

APPENDIX No. 1

A. That may possibly have something to do with it, although I think the reasons I have advanced are sufficient to explain the results. The evidence submitted points to the importance and value of the selecting of grain for seed, it also shows that such selected seed does not always produce the results expected. Further experiments will be conducted along this line.

The next point I wish to refer to is in connection with additional work which has been done in the cross fertilization of grain.

It has been several times suggested by members of this committee in years past that it would be a very interesting and important matter to endeavour to obtain crosses between Goose wheat, which is a very vigorous and productive wheat in Ontario, and the Red Fife. Three years ago, we succeeded in making such crosses, and some additional ones were made last year, so we now have a series of crosses between the Red Fife and Goose, and Red Fife and Roumanian, a hard, ricy wheat similar to the Goose, which has on the average been more productive. We have also succeeded in crossing Speltz wheat with the Colorado. The Speltz holds the grain so tight in the chaff that you cannot separate it without some difficulty, while the Colorado holds it so lightly that it drops out on the field; so, while the Colorado is otherwise a good wheat for the eastern farmer, its usefulness is much interfered with by this tendency to shed the grain in the field. The object in these experiments is to obtain a wheat which will have the power of holding the grain tightly in the chaff when cut, so as to avoid waste. Another object in view in making these crosses is to obtain varieties of wheat which will be less affected by rust. Both Speltz and Goose wheats are remarkably free from rust, and if we can by crossing, introduce into these wheats some of the qualities of the Red Fife, the value of the product would be much increased. Such government institutions as the experimental farms are the places where such important lines of work as these should be carried on. The farmer or average experimenter, with limited appliances in the way of area of land in which to sow these things, cannot conduct such experiments in any large way, and it is, I think, the duty of the state to look ahead in such matters and endeavour by constant experimentation, to produce new varieties likely to be of value to the country. We know the good qualities of certain varieties, we also know their faults. If we can by intermixing produce new sorts which will retain most of the good qualities of both parents, and less of the faults, a great step in advance has been made. We have not yet reached perfection in regard to the varieties of cereals we cultivate, what we want in a wheat is a variety as good in quality as Red Fife, and as productive, or more so, earlier in ripening, and a rust resisting sort. If we can produce a wheat combining these good qualities it would be of great value to the country, and any improvement we can make is a step in the right direction. All such investigation work should be encouraged.

Another very interesting and curious cross that we have produced is one between Red Fife and a wheat called Polonian. This Polonian wheat has a very large kernel, about three or four times the size of ordinary wheat. It is grown in Algiers and Egypt and some other countries in Europe, and produces, it is said, good crops there, but with us it has been a poor cropper. It does not seem to set well and the number of kernels in the head is much less than one would expect from its size and appearance. A single plant was grown last year from a kernel, the result of this cross, and it produced heads which were quite unlike Red Fife. The kernels also were considerably larger. The further development of this grain will be watched with much interest. The size of the kernel and the weight of the head are promising features in this new cross.

By Mr. Robinson (Elgin) :

Q. Have you named this new cross ?

A. No, not yet.

Q. You do not name it, I suppose, until you have a quantity of it ?

A. No. As yet we have only the result of the growth of one kernel. We had on the plant three or four heads of this wheat, and every kernel has been carefully pre-