II. DISEASES OF FORAGE AND FIBRE CROPS

ALFALFA

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

B.C.- In some alfalfa fields around Summerland the older foliage was heavily infected with this leaf spot. It was also quite general at Vernon, Kelowna and South Okanagan, especially on old alfalfa cover crops.

Alta.- Medium to heavy infections of common leaf spot were found in 7 fields out of 16 examined; the damage, if any, was very slight.

Sask.- Slight damage was caused by common leaf spot at Indian Head.

Ont.- Traces of this leaf spot were present in the plots at Ottawa.

Que.- Common leaf spot was first observed at Macdonald College, on June 2nd, and nearly every leaf was infected in several plots by August. It caused some defoliation on the lower parts of the plant. This leaf spot was also reported from Kamouraska and Deux Montagnes counties; it caused slight defoliation.

N.B.- Common leaf spot was widespread; the damage was moderate.

N.S.- This leaf spot was quite general, but it was not severe in any field examined.

P.E.I.- Common leaf spot caused moderate infections on alfalfa in Queens and Prince counties; the damage was moderate.

YELLOW LEAF BLOTCH - Pseudomonas Jonesii Nannf.
(=Pyrenopopeziza Medicaginis Fuck.)

Nannfeldt has recently published an excellent treatise entitled "Studien uber die Morphologie und Systematik der nich-lichenisierten inoperculaten Discomyceten" (Nova Acta Reg. Soc. Sci. Upsaliensis ser 4, vol. 8, No. 2 pp. 1-368, text fig. 1-47, pl.1-20. 1932). In this work he has added greatly to our understanding of these fungi. In consequence of his researches he has been compelled to change the names of some of the commoner fungi. Such a change is the one above, but it is proposed to adopt these names in the Survey.

Que.- A slight infection of yellow leaf blotch was observed

on June 2nd; it tended to disappear as the season advanced. A heavy infection was observed in two localities on well-drained and fertilized soils in Rimouski county.

RUST - Uromyces Medicaginis Pass.

Man.- This rust, which appeared in small quantities late in 1931, was not seen this year.

Ont.- Traces of rust were collected in the Forage Division Plots at Ottawa late in the season.

DOWNY MILDEW - Peronospora Trifoliorum de Bary

Ont.- Specimens of alfalfa collected in the Forage Division plots were found to be heavily infected with downy mildew. According to the severity of the disease the varieties were given a rating between 1 and 10 by the Forage Crop Division. The standing was as follows: Nebraska selection, Brooks Grim, Ontario Variegated, 1 (least injured); Ladak, 2; Hardistan, 3; Lytben, 9 (most injured).

FOOT ROT - Sclerotinia Trifoliorum Erikss.

Alta.- Foot rot caused a trace to light damage in 3 fields out of 16 examined. The fungus was found associated with severe winter killing of alfalfa at Brooks.

BROWN ROOT ROT - Plenodomus Meliloti Dearn. & Sanf.

Alta.- A trace to light damage was caused by brown root rot in 5 fields. The fungus was also associated with the severe winter killing of alfalfa, which occurred at Brooks.

MACROSPORIUM LEAF SPOT - Macrosporium sp.

Alta.- A trace to light infection of this leaf spot was reported from 3 fields.

WITCHES' BROOM - Cause undetermined

B.C.- Two-year old alfalfa plants affected with a witches' broom were sent to the laboratory from Smithers and Saanichton. Many small shoots, instead of a few normal ones, arose from the crown. The disease may be important economically (W. R. Foster).

DODDER - Cuscuta epithymum Murr.

B.C.- Dodder was reported from Yale county.

BACTERIAL BLIGHT - Pseudomonas Medicaginis Sackett
Alta.- A light infection of bacterial blight was reported from several fields at Beaverlodge.

COMMON CLOVER

COMMON LEAF SPOT - Pseudopeziza Trifolii (Biv.-Bern.) Fuck.
P.E.I.- All red clover was moderately infected with common leaf spot in Prince, Queens and Kings counties.

MOSAIC - Virus
Que.- Varying amounts of mosaic were present in the different varieties at Macdonald College.

P.E.I.- Four plants were seen in one field of red clover at Charlottetown.

POWDERY MILDEW - Erysiphe Polygoni DC.
Que.- Powdery mildew was general in the Montreal district. It was also general in the eastern part of Quebec; in some fields it was so severe that a small percentage of the leaves shrivelled and dried up.

N.B.- Powdery mildew was widespread; the damage was slight.

N.S.- Red clover was severely infected with powdery mildew in Durham Tp., Pictou Co. This year haying was not completed owing to showery weather, until after the middle of August, a delay of at least 2 weeks. Usually no mildew is found on the first crop.

P.E.I.- Second crop of red clover was severely injured by powdery mildew in Queens, Kings and Prince counties.

RUST - Uromyces Trifolii (Hedw.f.) Lév.
Alta.- White clover was slightly to moderately infected with rust throughout the province.

Que.- A moderately heavy infection of rust was found in Chateauguay county. Slight infections of rust were reported in fields throughout eastern Quebec.

N.S.- Alsike clover was moderately infected in Colchester county. Rust is very common on second crop clover, but it does not appear to cause serious injury.

P.E.I.- Rust was rather abundant on red clover this year in all parts of the province. It apparently caused slight damage. It was also reported on alsike clover from Queens county.

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

N.S.- A trace of sooty blotch was present on alsike clover at Kentville. Red clover was moderately infected in a field in Colchester county.

P.E.I.- Traces of sooty blotch were reported from the Experimental Station, Charlottetown.

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

Alta.- Anthracnose caused slight damage to a field of Alberta Swede red clover at Spruce Grove.

WITCHES' BROOM - Cause unknown

B.C.- Witches' broom produced similar symptoms on clover and was found at the same places as it was on alfalfa (see above).

SWEET CLOVER

MOSAIC - Virus

B.C.- Mosaic was reported from Summerland.

FOOT ROT - Sclerotinia Trifoliorum Erikss.

Alta.- Foot rot caused slight to medium damage in 5 fields in zones 1, 2 and 10 out of 20 examined. Severe killing was produced experimentally at Edmonton.

BROWN ROOT ROT - Plenodomus Meliloti Dearn. & Sanf.

Alta.- A trace to light damage from brown root rot was found in 8 fields in zones 1, 10 and 12.

STEM CANKER - Stagonospora Meliloti (Lasch.) Petr.
(=Ascochyta Meliloti (Trel.) Davis)

Alta.- Stem canker of the Ascochyta Meliloti type caused a trace of damage in 9 fields out of 20 examined. A leaf spot bearing Stagonospora Meliloti was reported in 5 fields; infection was a trace to light except in one field at Athabasca where the plants were moderately infected.

CORN

RUST - Puccinia Sorghi Schw.

Sask.- Corn rust was very severe on the lower leaves of corn in the variety test plots at Indian Head. A trace was found at Imperial. This appears to be the first report of this rust from Saskatchewan.

Man.- A trace of rust was found at Gimli.

Que.- Rust was abundant, the heaviest ever observed, in many fields in Jacques Cartier county. It may have caused some damage. (F. Godbout).

SMUT - Ustilago Zeae (Beck.) Unger

Sask.- A specimen was sent in from Lydden.

Man.- One per cent of the plants was smutted in a field at Winnipeg.

Ont.- Corn smut was noticed in several fields in Lincoln county. The disease was most prevalent on early varieties, where the land was heavily manured. Late field corn was not as severely affected. A specimen was sent to the Division at Ottawa from Blind River.

Que.- A trace of smut was observed in a field of corn in Kamouraska county.

N.B.- A trace of smut was found in a field at the Experimental Station, Fredericton.

N.S.- Traces of corn smut were reported from several places in the province.

BACTERIAL STALK ROT - Bacterium dissolvens Rosen

Alta.- A trace of bacterial stalk rot probably caused by Bacterium dissolvens was found in an Edmonton garden. The

disease was not nearly as prevalent or severe as in 1931.

Ont.- Specimens of this disease were submitted to the Bacteriological Dept., O.A.C. for determination. (D. H. Jones).

FLAX

RUST - Melampsora Lini (Ehrenb.) Desm.
Sask.- A trace of rust was found in one field out of 8 examined.

Man.- Traces of rust were reported from Oak Lake, Jordan and Ste. Agathe.

WILT - Fusarium Lini Bolley
Sask.- A trace of wilt was reported in one field.

HEAT CANKER - Non-parasitic
Alta.- Heat canker caused a trace of damage in one field in zone 3.

BROWNING - Polyspora Lini Laff.
Alta.- Browning was reported from one field in zone 8.

DAMPING OFF - Rhizoctonia sp.
Sask.- A damping off or seedling blight was general in the University plots, Saskatoon, but the damage was a trace. The plants were attacked at the soil level, when they were 3 to 4 inches high. The zone of infection was a half to one inch long. Rhizoctonia only was isolated in pure culture. This seedling blight appears earlier than wilt caused by Fusarium. It has been under observation for 3 years. (T. C. Vanterpool).

SUNFLOWER

FOOT ROT - Sclerotinia Sclerotiorum (Lib.) de Bary
B.C.- Foot rot was observed at Saanichton on June 27. Usually several stems were killed in a clump, some clumps being completely destroyed.

RUST - Puccinia Helianthi Schw.
Sask.- Sunflowers were heavily rusted in the University gardens, Saskatoon.

MANGEL

BLACK LEG - Phoma Betae (Oud.) Frank
N.S.- A crown rot caused by Phoma Betae was present in some plots at the Experimental Station, Kentville. It apparently followed tarnished plant bug injury.

SOY BEAN

LEAF SPOT - ?Pseudomonas glycineum Coerper
Sask.- Fifty to 75 per cent of leaves were slightly to severely attacked in a plot at the Experimental Farm, Indian Head.

CULTIVATED GRASSES

BROOM MILLET (Panicum mileaceum)
Smut (Sorosporium Panici-mileacei (Pers.) Takah.) A specimen of this smut was sent to the Laboratory at Saanichton, from a farm at Vernon, B. C.
Six per cent of the heads in three 1/40 acre plots of hog millet were destroyed by smut at Indian Head, Sask.

FOX-TAIL MILLET
Downy Mildew (Sclerospora graminicola (Sacc.) Schroet) Downy mildew caused 2 to 3 per cent damage in a plot of Siberian millet at the Experimental Farm, Indian Head, Sask. Hungarian and common millet did not appear to be infected in the neighbouring plots.

Leaf Spot - A light infection of a bacterial leaf spot was reported from a field near Vermilion.

RED TOP (Agrostis alba)
Stem Rust (Puccinia graminis Pers.) Traces of stem rust were found in Queens county, P.E.I.

TIMOTHY
Stem rust (Puccinia graminis Pers. var. Phlei-pratensis (Erikss. & Henn.) Stakm. & Piemeisel) Stem rust is common on wild

plants throughout Alberta. A medium infection occurred in a field at Barrhead.

A light infection of stem rust was found in Lincoln county, Ontario.

Stem rust was plentiful on timothy throughout Prince Edward Island causing slight to severe damage. Last year the damage was negligible.

Smut (Ustilago striaeformis (West.) Niessl). Timothy was found heavily smutted in Lincoln county, Ontario.

WESTERN RYE GRASS (Agropyron tenerum)

Smut (Ustilago bromivora (Tul.) Fisch. v. Waldh.) Traces to light infections were found at several places in zones 8 and 9 in Alberta. The damage was estimated to be 6 per cent in a field at Vermilion.

Smut was found in 4 fields out of 5 examined in Saskatchewan, causing moderate damage. It is rather common north of North Battleford; several fields were rejected by the Seed Inspection Branch, Saskatoon, on account of smut.

Ergot (Claviceps purpurea (Fr.) Tul.) Fifty per cent of the heads were infected in a field near Drumheller, Alta. It was fairly common on road-side plants everywhere.

LAWN GRASS

Circular areas, where the grass died completely, were observed in a lawn at Charlottetown, P.E.I. An active pathogen was not isolated.

A snow mould (Cause unknown) also attacked bent grass growing in rows at Charlottetown; all plants were killed. (R. R. Hurst)