New or Noteworthy Diseases

In this place, diseases new to Canada or to provinces other than those, from which they have already been reported, are brought together. In addition, notes are included on several diseases, which have attracted attention for one reason or another in the past year.

To the long list of cereal diseases a new foot rot of oats has been added by Sanford from Alberta. The symptoms of the disease have been described and illustrated by him (Sc. Agr. 14:50-51. 1933). Since the publication of this note he has found that there are apparently two organisms, Fusarium Equeseti and an unknown dark sclerotia-forming fungus, associated with the disease. Experiments to determine the pathogenicity of these fungi, singly and in combination, have not yet been completed. The disease was common in the Edmonton district in 1933, and caused severe damage in some fields.

Downy mildew (Peronospora aestivalis) of alfalfa was probably the most interesting forage crop disease in the past year. Before 1932, it was apparently of little economic importance, although it had been reported on alfalfa from nearly every province in Canada. In that year, however, the Lytton strain originated at Lytton, B.C. was severely affected at Ottawa, while other varieties were only slightly diseased. Again in 1933, this strain was noticeably affected not only at Ottawa, but also at 10 other stations scattered from Alberta to Quebec. From these observations it would appear that downy mildew might become a serious disease and has not done so before, due to the high resistance of the commonly grown varieties.

Smut (Ustilago striaeformis) was found on two new hosts in Manitoba for the first time. It affected Kentucky blue grass at M.A.C., Winnipeg, and timothy near Beausejour and at Winnipeg. It was previously reported from Manitoba on Beckmannia erucaeformis and from Ontario on timothy. Specimens on Kentucky blue grass from a lawn and on timothy are in the Herbarium from Ottawa, Ont.

Smut (Ustilago bromivora) was collected on western rye grass at Nappan, N.S. This smut has not been reported previously outside of the Prairie provinces.

Leaf spot (Septoria Agropyri E.& E.) heavily infected one field of western rye grass in zone 10 in Alberta. It was also reported on Agropyron sp. at Pense, Sask. It was previously reported on A. tenerum at Morden, and A. Richarsoni at Roblin, Man., by Bisby et al (Fungi of Manitoba p. 140).

A leaf spot caused by Ovularia sp. was common on a New Zealand

variety of perennial rye grass (Lolium perenne) at Saanichton, B.C., while it was not observed on local varieties. O. Lolii Volkart is reported on this host from Switzerland.

The observations on turf diseases deserve mention. Browning root rot (Pythium sp.) caused serious damage to a lawn of crested wheat grass (Agropyron cristatum) at Winnipeg, Man. The latter thrives in dry situations and consequently it is being grown more and more each year. Rhizoctonia Solani was destructive to a turf of Poa annua at St. Catharines, Ont., while both Pythium and Rhizoctonia caused some damage to the greens of the Saskatoon Bowling Club, Saskatoon, Sask.

Records of a few new vegetable diseases were received this year. Marginal leaf spot (Pseudomonas marginalis) caused severe damage to lettuce at Ancaster, Ont. A dry fruit rot (Alternaria sp.) of eggplant was observed several times in Lincoln county. Ont. Not only were large external lesions formed, but the internal tissue was invaded. The foliage was free of any Alternaria leaf spot. Sclerotium disease (Sclerotium bataticola) was found affecting two pepper fruits on a farm in Lincoln county, Ont. The aecia of Puccinia Phragmitis were collected for the first time on rhubarb in Manitoba. They were abundant on some varieties at Brandon and the rust was rather common at scattered points throughout the province.

Besides these new vegetable diseases certain others may well be reported. Powdery scab (Spongospora subterranea) was found again this year in British Columbia. At the time the vegetable disease section was being written, it was thought to be the first report for British Columbia; later, however, I find that it was reported in 1922 (P.D.S. 2:60). It must be extremely rare in that province. A crown rot was reported for the past two years at Saskatoon. Isolations from the diseased tissue yielded a Fusarium. Those made this year were identified as F. bulbigenum. A soft rot (Pythium sp.) has been destructive to the seed pieces after they were planted and caused high percentages of misses in some fields in British Columbia. The organism was identified this year as Pythium ultimum.

Among the fruit diseases the only new one to be reported was false blossom (virus) of cranberry. Its appearance in the commercial bogs of Nova Scotia may well cause apprehension of the ultimate success of cranberry growing in Canada, as this disease is thought to be responsible for the decline of 30% in the yield in the cranberry bogs of New Jersey since 1923, when they attained their highest productivity. Fire blight (Bacillus amylovorus) appeared in epidemic form at Saskatoon and other points in

Saskatchewan in 1933, although it was reported only last year for the first time in this province. Both blossom and twig infection was severe in the University orchards at Saskatoon. It also affected a few twigs on plum trees adjacent to apples in the same orchard and generally infected the flowering crabapples in a border at Regina. In Manitoba the disease caused serious twig blight of seedling apple trees at Morden and was found affecting Prunus nigra at Dauphin. An outstanding case of Xanthosis? (virus) of strawberries was observed on one farm at Stamford, Ont. The majority of the plants exhibited unmistakeable, although not distinctly defined symptoms, resembling those of "Xanthosis" of Plakidas and the "Yellow-edge" disease in England, and these observations were confirmed by experimentally transmitting the disease to healthy plants. However, this was the only case observed by Dr. R.V. Harris in which, by leaf symptoms alone, virus attack could be diagnosed as a major cause of a deterioration of serious economic importance. Blue stripe wilt (Verticillium sp.) was found affecting a few plants at Macdonald College, Que. Apart from a doubtful record from Rimouski county in 1926, this is probably the first record of this disease in Quebec.

Anther smut (Ustilago violacea) was found affecting carnations in a greenhouse at Toronto. This is the first report of this smut on carnation in Canada or the United States. Apparently it is a disease of minor importance on this host in Europe. Bacterial blight (Bacterium(Pseudomonas) gummisudans) affected gladiolus in a garden at Brantford, Ont., in 1932. Although this is the first report of this disease to the Survey, Drayton (Rept. Dominion Botanist for 1927, p. 28, 1928) found it in 2 plantations at Kitchener, Ont., in 1927. Although rust (Puccinia Malvacearum) has been reported on hollyhock at Winnipeg, Man., according to Bisby et al (Fungi Man. p. 85) it was not observed from 1920 until the fall of 1932, when it appeared at the Agricultural College. It was found again this year and became very prevalent during the season. It also heavily infected a cultivated mallow in a Winnipeg garden.

Attention is directed to the unusual number of hosts reported to be attacked by Rhizoctonia Solani this year. Below are listed the name of the disease, the host, and the place of appearance. Brown patch in a turf of Poa annua at St. Catharines, Ont., p. 19 and in bowling greens at Saskatoon, Sask., p.19; wire stem in cabbage at Winnipeg, Man., p.23, and in cauliflower at Saskatoon Sask., p. 24; bottom rot of lettuce in Jacques Cartier county, Que., p.27; rhizoctonia in potato, p.29; damping off of tobacco seedlings in a greenhouse, Norfolk county, Ont., p.36; sore shin of tobacco in Norfolk county, Ont. p.37; storage rot of turnip, Queens county, P.E.I., p.41; seedling blight of plum, Saskatoon, Sask., p.55; crown rot of garden heliotrope, Saskatoon, Sask. p.67.