New or Noteworthy Diseases

Stem rust (Puccinia graminis) was unusually heavy on susceptible varieties of wheat in Man. and eastern Sask. The resistant varieties now commonly grown were free from rust or carried only a trace. Durum wheat was also lightly infected, while barley was more heavily rusted than usual and oats was rather severely rusted. In other parts of Canada stem rust was of minor importance except for a few isolated local epidemics.

Leaf rust of wheat (P. triticina) was generally quite severe in Canada except in Alta. and parts of Sask. Moreover, the varieties Regent, Redman and Renown, which were quite resistant to leaf rust when they were first developed were almost as heavily rusted in the central part of Canada as the susceptible varieties, Thatcher, Apex, and Saunders.

Crown rust of oats (P. coronata) was light to moderate in Man. and eastern Sask., but it was heavy in many localities in Eastern Canada.

Disease ratings of common root rot (Helminthosporium sativum and Fusarium spp.) on wheat in Sask. were lower than in 1946, but higher than in 1945. Again there was a fairly high negative correlation between yield and root-rot ratings.

Helminthosporium blight (H. victoriae Meehan & Murphy) a new oat disease in Canada, was found at Ottawa, Ont., in June 1947. Subsequently it was observed in every province except Alta. The disease is of considerable significance because the two new Canadian varieties, Beacon and Garry, are susceptible to the blight as are several American varieties that derive their resistance to crown rust from their Victoria parent. On account of the susceptibility of Beacon and Garry to the new blight, new varieties are urgently needed in Canada possessing their resistance to crown rust but without their susceptibility to the blight.

The root-gall nematode (Ditylenchus radicicola (Greef) Filipjev) was observed in Canada for the first time when it was found on wheat at Radisson, Sask. Its presence on Agropyron Smithii in a virgin meadow in the same district suggest that this nematode, known previously only from northern Europe, may be indigenous.

An examination of farmers' seed samples for smut in western Canada has revealed that over 70% of the wheat, almost 90% of the oat and over 95% of the barley samples for sowing in 1947 carried some smut. The percentage of cars of wheat graded smutty was likewise high in 1946 and no improvement has been noted in the 1947 crop so far as marketed. The introduction of the resistant Cornell 595 into southwestern Ont. should reduce losses from loose smut in winter wheat, where an average infection of 11% was observed in Dawson's Golden Chaff.

Winter crown rot (low-temperature basidiomycete) of alfalfa was in general less severe in Alta. than in 1946. The disease is largely confined to the northern moist sections of Sask., where the damage was again moderate in 1947. Bacterial wilt (Corynebacterum insidiosum) has

now spread into the Peace River District of Alta. and the Melfort section of Sask. The disease was less prevalent in some districts due to the most severely affected fields having been ploughed up. Wilt was also reported in B.C. and Man. Alfalfa rust (Uromyces Medicaginis) is a disease of minor importance in Canada, but it may be noted that its aecial stage, not previously reported in North America, was found on Euphorbia Cyparissias near Arnprior, Ont.

Flax suffered to some extent from disease in Man. and the eastern part of Sask., whereas heat and drought caused heavy losses from die-back and scorch in the dry central and western parts of Sask. Seedling blight (Rhizoctonia Solani, etc.) caused unusually severe losses in Man. and a slight thinning of stands in Sask. This year R. Solani was the dominant pathogen. Pasmo (Septoria Linicola) was widely distributed and severe in Man.; it was also more prevalent in southeastern Sask. than in the previous year, but it caused little damage.

Still another disease was added to the long list of soybean diseases reported in recent years when brown stem rot (Cephalosporium sp.) was found in a test plot at Ridgetown, Ont. Observations at Guelph and Ottawa indicate that in areas where bacterial blight (Pseudomonas glycinea) is of importance, the growing of resistant varieties should prove beneficial.

Bacterial ring rot (Corynebacterium sepedonicum) of potato was the third most important cause for the rejection of seed potato fields entered for certification and was the leading cause in Sask., Man., Ont., and Que. All potatoes were remarkably free from ring rot in P.E.I., N.S., and B.C. The provincial surveys in Alta. and Ont., have done much to reduce the prevalence and intensity of the disease. The experience of the Alta. authorities, however, has been that an educational programme is insufficient and must be combined with legal action against quarantine violators.

Late blight (Phytophthora infestans) was less destructive than usual in the important potato-growing sections in P.E.I. and N.B., but was relatively severe throughout Ont. and where the vines were not adequately sprayed it caused considerable loss in reduced yields and tuber rot.

Common scab (Actinomyces scabies) is a rather injurious disease in some counties in central Ont., where a scab-resistant variety is needed. The disease appears to be on the increase where heavy applications of commercial fertilizers are commonly used.

A few diseases of other vegetable crops also deserve mention. Bean rust (Uromyces appendiculatus), usually a minor disease, was widespread in southwestern Ont., and caused severe damage in some fields. Not only was root knot (Heterodera marioni) reported on carrots in new centres in the Montreal district, Que., but it was also found attacking parsnips and sugar beets. Carrot yellows (Callistephus virus 1) was again fairly prevalent across Canada; rigorous roguing as the steeklings were harvested has reduced the incidence of the disease in the seed crop in the B.C. Interior. A new

aphid-transmitted virus disease has been described from N.B. and named carrot dwarf. Rust (Puccinia Porri) was definitely identified from chive specimens received from B.C. Downy mildew (Pseudoperonospora Humuli) is a serious disease in the hop district at Fournier, Ont.; but the disease can be effectively controlled with copper sprays. Onion smut (Urocystis Cepulae) was observed for the first time in the Okanagan Valley, B.C. Yellow dwarf (virus) appears to be well established in the Grand Forks and Vernon districts, B.C.; in the latter district 10% of the plants in seed crops and 1% in bulb crops were affected. Blue mould (Peronospora tabacina) was very destructive in the seed bed in the tobacco sections of Ont., and it also caused considerable damage in the field. In Norfolk Co., the disease was effectively controlled by spraying the seedlings with Fermate. Late blight was again prevalent in the tomato-growing areas in Ont. and was quite destructive in the Counties along Lake Ontario and in the Niagara Peninsula. A destructive outbreak of stem canker (Phytophthora parasitica) was again reported from Belle River, Ont. Blossom-end rot (non-parasitic) was unusually destructive to tomatoes in Canada on account of the dry weather during late summer.

Apple scab (Venturia inaequalis) was severe in Ont., western Que., N.B., and N.S., except in perfectly sprayed orchards. The presence of stony pit (virus) of pear in Ont. was confirmed. Little cherry (virus) now occurs in all important fruit-growing districts of the Kootenays, but it has not been found in the Okanagan Valley, B.C. New provincial regulations permit the immediate removal of any trees suspected of being infected by little cherry. Other virus diseases of stone fruits continue to be a major threat to the industry in B.C. and Ont. Leaf curl (Taphrina deformans) was epidemic in many peach orchards in the Niagara Peninsula, Ont., in which application of the spring dormant spray was delayed by frequent rains. Blossom blight or pedicel rot due to Sclerotinia fructicola caused severe losses in sweet and sour cherry orchards. Stunt, an important virus disease of blueberry, and canker (Godronia Cassandrae) were found in blueberry plantings in Western N.S., for the first time.

An interesting leaf spot (Passalora bacilligera) was found on Alnus mollis var. crispa near Perce, Que.; first Canadian report. Die-back (cause unknown) of birch continues to cause heavy loss in the Gaspé Peninsula, Que., and the Maritime Provinces. Dutch elm disease (Ceratostomella Ulmi) has spread westward in Que. north of the Ottawa River to within 3 miles of the Ont. boundary.

Leaf blotch (Haplobasidium paeoninum) was found on Aquilegia in B.C.; previously known from Calif. and Europe. Chrysanthemum stunt (cause unknown, possibly virus), which apparently originated in a commercial greenhouse in N.Y., has become established in several greenhouses in Ont. and N.S. Leaf rot (Heterosphaeria veltellinensis), previously known only from Europe, was discovered on carnations from New Westminster, B.C., and at Seattle, Wash. Downy mildew (Peronospora Gei) severely damaged a seed crop of Geum chiloense at Keating, B.C. Nematode blight (Aphelenchoides ritzema-bosi) was severe on Lilium longiflorum in a greenhouse at Esquimalt, B.C.; although the nematode is well-known on chrysanthemum, it

has not been reported previously on lily in Canada. Rust (Puccinia Oxalidis), a tropical species, was found on Oxalis corymbosa growing as a weed in a greenhouse at Ottawa. Phytophthora blight (P. Paeoniae) was observed at Morin Heights, Que.; first Canadian report, but it may have been confused previously with Botrytis blight. Stem rot (Myrothecium roridum), recorded on pansy in B.C., is another new disease for Canada.

Maladies nouvelles ou d'importance notable

R.O. Lachance

Au Manitoba et dans l'Est de la Saskatchewan la rouille de la tige (Puccinia graminis) fut particulièrement grave sur les variétés de blé susceptibles à cette maladie, tandis que les variétés résistantes, dont la culture est maintenant très généralisée, furent exemptes de rouille ou n'en montrèrent que des traces. Le blé durum ne fut que légèrement infecté, tandis que l'orge fut plus rouillée que d'habitude, et que l'avoine, d'une façon générale, fut plutôt gravement atteinte. Dans les autres parties du Canada la rouille de la tige n'eut qu'une importance minime, sauf en quelques endroits où des épidémies locales furent observées.

La rouille des feuilles du blé (Puccinia triticina) fut en général assez grave au Canada sauf en Alta et dans certaines parties de la Sask. De plus les variétés Regent, Redman et Renown, qui étaient très résistantes à la rouille des feuilles lors de leur création, furent presque aussi gravement rouillées que les variétés susceptibles Thatcher, Apex et Saunders dans la partie centrale du Canada.

La rouille des feuilles de l'avoine (P. coronata) varia de légère à modérée au Man. et dans l'Est de la Sask., mais elle fut grave dans plusieurs localités de l'Est du Canada.

Les évaluations de la pourriture commune des racines du blé (Helminthosporium sativum et Fusarium spp.) en Sask. furent plus basses qu'en 1946 mais plus élevées, toutefois, qu'en 1945. Cette année, encore, on nota une forte corrélation négative entre les rendements et ces évaluations.

La brûlure des noeuds de l'avoine (Helminthosporium victoriae Meehan & Murphy), une maladie nouvelle au Canada, fut observée à Ottawa en juin 1947. Subséquemment on l'observa dans toutes les provinces sauf en Alta. Cette maladie a une importance considérable parce que les deux nouvelles variétés canadiennes Beacon et Garry sont susceptibles à cette brûlure, tout comme nombre de variétés américaines qui tirent leur résistance à la rouille des feuilles de leur parent Victoria. A cause de la susceptibilité de la Beacon et de la Garry à cette nouvelle brûlure il y a au Canada un besoin urgent de nouvelles variétés qui, tout en possédant la résistance à la rouille des feuilles, ne seront pas susceptibles à la brûlure des noeuds.