II. DISEASES OF FORAGE AND FIBRE CROPS

ALFALFA

COMMON LEAF SPOT (Pseudopeziza Medicaginis) is general on all varieties each year on Vancouver island and in the Fraser valley, B.C.; it was general on the lower leaves of alfalfa at Summerland, B.C. A light infection was observed at Beaver Lodge and Edmonton, Alta. A trace was present on the lower leaves of alfalfa at Morden, Man. A heavy infection occurred in a field near Newcastle and at the Fredericton Experimental Station, N.B. Both alfalfa and sweet clover was conspicuously free from leaf and stem blemishes in the University plots at Saskatoon, Sask.

DOWNY MILDEW (Peronospora aestivalis). Lytton has been consistently affected and is obviously more susceptible than any of the other popular varieties grown in the Fraser valley, B.C. The disease was not as prevalent as in 1936 (W. Jones). Downy mildew was severe in patches at Winnipeg, Man.

YELLOWS (Boron deficiency) was fairly common at the Summerland Experimental Station, B.C.

ROOT ROT (Cylindrocarpon Ehrenbergi Wr., Sclerotinia sp. etc.). A light infection was found in the experimental plots at Edmonton and Lacombe, Alta., and in several fields at Lacombe.

Root Rot (Sclerotinia sp.) and Winterkilling caused moderate damage in May at Saskatoon, Sask.

WHITE SPOT (Non-parasitic) was conspicuous on specimens received from Acton, Ont., at the Central Laboratory in June.

DWARF (Undetermined) is apparently prevalent in the Cariboo district and other parts of the interior of B.C. While no survey has been made, reports indicate it to be rather widely spread, particularly in the irrigation areas. (W. Jones)

COMMON CLOVER

MID-VEIN SPOT (Mycosphaerella carinthiaca Jaap). Specimens of red clover collected at Woodstock, N.B. in 1936 and affected with an unknown fungus were sent to the Imperial Mycological Institute. Mr. E.W. Mason identified the fungus to be Mycosphaerella carinthiaca. He reports -

"This species was described by Jaap on Trifolium medium from the Austrian Alps in 1908 and later on the same host from Switzerland. Ramularia Trifolii Jaap was stated to be the conidial state (Ann. Mycol. 6:210, 8:145, and 15:106). In 1922 it was recorded on Trifolium pratense in Wales (Rev. Appl. Myc. 1:422). The present collection is no doubt the same thing as that recorded from Wales, material of which is preserved in Herb. Kew." (I.L. Conners)

COMMON LEAF SPOT (Pseudopeziza Trifolii) was unusually heavy in September on red clover in all parts of P.E.I.

POWDERY MILDEW (Erysiphe Polygoni) caused slight damage in York county. It was heavy on red clover in September in P.E.I.

RUST (Uromyces Trifolii) was present on alsike clover in several fields on Vancouver island and in the Fraser valley and on N.Z. white clover at Agassiz, B.C. A general light infection of aecia and uredinia occurred on alsike at Winnipeg, Man. Rust slightly damaged clover at the Fredericton Station, N.B. It was heavy on red clover, moderate on white, and light on crimson clover (T. incarnatum) at Charlottetown, P.E.I.

SOOTY BLOTCH (Cymadothea Trifolii) was general on red clover, but caused little damage in the Fraser valley, B.C.; it was also present on white clover at the Sidney Station. It was common at the Fredericton Station, N.B. and abundant in September on red clover in P.E.I.

LEAF SPOT (Gloeosporium sp.) moderately infected over half the plants in a field at Fallis, Alta.

MOSAIC (Virus). Traces of mosaic were reported on red clover in Queens county, P.E.I.

SWEET CLOVER

LEAF SPOT and STEM CANKER (Stagonospora Meliloti). A trace to slight infection was found in several fields in central and northern Alta.

ROOT ROT (Cylindrosporium Ehrenbergi, Sclerotinia sp. etc.) lightly to severely infected the experimental plots at Edmonton and Lacombe, Alta., and several fields in the Lacombe district. Root rot (Sclerotinia sp.) and Winter-killing moderately affected sweet clover in the University plots, Saskatoon, Sask. in May.

MOSAIC (virus) affected 10% of white sweet clover plants at the Summerland Station, B.C.

LENTIL

ROOT ROT (Fusarium spp.) affected 3% of the plants at Lethbridge, Alta.

VETCH

DOWNY MILDEW (Peronospora Viciae) was common on young plants at Sidney, B.C.

BROOM-CORN MILLET

SMUT (Sorosporium Panici-miliacei) affected 0.75% of the heads at Brandon, Man. and 18% at Fredericton, N.B.

BACTERIAL LEAF SPOT (Phytomonas Holci) slightly infected Japanese millet at Morden and Brandon, Man.

BUCKWHEAT

YELLOWS (Virus). At the Fredericton Station, N.B., infection ranged from 1-50%; every smooth variety of buckwheat showed far less yellows than the rough sorts (J. L. Howatt). Infection was a trace in a field at Millerville, N.B., and about 15% in one at River John, N.S. Judging from the symptoms the buckwheat was affected with Aster Yellows (K. Smith. Textbook of Plant Virus Diseases, p. 216. 1937). (I.L. Conners)

CORN

SMUT (Ustilago Zeae). It was reported that smut is present throughout the Grand Forks district, B.C. and that some fields are badly affected; specimens were also received from Oyama. A trace was present at Morden, Man. Smut was prevalent throughout Ont.; in many fields 5% of the plants were affected (J.E. Howitt and R. E. Stone). A single ear was observed in 1½-acre field in Kings county, N.S.

RUST (Puccinia Sorghi) slightly infected corn at Morden, Man. Traces were also present in P.E.I.

FUSARIUM ROT (Fusarium sp.). Traces were found on corn in November in P.E.I.

FLAX

RUST (Melampsora Lini). Traces of rust were observed at Haywood and Culross, Man.; rust was slight to severe depending on the variety at the Morden Station.

DAMPING OFF and WILT was severe in the first sowing of Bison flax in the University plots, Saskatoon, Sask., slight in the second sowing and absent in the third. The sowing dates were April 20, May 1, and May 15. Rhizoctonia was the fungus most commonly isolated. (T.C. Vanterpool)

WILT (Fusarium Lini) caused a trace of damage to flax injured by heat canker at the Scott Station, Sask. One per cent of the plants were infected in a field at Melita, Man.

A field examination followed by cultural tests indicated that wilt was present in practically every plot of fibre flax at Ottawa, Ont. The diseased areas were rapidly expanding at harvest time due to the warm moist weather. Fibre flax from Tavistock, and Lucknow, Ont., and De Beaujeu, Que., were also affected. (F.S. Thatcher)

BROWNING (Polyspora Lini) a light general infection occurred at Edmonton, Alta.; it was most prevalent on Bison.

HEAT CANKER (Non-parasitic). About a dozen varieties were affected at the Scott Station, Sask., and the amount of injury varied from a trace to 25% depending on the variety.

MANGEL

CERCOSPORA LEAF SPOT (Cercospora beticola) caused slight to severe damage in York and Northumberland counties, N.B.

CROWN GALL (Phytomonas tumefaciens) was found affecting 4 roots in one field at the Charlottetown Station, P.E.I.

CROWN and DRY ROT (Non-parasitic). A disorder, which answers the description of this disease, is common on mangels throughout N.B. Although attempts to control the malady by the use of boron have failed, it is suspected that

the trouble is in part due to boron deficiency and that the failure of previous trials has been due to the use of too small applications of boron salts. (J.L. Howatt)

STRANGLE (Undetermined). Traces were noted in 10 rows in one field in P.E.I. (R.R. Hurst)

FERTILIZER INJURY. Heavy applications of a cyanamid fertilizer on a sandy soil apparently caused the killing of 10% of the young mangels at or just below the level of the ground in a field in Annapolis county, N.S.

SUGAR BEET

BLACK LEG (Phoma Betae) as a leaf spot slightly affected sugar beets at Sidney, B.C.

RUST (Uromyces Betae) was general on the foliage, but caused slight damage to the yield at the Sidney Station, B.C.

SORGHUM

BACTERIAL LEAF SPOT (Bacillus Sorghi). A trace of infection was reported at Brandon, Man.

SUDAN GRASS

BACTERIAL LEAF SPOT (Bacillus Sorghi). Infection was a trace at Brandon, Man.; light to moderate at Morden.

SOY BEAN

BACTERIAL BLIGHT (Phytomonas glycinea). A light infection of two distinct types of blight was found at Olds, Alta. The disease was slight to moderate at Morden, Man. The disease was fairly prevalent in Essex and Kent counties, Ont.

MOSAIC (virus). In nearly every planting of soy beans in Essex county, Ont., 1 to 10% of the plants were affected with mosaic.

SUNFLOWER

WILT (Sclerotinia sclerotiorum). Affected plants occurred here and there at both Morden and Brandon, Man.

RUST (Puccinia Helianthi) was heavy on the lower leaves at Morden and Brandon, Man.; it was prevalent late in the season at Winnipeg.

LEAF SPOT (Septoria Helianthi) lightly infected sunflowers at Edmonton, Alta.

CULTIVATED GRASSES

BROWN TOP (Agrostis)

Stem Rust (Puccinia graminis) moderately affected this grass at West Bathurst, N.B., and near Great Village, N.S., in the vicinity of barberries.

KENTUCKY BLUE GRASS (Poa pratensis)

Leaf Spot (Helminthosporium vagans) was abundant on the leaves and sheaths and uncommon on the inflorescence of Kentucky blue grass on Lulu island, B.C. On the leaves are formed well defined oval spots with light centre and fairly wide dark purplish borders 0.5-3.0 mm. x 1-10 mm. or sometimes more elongated (W. Jones).

ORCHARD GRASS (Dactylis glomerata)

Ergot (Claviceps purpurea) slightly injured this grass at the Fredericton Station, N.B. Ergot heavily infected the following grasses at Winnipeg, Man.: Dactylis glomerata, Agropyron repens, A. dasystachyum, A. repens, A. Smithii, Bromus inermis, and Elymus curvatus.

Brown Stripe (Scolecotrichum graminis) was general and caused slight damage on Vancouver island and the lower mainland, B.C.

Leaf Spot (Mastigosporium album) was also fairly general and caused slight damage in the Fraser River valley and on Vancouver island.

PERENNIAL RYE GRASS (Lolium perenne)

Eye Spot (Ovularia Lolii) was general and caused slight damage on the lower mainland and Vancouver island, B.C.

VELVET GRASS (Holcus lanatus)

Twist (Dilophospora Alopecuri) was fairly general in the Fraser valley, B.C., but it was not as common as in 1936.

TIMOTHY (Phleum pratense)

Leaf Spot (Heterosporium Phlei) was quite general in the Fraser River valley, B.C., and to a slight extent in

the Buckley valley. It was also prevalent in York county, N.B.

Stem Rust (Puccinia graminis Pheli-pratensis) first appeared in the Fraser valley, B.C., about July 1, and became general later; it was not found in mid June in Buckley valley, an area devoted to timothy seed production. A trace was present at the Fredericton Station and in York and Carleton counties, N.B., in September. Stem rust was late developing this year in P.E.I. Plant counts along the roadside gave an average infection of 12% in August and 72% in September.

WESTERN RYE GRASS (Agropyron tenerum)

Smut (Ustilago bromivora). About 50% of the heads were smutted in a field west of Edson, Alta. Fischer (Mycologia 29:408-425. 1937) considers this smut as caused by Ustilago bullata Berk., under which name he combines U. bromivora, and U. Lorentziana.

LAWN GRASS

Brown Patch (Rhizoctonia Solani) was present in material received from Windsor, Ont., and it was described in an enquiry from Welland. (G.C. Chamberlain)