in N. B. (S.R. C.) and particularly severe in some areas in Yarmouth, Pictou and Cumberland counties, N. S. Deep pitted infections were frequently seen (C. O. G.). Scab was more prevalent than in 1965 in P. E. I. but in only a few cases was it a problem (J.E. C.). It was generally light to moderate in Nfld.

One severely infected crop was seen at Robinson's on the west coast (O.A. O.).

WART (Synchytrium endobioticum) was moderate to severe throughout Nfld. with the heaviest infections occurring on the east coast (O.A. O.).

WILTS (Verticillium spp., Fusarium spp.). Traces only were seen in B. C. on the Lower Mainland and on Vancouver Island and specimens were received for diagnosis at Summerland (R. J. N. M., G. E. W.). They were rated trace in 28/87 seed fields inspected in Sask. (B. H. W.). V. albo-atrum affected 5% of a crop of 'Kennebec' at Winkler, Man. This is the first positive report of this species occurring in Man. Most of the Verticillium found in Man. is V. dahliae (J.H. H.). Both V. albo-atrum and V. dahliae were isolated from wilted plants in a number of fields in the Harrow-Leamington district of Ont. (C. D. McK.). Wilts were found in 104/889 fields inspected in Que. They were most prevalent in 'Kennebec' (G. E.). Trace infections were seen in 34/370 seed fields in N. S. Some table stock fields, particularly of 'Kennebec', had severe infections (R. C. L.). Approximately 85% of the plants of one Fredericton seedling in a block trial at Starr's Point, N. S. were infected with V. albo-atrum (C. O. G.). Incidence decreased in P. E. I. in 1966 (J. E. C.).

HAYWIRE (aster yellows virus) occurred in B. C. to a greater extent than in any previous year. As many as 25% of the plants were infected in some fields (N. S. W.). See Wright, N. S. Can. Plant Dis. Surv. 46:121-122. 1966 for a more complete account (Ed.).

PURPLE TOP WILT (aster yellows virus). Traces were seen in 2/87 fields inspected in Sask. (B. H. W.) and a slight infection was seen at Prince Albert (R. J. L.). It was slight in a field at Dugald, Man. (W. A. F. H.) and its incidence was higher than normal in the Guelph, Ont. district (J. W. G.). Traces were seen in a number of seed fields in N. S. (R. C. L.) and there was a considerable increase in incidence in P. E. I., especially in 'Sebago'. Affected fields had 5-25% infected plants (J.E. C.).

LEAFROLL (virus) was general but light in B. C. Most infections occurred on the Lower Mainland (R. J. N.M.). It was frequently encountered in n. Alta. (A. W. H., D. S.) but its incidence in Sask. was lower than in 1965 (B. H. W.). It was seen in 176/889 fields inspected in Que. (G. E.) and in 125/370 in N.S. (R. C. L.). It was less common in P. E. I. than in 1965 (J.E. C.).

MOSAIC (virus). Infections were generally light in B. C. but there was a marked increase in its incidence on the Lower Mainland (R. J. N. M.). Traces only were found in 3/87 seed fields in Sask. (B. H. W.) although slight damage was seen in fields at Scott and Saskatoon (R. J. L.). Incidence ranged up to 3% in the Leamington, Ont. area in several fields of 'Irish Cobbler' grown from Minnesota seed stock (C.D. McK.). Mosaic was recorded in 356/889 seed fields in Que. and caused the rejection of 107 (G.E.). Rugose mosaic was extremely severe in a small planting at Chipman, N.B. (S. R. C.). Mosaic occurred in 79/370 seed fields in N. S. (R. C. L.) and incidence in P.E. I. was at about the 1965 level (J.E. C.).

SPINDLE TUBER (virus). A slight amount was seen in a garden at Saskatoon (J.D. S.) and it was found in 2/87 seed fields in Sask. (B. H. W.). It was found in 3/889 fields and in 7/386 bin lots inspected in Que. (G. E.). More spindle tuber was seen in N. S. than in recent years, particularly in 'Kennebec' (R. C. L.) and more fields were rejected in P. E. I. than in 1965 (J. E. C.).

WITCHES' BROOM (virus). Traces were found in seed fields in most districts in B. C. (R. J. N. M.) and a trace was seen in 1/87 seed fields in Sask. (B. H. W.).

ELEPHANT HIDE (cause undetermined) occurred in slight amounts in a field at Biggar, Sask. The symptoms fit the description given by Peters, Can. Plant Dis. Surv. 46:99. 1966 (R. J. L.).

FROST INJURY occurred in 24% of the bin lots inspected in Que. compared to 90% in 1965. Losses were estimated to be less than 1% (G. E.).

GIANT HILL (genetic) was occasionally observed in 'Green Mountain', 'Netted Gem' and 'Irish Cobbler' in N. S. (R. C. L.).

INTERNAL BROWN SPOT (physiological) was seen in a crop grown on light, sandy soil at Chauvin, Alta. (A. W. H., D. S.).

MAGNESIUM DEFICIENCY. Symptoms were severe in a crop at Clarenville, Nfld. (O. A. O.).

RADISH

LEAF SPOT (Alternaria raphani). A slight infection was seen at Saskatoon, Sask. (G. A. P., T. C. V.).

DOWNY MILDEW (Peronospora parasitica) caused traces of injury in 1/15 fields surveyed in s.w. Que. (T. S., R. C., L. M. T.)

RHUBARB

LEAF SPOT (Ascochyta rhei). A severe infection was observed in a planting nr. Ottawa, Ont. (V. R. W.).

CROWN ROT (Pythium sp.). A species of Pythium was isolated from affected plants at Edmonton, Alta. (A. W. H., D. S.).

RED LEAF (cause unknown) was observed at Innisfail, Alta. (A. W. H., D. S.).

RUTABAGA

STORAGE ROT (Botrytis cinerea) caused 10% losses to roots in storage at Sussex, N. B. The relative humidity in the storage was very high (S. R. C.). At Harbor Grace, Nfld., 7-8% of the roots of 'Laurentian' in storage were affected (O.A. O.).

DOWNY MILDEW (Peronospora parasitica). Specimens were received from St. Anselme, Dorchester Co., Que. in Aug. An earlier crop on the same field had been free of the disease (D. L.). A 3-acre field at Port Williams, N. S. had a 50% infection on the older leaves (C. O. G.) and infection ranged from 20-60% in plantings at Pleasantview, Lethbridge and St. John's, Nfld. (O.A. O.).

CLUB ROOT (Plasmodiophora brassicae). Affected specimens were received from Champlain and Quebec counties, Que. (D. L.). Infections ranging from trace to 40% were common in N.B. The new variety 'York' showed good resistance except for the presence of small clubs in one planting at Oromocto (S. R. C.). A severe infection was seen on 'Laurentian' at Argyle Shore, Queen's Co., P. E. I. (G. W. A.). Clubroot is a continuing problem in Nfld. and moderate infections were common throughout the province in 1966. 'York' was infected at Cupid's in the Conception Bay area (O.A. O.).

SKIN ROT (Rhizoctonia solani). Specimens were received from L'Islet, Champlain, Saguenay and Temiscouata counties, Que. (D. L.). Damage was slight in a crop at Fredericton Junction, N. B. (S. R. C.), trace in one at Grand Pré, N. S. (C. O. G.) and slight to moderate in one at Argyle Shore, P. E. I. (G. W. A.).

SCAB (Streptomyces scabies). Severe scab lesions developed on 80-90% of the roots of an unknown variety at Long Pond in the Conception Bay area, Nfld. Trace infections only have been seen in the past (O.A. O.).

BROWN HEART (boron deficiency) affected 100% of the roots at St. Stephen, N.B. where rutabagas were planted on land not cultivated for 30 years (S. R. C.).

BLACK HEART (cause unknown) has been observed intermittently for several years in Nfld. It is characterized by a grayish black, watery discoloration of the flesh. No external symptoms are evident and the disorder has been confined almost entirely to 'Laurentian'. About 1% of the crop at Lethbridge in the Bonavista Bay district was affected in 1966 (O.A. O.).

CHEMICAL INJURY. Spray drift of 2, 4-D caused some damage at Grande Prairie, Alta. (A. W. H., D. S.).

CRACKING (cause undetermined). A horizontal cracking, followed by what appeared to be a superficial bacterial rot affected 30% of the roots in a planting of 'York' at Heatherton on the west coast of Nfld. (O.A. O.).

SALSIFY

WHITE RUST (Albugo tragopogonis). A moderate infection was seen in a garden planting at Rougemont, Que. (R.C.).

SPINACH

DOWNY MILDEW (Peronospora farinosa). Infection was lighter than usual in market gardens at Musqueam, nr. Vancouver, B. C. (H. N. W. T.).

YELLOWING (nutrient deficiency) was general on the lower leaves of a second crop at Beauport, Que. The first crop was normal (D. L.).

SQUASH

STORAGE ROT (Sclerotinia sclerotiorum, Fusarium spp.) caused traces of damage at Sussex, N. B. (S. R. C.).

SWEET CORN

EAR ROT (Diplodia maydis) was found on a few specimens received from the Lower Fraser Valley, B.C. This disease, reported from Ont., has not previously been found in B. C. (H. N. W. T.).

STALK ROT (Nigrospora oryzae) was found in trace amounts at Outlook, Sask. in a field under irrigation (J.D. S.).

SMUT (Ustilago maydis). Specimens were received from Cristina Lake, B. C. (G. E. W.), Hays, Alta. (A. W. H., D.S.) and Saskatoon and Drake, Sask. (R. J. L., R.M.).

TOMATO

EARLY BLIGHT (Alternaria solani). Infection ranged from 15-20% on fruit of 'Glamor', 'Fireball' and selection '29-70-89' in plots at Acadie (L. J. C.) and affected leaves were received from a greenhouse crop in Asbestos, Que. (D. L.). It was seen in 8/11 fields visited at Sheffield, N. B. and defoliation was severe in 2 fields (S. R. C.). Severe collar rot symptoms developed in a 5-acre irrigated field at Canning, N.S. (C.O.G.).

FRUIT ROT (Alternaria tenuis). Traces of damage only occurred at Vernon, B. C. There was little fruit cracking and rainfall was light during harvest (G. E. W.).

STEM ROT (Botrytis cinerea). Incidence was about normal in greenhouse crops in the Leamington, Ont. area (C. D. McK.) and slight at Sheffield and Hampstead, N.B. (S.R. C.).

LEAF MOLD (Cladosporium fulvum) was observed in both spring and fall greenhouse crops in Essex Co., Ont. where susceptible varieties were grown under poor cultural conditions (C. D. McK.). Traces of infection were seen in a crop at Lincoln, N.B. (S. R. C.).

ANTHRACNOSE (Colletotrichum coccodes). Visible infection was less than 1% at harvest at Vernon, B. C. but 5-20% of the fruit developed rot in storage (G. E. W.). Anthracnose was prevalent in the early basket crop in the Harrow-Leamington area of Ont. toward the end of harvest. Although its incidence in the canning crop in s. w. Ont. was variable, it was reported to be slightly lower than usual (C. D. McK.). Field infections at Ste. Foy, Que. were inconspicuous but severe fruit rotting developed after a short time in storage (D. L.). Slight infections were seen on 'Stokesdale' at the Research Station, Kentville, N.S. (C. O.G.).

BACTERIAL CANKER (Corynebacterium michiganense) caused some damage in a planting at Medicine Hat, Alta. (F.R. H.). Bacterial canker presented a real threat to the greenhouse industry in the Leamington, Ont. area in 1966. It also occurred in a number of fields grown for canning and early basket crops. Canker was present in the 1966 spring crop in every greenhouse establishment where it had occurred in the 1965 fall crop with the incidence ranging from a trace to 100%. A more widespread outbreak was experienced with the 1966 fall crop. In spite of grower compliance with recommendations from the Harrow Research Station concerning sanitation and preventative measures, canker re-appeared in the fall at every establishment where it occurred in the spring crop as well as at several previously unaffected establishments. More than 45 individual growers were affected. Although the source of canker at each establishment was somewhat obscure, it was obvious in some greenhouses that the disease was introduced on infected transplants, some of which had been grown outside and became infected at the time of the severe rainstorm on 12 July. Losses in the fall crop were again variable, ranging up to 100% and depending to a considerable extent on the time of infection and the care taken to prevent spread. Transmission, under greenhouse conditions, is mainly by plant handling and to a lesser extent by sprinkler irrigation (C. D. McK.). Slight damage. occurred at Abbotsford and 20% damage at St. Cesaire, Que. (L. J. C.).

WILT (Fusarium oxysporum f. lycopersici) was seen in trace amounts in plots at Acadie, Que. (L. J. C.)

ROOT-KNOT NEMATODE (Meloidogyne hapla) caused severe symptoms on the roots of most plants in a greenhouse crop at St. Isadore, Que. (A. E. S.).

LATE BLIGHT (Phytophthora infestans) was found in a garden at Edmonton, Alta. (A. W. H., D. S.). None was reported from eastern Canada for the first time in many years (Ed.).

BUCKEYE ROT (Phytophthora parasitica) developed in severe proportions in some fields in Essex Co., Ont. following a 5-inch rainfall and subsequent flooding in mid-July (J. R. C.).

DAMPING-OFF (Rhizoctonia solani) was seen at Desmarais, Alta. (A. W. H., D. S.).

LEAF SPOT (Septoria lycopersici). Infections were observed in a few early basket crops at Leamington, Ont. The incidence of this disease has been much reduced in recent years since the adoption, by most growers, of a regular spray schedule (C.D. McK.).

WILT (Verticillium dahliae) occurred in the Okanagan Valley, B. C. in greenhouses where the soil had not been sterilized and in fields not planted with resistant varieties or strains (G. E. W.). It occurred in patches in a greenhouse planting at Peace River (A, W. H., D. S.) and was seen affecting a few plants in garden plantings at Lethbridge and Medicine Hat, Alta. (F.R. H., P.E.B.). It was observed in a greenhouse crop. at Grand Pré. N. S. (C. O. G.).

SHOESTRING (cucumber mosaic virus) caused damage estimated at 40% in a greenhouse crop of 'Vantage' and 'Veegan' at Trenton, N. S. All plants were infected (C. L. L.).

MOSAIC (tobacco mosaic virus) occurred in both greenhouse and field-grown crops in the Okanagan Valley, B. C. (G. E. W.) and in most spring and fall greenhouse crops in the Leamington area, Ont. A severe fruit mottle was observed in one affected fall crop (C. D. McK.). Specimens were received from Thetford Mines, Que. (D. L.) and a greenhouse crop at Homestead, N. B. was 10% infected (S.R. C.).

GRAY WALL (tobacco mosaic virus). The first harvest from one N. B. crop had 10% of the fruit affected. The later crop showed no damage (S.R. C.).

SPOTTED WILT (tomato spotted wilt virus). All fruits of one plant of 'Glamor' were affected at Acadie, Que. (L. J. C.).

BLOSSOM-END ROT (physiological) was seen in most field and greenhouse crops in the Okanagan Valley, B. C. but losses were not economically important (G. E. W.). Some damage occurred at Red Deer, Botha and Edmonton, Alta. (A. W.H., D.S.). It was more prevalent than usual in the fall greenhouse crop in Essex Co., Ont. particularly in the variety 'WR-25' (C. D. McK.). Traces of the disorder were observed at L'Assomption, Que. (L. J. C.) and it was severe in a planting at Scotchtown, N.B. (S. R. C.).

BLOTCHY RIPENING (physiological) was commonly seen in greenhouse crops in the Okanagan Valley, B. C. (G. E. W.) and in most greenhouse crops in the Leamington, Ont. area in November and early December. It also tends to become prevalent toward the

end of the spring crop each year (C. D. McK.).

CATFACE (physiological). This disorder and generally rough fruit were common in the first pickings of most crops in N. B. (S.R. C.).

CHEMICAL INJURY. Damage from 2, 4-D was observed at Edmonton, Leduc, Cayley, Grande Prairie and Calgary, Alta. (A. W. H., D. S.).

MAGNESIUM DEFICIENCY. Symptoms were severe on 90% of the plants of a greenhouse crop of 'Vetomold' at St. John's West, Nfld. (O.A. O.).

SUNSCALD was observed on a few plants at Winnipeg, Man. (W. A. F. H.).

DISEASES OF FRUIT CROPS

A. Pome Fruits

APPLE

CROWN GALL (Agrobacterium tumefaciens) affected a few trees on 'Beautiful Arcade' rootstock in a nursery at Wolfville, N. S. (R. G. R.).

GRAY-MOLD ROT (Botrytis cinerea) is becoming more important in the Okanagan Valley, B. C. since the introduction of water immersion dumpers, Some damage occurred at Kelowna, mainly on 'Delicious' which has an open calyx (L. E. L.).

CANKER (Cytospora sp.) was seen at Camrose, Two Hills and Bon Accord, Alta. (A. W. H., D, S.).

FIRE BLIGHT (Erwinia amylovora). The only report of fireblight in the Okanagan Valley, B. C. in 1966 was from Kamloops (L. E. L.). It was reported from 19 localities scattered throughout Alta. (A. W. H., D. S.). Fireblight was prevalent on apples and crabapples in the Saskatoon, Sask. area but damage was generally slight (R. J. L.). Incidence was low in the Niagara Peninsula, Ont. in 1966 (J.N.). Cankers, confirmed to be those of fireblight, were found in apple orchards adjacent to infected pear orchards at 7 locations in the Annapolis Valley, N. S. Its presence has not previously been confirmed in that province (C. O. G., C.L.L., R.E.C.L.).

BULL'S-EYE ROT (Gloeosporium perennans). Infection of 'Newton' apples was very light in the Summerland, Penticton and Naramata areas of B. C. (L. E. L.).

QUINCE RUST (Gymnosporangium clavipes). Trace infections were seen on 'Cortland' and 'Delicious' at La Pocatikre (H. G.) and slight to moderate infections occurred at St. Jean Port Joli, L'Islet Co., Que. (D. L.).

CORAL CANKER (Nectria cinnabarina) caused moderate damage to limbs of 'Red Delicious' in an orchard at Aylesford, N. S. (R. G. R.).

EUROPEAN CANKER (Nectria galligena). Traces of damage were seen in 2 orchards in the Gagetown, N.B. area (S.R. C.).

ANTHRACNOSE (Neofabraea malicorticis) caused severe distortion of older l l on a neglected tree in a home garden at Richmond, Lulu Island, B. C. (H. N. W. T.).

PERENNIAL CANKER (Neofabraeaperennans). Extension of existing cankers on 'Newtown' was much less than that of the previous season, probably because of the relatively mild winter of 1965-66 (L. E. L.).

COLLAR ROT (Phytophthora cactorum) killed 'M II', 'MM III' and 'MM 104' rootstocks at Summerland, B. C. (D. L. McI.).

POWDERY MILDEW (Podosphaerea Zeucotricha). Infection was general on tips of new growth in late summer in home gardens in the Vancouver, B.C. area (H. N. W. T.). It was prevalent and severe on foliage of susceptible varieties in the Okanagan Valley, B. C. (D. L. McI.). 'Jonathen' was extremely severely infected in an orchard in Gosfield South Twp., Essex Co., Ont. Leaves were 100% infected and it also caused fruit deformity and russeting. 'Delicious' and 'McIntosh' in the same orchard were less severely affected (J. R. C.). It developedinsome orchards of 'McIntosh' in the Niagara Peninsula, Ont. in May and June butdefoliationwasnot serious (J.N.). Damage was moderate to severe on terminals of 'Cortland' at Greenwich and Rockland and slight on 'Gravenstein' at Greenwich, N. S. This is the first report from N. S. of powderymildewin bearing commercial orchards. Previous occurrences have been on seedlings (R. G. R.).

CALYX-END ROT (Sclerotinia sclerotiorum) caused traces of damage at Pokiok and Gagetown, N. B. (S.R. C.). A corky, dry rot was found on the calyx end of 'Delicious' apples in several orchards in the North Okanagan and Salmon Arm districts of B. C. (D. L. McI.). The symptoms, as described, are strongly suggestive of sclerotinia rot (Ed.).

SCAB (Venturia inaequalis) was common on foliage and fruits in Vancouver, B. C. home plantings (H. N. W. T.). Fruit infection reached 50% in a 'McIntosh' orchard at Maidstone, Essex Co., Ont. where an inexperienced orchardist used too little fungicide at improper times (J.R. C.). Little scab developed in the Niagara Peninsula, Ont. because of dry weather (J.N.). A 10-25% foliar infection caused slight damage in an orchard at La Pocatière, Que.