II. DISEASES OF FORAGE AND FIBRE CROPS

ALFALFA

COMMON LEAF SPOT - Pseudopeziza Medicaginis (Lib.) Sacc.

B.C.- Common leaf spot was general on Grimm on Vancouver island, but it caused slight damage. It was also observed at Salmon Arm.

Alta.- The disease lightly to moderately infected 5 fields out of 10 examined, but in an experimental plot at Edmonton, all the leaves were infected. The average damage was slight.

Que.- Common leaf spot slightly to severely infected the different varieties grown at Macdonald College. It caused some defoliation.

N.B.- This leaf spot was common in Westmoreland, Queens, Sunbury, York and Carleton counties. The damage was slight.

P.E.I.- Grimm alfalfa was moderately infected with common leaf spot. The disease is very common throughout the province.

DOWNY MILDEW - Peronospora aestivalis Syd.
(P. Trifoliorum de Bary p.p.)

Alta.- Lytton was heavily infected and severely damaged by downy mildew at Lacombe and Edmonton, while other varieties of alfalfa were free or bore only traces of mildew.

Downy mildew was also observed by Dr. L. E. Kirk on Lytton alfalfa at the above places, and at Lethbridge, Alta.; Indian Head, Sask.; Brandon, Man.; Kapuskasing and Ottawa, Ont.; and Macdonald College, Que. Moreover, a sample of this strain of alfalfa grown at Lytton, B.C. in 1932 was examined for oospores. A small quantity of seed was shaken up in water, the washings centrifuged and the deposit examined microscopically. It was found that oospores of Peronospora aestivalis were present floating singly in the mounting medium. In addition, one fragment of plant tissue containing 5 spores in situ was observed. (I. L. Conners)

CROWN ROT - Sclerotinia sp.

Alta.- Alfalfa was lightly to moderately damaged by this rot in the experimental plots at Edmonton and Lacombe in the early spring.

BROWN ROOT ROT - Plenodomus Meliloti Dearn. & Sanf.

Alta.- Severe damage by brown root rot was observed in the early spring in several fields at Athabasca and in the experimental plots at Edmonton and Lacombe.

LEAF SPOT and STEM CANKER - Stagonospora Meliloti (Lasch) Petr,
(=Ascochyta Medicaginis Bres.)

Alta.- Leaf and stem canker was observed in practically

every field examined and in the experimental plots, Edmonton. The damage was a trace.

YELLOW LEAF BLOTCH - Pseudopeziza Jonesii Nannf.

An unfortunate typographical error was made last year. The organism causing this disease was called by Nannfeldt Pseudopeziza Jonesii, not Pseudomonas Jonesii as reported in the Survey (Can. Pl. Dis. Survey 12:24)

COMMON CLOVER

COMMON LEAF SPOT - Pseudopeziza Trifolii (Biv.-Bern.) Fuck.

P.E.I.- This leaf spot was reported to be common and moderately destructive to red clover in Prince Edward Island.

MOSAIC - Virus

B.C.- Mosaic was reported from Salmon Arm on white clover.

Que.- Ninety per cent of the clover plants were infected with mosaic in the Agronomy plots at Macdonald College. Mosaic was also common in clover grown for hay. Some damage was caused due to the reduced growth of affected plats. (R. F. Suit)

P.E.I.- Traces of mosaic were observed in red clover in pastures.

POWDERY MILDEW - Erysiphe Polygoni DC.

B.C.- Powdery mildew was common on red clover on Vancouver island and in the Fraser valley, but it caused little damage. It is also fairly prevalent at Summerland.

Que.- Powdery mildew was first observed on red clover on June 24. The plants were slightly to moderately infected, but were apparently not injured.

N.B.- This disease was common throughout the province; the damage was slight.

P.E.I.- Red clover was slightly to heavily infected with powdery mildew in all 3 counties; the damage was slight to very severe.

RUST - Uromyces Trifolii (Hedw. f.) Lév.

Man.- Aecia of this rust were found on alsike at Winnipeg and on white clover at Winnipeg and Lac du Bonnet. The infection was slight.

Ont.- A very heavy infection of rust was observed on the aftermath in a field of red clover near Bradford.

N.B.- Rust was common on red clover in York, Sunbury, Queens and Westmoreland counties.

P.E.I.- Rust was present on both red and white clover in Queens county. The damage was negligible.

SOOTY BLOTCH - Dothidella Trifolii (Pers.) Bayl.-Elliott & Stansf.
(Polythrincium Trifolii Kunze)

P.E.I.- Traces of sooty blotch were found at the Experimental Station, Charlottetown.

ANTHRACNOSE - Kabatiella caulivora (Kirchn.) Karak.
(=Gloeosporium caulivorum Kirchn.)

Alta.- Anthracnose caused slight damage in the field of Altaswede red clover at Spruce Grove, from which it was reported in 1932.

BROWN ROOT ROT - Plenodomus Meliloti Dearn. & Sanf.

Alta.- Severe damage by brown root rot was observed in the early spring in stands of Altaswede red clover at Athabasca.

SWEET CLOVER

MOSAIC - Virus

B.C.- Mosaic was reported on sweet clover from Summerland.

CROWN ROT - Sclerotinia sp.

Alta.- Sweet clover was moderately to severely damaged by crown rot in fields at Athabasca and Lacombe.

BROWN ROOT ROT - Plenodomus Meliloti Dearn. & Sanf.

Alta.- Brown root rot caused moderate to severe damage to sweet clover in the early spring in fields at Athabasca and in the experimental plots at Lacombe and Edmonton.

LEAF SPOT and STEM CANKER - Stagonospora Meliloti (Lasch) Petr.

Alta.- A trace of stem canker was observed in 4 out of 9 fields examined.

Sask.- This leaf spot was found in 2 fields out of 3 examined. Damage was a trace.

Man.- This disease was general throughout Manitoba.

CORN

BACTERIAL STALK ROT - Bacterium dissolvens Rosen

Alta.- Bacterial stalk rot caused slight damage to corn at Olds and Edmonton.

SMUT - Ustilago Zeae (Beckm.) Ung.

Alta.- A specimen of corn affected with smut was received from Brooks. Damage was a trace.

Man.- A slight infection of corn smut was reported from Winnipeg.

N.B.- A trace of smut was found in a small field at Fredericton.

FLAX

RUST - Melampsora Lini (Ehrenb.) Desm.
Man.- A trace of rust was found in most fields of flax. Twenty-five per cent of the plants were infected in one, south of Brandon.

WILT - Fusarium Lini Bolley
Man.- A slight infection of flax wilt was observed at Morris and a trace at Morden.

SUNFLOWER

WILT - Sclerotinia Sclerotiorum (Lib.) de Bary
Alta.- Wilt caused moderate damage to sunflowers in patches in a field in zone 10.
Sask.- Sunflowers were slightly infected with wilt in a garden at Saskatoon.
Man.- Wilt caused slight damage in a field at Morris.

MANGEL

BLACK LEG - Phoma Betae (Oud.) Frank
B.C.- Black leg caused heavy losses in storage especially during the spring months. Long Red appeared to be the least susceptible variety. In the field several plants bore leaf infections and only a few of the roots showed disease symptoms at harvesting.

SUGAR BEET

CROWN GALL - Pseudomonas tumefaciens (E.F.Sm.& Towns.) Dugg.
Alta.- A root bearing a well developed gall, probably crown gall, was observed at Edmonton.

SOYBEAN

MOSAIC - Virus
B.C.- Soybeans, which were grown from seed obtained from the Central Experimental Farm, Ottawa, were affected 100% with mosaic at Summerland. The disease was spreading to a healthy strain from locally grown seed.

N.B.- One per cent of the plants were affected with mosaic at the Experimental Station, Fredericton.

BACTERIAL BLIGHT - Pseudomonas glycinea Coerp.
Ont.- Bacterial blight seriously damaged soybeans near Woodham. The organism was isolated and identified as Phytomonas Sojae. (D. H. Jones)

BROOM CORN

COVERED KERNEL SMUT - Sphacelotheca Sorghi (Lk.) Clinton
Ont.- Fifteen to 20% of the plants were affected in an acre field in Lincoln county. The seed had not been treated. This smut was also prevalent at Forest, Ont.

CULTIVATED GRASSES

BROOM MILLET (Panicum mileaceum)
Smut (Sorosporium Panici-mileacei (Pers.) Takah.) was destructive in 3 plots at Indian Head and in one field in zone 7 in Saskatchewan. The average damage was 25%.

KENTUCKY BLUE GRASS (Poa pratensis)
Leaf spot (Scolecotrichum graminis Fuck.) was fairly general on the experimental plots, Saanichton, B.C. It caused some premature defoliation.

Smut (Ustilago striaeformis (West.) Niessl). A small amount of this smut was found for the first time at M.A.C., Winnipeg, Man., on the above host. (G. R. Bisby)

PERENNIAL RYE GRASS (Lolium perenne)
Leaf spot (Ovularia sp.) was common on a New Zealand variety of this grass in the experimental plots, Saanichton, B.C., and introduced via the Central Experimental Farm, Ottawa. The affected leavesdie prematurely, reducing considerably the pasturage value. It was not observed on local varieties. (W. Jones)

RED TOP (Agrostis alba)
Stem rust (Puccinia graminis Pers. var. Agrostidis Erikss. & Henn.) Traces of stem rust were found in Queens county, PE.I.

TIMOTHY (Phleum pratense)
Stem rust (Puccinia graminis Pers. var. Phlei-pratensis (Erikss. & Henn.) Stakm. & Piem.). Individual selected timothy plants growing in the University plots, Edmonton, Alta., were heavily attacked, while others in the vicinity were free from rust.
Stem rust was common on timothy at Berens River, Man., in

July. It evidently overwinters there. (G.R. Bisby).

Stem rust was first observed on July 27 at Macdonald College, Que. By Oct. 1, the leaves and stems were moderately to severely infected, causing some reduction in vigour.

This rust was common on timothy in fields at the Experimental Station, Fredericton, N.B. The damage was slight.

Stem rust may be found on a number of cultivated strains at the Experimental Station, Charlottetown, P.E.I., and also on wild plants. It causes slight damage.

Ergot (Claviceps purpurea (Fr.) Tul.) moderately infected timothy in a field near Red Deer, Alta.

Smut (Ustilago striaeformis (West.) Niessl) was found for the first time on timothy in Manitoba at Seddon's Corners near Beausejour and at Winnipeg. The disease was not serious.

Floret Sterility (Cladosporium herbarum Lk.). Timothy plants so affected were collected by Dr. W.C. Broadfoot in Alberta and the associated fungus was determined by Dr. G.R. Bisby. It appeared to be parasitic.

WESTERN RYE GRASS (Agropyron tenerum)

Smut (Ustilago bromivora (Tul.) Fisch. v. Waldh.) lightly infected this grass in the experimental plots at Lacombe, Alta.

This smut has been transferred experimentally to Agropyron Griffithsii, A. dasystachyum and A. Richardsoni by Dr. A.W. Henry, Edmonton, Alta., who has deposited affected specimens in the herbarium at Ottawa. (I.L. Conners)

It was also collected for the first time on western rye grass at Nappan, N.S. This is the first report of this smut on A. tenerum from other than the Prairie provinces. (I.L. Conners)

Ergot (Claviceps purpurea (Fr.) Tul.) frequently but lightly infected one field in zone 10 in Alberta.

Leaf spot (Septoria Agropyri E. & E.) heavily infected one field in zone 10 in Alberta.

Scolecotrichose (Scolecotrichum graminis Fuck.) moderately infected this grass in the University plots, Edmonton, Alta.

TURF

Snow mould (Fusarium etc.). Many inquiries about snow mould on golf and bowling green etc. have been received at M.A.C., Winnipeg, Man., probably on account of an awakened interest. (G. R. Bisby)

Brown patch (Rhizoctoni Solani Kühn) was destructive to a turf of Poa annua at St. Catharines, Ont.

Brown patch of the "dollar spot" type caused some damage

to the greens of the Saskatoon Bowling Club, Saskatoon, Sask., in May. Both Rhizoctonia and Pythium appeared to be present.

Browning root rot (Pythium sp.) caused serious damage to a lawn of crested wheat grass (A. cristatum) at Winnipeg. The disease appeared in patches, which gradually increased in size.

Crested wheat grass, quack grass, green foxtail, wild barley, common darnel, wild oats, timothy, western rye grass and brome grass were grown in field soil naturally infected with various Pythium species. On every grass lesions containing typical oospores of Pythium developed in the roots. Isolations of various species from each host have been made. (T. C. Vanterpool)