I. DISEASES OF CEREAL CROPS

WHEAT

STEM RUST (*Puccinia graminis*) was very prevalent on the lower mainland of B.C.; the average damage was estimated to be 10%. In the rust nursery rows at Agassiz, it was severe on Marquis and Reward, but none was found on H 44 x Reward R.L. 975-1, Hope and Kubanka.

Stem rust was observed on July 2 at Indian Head, July 8 at Saskatoon, and July 15 in the northerly sections of Saskatchewan. The average infection was 5% in zone 1, 4% in zone 2, 9% in 3, and 4% in 4.

In 1936, stem rust of wheat made its appearance in Manitoba a week earlier than it did in the severe rust year of 1935. The first stem rust infections were observed at Morden, on June 26, and at that time, primary infections were just breaking out on about 5% of the stems of common wheat in the southern part of the Red River Valley. The early and widespread occurrence of primary infections was no doubt due to the advent of a general rust-spore shower over Manitoba during the latter part of the second week in June and to weather conditions favourable to rust development during the third and fourth weeks of June. By the end of the month stem rust of wheat was known to be present throughout all of Manitoba south of a line east and west through Neepawa. At that time the crop was slightly later than at the corresponding date in 1935 and there was sufficient inoculum present in Manitoba to produce a destructive rust epidemic given weather favourable for infection and development of rust. However, weather conditions were unfavourable for rust development during all of July and rust progressed very slowly particularly in the southern half of the agricultural portion of the province where, in general, rainfall was scanty or even practically absent in some localities and temperatures excessively high. The whole area south of the main line of the Canadian Pacific Railway suffered during July from excessive heat and drought. All cereal crops in that region ripened (in many cases dried up) prematurely and rust made but little progress there. The severity of rust infection on common wheat in this area ranged from a trace to 30% and rust damage was negligible. In the area north of the main line of the Canadian Pacific Railway and south of the Riding Mountains, the deficiencies in rainfall and excesses in temperature were less than in the southern areas and crops were considerably heavier and rust more prevalent. The severity of rust infection in this area ranged from slightly more than a trace on the earliest ripening crops to 55% infection on late crops. Most of the crops in this area ripened early and escaped appreciable rust damage and only about 2% of the wheat carried infections of 40% or more. There was undoubtedly some damage caused by rust in this area, but it was largely obscured by the greater damage caused by drought and heat.

Only a trace of stem rust developed on durum wheat at any time in Manitoba.

In general, weather conditions favoured the rust organism during the early part of the season. Southerly winds which prevailed during the early part of June over the Great Plains region brought spores northward into Manitoba. Normal temperatures prevailed throughout the month and sufficient moisture in the form of rains and frequent dews favoured spore germination. However, a decided change in the weather occurred towards the end of June and from that time until the end of the growing season, the weather was unfavourable for rust development. Throughout the agricultural region of Manitoba the deficiencies in rainfall for July ranged from 50 to 75%, while temperatures were on the average about 9°F. above normal and in some localities in the southern parts of the province excesses in temperature of 14°F. occurred. During all this month dew formation was very infrequent and light. The progress of the rust which had become so well established in Manitoba in late June, was effectively checked by the lack of moisture during July, and by the excessive heat which hastened maturity of cereal crops by about two or three weeks, thus shortening the period of exposure to the rust.

Rainfall was fairly generous throughout the whole growing season in the portion of Manitoba lying north of the agricultural area and cereal rusts were observed on Hordeum jubatum and cereals in some of the settled localities in that region. Dr. Margaret Newton found stem rust on H. jubatum and barley at The Pas, Man., on August 15. The severity of infection ranged from a trace to 25% on barley. On August 17, Dr. Newton found a trace of stem rust of wheat on H. jubatum and common wheat at Churchill, Man., and, on the following day, she found stem rust on H. jubatum, wheat, and barley at Wabowden, Man., a distance of 300 miles north of Winnipeg. At that point the average severity of infection was 25% on wheat, and 15% on barley. (B. Peturson)

Stem rust infection was severe at Ste. Anne de la Pocatiere, Que., late in the season and probably caused some reduction in yield. It was also general and very severe at the Cap Rouge Station. It was moderately infecting winter wheat on July 11 at Ste. Anne and traces were present on Garnet and Brock at the Lennoxville Station on July 16.

Stem rust was fairly prevalent in the variety plots at Fredericton, N. B., on August 4. Typical readings were Garnet, 25%; Mindum, 20%; Huron, 5%; Marquis, trace; Thatcher, 0; and R. L. 716, 0. A 60% infection was noted in a field of Garnet near Fredericton on August 5, and a trace on wheat at Doaktown on Aug. 6.

Only a trace or a slight infection of stem rust was found in the variety plots at Nappan and Kentville, N. S.

Traces of stem rust were first found in P. E. I. on July 23, and became very destructive, particularly in fields where the seed was sown late.

LEAF RUST (Puccinia triticina) infection was severe on Little Club; moderate on H 44 x Reward R.L. 975-1; and trace on Marquis, Reward, and Hope in the rust nursery rows, Agassiz, B.C. Infection was moderate in a field of Jones Fyfe at Grand Forks.

Traces of leaf rust were observed on some of the varieties at Lacombe Station, Alta. Infection was a trace to very light in zones 1 to 3 in Saskatchewan.

Leaf rust was general throughout Manitoba, but it caused very little damage.

Leaf rust infection was severe on Reward, Red Fife and Garnet; and moderate on Reliance, Canus, Brock M.C., Huron and R.L. 716 in the plots at Lennoxville, Que., on July 17. The infection was moderate in the plots at Ste. Anne de la Pocatière. However, only 1% was noted on R.L. 1000 and R.L. 729. Traces only were found in Bonaventure county in early August.

In the plots at Fredericton, N.B., Thatcher, the new stem rust resistant variety, was very susceptible to leaf rust, while R.L. 729, R.L. 1005, and others were highly resistant. R.L. 716 contains susceptible and highly resistant plants in about equal proportions to judge by the amount of rust on individual plants. It was also observed that where a variety is highly susceptible to leaf rust, the sheaths are rusted, but to a lesser degree. It is suggested that the percentage infection found thereon may serve as an index to the susceptibility of the variety when it is impossible to estimate the infection on the blades late in the season on account of their shrivelled condition. Where the sheaths showed 10 to 20% infection the blades were moderately to severely rusted. Field infections recorded were: Fredericton, 5% on sheaths of Garnet; Nashwaak, 20% on sheaths; Doaktown, 40% on leaves. (I. L. Conners)

In late July leaf rust infection was severe on susceptible varieties at Nappan, N.S. and moderate at Kentville. Only traces of leaf rust were seen in fields where at that time the crops were just heading.

Leaf rust infection was moderate to severe in the plots at Charlottetown, P.E.I. It appeared early and continued in

great abundance throughout the growing season. The infection was general, causing considerable shrivelling of the lower leaves. It was also thought to have caused stunting of the plants in many sections. (E.H. Saunders)

STRIPE RUST (Puccinia glumarum) was abundant in the Gordon Head district, near Victoria, B.C.; the damage was a trace.

BUNT (Tilletia caries and T. laevis). Dr. W.F. Hanna has again supplied a summary on the bunt situation in Western Canada, prepared from the records of the Western Grain Inspection Division.

Table 1. Wheat Bunt in Western Canada

Summary of Inspections in Western Canada from Aug. 1,1936 to Oct. 31, 1936.

Class of Wheat	Cars Inspected	Cars Graded Smutty	Percentage Smutty
Hard Red Spring	68,573	529	0.8%
Amber Durum	5,749	43	0.7
White Spring	16	0	0.0
Alberta Red Winter	38	4	10.5
All Classes	74,376	576	0.8%

There is little change in the prevalence of bunt over previous years (see P.D.S. 15:4. 1936), there being a slight increase in Hard Red Spring Wheat, which was offset by a decrease in other classes.

Bunt was recorded in 2 fields out of 239 examined in Sask., as follows: Parkbeg, 2%; Indian Head, 6%.

In N.B., the following summary on the prevalance of bunt was prepared by Mr. O.C. Hicks, Prov. Dept. of Agriculture: Bunt is found in the counties of Kent, Gloucester, and Madawaska. In Kent county, out of 70 fields inspected, 15 showed the presence of bunt; in one 50% of the heads were affected. In Gloucester county, about Caraquet and on the Islands of Shippigan and Miscou, bunt is very prevalent. In Madawaska the percentage of grain affected is somewhat lower. In the other counties, little or no bunt is found, due to the practice of seed treatment.

Very little bunt was found this year in P.E.I.; traces caused by T. laevis were recorded in a field in Queens county.

LOOSE SMUT (Ustilago Tritici) was recorded in Sask., in 32 fields out of 207 examined or 15.4%, with an average infection of slightly more than a trace. In Man., loose smut was found in 8 fields of Ceres, average infection 0.5%; in 6 fields of Reward, average infection 3.5%; and in one each of Garnet, infection 1.5%; Marquis, a trace; and durum a trace.

A light infection of loose smut was present in the fields of the Experimental Sta., Ste. Anne de la Pocatiere, Que., where the seed was treated by the hot water method, but on other farms in Kamouraska and L'Islet counties, infection varied from 3 to 12%. Similarly, seed from Ottawa, which was untreated, gave a high percentage of smut. A trace was observed at the Cap Rouge Station and a trace to 1% was present in Bonaventure county. This smut occurs generally throughout N.B., infection ranging from a trace to 3%. Traces to 2% loose smut were present at the Nappan Station, N.S. and in fields in the province. Traces to 2.5% were found in P.E.I.

BLACK CHAFF (Pseudomonas (Phytomonas) translucens var. undulosa) was found in 4 fields out of 35 examined in Man.; a trace on Marquis at Neepawa and Winnipeg, slight infection on Thatcher, and moderate on Renown at Souris. A slight infection was recorded on leaves of Marquis in the plots at Ste. Anne de la Pocatiere (4336).

BASAL GLUME ROT (Phytomonas atrofaciens) caused severe damage in a field in zone 11, Alta. It was associated with hail damage. A trace was reported from Bield, Man.

ERGOT (Claviceps purpurea). A trace was present on Marquis in the wheat plots at Lacombe, Alta. A trace was seen in the Plant Pathological plots at Saskatoon and also at Muenster, Sask. It moderately infected Reward and Thatcher at Winnipeg. Traces were reported in wheat at the Charlottetown Station, P.E.I., and in fields of Red Fife, Huron, and other wheats in Kings county.

A carload of Thatcher wheat, imported in March 1936 from the United States to Regina, Sask., for seed purposes, contained 6 ergots per lb., which was in excess of the maximum of established grades, viz.: one ergot per bushel in registered seed, in certified seed No. 1 and grade No. 1, and 2 per bushel in certified seed No. 2.

GLUME BLOTCH (Septoria nodorum) infections were reported as follows: at Lacombe, Alta., moderate on Velvet Don, light on Timalia, and a trace on Supreme among those grown; at Ochre River, Man., severe; at Doaktown, N.B., slight, and at Nashwaak, severe on August 6; at Fredericton

traces to slight on many varieties on Aug. 29; in P.E.I., traces on Huron and White Fife.

LEAF SPOTS (Septoria Tritici in part) were reported in 35 out of 239 fields examined in Sask.; the damage was a trace in zone 2 and slight in zone 3.

FOOT ROTS. A patchy infection of Take All (Ophiobolus graminis) was observed in Saanich county, Vancouver Island, B.C.

A Seedling Blight (Helminthosporium sativum) was recorded from zone 4, Alta., on June 26. The trouble was associated with alkali patches.

Take All occurred in 5 fields out of 277 examined in Sask.; the damage was a trace. Common Foot Rot (Helminthosporium and Fusarium spp.) was present in 257 fields out of 277 examined or in 92.8%; the average damage was moderate. At the Scott Station on June 27 the variety plots were slightly to moderately affected. The fertilized portion of the rotation wheat-summerfallow, which has been maintained for 25 years, contained more infected plants than the unfertilized; the heavily seeded plots more than those lightly seeded. Manure and fertilizer reduced the amount of foot rot over fertilizer alone. Heavy applications of superphosphate likewise reduced the foot rot. Wheat following brome grass showed more foot rot than wheat following western rye grass or crested wheat grass. When examined on July 30, prolonged drought appeared to mask any differences; all varieties were moderately affected whatever the treatment. Common foot rot moderately affected wheat both in the plots and the larger fields at Swift Current. Pre-Maturity Blight was found in 4 fields out of 96 inspected; the average damage was a trace, but in one it caused 5% damage.

Browning Root Rot (Pythium spp.) was found in 8 fields out of 131 surveyed in Sask.; these were entirely in zones 2 and 3. The average damage was a trace.

Common Foot Rot was reported in 2 fields out of 4 examined in Man.; infection was slight and severe respectively.

A Root Rot (a new but undetermined fungus) caused severe damage to one field of White Fife at Malpeque, P.E.I. Slight amounts were noted in other fields, but no other damage was observed. (R.R. Hurst)

HEAD BLIGHT (Fusarium spp.). Traces were recorded in the plots at both Ste. Anne de la Pocatiere and Cap Rouge, Que. Traces were also reported in a field of Huron wheat in

SPOT BLOTCH (Helminthosporium sativum) caused a trace of infection at Rathwell and Fort Whyte, Man. A slight infection was recorded in the plots at Cap Rouge, Que.

BLACK POINT (Stemphylium sp.) caused a trace of damage in a field in zone 10, Alta.

FROST BANDING was reported from one field in zone 10, Alta., and numerous samples so affected were received from Saskatchewan at the Saskatoon Laboratory. The amount of damage was not recorded.

POWDERY MILDEW (Erysiphe graminis) was abundant at Kentville, N.S., especially in the rust nursery. R.L. 1000 showed only a trace. Traces were observed at Fredericton, N. B.

OATS

STEM RUST (Puccinia graminis) varied from none on Richland and S 339 to severe on Glabrota in the rust nursery at Agassiz, B.C. It was general in the Fraser River valley and delta, the damage being 10% in some fields.

A light sprinkling of stem rust was found in zones 1 to 3 in Saskatchewan; the highest infection was 1% in a field at Regina.

Stem rust was general throughout Manitoba late in the season. No damage resulted except to late crops in the northern areas. It was collected at Wabowden, 300 miles north of Winnipeg.

Traces of stem rust were present in late July or early August at Ste. Anne de la Pocatiere, Que., Kentville, N.S., and Charlottetown, P.E.I. No rust was observed in fields. In late August it was severe at Ste. Anne; infection ranged from a trace to 50% in Kings county, N.S.; and traces to 10% were observed in Kings county, P.E.I.

CROWN RUST (Puccinia coronata) was present throughout Manitoba, but it was much less prevalent than in 1935. It caused no appreciable damage.

Crown rust modetately infected oats at Farnham, Que.; it was severe at Ste. Anne de la Pocatiere, and Cap Rouge, probably reducing the yield. In early August only traces of rust were observed at Fredericton, N.B., at Kentville and Nappan, N.S., with a slightly greater prevalence at Charlottetown, P.E.I. Nevertheless on that date in one

field, 2 miles north of Fredericton, a 40% infection was recorded, while other fields in the locality showed 1 or 2%. It is suspected that buckthorn bushes were growing in the close vicinity. Later, oats were slightly to moderately infected in Kings county, N.S., and slightly to severely rusted throughout P.E.I.

SMUT (Loose Smut, Ustilago Avenae, and Covered Smut, U. Kolleri). An occasional head of loose smut was found near Summerland, B.C.

A field with a 3% infection of covered smut was reported from zone 10, Alta.

Covered smut was found in 16 fields out of 48 inspected in Sask., the average damage being slight; in 2 fields 20% of the heads were destroyed. Loose smut was observed in 5, while the average damage was a trace.

Covered smut was reported from 12 fields in Man., infection varying from a trace to 5%. On the other hand, a trace of loose smut was recorded from one field.

Both covered and loose smut were abundant and present in practically every field in Bonaventure county, Que.; the highest percentages recorded were: covered smut, 9%; loose smut, 8%. A trace to slight infections of loose smut were noted at Ste. Anne de la Pocatiere and Lennoxville.

Both smuts occurred throughout N.B.; for covered smut, infection varied from a trace to 20%, the average being about 5%, while, for loose smut, infection was less, a trace to 15%, with an average of about 3%.

Loose smut was reported from several counties of N.S., infection ranging from a trace to 15%; covered smut was less common, percentages of a trace to 7% being recorded. Mixed infections of the two smuts were not uncommon. Some smut was present in the variety plots at Kentville and Nappan.

Loose smut was present on oats throughout P.E.I., infection ranging from a trace to 65%. Covered smut was also observed; in one field of hulless oats in Queens county, 95% of the heads were affected. This figure was by actual count. (R.R. Hurst)

HALO BLIGHT (Phytomonas coronafaciens) caused a trace to light infection in several varieties at Lacombe, Alta. It was observed in 7 out of 14 fields examined in Man.; the average damage was slight.

FOOT ROT (Fusarium culmorum) was more common that it usually is in Alta., possibly on account of the dry warm season. Affected plants were bleached their entire length. Take All (Ophiobolus graminis), however, was much less prevalent than usual. Foot Rot and Leaf Spot due to Colletotrichum graminicola caused 3% damage in one field in zone 10.

Common Foot Rot (Helminthosporium and Fusarium spp.) was recorded in 52 fields out of 56 examined in Sask., and caused slight damage in zones 1 to 3. Pre-Maturity Blight (cause unknown) affected 5 fields out of 20 examined, the average damage was a trace. It injured about 5% of the plants in some hybrid lines in the Field Husbandry plots at Saskatoon.

No Foot Rot was found in the 4 fields examined in Manitoba.

LEAF BLOTCH (Helminthosporium Avenae) moderately to lightly infected most of the varieties at Lacombe, Alta.; traces were present on Anthony and Banner.

Oats were reported to be moderately infected at Ste. Anne de la Pocatiere, Que. Most varieties were slightly affected at Fredericton, N.B., Nappan and Kentville, N.S., while the infection was somewhat heavier at Charlottetown, P.E.I. Spores of the organism were found on the Charlottetown material. Slight infections were noted in the field in N.B., N.S., P.E.I., and Bonaventure county, Que. (I.L. Conners)

Undetermined Leaf Spots were found in 7 fields out of 48 in Sask.; the average damage was a trace.

SPECKLED LEAF SPOT (Septoria Avenae) was severe at Ste. Anne de la Pocatiere, but it caused no apparent damage. (C. Perrault)

NEMATODE (Heterodera schachtii). The discovery of this nematode was reported in some detail in 1934 (see P.D.S. 14:12-13), but no reference was made to it in 1935. Recently Dr. D. F. Putnam and Mr. E. I. McLoughry, Agricultural Representative of Waterloo county, have supplied important details of the present situation.

Several exploratory trips were made through the infested areas in Simcoe and Ontario counties during 1935 and 1936. It would seem that in 1934 when we worked on the problem, the infestation was at its lowest ebb and has since been increasing in intensity. A number of farms on which a mild infes-

tation was noted in 1934 are now fairly severely infested, and in addition several farms have been added to the list of those infested. In Ontario county about 8 farms are known to be infested as against 2 seen in 1934. The dry weather this year further decreased the chances of obtaining a crop and a number of fields were ploughed up. Some farmers, however, are apparently having a measure of success in avoiding severe infestation by introducing more alfalfa into their rotation.

The discovery of another centre of infestation in Waterloo county by workers from the Ontario Agricultural College, emphasizes the seriousness of the problem as there are possibly other centres still undiscovered. Diseased material was sent to me by Prof. Howitt. (D. F. Putnam)

Regarding the infestation in Waterloo county, 24 farmers were visited last spring in areas where we considered fields might be infested. We took a sample of soil as well as plants from these fields. The samples were analysed and the plants examined for disease. In all cases nematodes were present. It should be noted that the disease is spread over a larger area than the number of visits we made would indicate. In the area where the infestation is most evident I am of the opinion that practically every farm has some of the disease present. Scattered fields throughout the county will probably show a certain amount of the disease. The following rotation has been recommended in the infested area. First year: hay mixture, alfalfa (2 years); Third year: corn for silage, or for husking, roots, soy beans, alfalfa; Fourth year: oats, barley, mixed grain; Fifth year: wheat, rye. Buckwheat has been suggested as an alternative crop in the third and fourth years. (E. I. McLoughry)

BLAST (Non-parasitic) affected 75% of the spikelets and reduced the yield 25% in one field in zone 10, Alta. It was present in all of the 48 fields examined in Sask.; the average damage was moderate. The trouble was severe at the Melfort Station. Blast affected a trace to 38% of the spikelets in the 7 fields examined in Man.; the average damage was slight. It was severe on Banner at the Brandon Farm.

Traces to slight amounts of blast were observed in the plots at Fredericton, N.B. Slight to moderate amounts were observed in 2 fields in the province. Traces were present in all oat fields in Kings county, P.E.I.

FROST BANDING was recorded on oats once from each of zones 9, 11, and 13.

BARLEY

STEM RUST (Puccinia graminis) was present in 10 fields out of 15 examined in Sask., and caused slight damage in zone 2 and a trace in zone 3. It was general in Man.; infection ranged from a trace to 50%.

Stem rust infection was general and severe at the Cap Rouge Station, Que. Traces were noticed in the plots at Ste. Anne de la Pocatiere and at Kentville, N.S. Infections ranging from a trace to 10% were reported on Charlottetown 80 in Kings county, P.E.I.

LEAF RUST (Puccinia anomala) very severely infected barley at Cap Rouge (C. Perrault). It was prevalent at Fredericton, N.B. Some rust was present on practically every variety, the highest infection being 35% on Olli. Infection was slight at Kentville and Nappan, N.S., and traces were recorded at Charlottetown, P.E.I., and Ste. Anne de la Pocatiere, Que. Traces in the field were noted in N.B. (I.L. Conners)

COVERED SMUT (Ustilago Hordei). A 2% infection was noted at Sumas, B.C. and in a field in zone 10, Alta. It occurred in 3 fields out of 18 examined in Sask., with the average damage a trace. It affected 1% of the heads in a field at Morden, Man. A trace was recorded at Ste. Anne de la Pocatiere, Que., and 6% in a field in Bellechasse county. Covered smut occurs throughout N.B., infection varying from a trace to 10%. Infections of a trace to 5% were reported from Kings county, P.E.I.

LOOSE SMUT (Ustilago nuda) was recorded from one field in Alta.; a trace in one field out of 18 in Sask.; a trace at Morden, Man.; slight in Kamouraska and Quebec counties, Que., and traces at the Ste. Anne de la Pocatiere and Cap Rouge Stations, where the seed was treated by the hot water method before sowing. Loose smut occurs in all the counties of N.B., infection varying from a trace to 3%. A 10% infection was noted in one field, but a second was clean in Kings county, N.S. Infections of a trace to 10% were reported in Kings county, P.E.I.

STRIPE (Helminthosporium gramineum) caused a trace of infection in a field in zone 10, Alta.

Traces of stripe were noted in only two varieties at Kentville and Nappan, N.S., and none was found elsewhere. Previous reports of its abundance in Eastern Canada should be discounted, as the disease has been confused by some of the

workers there with the relatively common Net Blotch.
(I.L. Conners)

FALSE STRIPE (Cause unknown) affected 1% of plants in a field at Elie, 4 and 5% at Gimli, and 5% at Petersfield, Man.

NET BLOTCH (Helminthosporium teres) lightly infected Hannchen at the Lacombe Station, Alta.; a trace occurred on most other varieties. It severely infected one field at Watson, Sask. Undetermined leaf spots were found in 2 other fields out of 21 examined. It was present in 8 fields out of 12 examined in Man.; the average damage was slight.

Net blotch was prevalent at Fredericton, N.B., Kentville and Nappan, N.S., and Charlottetown, P.E.I. Victory was moderately to severely affected. Traces to slight infections were observed in the field in these provinces. Traces were found at Ste. Anne de la Pocatiere, Que., and in Bonaventure county. (I.L. Conners)

SPOT BLOTCH (Helminthosporium sativum) lightly infected Charlottetown 80 and traces were seen on other varieties at Lacombe, Alta. A slight general infection occurred throughout Man. It slightly affected Olli at Charlottetown, P.E.I. and traces to slight infections were recorded at Ste. Anne de la Pocatiere, Que.

FOOT ROTS. Common Foot Rot (Helminthosporium and Fusarium spp.) was found in 19 fields out of 21 examined in Sask.; the average damage was moderate in zone 2 and slight in zone 3. A slight infection was found at Ste. Rose du Lac and Laurier, Man., and a moderate infection at Gilbert Plains.

ERGOT (Claviceps purpurea) was reported on barley from Salmon Arm, B.C. Reports from Grain Companies indicate that ergot was noticeably more prevalent on barley in 1936 than in previous years in Man. Field observations indicated that infection was largely due to spread of the disease from heavily infected awnless brome grass growing beside the fields. Traces of ergot were observed in barley in Kings county, P.E.I.

SCALD (Rhynochosporium Secalis). Traces were found in a few varieties at Lacombe, Alta.

POWDERY MILDEW (Erysiphe graminis). A trace was present on barley plants in the Cereal greenhouse, Ottawa, Ont. A general and severe infection occurred in the plots at Cap Rouge, Que.

BACTERIAL BLIGHT (Phytomonas translucens) slightly infected Sans Barb at Ste. Anne de la Pocatiere, Que. (I.L. Conners)

HEAD BLIGHT (Fusarium sp.). Traces were reported on several varieties at Ste. Anne de la Pocatiere, Que.

SPECKLED LEAF BLOTCH (Septoria Passerinii) moderately infected Oxford (4023) and Pontiac (4028) at Kapuskasing, Ont., in Aug. 1935. It was also collected on barley in the neighboring settlement at Moonbeam (4022). (G. A. Scott and I. L. Conners)

FROST BANDING was recorded in a field of barley in zone 10, Alta.

RYE

STEM RUST (Puccinia graminis) lightly infected plants at the end of the rows at Lennoxville, Que. on July 16.

LEAF RUST (Puccinia secalina). Considerable infection was found in one field at Kentville, N.S. (3979). A slight amount was reported on rye on Wood Islands, P.E.I.

ERGOT (Claviceps purpurea) was recorded as follows; trace in the Field Husbandry plots at Saskatoon, Sask.; moderate infection at Winnipeg; collected at Kapuskasing, Ont. (4026) in 1935; 7% of the heads infected in a field on Ile aux Grues, Montmagny county, Que.; slight infection on Wood Islands, P.E.I.

COMMON FOOT ROT (Helminthosporium and Fusarium spp.) was found in one field out of 7 examined in Sask.; the damage was slight. A moderate infection was recorded in 2 fields at Ethelbert and Ashville in Man. respectively.

BACTERIAL BLIGHT (Pseudomonas (Phytomonas) translucens var. Secalis) caused a trace of infection on fall rye at Elm Creek, Man.