

great care should be exercised by seedsmen in purchasing and distributing seeds, and also by farmers in buying. If the farmers would demand that they should have clean seed from seedsmen, the seedsmen naturally will take special pains to have their seed well cleaned. Some of the weeds in Manitoba which have proved of considerable trouble have not been found very bad in the Eastern provinces.

*False Flax.*—There is a plant called False Flax which has been introduced widely into Manitoba in flax seed, which we have known in Ontario for many years and which has not proved a very troublesome weed here, but it has shown in Manitoba by its power to spread that it is a bad weed. It has spread from Manitoba to the Rocky Mountains. It is an aggressive weed which belongs to the mustard family, and having spread very fast over hundreds and thousands of acres it has to be recognized as an enemy and dealt with accordingly. It ripens early in the same way as mustard does.

*Ball Mustard.*—Another weed of the same nature has been called Ball Mustard, because the seeds are contained in a little round pod about the size of No. 6 shot, which does not open at all: this plant has spread all through the country where wheat is grown. I saw one area of 200 acres, quite overgrown in colour, with this new weed. A farmer said to me "it does not do much harm," but when he came to thrash his wheat he found that he had reaped off that land many bushels of grain less than he would have got had that weed not grown there.

*Pepper Grass.*—Weeds apparently not injurious, under special conditions, develop into bad weeds. One of the weeds most inquired about in Manitoba last year is what is known as Pepper Grass, belonging to the same family as Mustard. The seeds are small but produced in enormous numbers. It is a slender plant growing from 6 inches high with a great many branches covered with pods, each of which bears two seeds. It is what is called a Winter Annual. The plants are of either one or two years duration. There are some plants which ripen their seeds in the first year and these germinate in the autumn, and, instead of being killed by the frost, live through the winter in the shape of a flat rosette of leaves on the ground, in the same way that two year plants do; they are then ready the next year to throw up their stems and produce seeds quickly. In wet seasons this plant instead of being a small plant with few branches develops into a large tree-like plant, 18 inches high, which overtops the young wheat and prevents its proper development. This calls attention to the fact that it is not wise to continue the practice which some have followed in Manitoba and the North-west Territories, of sowing their grain on stubble, instead of ploughing their stubble land and then sowing; they sow with a press drill on the stubble. If there happens to come a wet spring, there is a risk that these biennial weeds or winter annuals will develop ahead of the grain and a large loss will occur therefrom. There are several plants belonging to this same class. The value of the method of summer-fallowing in the Western country where there is sometimes not quite enough rain, was shown very vividly by Mr. MacKay at the meeting at which he addressed the Committee, and I also referred to the subject at that time so that it is not necessary for me to add anything now. But the idea generally held in regard to summer-fallowing in this part of the country is that we are not making the best use of our land, and that by higher cultivation utilizing the labour which we have available, we shall produce better results. It is considered that more moisture is not necessary. This is probably the case in many parts of Ontario but in the West it has been shown that summer-fallowing is an essential necessity. Mr. MacKay told us that the farmers who summer-fallowed got good crops, and those that did not summer fallow, did not get good crops. The greatest advantage is in the moisture which is retained in the land by this method. Summer-fallowing in Manitoba is sometimes done too late on account of the large amount of work to be done by each individual farmer. It should be done before the 12th of July, after which date most of the weeds which grow in summer-fallows have ripened their seeds, and there are only one or two which have not ripened their seeds by that time, but these are better described as weedy plants than as weeds, and there is a difference. Some weeds are aggressive, and there are some few plants which have a weedy appearance, but which have a mode of growth which renders them less injurious or destructive than some others. Instances of such plants are the Biennial Wormwood, Evening Primrose, etc