New or Noteworthy Diseases

Stem rust of wheat caused severe damage in the south-central and south-eastern parts of Manitoba, but the damage was slight in other parts of Western Canada. Rust appeared the last few days in June and spread rapidly. By the end of the first week of July it was present on susceptible common wheat varieties throughout the wheat growing area of Manitoba and the adjacent sections of Saskatchewan. Severe drought conditions in both Manitoba and Saskatchewan prevented its development. Stem rust was destructive in Prince Edward Island in late August and here and there in other places in Eastern Canada. Stem rust caused severe damage to oats at scattered points in New Brunswick, Nova Scotia and Prince Edward Island. These outbreaks were found centred about plantings of barberries. Elsewhere in these provinces oat stem rust was unimportant. The removal of the barberry would be a great boon in these districts.

Crown rust was very general in the Maritime Provinces, but it reached epidemic proportions very early near plantings of buckthorn (Rhamnus cathartica).

Leaf blotch (Pyrenophora Tritici-repentis (Died.) Drechsler (Helminthosporium Tritici-repentis) was reported for the first time as parasite of wheat when it was found causing a severe wilting and spotting of the leaves of Durum wheat near Melita, Man. Its usual host is Agropyron repens.

A fungus, referable to Cryptoascus Petri, was found on the roots of wheat in Prince Edward Island in 1936 and again in 1937. Its parasitic capabilities remain to be investigated. It also occurs on barley and oats.

While browning root rot (Pythium spp.) has been recognized as an important disease in Saskatchewan, this was the first year a severe epidemic was encountered in Manitoba. It was destructive to wheat on summerfallow in the Dauphin, Gilbert Plains, Grandview, Roblin and Russell areas in June.

Besides the rusts, the special survey of cereal diseases in the Maritime Provinces in 1937 revealed others also important. The oat smuts were present in two-thirds of the fields visited, the average infection being 2%. While no comparable data is available for 1936, the smuts appear to have been less prevalent this year than last. Nevertheless 16% of the fields visited contained 5% or more smut. In addition a smartweed (Polygonum lapathifolium) affected by smut (Ustilago utriculosa) was common especially in fields of oats. The weed seeds were evidently sown with the grain. It

was concluded that little attention was given to seed treatment. Leaf blotch (Helminthosporium Avenae) was a very common disease, and from studies by other workers, it is inferred that the weather greatly favoured its development in 1937. It probably caused considerable injury as a seedling blight. However, several investigators have shown that leaf blotch can be readily controlled by the use of the organic mercury dusts. These facts clearly emphasize the need of popularizing the organic mercury dust treatments in the Maritime Provinces.

The survey for the oat nematode (Heterodera schachtii) in Waterloo county, Ont., was continued and nematodes were found to a greater or less extent on nearly every farm in an area of 300 square miles. In addition samples of oats attacked by nematodes were received at Guelph from widely scattered areas of the province. However there are only two areas in which serious, widespread outbreaks have been recorded, viz. in Waterloo, and in Simcoe and Ontario counties.

A disease known as mid-vein spot (Mycosphaerella carinthiaca Jaap) was found on red clover at Woodstock, N.B. in 1936. This is a new record for Canada and probably for North America. Ramularia Trifolii Jaap is stated to be the conidial state.

The causal organism of bacterial wilt and rot of potato has been isolated and shown to be very closely related to both Phytomonas michiganensis, the cause of bacterial canker of tomatoes and Bacterium sepedonicum Spiekermann (Phytomonas sepedonica according to Bergey's terminology), the cause of bacterial ring spot of potatoes, a disease recorded from Germany and very similar to the one found here. The disease is now known to occur in Canada in Quebec and New Brunswick.

Violet root rot (Rhizoctonia crocorum) was recorded for the second time in Canada when two potato tubers affected with the disease were received from Winterburn, Alta. The disease was present in only a few hills.

Potato tubers affected with what appears to be dry rot (Fusarium Solani (Mart.) App. & Wr. var. eumartii (Carp.) Wr. were received from south-western Ontario this year; definite information of its occurrence in 1936 was also obtained. It has not been recorded before in Canada.

A wilt of unknown cause appears to be present on potato in the Prairie Provinces. The most striking symptom of the disease is the purple colour of the margins of the leaves

on the upper parts of the plant. It appears to be very similar to the wilt reported from Minnesota and Wisconsin.

Yellow dwarf (virus) was found in Middlesex county, Ont., chiefly on Dooley potatoes. While the disease has not been reported previously in the Survey, it has been present for the past few years.

A disease of tomatoes which answered perfectly the symptoms of stem girdle (Phytophthora parasitica) as described by Reddick was found in a greenhouse at Grimsby, Ont. This is apparently the first report of its occurrence in Canada.

Thrystroma compactum (Sacc.) v. Höhn. has been found fruiting on dead twigs of elm from Levis, Que. and Port Hope, Ont. This appears to be a new record for Canada.

Leaf blister or spot (Taphrina sp.) was found in fruit on leaves of the red maple (Acer rubrum) collected at Portland, Ont. This appears to be a new disease in Canada.

The rust, Coleosporium Campanulae, recorded in Canada for the first time from collections in B.C. has since been reported to the Survey from Ontario and Nova Scotia. Diseases on ornamentals unrecorded previously in Canada are: Leaf Spot (Phytomonas Geranii) on Geranium sanguineum at Winnipeg, Man.; Leaf Curl (virus) on cultivated geranium (Pelargonium) at Fonthill, Ont., although it was probably present in Ontario for the past 10 years; Ink Disease (Mystrosporium adustum Massee) on iris var. Imperator at Victoria, B.C.; Coryneum Canker (Coryneum microstictum Berk.) on roses at Niagara Falls, Ont. in 1929; Downy Mildew (Peronospora sparsa Berk.) on several varieties of roses at West Vancouver, B.C.