I. DISEASES OF CEREAL CROPS

WHEAT

STEM RUST - Puccinia graminis Pers.

B.C.- Slight infections of stem rust were observed in September; it caused little damage.

Alta.- No stem rust was found on wheat until early in September. From that time local, light to medium infections were present in a few very late fields.

Sask.- Stem rust was reported from 6 fields out of 134 examined. Infection was seldom more than a trace and the damage was practically nil. It was first collected on wheat at Indian Head on August 10, then at Unity and Muenster on August 11, at Saskatoon on August 23 and at Candle Lake on August 27.

Man.- In no year during the past decade has wheat been so free from stem rust. Although a trace was present throughout Manitoba, no appreciable damage resulted. Scarcity of inoculum during the early part of the season, early ripening of the crop and unfavourable moisture conditions probably accounted for the failure of stem rust to develop in 1933.

Traces of stem rust were found at Morden on June 23 and except in a few plots at this place, never more than a trace could be found at any time in any part of the province.

Que.- A trace to 2 per cent of stem rust was observed in Kamouraska county.

N.B.- Stem rust was reported from Westmoreland, Gloucester, Victoria, Carleton, York and Sunbury counties. Light infections occurred on the varieties Huron, Garnet, Belokoloska and White Russian at the Experimental Station, Fredericton.

P.E.I.- Stem rust first appeared in most fields after August 25, when the major part of the wheat crop was ripening. In consequence, very little damage was done except in fields which were sown late. A severe outbreak occurred in such fields in the western part of Prince county, while stem rust had practically destroyed several fields of wheat, which were examined Sept. 1 at Orwell, Earnscliffe and Wood Islands in Queens county.

LEAF RUST - Puccinia triticina Erikss.

B.C.- Leaf rust was general in August, but caused slight damage.

Alta.- Leaf rust infections varied from a trace to medium in a few green fields. Rust was reported from 4 fields out of 247 examined.

Sask.- Leaf rust was easily found in southeastern Saskatchewan on July 17, but its prevalence later in the season was not reported.

Man.- Leaf rust was first observed at Burnside on June 7. By June 17 a sprinkling of this rust was present throughout Manitoba and towards the latter part of the season it was quite severe in many fields, infections as high as 80 per cent being recorded. The average damage varied from medium in the south to

severe in the northern sections.

Ont.- Leaf rust was first observed in the Ottawa district on June 21. Later in the season it was abundant on the plots at the Central Experimental Farm.

Que.- Leaf rust was found at Macdonald College on June 28 on both winter and spring wheats. It increased until the plants were mature, individual leaves often showing 30 to 40 per cent infection.

N.B.- Leaf rust was reported from 12 fields in northern New Brunswick and from 4 in the southern part of the province The following varieties of wheat grown at the Experimental Station, Fredericton, were classified according to their rust reaction: (1) Slightly infected - Pentad x Marquis 1000, Mindum, Federation, Reliance, Belokoloska, Kenya, Governor, Whiteheads, Charlottetown 123, Caesium, Arnautka, Lutescens, Navara, Chelsea; (2) Severely infected - White Russian, Huron, Garnet, Marquis, Ceres, Early Red Fife, Quality and Reward.

STRIPE RUST - Puccinia glumarum (Schmidt) Erikss. & Henn.

Alta.- No reports of stripe rust on wheat were recorded. It was apparently not present in the Edmonton district on Hordeum jubatum until August 3 and was relatively scarce at any time in north-central Alberta. Between August 27 and 30, traces to light infections were found at Athabasca, Slave Lake, Peace River, Dunvegan and Grand Prairie. Stripe rust was very scarce in southern Alberta due to the dry conditions.

BUNT - Tilletia Caries (DC.) Tul. & T. foetens (Berk.) Trel.

In addition to the field reports from Alberta and British Columbia, data were collected from the records of the Western Grain Inspection Division on the percentage of cars of "smutty" wheat inspected between August 1 and October 31, 1933. Although Hard Red Spring is grown in all three Prairies provinces, most of the Amber Durum is produced in Manitoba. These data were kindly supplied by Dr. W. F. Hanna.

Table 1. Wheat Bunt in Western Canada

Classes of Wheat	Percentage of "smutty" cars
Hard Red Spring	0.3%
Alberta Red Winter	10.5%
White Spring	1.6%
Amber Durum	0.5%
All Classes	0.3%

If the percentages reported in Table 1 are compared with

those of last year (Ann. Rept. Can Plant Dis. Survey 12:5) it is evident that wheat bunt continues to be less prevalent each succeeding year since the very heavy losses from bunt in 1930. The percentage of cars graded "smutty" upon inspection during the first quarter of the crop year, August 1 to October 31, in each year since 1930 for all classes of wheat are: 1930, 2.8%; 1931, 1.4%; 1932, 0.6%; and 1933, 0.3%. The corresponding figures for Amber Durum are: 1930, 16.6%; 1931, 5.6%; 1932, 1.2%; 1933 0.5%. The marked reduction in "smutty" wheat is probably the result of the campaign conducted in recent years in Western Canada to control the disease by seed treatment especially in durum wheat.

Although Alberta Red Winter constitutes only a small fraction of the wheat grown in Western Canada, it is worthy of note that some 10 per cent of the crop grades "smutty" each year. It may well indicate that soil infection makes control by seed treatment ineffective. In any event, a variety of winter wheat highly resistant to bunt and suitable to the area would be desirable.

B.C.- Bunt was found here and there in the Fraser River valley. Some fields showed as many as 15% of the heads infected.

Alta.- A trace of bunt was reported from 5 fields out of 257 examined in zones 9 and 10 (See 1930 Report for a description of these zones).

LOOSE SMUT - Ustilago Tritici (Pers.) Jens.

B.C.- Loose smut was found in British Columbia, but in no field was it causing significant losses.

Alta.- A trace of damage was caused by loose smut in 18 fields out of 257 examined, chiefly in zones 9 and 10.

Sask.- Loose smut was recorded from only one field out of 134 examined. The damage was less than 1%.

Man.- Loose smut was found in 60 per cent or 18 fields out of 30 examined, the average damage being 1.2 per cent. The highest infection was in a field of Reward, where 9% of the heads were destroyed by smut.

Que.- A trace to 2% of loose smut was present in the spring wheat at Macdonald College. Infections of loose smut as high as 5 per cent were observed in Kamouraska county.

N.B.- A trace of loose smut was found in Huron in an experimental plot at Fredericton.

P.E.I.- A survey showed that loose smut was present throughout the province, every field examined being infected. As infections ranging from 0.5% to 48.5% were recorded, the loss from smut must have been considerable.

BLACK CHAFF - Pseudomonas translucens J.J. & R. var. undulosa (S.J. & R.) Stev.

Man.- Black chaff caused a trace of damage in 72 per cent or 26 fields out of 36 examined.

BASAL GLUME ROT - Pseudomomas atrofaciens (McCull.) Stev.

Alta.- A trace of basal glume rot was found in 5 fields out of 257 examined, all in zone 10.

Sask.- Basal glume rot was recorded in one field in zone 12; damage was a trace. A diseased sample of wheat was also sent from Clair.

Man.- Basal glume rot was found in 3 fields out of 30 examined. A trace of infection was found at Elm Creek and Morris, while 25% of the heads were diseased in a field at Grandview.

ERGOT - Claviceps purpurea (Fr.) Tul.

According to the records of the Western Grain Inspection Division, ergot was recorded in 1.4% or 72 cars out of 5,104 of Amber Durum inspected from August 1, 1931 to July 31, 1932 Again, ergot was recorded in 0.4% or 25 cars out of 6,908 inspected from August 1, 1932 to January 31, 1933.

Alta.- A trace of ergot was found in 2 fields out of 257 examined.

Sask.- A correspondent reported that his Reward wheat grown at Springside was badly infected with ergot in 1932. He stated that 6 to 8 sclerotia were present per bushel in the threshed grain. On account of the dry season the seed germinated poorly and in consequence the stand was uneven and ripened slowly (3053)

Man.- A trace of ergot was reported in 2 fields of durum wheat. It was also observed in the experimental plots at Winnipeg on Einkorn, Iumillo x Hope F_3, Reward x (Pentad x Marquis) F_2, and Pentad x Marquis.

POWDERY MILDEW - Erysiphe graminis DC.

B.C.- Powdery mildew was present on wheat on Vancouver Island and in the Fraser valley, but it caused little damage.

Alta.- A light infection of powdery mildew was observed in the experimental plots at Edmonton and Lacombe.

Que.- Powdery mildew moderately to severely infected several varieties of winter wheat in the plots at Macdonald College; it caused some reduction in yield. It was first observed on May 17 and by June 2, 50% of the stems were infected 100 per cent.

GLUME BLOTCH - Septoria nodorum Berk.

Alta.- A trace of glume blotch was reported from 10 fields out of 257 examined.

SPECKLED LEAF BLOTCH - Septoria Tritici Desm.

B.C.- Speckled leaf blotch was present on wheat, but caused slight damage.

Alta.- Light to medium infection of this leaf blotch was common in most fields examined. Some varieties were heavily infected in the plots at Edmonton.

FOOT ROTS

Alta.- Take-all (Ophiobolus graminis Sacc.) was found in 34.2% or 88 fields out of 257 examined, in zones 9, 10, 11 and 12. The average damage in the infected fields was 5.5%, while the maximum damage observed was 50% in a field in zone 11. The southern half of the province was not surveyed as the extremely dry conditions, to which the crop was subjected, seriously obsecured the presence of the disease.

Foot rot caused by Helminthosporium sativum Pamm. King & Bakke and Fusarium spp. was reported from 58% or 149 fields out of 257 examined in zones 9 to 12, the average damage in the infected fields was estimated to be 0.8%.

Sask.- Some take-all was found near Muenster in plots, where excavation studies were made. It is probable that the disease was present in the eastern and northeastern sections of the province, but districts having normal or abundant rainfall were not surveyed.

Foot rot attributed to Helminthosporium sativum and Fusarium spp., was reported in 87% or 117 fields out of 134 examined in zones 1, 2, 7, 9, and 11. It was estimated that 35.8% of the plants were infected and the damage was slight. In 7 different fields, however, 90% or more of the plants were infected. The disease was widespread in the dry areas, where its symptoms were with difficulty distinguished from those of drought injury.

Man.- Foot rot caused by Helminthosporium and Fusarium spp. was reported from 67% or 107 fields out of 157 inspected. The rate of infection was: trace, 32 fields; slight, 25; medium, 32; and severe, 18.

Take-all was not recorded in Manitoba in 1933.

Ont.- In a field of mixed Niger and Red Rock wheat in the Chatham district, 50% of the crop lodged. Many plants showed distinct foot rot symptoms, but no pathogenic organisms were isolated.

BROWNING ROOT ROT - Pythium spp.

Sask- Browning root rot appeared very suddenly following a few hot days at the end of May and the beginning of June. In the Saskatoon area and in adjacent districts to the north and east, the crop suffered the heaviest attack from this disease that Prof. Vanterpool has seen during the 5 years that he has been studying this disease. The damage was severe; a distinct retardation of seedling growth was evident. The "browning" symptoms were visible this year for a very short period, approximately two weeks in most areas. At some distince to the north and east from Saskatoon, where there was plenty of rainfall, the crop rapidly recovered its normal appearance, but towards the dried out areas, where a severe drought followed in the early summer, the symptoms soon merged into those of drought. Saskatoon and the area immediately to the north and east lay between these two zones and this may account for its unusual conspicuousness

in this intermediate belt in 1933. The fields about Scott were almost free from browning root rot, but north of Unity some very severely diseased fields were examined. In addition the disease was found in zones 1 and 2. (See also the report of its presence on certain grasses p. 20 below).

Man.- A field near Brandon was found severely infected with browning root rot on July 7. In addition, a field at Glenboro and another at Holland apparently were similarly affected.

HEAD BLIGHT - Gibberella Saubinetii (Mont.) Sacc. & Fusarium spp.

Que.- A trace to 1% of the heads were found infected in a variety of spring wheat at Macdonald College on July 14.

P.E.I.- Head blight was observed on Huron wheat on July 20, an unusually early date for its appearance, when 0.5% of the heads were found affected.

SPOT BLOTCH - Helminthosporium sativum Pamm, King & Bakke

Man.- A trace of spot blotch was found on the leaves in most fields of wheat examined. A field at Brunkild had turned a yellow-brown colour on account of the disease.

PSEUDO BLACK CHAFF - Non-parasitic

A comprehensive account of this discolouration has been published by Broadfoot and Robertson, (Sc. Agr. 13:512-514. 1933). In addition to the report by Henry in the Canadian Plant Disease Survey for 1929 under the name "black glumes" it has been mentioned in the 1931 and 1932 Reports as "glume darkening". It was found this year in Alberta in practically all fields of Reward wheat examined.

LEAF SPOT - Undetermined

Sask.- Eight fields out of 134 examined were slightly infected by leaf spot, the cause of which was undetermined.

OATS

STEM RUST - Puccinia graminis Pers.

B.C.- Stem rust was general, but it caused slight damage.

Alta.- Stem rust did not appear until very late in the season and only a trace of infection was observed in 2 fields.

Sask.- A trace of stem rust was found at Indian Head on July 17, fully 3 weeks before it was observed on wheat. Its later spread was not reported.

Man.- Stem rust was first recorded on oats on July 18. It was somewhat more abundant than stem rust on wheat, but not severe enough to damage early oats. Very late crops of oats were slightly damaged.

Ont.- Individual stems of oats showed up to 40% of rust

near Ottawa on July 18, the average infection being 1%. Later observations were not made.

Que.- Most fields were only slightly infected with stem rust at Macdonald College. In one field sown very late, infection ranged from a trace to 65%.

N.B.- A trace of stem rust was found in Westmoreland, York Sunbury, Victoria and Queens counties.

P.E.I.- Stem rust was first observed on August 25. While the disease was of no consequence in early sown oats, it caused severe damage in late fields. All varieties grown on the 42 farms visited in the province were affected.

CROWN RUST - Puccinia coronata Corda

Man.- Although a trace of crown rust was present throughout the agricultural section of Manitoba in 1933, the infections were light and scattered, and caused no damage. It was first observed on July 7 at Calder.

Que.- In Kamouraska county crown rust infections varied from slight to severe; the latter were found in fields on wet soil.

N.B.- Traces of crown rust were found in 5 counties; a field of Victory oats was moderately infected at the Experimental Station, Fredericton.

N.S.- A trace of crown rust was first observed on August 17 in Colchester county; a very light infection was seen later in Halifax county.

P.E.I.- Crown rust caused a trace to severe damage in all counties. Although buckthorns are found at Charlottetown, Summerside, Kensington and on many farms throughout the province, the aecial stage was not collected this year.

SMUT - Covered Smut - Ustilago levis (Kellerm. & Swingle) Magn.
& Loose Smut - Ustilago Avenae (Pers.) Jens.

B.C.- Both loose and covered smut are general and cause considerable damage on account of the failure of the farmer to treat his seed.

Alta.- Covered smut was present in 20% or 27 fields out of 135 examined, the average damage being 4% in the infected fields. The highest infections were 30 and 25% in zone 10 and 20% in zone 9.

A trace of loose smut was found in only 2 fields out of 135 examined.

Sask.- No reports of oat smuts were made this year.

Man.- Covered smut was reported from 47% or 20 out of 42 fields examined; the average infection being 1.2%. The highest infection observed was 10%.

Loose smut was present in 28% or 12 out of 42 fields examined. The average damage was a trace and the highest infection 5%.

Que.- In the Montreal district loose smut was not difficult to find; infections varied from a trace to 5%. In Kamouraska county the infections were from a trace to 10%. No covered smut was reported.

N.B.- A trace of covered smut was observed in Alaska, Laurel, Gold Rain, Star, Banner and Victory varieties at the Experimental Station, Fredericton. No loose smut was reported.

N.S.- Covered smut was reported in 3 fields in Colchester and Pictou counties; infections ranged from 2.5 to 5%. Loose smut was found in 6 fields, chiefly in Colchester county. Infections ranged from 3 to 15%.

P.E.I.- Loose smut was general in the province on all varieties grown. It caused considerable damage in Queens county. Infections varied from a trace to 15%.

HALO BLIGHT - Pseudomonas coronafaciens (Ch. Elliott) Stev.

Alta.- Halo blight was reported from 26.6% or 36 fields out of 135 examined, principally in zones 9 and 10. The damage was a trace in 29 fields, and light in 7.

Sask.- Halo blight was found in 5 fields out of 36 examined. The damage was slight.

Man.- The damage caused by this disease was a trace in 3 fields out of 78 examined.

N.B.- A trace of halo blight was found on Laurel and Victory at the Experimental Station, Fredericton.

P.E.I.- Only a trace of halo blight was observed at the Experimental Station, Charlottetown.

BACTERIAL STRIPE BLIGHT - Bacterium (Pseudomonas) striafaciens Ch. Elliott

Alta.- Bacterial stripe blight was found in 42.9% or 58 out of 135 fields, 49 of which were in zone 10. The damage was estimated as a trace in 16 fields and as light in 42.

Man.- A trace of this disease was reported in 2 fields out of 50 examined.

FOOT ROTS

Alta.- Foot rot (Fusarium spp.) caused 5% damage in one field, while in all others the damage was a trace.

Sanford (Sc. Agr. 14:50. 1933) has described a serious foot rot of oats, which was widespread in the Edmonton district in 1933. The damage ranged from a trace to severe.

Sask.- Foot rot due to Helminthosporium sativum and Fusarium spp. caused slight damage in 27 out of 30 fields examined.

One field suffered a trace of damage from prematurity blight (cause unknown).

Man.- Foot rot attributed to Helminthosporium and Fusarium spp. was found in 37% or 29 out of 77 fields examined. Infection was as follows: trace, 13 fields; slight, 10; medium, 4; severe, 2.

N.B.- Foot rot (Helminthosporium sp.) caused severe damage in one field in Carleton county and a trace of damage in a small field of Victory at Fredericton.

BROWNING ROOT ROT - Pythium spp.

Man.- Although 25 fields were examined for browning root rot, it was not found.

LEAF BLOTCH - Helminthosporium Avenae Eidam

Man.- A trace of leaf blotch was recorded from one field out of 38 examined.

P.E.I.- Infections of leaf blotch varying from a trace to 10% were reported. It was found throughout the province, on every variety grown.

SPECKLED LEAFBLOTCH - Leptosphaeria avenaria Weber (Septoria Avenae Frank)

Que.- Speckled leaf blotch was first observed at Macdonald College on June 28. The disease increased in prevalence from then until the oats were mature. Infection ranged from a trace to 50%. It was most abundant on Cartier and 3 new varieties, not yet available commercially, Lanark, Robin and Mabel, not only at Macdonald College but also at Lennoxville, and Ste. Anne de la Pocatière. (R.F. Suit)

BLAST - Cause unknown

Alta.- Blast was present in all the 135 fields examined. The average damage was 6% and in 3 fields in zone 9 it was as much as 25%.

Sask.- A trace of blast was reported from one field.

Man.- Blast was observed in 14 fields out of 35 examined; the average damage was slight.

N.B.- A trace of blast occurred in all varieties at the Experimental Station, Fredericton. It was severe in a variety grown at the Seed Laboratory, Sackville.

P.E.I.- Blast was found in all 3 counties of the province; infection ranged from a trace to 15%.

BARLEY

STEM RUST - Puccinia graminis Pers.

B.C.- Stem rust was present on barley, but caused little damage.

Sask.- A trace of stem rust was found at Indian Head on July 17. The rust never became abundant.

Man.- Very little stem rust occurred on barley this year. A trace only was reported in 3 fields out of 22 examined.

Que.- Stem rust was first found on barley at Macdonald College on July 14. Infections ranging up to 40% on some stems were observed.

N.B.- A trace of stem rust was present in a field of Charlottetown 80, at Fredericton on August 4.

P.E.I.- Light infections of stem rust were observed on barley at Charlottetown.

LEAF RUST - Puccinia anomala Rostr.

Man.- A trace only of leaf rust was reported this year. A few pustules were first found on July 7 at Morden.

Que.- Leaf rust was first observed at Macdonald College on July 14. Infections ranged from slight to moderate on various varieties.

N.B.- One per cent of leaf rust was present on a specimen sent from the Fredericton Laboratory to Ottawa.

COVERED SMUT - Ustilago Hordei (Pers.) Kellerm. & Swingle

Alta.- Covered smut was reported from 32.6% or 15 out of 46 fields examined. The average damage in the infected fields was 1.9%; the highest damage was 10% in a field in zone 10.

Sask.- Covered smut was found in 3 out of 6 fields examined. The average damage was 1%.

Man.- This smut was present in 3 fields out of 14 examined. The average damage was 1%.

N.B.- A trace of covered smut was reported in Star, Trebi, Gold, Sanalta, Himalayan, Early Chevalier, O.A.C. 21, Manchurian, Velvet, Gordon A, Hannchen, Monck, Glabron, Bearer, Charlottetown 80 and Regal, all the varieties grown in rod-row plots at Fredericton.

P.E.I.- Traces of covered smut were present in the head rows at Charlottetown.

LOOSE SMUT - Ustilago nuda (Jens.) Rostr.

Alta.- Loose smut was reported from 4 fields out of 46 examined. The average damage was 1.2% in the infected fields; the highest damage was 2.0%.

Man.- A trace of loose smut was found in one field out of 14 examined.

Que.- Infections of loose smut varied from a trace to 5% at Macdonald College. It was most prevalent in the breeding plots.

P.E.I. Loose smut infections varied from a trace to 12%. It was observed in all 3 countries of the province.

STRIPE - Helminthosporium gramineum Rabh.

Alta.- Stripe caused light damage in 4 fields out of 46 examined.

Man.- A trace of stripe was found in one field out of 25 examined.

Que.- Stripe was found in several crosses and varieties in the yield plots at Macdonald College. A trace to 5% of the plants were infected.

P.E.I.- Traces of stripe were present on several varieties in Queens county.

NET BLOTCH - Pyrenophora teres (Died.) Drechsl.
(Helminthosporium teres Sacc.)

Alta.- Net blotch was found in 10 fields out of 46 examined. The damage was: trace in 8 fields and light in 2.

Sask.- Net blotch caused slight damage in 2 fields out of 6 examined.

Man.- A trace of net blotch was recorded in 3 out of 25 fields inspected.

N.B.- Leaves of barley affected with net blotch were received at Ottawa from the Fredericton Laboratory.

SPOT BLOTCH - Helminthosporium sativum P.K. & B.

B.C.- Spot blotch slightly infected barley on Vancouver Island.

Alta.- The damage from spot blotch was: trace in 6 fields and light in 5, out of 46 fields examined.

Man.- A trace of spot blotch was reported from 6 fields out of 25 examined.

Que.- Spot blotch was first observed on June 9 at Macdonald College. On July 21, infection ranged from a trace to 40%. The most heavily infected varieties were - Gordon, 40%; Oxford, velvet and O.A.C. 21, 10%. At Lennoxville and Ste. Anne de la Pocatiere, infection ranged from a trace to 10%.

FOOT ROTS

Alta.- Foot rot attributed to Helminthosporium sativum P.K. & B. and Fusarium spp. was reported from 6 fields out of 46 examined; the highest damage was 3%.

Sask.- Helminthosporium-Fusarium foot rot caused slight damage in 5 out of 6 fields inspected.

Man.- Foot rot of the same type was reported in 22 fields out of 35 examined. Infection was as follows: trace in 6 fields, slight in 7, medium in 6, and severe in 3.

N.B.- Foot rot due to Helminthosporium sp. caused severe damage to one field in Carleton county and another in Queens. Traces of foot rot were widespread.

P.E.I.- A Fusarium foot rot infected a trace to 15% of the young plants in some fields in Queens county. Later the plants apparently recovered their normal vigour.

ERGOT - Claviceps purpurea (Fr.) Tul.

Alta.- Ergot was found in 4 fields in zone 10. In one field 3% of the heads bore ergots, in the other a few heads were infected.

Sask.- A trace of ergot was recorded from one field.

Man.- A trace of ergot was found in barley at Winnipeg.

N.B.- A trace of ergot was observed in Charlottetown 80, at Fredericton.

P.E.I.- Traces only of ergot were present in the barley head rows at Charlottetown.

SCALD - Rhynchosporium Secalis (Oud.) Davis

Alta.- Scald caused slight damage in 2 fields out of 46 examined.

POWDERY MILDEW - Erysiphe graminis DC.

Man.- A single collection of powdery mildew was made on barley in October.

P.E.I.- Traces of powdery mildew were reported on O.A.C. 21 in Queens county.

BACTERIAL BLIGHT - Pseudomas translucens J.J. & R.

Man.- A trace of bacterial blight was reported from 12 out of 30 fields examined.

Que.- Bacterial blight moderately infected several varieties of barley at Macdonald College. It was heaviest on Pontiac, of which 40% of the leaves were infected.

FALSE STRIPE - ?Heterosporium Avenae Oud.

Man.- False stripe caused slight damage to 5 out of 22 fields inspected.

RYE

STEM RUST - Puccinia graminis Pers.

Man.- Stem rust was first found on rye on June 30. Later a trace was present on rye in several localities. No damage was caused.

Que.- Infections ranging from 5 to 85% were present on fall rye on June 29 at Macdonald College.

LEAF RUST - Puccinia dispersa Erikss.

Alta.- Rye was moderately infected with leaf rust in one field out of 5 examined.

Sask.- Leaf rust was fairly common in southweastern Saskatchewan by July 20.

Man.- Leaf rust was first reported on rye on July 6. It was found throughout the province, but it was not sufficiently abundant to cause any damage.

Que.- A trace of 15% of leaf rust was found on fall rye at Macdonald College.

ERGOT - Claviceps purpurea (Fr.) Tul.

From the records of the Western Grain Inspection Division it was found that from Aug. 1, 1931 to July 31, 1932, 34 cars of

rye graded "ergoty" out of 1,929 cars inspected. In addition, 815 others contained ergot. Again from August 1, 1932 to Jan. 31, 1933, 8 cars graded "ergoty", 390 others contained ergot, out of 625 cars inspected. Dr. J. H. Craigie kindly supplied these data.

Alta.- Ergot was found in 3 fields out of 5 examined. In one field near Edmonton, 50% of the heads were infected, in the other two, a trace was present.

Sask.- Three per cent of the heads were infected with ergot in one field out of 2 examined.

POWDERY MILDEW - Erysiphe graminis DC.

Que.- Powdery mildew slightly to moderately infected fall rye at Macdonald College, but caused no noticeable damage.

FOOT ROTS

Alta.- Foot rot attributed to Helminthosporium sativum and Fusarium spp. caused a trace of damage in one field.

Sask.- Slight damage was caused by Helminthosporium-Fusarium foot rot in one field.

Man.- A trace of damage was caused by foot rot due to Helminthosporium and Fusarium spp. in 4 out of 14 fields examined.