D I S E A S E S O F C E R E A L C R O P S.

WHEAT.

STEM RUST -- Puccinia graminis Pers.

PRINCE EDWARD ISLAND

1927 - General but not considered serious. There was little noticeable variation in the degree of infection upon the standard varieties in the rust nurseries.

1928 - Infection general in the three counties, in some districts being unusually heavy.

NOVA SCOTIA

1927 - Though common, rust did not appear to cause much damage. Infection was somewhat heavier on account of wet period.

1928 - General infections observed in different parts of the province. Several severe cases Hants and Kings counties.

NEW BRUNSWICK

1927 - Observed generally in York and Sudbury counties. Infection heavier than usual.

1928 - Widespread but of no serious consequence.

QUEBEC

1927 - Trace reported in rust nurseries at Ste. Anne de la Pocatiere.

1928 - Only a trace of this rust was observed this year and it developed very late, although there was a heavy infection of the few barberry bushes in the vicinity.

ONTARIO

1927 - This disease was general throughout the province. Especially severe case reported from Kapuskasing.

1928 - Occurred in different localities but no serious cases reported.

MANITOBA and
SASKATCHEWAN

1927 - "Rust developed in epidemic form in most parts

of Manitoba and Saskatchewan. The first traces of rust were discovered at Winnipeg and in the experimental plots at Morden on July 6. By July 18 a light infection was general in Manitoba as far north as Winnipeg. Little change was evident in the amount of rust in the fields until towards the last of July. Several days of hot weather, from July 23 to July 27, evidently stimulated the development of the organism in the plants for infections became considerably more common by the first of August. The first eight days of August were cool, and both wheat and rust made slow progress during that time, although heavy dews made conditions favourable for infection of the plants. The temperature for the week beginning August 9 was hot and imparted a decided stimulus to the development of the rust mycelia in the wheat plants, so that by August 16 the situation was decidedly alarming. Following that date, the progress of the rust proceeded apace, with the result that Western Canada suffered one of its worst rust epidemics in history."

1928 - "In 1928 the damage from rust was negligible. "The first trace of rust was discovered at Winnipeg on July 9th and at Morden on July 12. Evidently the infections from which these first two pustules arose, occurred at approximately the same time. By July 21 rust development had progressed somewhat. Secondary infections were becoming common on Garnet wheat in the Carmen-Morris-Morden district, although only a trace was yet present on Marquis and other common wheats. Only traces of rust were found further west in Manitoba through Treberne, Glenboro, and Killarney to Deloraine. In the durum-growing area in southwestern Manitoba, no rust was found up to this time, and, in fact, the durum wheats remained almost free of rust all the season. Along the Winnipeg-Brandon line, scattered infections could be found. "It was not until July 20 that any trace of rust was found in southeastern Saskatchewan. By this date also a few infections were found at Saskatoon. Secondary infection was found in a winter-wheat plot at the University at Saskatoon.

The dull wet weather cleared up about the first of August, and the grain ripened fast during the next two weeks. In both Manitoba and Saskatchewan the rapid ripening of the grain brought to a sudden ending the advance of rust."

ALBERTA

1927 - "In Alberta rust was less severe and did not cause any appreciable damage, although as high as 60 per cent infections occurred around Camrose, where shrinking of the kernels was noticed, but in general the loss due to rust was negligible. The good fortune of Alberta is evidently attributable not to lack of conditions favourable for rust development, for there was abundant rainfall, but to the failure of spores to arrive early enough and in sufficiently large numbers to initiate an epidemic. However, more rust was present in Alberta this year than ever before, for the unusual amount of precipitation delayed the early maturing of the grain, and gave the earlier arriving spores an opportunity of becoming established. Rust was found, moreover, farther north than in any previous year, occurring at Beaver Lodge for the first time on record."

1928 - Collected first (August 8) at Aldersyde, just south of Calgary. Very light infections found scattered over the province as far north as Edmonton. Scarcely more than a trace appeared anywhere in Alberta, and no appreciable damage resulted.

BRITISH COLUMBIA

1927 - Trace present on Vancouver Island.

1928 - Slight infections reported from Salmon Arm and Sidney.

LEAF RUST -- Puccinia triticina Eriks.

PRINCE EDWARD ISLAND

1927 - General infection on all varieties causing slight damage.

1928 - Light infections reported.

WHEAT

NOVA SCOTIA

1927 - Severe infections observed in rust nurseries at Kentville. Also in Musquodoboit on the Garnet variety.

NEW BRUNSWICK

1928 - Generally distributed in York county but of little importance.

QUEBEC

1928 - Very prevalent as usual but damage caused most-likely slight.

ONTARIO

Gneral infection in experimental plots in 1927 and 1928.

MANITOBA and SASKATCHEWAN

1927 - Leaf rust of wheat appeared in southern Manitoba and southeastern Saskatchewan during the third week of June. Its spread and development were rapid, so that by the middle of July, it had become fairly abundant and was obviously beginning to do a good deal of harm.

1928 - Leaf rust was present as usual but appeared somewhat later than last year and was much less severe.

ALBERTA

1927 - Leaf rust was very prevalent being similar in distribution to that of stem rust. This rust was heavy enough to appear to be causing injury. While present in the experimental plots at Edmonton, it was not abundant.

1928 - Earliest collection at Edmonton on June 28 on winter wheat. General in most fields. Light to medium infections. Damage - trace to slight.

STRIPE RUST -- *Puccinia glumarum* (Schm.) Erikss. & Henn.

ALBERTA

1927 - This disease, which was recorded for the first time in Western Canada in 1926, was again observed this year on August 20, on both leaves

and glumes of a number of varieties of wheat growing in a plot impractically the same location as the plot in which the infection occurred the year before. The Hordeum jubatum nearby was also, again, infected with stripe rust, so that overwintering of the inoculum is suggested. On September 20 stripe rust was observed only on the leaves in eleven wheat fields from Cardston, southeast toward the Montana boundry, and also on Hordeum jubatum. Only two cases of severe infection were seen.

1928 - This disease was found on a number of varieties of spring and winter wheat. Of 64 varieties exposed to infection, only one variety (Chagot) was severely rusted, one variety had medium infection, and 53 varieties showed a trace. These observations indicate that the commonly grown varieties of wheat are fairly resistant to the form of stripe rust in Alberta.

Spring wheat field showing a general infection found at Hanna. Damage slight.

BRITISH COLUMBIA

1928 - Stripe rust occurred commonly on Vancouver Island but no extensive survey was made of the province. It was also reported from Sidney.

BUNT OR STINKING SMUT -- Tilletia Caries (DC.) Tul. and Tilletia foetens (Berk) Trel.

PRINCE EDWARD ISLAND

1927 - Light infection at Experimental Station.

1928 - Rarely found.

NEW BRUNSWICK

1928 - Slight occurrence in widely separated fields in York County.

QUEBEC

1928 - Infection of about 3 per cent was found in Kamouraska County on Preston wheat. In several other varieties a few affected heads were found.

WHEAT

MANITOBA

1927 - Severe infection at Miniota in Mindum wheat.

1928 - Eight to twelve per cent in Experimental plots grown from untreated seed at Brandon.

SASKATCHEWAN

1927 - Infections of 2.4 per cent at Indian Head and 5.7 per cent at Scott.

1928 - Infection in untreated plots at Indian Head ranged from 16.5 to 20.3 per cent.
Other cases of bunt were recorded from fields throughout the grain-growing area, causing appreciable loss. Reports from Carnduff and Maryfield showed 5 and 6 per cent respectively.

ALBERTA

1927 - Relatively scarce, especially in older settled and better farmed districts. Occasional fields with a serious amount of infection.

1928 - Widely scattered traces of infection. In no case abundant, except in experimental plots.

LOOSE SMUT -- Ustilago Tritici (Pers.) Jens.

PRINCE EDWARD ISLAND

1927 - Generally distributed but rarely severe.

1928 - Infection slight except in rare cases. Found in all three Counties.

NOVA SCOTIA

1928 - One field of Marquis in Pictou county showed about 3 per cent infection, while another field was infected to about 10 per cent.

NEW BRUNSWICK

1927 - Observed in York county. Slight infection only.

1928 - Slight occurrence in plots at Experimental Farm, Fredericton.

QUEBEC

1927 - One field in Kamouraska county showed 10 per cent infection.

1928 - Several heavy infections reported from St. Pascal, Kamouraska county, varying from 16 to 36 per cent.

ONTARIO

This disease was observed in the Ottawa district both years.

SASKATCHEWAN

1927 - Reported from different parts of the province. Trace to 2 per cent.

1928 - Many reports received from widely separated points; trace to 2 per cent.

ALBERTA

1927 - Infection general but not severe.

1928 - Much more common than bunt. Light infections generally distributed in fields scattered over the province.

ERGOT -- Claviceps purpurea (Fr.) Tul.

QUEBEC

1928 - Trace only reported.

MANITOBA

1928 - Very common in some fields. At Morden, 1 per cent infection found in a field of Marquis. Also a trace in a field of Garnet.

SASKATCHEWAN

1927 - Slight infections reported from Indian Head and from the University experimental plots at Saskatoon.

1928 - Occurrence common. Traces found at Benson, Summerberry, and Maryfield.

ALBERTA

1927 - Very common lowering grades of common wheat. Red Bobs particularly susceptible.

1928 - Much less abundant than in 1927. Only a few infected plants found in the field though Sclerotia were noted in several seed samples.

WHEAT SCAB OR HEAD BLIGHT - Gibberella Saubinettii (Mont.) Sacc.

PRINCE EDWARD ISLAND

1927 - This disease caused considerable damage in Huron and Red Fife.

NEW BRUNSWICK

1927 - Isolated infections only observed. Of no serious consequence.

QUEBEC

1928 - One two-per cent infection found in experimental plots at Ste. Anne de la Pocatiere.

MANITOBA

1928 - This disease was very prevalent in Manitoba this year, the warm moist season providing favourable conditions for its development. Plants were attacked by a light general infection varying from a trace to 3 per cent, except in certain low spots where plants were heavily attacked. In plots of Reward at Winnipeg 80 to 100 per cent of the plants were infected.

SASKATCHEWAN

1927 - Traces found at Indian Head and Saskatoon.

1928 - Slight infection found on Marquis wheat at Saskatoon and Trossachs.

ALBERTA

1928 - One collection of a typical blighted head was made at Edmonton.

FOOT AND ROOT ROTS

MANITOBA

1927 - Root rot caused by Helminthosporium sativum P.K. & B. was reported from different parts of the province, indicating a well distributed infection ranging from slight to 18 per cent.

1928 - The survey this year again showed this disease to be widely distributed. Infection - trace to 5 per cent.

SASKATCHEWAN

1927 - Root rot caused by Helminthosporium. Light to moderate general infection present in field crops (trace to 12 per cent). In experimental plots 27 to 60 per cent was noted, being much more severe than the previous year.

1928 - Common causing variable loss.

1927 - Take-all caused by Ophiobolus graminis Sacc. Eighty-three reports received from different points indicated a wide distribution, infection varying from a trace to as high as 25 per cent.

ALBERTA

1927 - Root rots caused by Helminthosporium sativum P.B. & B., Fusarium spp., Wojnowicia graminis (McAlp.) Sacc. & D. Sacc., and Leptosphaeria herpotrichoides De Not. These rots were common on the University plots, especially on early varieties.

1928 - Damage in individual fields usually less than that caused by take-all. Aggregate damage, however, considerable and extending over a wider area than take-all. As frequently more than one organism was present, it was impossible to estimate the damage done by each. Wheat in practically every field affected with one or more of these organisms.

Take-all caused by Ophiobolus graminis Sacc., was prevalent and destructive in 1928. Damage ranged 5 to 30 per cent of the crop in individual fields. Although found in all soil types, the disease was most common and destructive on the black soils and next on the transitional type.

GLUME BLOTCH -- Septoria nodorum Berk.

NEW BRUNSWICK

1927 - Serious infection observed at the Dominion Experimental Farm.

1928 - Moderate infection in York county.

MANITOBA

1928 - Reported from Graysville, Plum Coulee, and Jordan. Considerable injury to heads of fully

grown plants. Disease seemed to be developing rapidly on late wheat.

SASKATCHEWAN

1927 - Slight infections reported from Glasnevin, Carnduff, St. Gregor, Speddington, Perdue, St. Brieux, and Dysart. Severe on some plots at Indian Head.

1928 - In a field of Marquis at Maryfield about 50 per cent of the heads were infected. One section of a field at St. Brieux showed about 60 per cent infection. Light infections from a trace to 5 per cent were reported from Cudworth, Rosthern, Resource, Plunkett, Macoun, Humbolt, Melaval, Hitchcock, Alemada, Forbisher, and Boharm. Damage cuased was greater where heads had been knocked down by hail.

ALBERTA

1927 - Glume blotch of wheat was exceptionally prevalent throughout the entire area surveyed. It was most severe in the general High River - Nanton - Vulcan - Claresholm area. This severity seemed to have been increased by hail damage.

1928 - First report made July 16 from Morrin. This disease was very prevalent all over the province but more common in southern Alberta than farther north. It was not as severe as in 1927 and the damage caused was apparently slight. It was noticeable that late stools were often the most heavily infected.

POWDERY MILDEW -- Erysiphe graminis DC.

NEW BRUNSWICK

1928 - A few slight cases reported in York county.

SASKATCHEWAN

1928 - Mere trace reported. There was, however, a moderate infection on late sown Little Club in the experimental plots at Saskatoon.

ALBERTA

1927 - Abundant on winter and spring wheat in field plots at the University of Alberta on October 18.

1928 - First collection on June 11 on winter wheat at Edmonton. Later found on spring wheat at Edmonton, Spruce Grove, Vermilion, and Tofield. Some damage in the experimental plots at Edmonton, no damage observed elsewhere.

BRITISH COLUMBIA

1928 - Collected at Armstrong.

LEAF SPOT -- Septoria Spp.

SASKATCHEWAN

1928 - Moderate to heavy infection sometimes killing leaves prematurely. Reported from Yorkton, Wroxton, Melville, Prud'homme, Carmel, Kamsack, Muenster, Englefeld, St. Gregor, and Verigin. Traces of leaf spot caused by Septoria Tritici Desm. were found at Saskatoon, Duff, Totzke, Dane, and Bruno.

ALBERTA

1928 - Small brown spots with light borders. Common in southwestern Alberta. Lighter infections found elsewhere. Possibly caused by Septoria sp. Not identified.

BACTERIAL DISEASES

BLACK CHAFF -- Pseudomonas transluscens J.J. & R. var undulosum J.J.& R.

NEW BRUNSWICK

1927 - Slight infections reported from York county.

1928 - Widespread but of no serious consequence.

MANITOBA

1928 - Very severe attack of this disease on some hybrids and new varieties at Winnipeg, causing severe damage. At Graysville a field of Ceres wheat was badly attacked, in some areas 100 per cent of the Ceres plants were severely infected causing considerable loss.

ALBERTA

1927 - A trace of black chaff was collected at such widely separated points as Westlock, Lacombe, Youngstown, and Claresholm. It was easiest to find in what proved to be one of the driest parts of the crop area. Damage - trace to light.

BASAL GLUME ROT -- Bacterium atrofaciens McCulloch

NOVA SCOTIA

1927 - This disease was present to a slight extent on Ceres variety of wheat in the rust nurseries at Kentville.

SASKATCHEWAN

1927 - This disease was common this season and quite severe in some localities. Traces of this disease were found at Balcarres, St. Brieux, Carnduff, Indian Head, Kerrobert, and Disley. About 10 per cent infections were found at Waseca, Dysart, and Carmel. In one patch in a field at the latter point easily 90 per cent of the plants were diseased.

ALBERTA

1927 - Observed in many fields, but never more than a trace, it being usually confined to one spikelet per head, here and there, throughout the field. In view of the moist season which prevailed, it would seem that other factors were lacking for a serious development of this disease.

1928 - This disease was very common, being found in all parts of the province. Red Bobs appeared to be especially susceptible, Damage caused was usually slight, - about 2 to 3 per cent.

MISCELLANEOUS

LEAF SPOT (Cause undetermined).

SASKATCHEWAN

1928 - Heavy infection of a small white-centred leaf spot about 1 to 2 mm. in length was found at Patrick. This condition was accompanied by dark brown linear spots on the stems.

ALBERTA

1928 - Numerous small "colourless" spots on leaf blades. Especially prevalent at Edmonton. Different varieties of wheat showed marked differences in reaction.

HAIL DAMAGE

ALBERTA
1928 - Large losses from hail experienced. Damage 100 per cent in several districts.

FROST DAMAGE

ALBERTA
1928 - Most of the grain except that of the earliest varieties was frosted in the head before maturity. Damage from lowered grades very great.

CHEMICAL INJURY, ETC.

ALBERTA
1928 - Much damage to seed and seedlings resulted from using over strength solutions, sowing in dry soil, etc.

OATS

STEM RUST -- *Puccinia graminis* Pers.

PRINCE EDWARD ISLAND
1927 - On early crops this rust caused little damage. The infection observed on the rust nurseries at Charlottetown was trace to 5 per cent. It was more severe, however, on later maturing fields as a result of excessive moisture.

1928 - Slight infections observed; less than in 1927.

NOVA SCOTIA
1927 - Very prevalent, but not doing serious damage.

1928 - No report.

NEW BRUNSWICK
1927 - Light infection appeared late in the season.

1928 - No report.

QUEBEC
1927 - Trace to 5 per cent reported from Ste. Anne de la Pocatiere.

1928 - No report.

ONTARIO

1927 - This disease was reported slight to moderate from different parts of the province; especially prevalent in low-lying fields. A very severe case was reported from Kapuskasing. In the rust nurseries at Ottawa a trace to 10 per dent was recorded.

1928 - Light to moderate infections on late sown oats, especially on low land.

MANITOBA

1927 - Percentage of stem rust in 18 varieties of oats grown in uniform rust nurseries at Winnipeg, Brandon, and Morden in 1927.

Variety	Percentage infection of stem rust. Winnipeg	Brandon	Morden
Victory	31	45	80
Gold Rain	30	40	80
Richland	tr.	0	0
Alaska	26	45	50
Red Rustproof	20	30	70
Monarch Strain	2	0	5
Joanette	15	30	60
White Tartar	tr.	0	10
Ruakura	32	45	10
Miniota x White Tartar.	tr.	0	0
Green Mountain	tr.	0	0
Heigira Strain	tr.	0	0
Banner	20	40	80
Victory x White Tartar.	tr.	0	0
O.A.C. No. 72	16	40	70
Iowar	12	35	30
Iogold	tr.	0	10
Iowa 444	8	35	10

1928 - Trace to 100 per cent of plants infected, severity ranging from 5 to 20 per cent.

SASKATCHEWAN

1927 - Percentage of stem rust in uniform rust nurseries.

Variety	Saskatoon	Indian Head	Swift Current	Rosthern	Scott
Victory	45	8	3	28	25
Gold Rain	48	6	3	25	10

Richland	10	0	0	5	25
Alaska	50	40	5	20	22
Red Rustproof	20	2	tr.	55	45
Monarch Strain	10	0	0	5	5
Joanette	25	tr.	tr.	15	15
White Tartar	25	tr.	0	5	5
Ruakura	40	5	2	15	15
Miniota x White Tartar	10	tr.	tr.	5	5
Green Mountain	15	tr.	0	8	7
Heigira Strain	10	0	0	5	5
Banner	50	7	7	28	29
Victory x White Tartar	15	5	3	6	5
O.A.C. No. 72	45	8	3	27	26
Iowar	45	6	3	27	27
Iogold	12	tr.	tr.	5	6
Iowa 444	45	25	6	8	8

1928 - No reports received.

ALBERTA

1927 - Percentage of stem rust in uniform rust nurseries.

Variety	Lethbridge	Lacombe	Edmonton	Beaver-lodge
Victory	tr.	tr.	tr.	0
Gold Rain	tr.	tr.	tr.	0
Richland	0	0	tr.	0
Alaska	0	tr.	tr.	0
Red Rustproof	0	0	tr.	0
Monarch Strain	0	0	0	0
Joanette	0	0	tr.	0
White Tartar	0	0	tr.	0
Ruakura	tr.	0	tr.	0
Miniota x White Tartar	0	0	0	0
Green Mountain	0	0	tr.	0
Heigira Strain	0	0	0	0
Banner	0	tr.	tr.	0
Victory x White Tartar	0	0	0	0
O.A.C. No. 72	0	tr.	tr.	0
Iowar	0	tr.	tr.	0
Iogold	0	tr.	0	0
Iowa 444	0	0	0	0

1928 - The first report of this rust was made on August 1st, a specimen having been collected about 20 miles west of Edmonton. Numerous infections were found later, south and east of Edmonton, but the damage in no case exceeded a trace.

BRITISH COLUMBIA

1927 - Apparently absent (Summerland).

CROWN or LEAF RUST -- Puccinia coronata Cda.

PRINCE EDWARD ISLAND

1927 - As a result of the moist season there was a considerable amount of crown rust, particularly damaging late maturing crops.

1928 - General moderate infection observed.

NOVA SCOTIA

1927 - Several severe cases reported in Kings and Colchester counties.

1928 - Light to severe infections reported from Colchester, Cumberland, Kings and Pictou counties, doing considerable damage.

NEW BRUNSWICK

1927 - Moderate infection appeared late in the season.

1928 - Infection widespread but of no serious consequence.

QUEBEC

1927 - Reported from Megantic and Cap Rouge.

1928 - No report received.

ONTARIO

1928 - Light infections observed in the Ottawa district. One low-lying field severely infected. No other reports received.

MANITOBA

1928 - Reported from Rosebank, Winkler, and Graysville. Trace to 100 per cent of plants affected; severity 10 to 25 per cent. Damage very light.

SASKATCHEWAN
1928 - Reported from Lorlie, Chaplin, Carlyle, Grenfell, Humboldt, Wolsely, Percival, and Saskatoon. Only a slight trace observed at any point. A moderate infection was reported from Indian Head.

ALBERTA
1928 - Apparently absent (Edmonton).

LOOSE SMUT -- Ustilago Avenae (Pers.) Jens.

NOVA SCOTIA
1927 - Moderate infections observed in Colchester, Antigonish, Kings, and Pictou counties.

NEW BRUNSWICK
1927 - Very slight infection in York county.

1928 - Quite severe generally.

QUEBEC
1927 - Moderate infections reported from Megantic, Chicoutimi, and North Wakefield.

1928 - A very severe case was reported from Kamouraska county, 60 per cent of the heads being infected.

ONTARIO
1928 - Observed generally in the Ottawa district. Specimens for examination were received from a correspondent in Peterborough county.

MANITOBA
1928 - General infections reported from Morden, Miami, Winnipeg, and Brandon; trace to 4.5 per cent.

SASKATCHEWAN
1927 - Trace to 5 per cent reported from Moose Jaw, Indian Head, Qu'Appelle, Antler, Storthoaks, Kelliher, Fillmore, and Whitewood.

1928 - Eighteen reports from points widely separated, showed this disease to be distributed generally throughout southern Saskatchewan. Infections, however, were not serious ranging from a trace to 3 per cent.

ALBERTA
1928 - Scattered infections over the province but much less common than covered smut.

BRITISH COLUMBIA
1928 - Reported from Victoria

COVERED SMUT -- Ustilago levis (K. & S.) Magn.

NOVA SCOTIA
1928 - In Colchester and Pictou counties 5 to 12 per cent was found in fields where seed had not been treated.

NEW BRUNSWICK
1927 - Very slight infection of covered smut was observed in York county. Damage caused was below the average.

1928 - Infections found general in distribution, sometimes doing severe damage.

ONTARIO
1928 - Found in several fields in the vicinity of Ottawa.

MANITOBA
1927 - Untreated seed produced 4 per cent covered smut at Brandon.

1928 - General infection ranging from a trace to 5 per cent.

SASKATCHEWAN
1927 - Thirty-two reports showed that covered smut was very common in southern Saskatchewan. Most of the fields examined had slight to 5 per cent infections. However, reports from Balcarres and Dysart recorded 15 per cent infection, Markinch, Balgonie, and Stranraer 20 per cent, and Steleam 30 per cent.

1928 - Reports from thirty-four points recorded general occurrence of this disease ranging from very slight to 6 per cent. Reports from Willows, Heward, and Macoun recorded 10 per cent, 15 per cent, and 20 per cent respectively.

ALBERTA
1928 - This disease was very common causing considerable

damage. In one field more than 30 per cent of the heads were destroyed.

HEAD BLIGHT -- Gibberella Saubinetii (Mont.) Sacc.

NEW BRUNSWICK
1927 - Slight scattered infection reported from York county.

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

NEW BRUNSWICK
1927 - Fairly common but not severe.

1928 - General in distribution but not serious.

QUEBEC
1927 - Serious on certain varieties.

ONTARIO
1928 - Reported from Simcoe county.

ALBERTA
1928 - This disease was observed, but was not very common.

BRITISH COLUMBIA
1928 - Found at Sidney.

LEAF SPOT -- Helminthosporium Avenae Eidam.

NEW BRUNSWICK
1927 - Light infection reported.

ERGOT -- Claviceps purpurea (Fr.) Tul.

ALBERTA
1927 - Found several times, but not abundant.

1928 - Light infection observed at Edmonton.

FOOT ROT -- Fusarium sp.

ALBERTA
1928 - Reported from Stettler.

ROOT ROTS -- Cause undetermined.

MANITOBA
1928 - Very general infection; many plants stunted and killed. Appeared to be caused by either Helminthosporium sp. or Fusarium sp.

NON-PARASITIC DISEASES

BLASTING OF HEADS

SASKATCHEWAN
1928 - Slight damage noticed at Indian Head in July.

ALBERTA
1928 - Caused much damage throughout the province.

BARLEY

STEM RUST -- Puccinia graminis Pers.

NEW BRUNSWICK

1927 - Infection general, sometimes severe.

1928 - Only a few cases reported.

ONTARIO
1928 - Moderate infection in Ottawa district. Very severe case at Kapuskasing.

BRITISH COLUMBIA
1928 - Reported from Sumas Prairie.

LEAF RUST -- Puccinia anomala Rostr.

MANITOBA
1927 - This disease was very prevalent; severest epidemic so far. From 60 to 100 per cent of the plants were affected, showing a trace to 5 per cent.

SASKATCHEWAN
1927 - Moderate infection reported from Indian Head.

ALBERTA

1927 - Not abundant, but easy to find on green volunteer barley.

1928 - A light infection of this rust was found at Strathmore.

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

ALBERTA

1928 - A light infection of this rust was found at Strathmore in the same field where leaf rust was found. Neighbouring Hordeum jubatum was also infected with stripe rust.

LOOSE SMUT -- Ustilago nuda (Jens.) Rostr.

NEW BRUNSWICK

1928 - Quite general but not severe.

ONTARIO

1928 - Light infections observed at the Central Experimental Farm and in a few fields in the Ottawa district. Several specimens sent from eastern Ontario by correspondents.

MANITOBA

1928 - Very light trace reported from Plum Coulee.

SASKATCHEWAN

1928 - Trace to 3 per cent reported from Rosthern, Dundurn, Alameda, Melville, Tiny, Kelliher, and Indian Head.

ALBERTA

1927 - Loose smut of barley scarcely ever exceeded one per cent, but being rather common, the aggregate loss was important.

1928 - Widely distributed, but less abundant and destructive than covered smut.

COVERED SMUT -- Ustilago Hordei (Pers.) K. & S.

NEW BRUNSWICK

1928 - Few slight cases reported.

SASKATCHEWAN
1927 - Trace to 2 per cent reported from different localities.

1928 - Eighteen reports from different points recorded light infections general in distribution. Infections varied from a trace to 6 per cent.

ALBERTA
1928 - This smut was very common and caused important losses. In one field between 30 and 40 per cent of the plants were infected.

ERGOT -- Claviceps purpurea (Fr.) Tul.

QUEBEC
1928 - Trace of ergot reported from Kamouraska county.

SASKATCHEWAN
1928 - Traces found at Indian Head and Rosthern.

ALBERTA
1927 - Fairly common; more than the usual amount being present.

1928 - Reported only once.

STRIPE -- Helminthosporium gramineum Rabh.

NEW BRUNSWICK
1928 - General in Carleton county.

QUEBEC
1928 - About 2 per cent found on Mensury barley at Ste. Anne de la Pocatiere.

MANITOBA
1928 - Barley stripe was quite prevalent, especially in late low fields. About 60 per cent of the plants were infected quite heavily.

SASKATCHEWAN
1927 - Slight infections at Indian Head and Saskatoon.

1928 - Trace reported from Rosthern. In a plot of Colsess barley at Indian Head about 5 per cent of the plants were affected. Other varieties nearby were practically free.

ALBERTA
1927 - Common at University, especially on Canadian Thorpe.

1928 - Found in a number of fields throughout the province. Damage was slight. In experimental plots, however, considerable damage occurred, possibly as a result of earlier seeding than on farms.

FALSE STRIPE -- Cause undetermined.

SASKATCHEWAN
1928 - Trace observed at Rosthern.

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

NEW BRUNSWICK
1927 - Fairly common, but not of economic importance.

SASKATCHEWAN
1927 - Slight infection found throughout the southern part of the province.

1928 - This disease was reported from eighteen different localities, infections being usually light to moderate. However, at Headlands, Humboldt, and Vonda, severe cases were reported.

ALBERTA
1928 - Very abundant and widely distributed. Fields showing 100 per cent of the plants infected not uncommon. Appreciable damage is severe cases.

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

NEW BRUNSWICK
1927 - Slight infection generally distributed.

ALBERTA
1927 - This disease was common and at times severe.

1928 - Much less common and important than net blotch.

BRITISH COLUMBIA
1928 - Reported from Sidney.

SCALD -- Rhynchosporium secalis (Heins.) Davis.

SASKATCHEWAN
1927 - This disease was general in distribution, infection ranging from slight to moderate. A severe case occurred in the plots at Saskatoon.

1928 - Traces found at Rosthern and Alameda. Light infection reported from St. Gregor and Carlyle.

ALBERTA
1928 - A common disease in this province. In a few instances slight damage resulted.

TAKE-ALL -- Ophiobolus graminis Sacc.

SASKATCHEWAN
1928 - At Annaheim one dead plant of volunteer barley was noticed in a patch of wheat where take-all was plentiful. Upon examination this specimen was found to bear typical Ophiobolus mycelium.

LEAF BLOTCH -- Septoria Passerinii Sacc.

SASKATCHEWAN
1927 - Observed at Alameda.

1928 - At Maryfield a case was reported in which 25 to 30 per cent of the leaf area was affected.

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

NEW BRUNSWICK
1928 - Only one case observed at the Dominion Experimental Station at Fredericton.

SASKATCHEWAN
1927 - Slight but general infection reported from Herbert.

RYE

STEM RUST -- Puccinia graminis Pers.

SASKATCHEWAN
1928 - Moderate infection at Lorlie.

LEAF RUST -- Puccinia dispersa Erikss.

SASKATCHEWAN

1928 - Light infections found from Indian Head, Bradwell, Semans, Mikado, and Yorkton. Heavy infections reported from Lipton and Duff.

ALBERTA

1927 - Very abundant on winter rye at Edmonton.

1928 - Collected at Edmonton, Tofield, and Vermilion. Damage, trace to slight.

ERGOT -- Claviceps purpurea (Fr.) Tul.

QUEBEC

1928 - A slight infection of 2 per cent found in a four-acre field at La Perade.

ONTARIO

1928 - Slight infection observed at Ottawa.

SASKATCHEWAN

1927 - Slight to moderate infections reported from Indian Head, Mikado, Carlyle, and Saskatoon. At Mortlach about 20 per cent of the heads were affected.

1928 - Trace to light infections reported from different parts of the province, moderate case at Indian Head, and a severe infection at Carnduff.

ALBERTA

1927 - Very abundant, several severe cases recorded.

1928 - Moderately common, 10 per cent damage in one field.

BLACK CHAFF -- Pseudomonas translucens J.J.& R. var. Secalis (R.G.& J.) Stapp.

ALBERTA

1928 - One report from Coronation district.

FOOT ROT -- Helminthosporium sativum P.K.& B.

MANITOBA

1928 - Found in cultivated plots at Morden. Infection heavy and uneven. Damage 2 to 5 per cent.

ALBERTA
1928 - One report. Very little damage.

ROOT ROT -- Fusarium sp.

SASKATCHEWAN
1928 - Modern infection at Rosthern.

LEAF AND STEM SPOT -- Cause undetermined

SASKATCHEWAN
1928 - Severe on an isolated plot at Rosthern.

POWDERY MILDEW -- Erysiphe graminis DC.

SASKATCHEWAN
1928 - Light infections reported from Indian Head.

DISEASES OF FORAGE AND FIBRE CROPS

ALFALFA

LEAF SPECK -- Pseudopeziza Medicaginis (Lib.) Sacc.

NEW BRUNSWICK
1927 - One slight and one moderate infection reported; not sufficient to cause defoliation.

1928 - Quite general, but not severe; slight outbreak at Dominion Experimental Station.

QUEBEC
1927 - Severe occurrence at Macdonald College, causing yellowing of the leaves.

ONTARIO
1928 - Generally present but no case of defoliation. observed.

SASKATCHEWAN
1927 - Reported from Kelliher and Saskatoon, causing considerable fading and loss of the lower leaves.