

*By Mr. Knox:*

Q. Is it prevalent throughout the country here?—A. No, we have so far only found one authentic case in Saskatchewan.

Honourable Mr. MOTHERWELL: I think there is some suspicion of it around Humboldt.

The WITNESS: This specimen came from the neighbourhood of Indian Head, but I believe it to be also present near Scott.

*By Mr. Lucas:*

Q. Has it done much damage in Australia?—A. I understand that it has done serious damage in Australia. It is there, under certain conditions, a disease of similar importance to grain rust in Canada. It sometimes "takes" all the wheat in a locality. It is apparently a disease which depends upon certain unfavourable climatic and soil conditions. I do not believe it will become very serious in Canada. We cannot say so at the present time, but we must not allow any disease affecting wheat to remain unstudied, else it may go beyond our control. We may be able to do something towards its extermination at the present time, before there is much of it. I just wanted to point out, however, that grain rust alone is only a part of the general disease investigations carried on in the West.

*By Mr. Knox:*

Q. Have we any other disease that would resemble it in Canada?—A. Yes, we have the so-called "Fusarium root-rot" in Western Canada, which generally occurs on land on which wheat should not be grown. It is often the case that a certain piece of land is entirely unsuitable for the cultivation of wheat.

*By Mr. Sales:*

Q. What renders it unsuitable?—A. Cold, water-logged soils; low situations.

Q. That is the only thing?—A. That is the principal condition under which root rots will develop.

Specimens of diseased wheat were sent by a farmer to our Indian Head laboratory. The resident pathologist recognized that the wheat was attacked by something different from the usual root-rot. More specimens were secured, and a recent study of these in the laboratory showed evidence of the fungus which causes the Take-all disease of wheat. This disease is regarded in Australia as one of the most serious diseases occurring there. In Europe it is also regarded as a destructive disease. Its occurrence in the United States was viewed at first with alarm, but authors of a recent paper from Arkansas claimed that the disease is not really serious and that it is confined largely to plants weakened from other causes, such as lack of nutrients, water-logged soils, etc. It is impossible with our present knowledge to say how serious the disease is likely to become in Canada or the United States, but judging from the one field examined we do not think it should be lightly regarded. The diseased plants occurred in roughly circular patches, several feet in diameter. In these areas the wheat was stunted, and much shorter than the healthy wheat. The grain was very thin in these areas, as many plants had been killed in the early stage. The heads did not fill, or only shrivelled kernels were present. The ears of the diseased plants were bleached white, and were quite conspicuous as compared with the golden yellow of the sound ears at maturity.

To return to cereal rust investigations: These have to be considered (1) according to the relative importance of the host plant, viz., wheat, oats, barley, corn, rye, and fodder grasses, and (2) according to the relative importance of the various kinds of rust prevalent among the grain crops in Canada, viz., black stem rust—economically the most destructive, and affecting all our grains; crown rust of oats—also economically most important; leaf rust of barley and rye, as well as other more sporadic rusts.