mean an increase of from $60,000,000 to $80,000,000 to their present annual value.

On the second day Professor Robertson's evidence is summarized as follows:

He repeated the statement that there did not appear to be any superior productiveness in any one variety under the different conditions of soil and climate in different provinces in Canada. In fact, the sowing of the same varieties at the five different experimental farms in one season brought about such a variation in the relative productiveness of them that there was no evidence of constant superiority in regard to productiveness. A change of soil and locality brings about a variation, which may be towards greater or less productiveness. When a variety is sown in a locality new to it, it is simply a hazard whether it will succeed as well as those which have been sown there before, or whether it will succeed as well in the new locality as in the place where it has been grown before.

Having used the word "hazard" in this connection, he said that he had actually compared the hazard selection of numbers with the lists of selected varieties of grains reported at the experimental farms last season. He cut pieces of paper and put a number corresponding to a variety of grain on each. Sixty five of these papers numbered consecutively were put in a box. Twelve were shaken out; they were put back again, twelve more were shaken out; that was repeated five times. Each twelve that were shaken out were for comparison with the twelve in the selected lists of the best yielders at each of the experimental farms. He said there was a most remarkable, a most astonishing, similarity of results. In the case of 65 varieties of oats grown the selected list contained 41 varieties; the average of six trials by hazard gave 43; one of the trials giving 41. The comparison of the farms of 18 varieties of six-rowed barley gave 14 in the selected lists; the hazard method 16. The comparison of 23 varieties of two rowed barley gave 18 on the selected lists; the hazard method gave 17. The comparison at the experimental farms of 42 varieties of spring wheat gave 33 on the selected list, the hazard method gave 33. The comparison of 47 varieties of peas gave 32 on the selected lists; the hazard method gave 33.

UNSELECTED SOWING AND SELECTION BY CHANCE.

Class of Grain.	No. of Varieties Tested.	No. in Selected Lists by Sowing.	No. in Selected Lists by Chance.
Oats	65	41	43
Spring Wheat	42	33	33
Peas	47	32	33
Six-Rowed Barley	23	18	17
Two Rowed Barley	18	14	16
Totals	195	138	142

In the case of sowing, 70 per cent. appeared in the selected lists; and 72 per cent. appeared in the other lists.

He held that there was abundant evidence to prove that the productiveness of varieties varied greatly when the localities in which they were grown were changed; whereas the productiveness of each variety was increased when seed of the best quality was selected from it and was sown again in the same locality.

He cited the comparison of varieties on the Experimental Farm of the Ontario Agricultural College. In the case of spring wheat he said the evidence was all in one direction, namely that the new varieties, and those were the ones which were recommended as being superior to the old varieties, did not yield nearly as largely in 1895, 1896, 1897 and 1898 as the varieties which had been grown continuously on that farm for periods varying from six up to ten years. This was specially the case in a season unsuitable for yielding large crops of grain. In such a year the crops from the varieties which had been grown continuously on that farm for five, six or seven years, gave over twice as large a yield per acre as the varieties which were quite new to the farm. In the case of oats also, varieties which had been grown on the same land continuously for ten years, gave larger yields in 1896, 1897, 1898 than varieties which were comparatively new to the farm.

Since the varieties which have been grown on a farm continuously yield more largely than any new variety during the first two or three years, it is evident that continued selection in one place from plants or crops which yield largely there, will increase the productiveness of varieties. Change of seed or change of locality in which the seed is grown brings about a variation in the variety. Unless that is followed up by selection, there is no gain through change of seed. Continued selection of the best seed from large crops on the farm on which it is grown will give on the average much better results than the introduction of new varieties.

Hay-Making

Cutting and Curing Timothy and Clover

"Make hay while the sun shines" is a saying that has in it, not only good general advice that may be applied in many walks of life, but contains a truth that should be applied in a practical way by every farmer when haying arrives. Everything considered, the quicker hay is made the better. But to do this and cut the crop at the proper time, lots of sunshine is necessary. When this is available, timothy or clover wilts readily, and by proper handling can be put in cock or into the barn, when a hay-loader is in use, in comparatively short time.

With the improved haying machinery a farmer now has at his disposal, the hay crop can be attended to without much loss if the weather is at all favorable. What with hay tedders, sulky rakes, hay loaders, hay forks, etc., the work of getting the haying done is made very much easier than was the case even a few years ago, when it was our privilege to pitch tons of it on and off the load to the peak of the barn sometimes. But, though there is not the muscle developing work about it now that there was, yet the saving of the crop in the best possible condition for feeding purposes is one of the most important parts of the farm work. When a farmer has accomplished this in connection with all of his hay crop, he has reason to feel proud of the task he has performed.

The most important part of the haying operation is the cutting; not the mechanical part of it, but cutting when the crop is in the stage when it will give the most feed quantity and quality considered. Some of the best authorities agree that timothy should be cut when the heads begin to show a slight trace of brown or ripeness and when the seeds are well formed. Timothy cut at this stage, it is claimed, cures more pounds to the acre than if cut earlier, and many who raise hay to sell follow this plan, but some of them admit that it is at the expense of quality. When hay is to be fed on a farm, especially to cows and sheep, it should be cut at an earlier stage. Professor Henry says that for dairy cows and sheep grass should be cut early, since these animals do not relish hay that is woody and lacking in aroma, as is the case with late-cut hay. For horses and fattening cattle late cutting is perhaps better, as these animals subsist mostly on concentrated feed and hay serves more for "filling." If harvesting is delayed too long the stems of the grass are tough and woody and the seed shatter from the heads, thus leaving the hay lacking in aroma and palatability, if not nutrients.

All authorities agree that the best time to cut clover is when it is in full bloom. At this stage it has the maximum nutritive matter, and is in the best condition for assimilation. If cut before bloom the amount of water in the crop is so excessive that the process of hay making is slow and unsatisfactory. If the cutting is delayed till the heads are all brown the plants are easily dried, but such