FERTILIZERS WITH OATS.

Fertilizers.	Yield of Straw. 1893.	1892.	Yield of Grain. 1893.	1892.
Mixture	1.18	1.31	41.3	47.2
Nitrate of Soda	1.21	1.30	38.6	43.3
Muriate of Potash	1.77	1.22	37.6	40.8
Superphosphate	1.20	1.18	36.2	39.2
No Fertilizer	1.00	1.09	31.4	35.9

In this experiment the increase in the grain cost 44 cents per bushel. The results from the different varieties of soil all gave the same results. Of course there would be a certain amount of fertility left in the soil, but on the whole the results went to show that it would not pay to use the above artificial fertilizers in a dry season such as the last. The results might have been different had there been a greater rainfall.

FERTILIZERS WITH RAPE.

In the experiments with rape, sodium nitrate gave a gain of five tons of rape to the acre, owing to the addition of 80 pounds at a cost of $2.00; in this case there was a decided profit. The superphosphate gave but little increase in yield. The yields were as follows: No manure, 4.1 tons; superphosphate, 5.1 tons; sodium nitrate, 9.2 tons.

CARROTS.

Five varieties.	Yield per acre. Co-operative test.	At O. A. C.
Improved Short White	780	1097
White Belgian	661	853
White Vosges	657	958
Danvers' Half Long Orange	657	861
Guerande	601	740

It will be noticed that the White Vosges is second in the test at the Ontario Agricultural College and the Belgian third, which is the position that they occupied in both tests last year. The two varieties which were the easiest to remove from the ground were the White Vosges and the Short White.

TURNIPS.

Four varieties.	Yield per acre. 1893.	1892.
Jersey Novet	689	New variety.
Red Globe Norfolk	684	905
Hartley's Bronze Top	659	783
Carter's Elephant	662	764

The first two are fall varieties, the last two are Swedes. It will be seen that the last three varieties hold the same relative position as they did last year, Red Globe Norfolk being the highest in the yield, the Jersey Novet not being in the list last year.

MANGOLDS.

Four varieties.	Yield per acre.
Long Red Selected	1016
Mammoth Red	844
Carter's Orange Globe	785
White Silisian	778

Long Red Selected and Mammoth Red again lead the list this year.

MILLET.

The results obtained this year in regard to millet are practically the same as last year. The same varieties were sent out. Salzer's Dakota is far ahead in yield, the common millet is the poorest, while the Golden Wonder occupies a middle ground. Salzer's Dakota is a variety which was obtained from the Western States, and has been doing exceedingly well on the farm at Guelph Golden Wonder is also a new variety from the Western States. Mr. Zavitz would consider Salzer's Dakota a good feeding millet, though rather coarse. It stands stiff in the straw, and has a larger amount of leaf than either of the other two.

LUCERNE.

Reports from those who have experimented with lucerne this year and last are quite favorable, while from those who tried the experiments four years ago the majority were unfavorable, though in some cases, where it had been sown on high, dry land, the experiment had been very successful.

CORN.

Six Varieties.	Yield Per Acre. Tons per Acre.	Green Ears.
Mammoth White Surprise	17.5	2.4
Thoroughbred White Dent	15.9	3.5
Giant Beauty	15.5	3.0
Mammoth Cuban	15.2	3.4
Wisconsin Early White Flint	14.1	3.6
Salzer's North Dakota	13.2	3.5

Mammoth White Surprise is a very large variety, and has given the largest yield per acre of all the varieties grown at Guelph, where it has been grown for five years. It is very late, and it is a question if it is not too late for any part of the province. White Flint is a well-known variety. On the Guelph farm it is not early enough, only reaching the milk stage. Salzer's North Dakota will get very hard. Wisconsin Early will get fairly hard. Mammoth Cuban will get in very fair condition for ensilage. Salzer's North Dakota will do, as its name implies, best farther north. It will ripen at Guelph. It is impossible to say which variety will do best for the Province of Ontario, as much depends on the locality. The speaker would recommend Wisconsin Early, Mammoth Cuban, Compton's Early and North Dakota for general use in Ontario.

BARLEY.

Five varieties.	Yield per acre. Co-operative tests.	At O. A. C.
Mandschuri	23.7	53.3
Oderbrucker	20.7	49.7
Hungarian	20.0	32.3
Guaymalaye	18.0	33.0
Kura Kula	17.7	37.1

The Mandschuri and Oderbrucker occupy the same positions as they did last year. The Mandschuri is a Russian variety, and has a very long, strong straw.

SPRING WHEAT.

Six varieties.	Yield per acre. Co-operative tests.	At O. A. C.
Herison's Bearded	15.0 bush.	27.0
Blue Stem	15.0 "	25.0
Rio Grande	14.0 "	23.0
Mt. Corbin	14.0 "	22.0
Red Fern	13.0 "	30.8
Pringle's Champion	12.9 "	26.9

It will be noticed that though the Red Fern is only fifth in the co-operative experiments, it headed the list at the College Farm with a yield of 30.8 bushels. Last year it headed the list in both sets of experiments. Herison's Bearded, which is first and second this year, was third in both tests last year.

WINTER WHEAT.

Five varieties.	Yield per acre. Co-operative tests.	At O. A. C.
Dawson's Golden Chaff	34.9	45.7
Golden Drop	34.4	47.0
Early Red Clawson	32.0	43.0
Bulgarian	31.4	41.2
American Bronze	31.3	37.9

PEAS.

Four varieties.	Yield per acre.
Prussian Blue	25.9 bush.
White Marrowfat	25.0 "
Canada Cluster	25.0 "
Dauphin	21.0 "

Prussian Blue has done exceedingly well at the Guelph Farm this year, and is well known over the Province as one of the best varieties grown.

OATS.

Four varieties.	Yield per acre. Co-operative tests.	At O. A. C.
Siberian	52.4 bush.	75.1
Poland White	52.0 "	67.6
Joanette	51.0 "	87.4
Golden Giant	45.0 "	62.0

Of this variety of grain, Mr. Zavitz has the following to say:—

"There is a greater demand for oats than for any other class of experimental material which we send out. Last year we had 175 complete results, this year 105. Siberian White Oat, which was imported from Russia five years ago, is at the head of the list among 105 experiments. It was at the head of 175 experiments last year. It is also at the head of the list of white varieties which have been grown here for the last five years. Eighty-one varieties have been grown here for five years, of which I suppose four-fifths are white, and the Siberian is at the head. It also came out head in the large plots on the farm.

The Poland White is early, and is a very heavy oat. It is thicker than the Siberian, and stands second on the list.

Joanette holds the same relative position as last year. It stood third in point of yield in 105 experiments last year, and it stands third this year. It is a black oat, and was imported from France by this Station. It is at the head of all other varieties among the 81 grown here for five years.

In co-operative experiments Joanette did well on low land, where it is apt to grow a great deal to straw. On clay and light lands it will not do so well, and some experimentalists say the results from the Joanette are entirely unsatisfactory, and they would not grow it any more, while others speak in the highest terms of it.

The Golden Giant is an oat which, perhaps, has been boomed the most. We sent it out this year for the first time. It is one of the leading varieties, and stands second among the twenty-seven new sorts we introduced three years ago, and grew this summer for the first time.

Joanette is apt to shell a good deal, and should be cut on the green side. White Poland is not quite so apt to shell in our experience. The Joanette is the thinnest-shelled oat we have in the list of eighty-one varieties. We took one hundred grains of each variety, shelled them, weighed the shells and weighed the kernels, and found there was no thinner-shelled oat than the Joanette.

RESULTS.

The greatest care was taken in selecting varieties and seed. We consider it better to send out small quantities of really good seed of special quality than larger quantities of inferior seed. I wrote to quite a number to whom grain was sent in 1891, asking them what results they had reaped from the experiment, and have received a large number of very satisfactory replies. One man says he has now 30 bushels of Herison's Bearde d; another has fifty bushels of Hungarian barley, seed of which was sent out in the spring of 1891; another has 100 bushels Flying Scotchman oats and 100 bushels Poland White, started from small lots; another has 45 bushels Poland White and 60 Joanette; another has two and a-half acres of Poland White; another man has 105 bushels; another man is growing Joanette right along this year, and considers it one of his most profitable crops; another has eight bushels Siberian; another has 50 bushels Pringle's Champion spring wheat; another 50 bushels Joanette; another ten bushels Herison's Bearde, weight 63 lbs. to the bushel.

A number of valuable addresses and papers were delivered by prominent agriculturists, and as a number of these will be published in full at a later date, we will merely give a few extracts and the following synopsis of the proceedings.

A DISCUSSION AROSE

as to how the interest taken in the Union by farmers could be increased. At present there is on each delegation to the Farmers' Institutes a member of the Union, and it was suggested that instructions should be given to this Union delegate to advocate the claims of the Experimental Union at the Institutes attended by them. A motion in accordance with this idea was submitted and carried unanimously.

SHEEP AS PROFITABLE FARM STOCK.

As Mr. John Harcourt was unavoidably detained from the meeting, his paper on "Sheep as Profitable Farm Stock" was read by his brother. He considered sheep-raising as one means by which, during the present hard times, a profit could be made without much hired help. They are but little trouble to care for, except at lambing time, and are easily pastured—indeed, can pick up their living where other animals would die. Sheep give good returns for good care, and with better feed and more careful attention more profit could be made. The point was raised as to the advisability of keeping sheep in a warm place, and the essayist asked for the experience of others on this point.

Mr. Mason did not think warm stables advisable. The main thing was to keep the sheep dry. The depression of the present year had rather discouraged sheep breeders, but he thought that Canadian breeders would ultimately come out all right, as they raised good stock. He had sold lambs in Buffalo this year for the lowest price that he had in thirty years.

Mr. E. Lunn was much in favor of keeping sheep in a warm barn, and cited his own experience in proof of his statements. An interesting and lengthy discussion then followed on this question.

BEE-KEEPING IN ONTARIO.

Mr. R. F. Holtermann read a paper on "Bee-Keeping in Ontario," which will appear in an early issue. In the discussion which followed, the following points were brought out: The lightest honey is raised on high land. Undulating soil extends the season. A site near the lake shore has same result, for the bloom opens later by lake and earlier further back. As a rule, the further north the better the honey. A man to be successful in bee-keeping must be an enthusiast in his business, and use push, pluck and perseverence. Less skill is required in working for extracted honey than for comb honey. In extracted honey it is necessary to watch the bloom closely, so as not to mix the honey from different flowers.

HOW TO IMPROVE THE FINANCIAL CONDITION OF THE FARMER.

The address on the above subject, which Vice-Chancellor Mulock was unable to deliver through illness in his family, was read by Mr. R. F. Holtermann.

This paper was most interesting in many respects and very practical. He did not treat the subject in relation to its connection with any tariff legislation, but showed how each farmer could improve his financial condition for himself, and gave much valuable information gained from results achieved on his own farm.

First, he said that farming was a science and not a game of chance, and that the first question of each farmer should be, "How can I increase the production of my farm?" In answer to this, he said the farmer must increase the means of fertilization by underdraining, proper cultivation, and a thorough system of manuring.

He then explained his system of adding nitrogen to his soil by plowing under leguminous plants, such as clover and peas, and showed, by reference to his own field, the great advantage to be derived from this system of manuring. There is no profit in endeavoring to cultivate more land than can be properly manured. The successful agriculturist must be able to make a practical application of scientific knowledge. The farmer should also have some definite policy in his work, and make some department of the farm a specialty.

Mr. Mulock then gave a few remarks of caution as to what farmers should avoid if they would succeed.

It is false economy for a farmer to over-work himself, and in order to avoid this he must form habits of regularity, and, if possible, keep ahead of his work. The successful man must be temperate in his habits. Another pitfall is debt. "A man in debt is caught in a net." He must also avoid all bubble schemes. The prudent man must avoid litigation; it is a luxury in which no farmer can afford to indulge. He must also adopt business methods in connection with his calling, and should keep a full account of his business transactions. In conclusion, he said that all farmers should keep themselves abreast of the times by means of farm journals and newspapers. He urged them all to give their hearty support and sympathy to this farmers' college, which was doing so much to advance the interests of the farmers.

In the discussion which followed, Mr. Dryden said that farming for glory was not a favorite pastime in Canada. Gain was the objective point of everyone. The object of every farmer must be to obtain the greatest possible results by the most economic methods, though parsimony must be avoided. What the farmer needed was access to the best markets of the world, and such instruction as would best enable him to produce the most from his land. No man should be a mere copyist, and no one can succeed by careless, slipshod or old-fashioned methods.

Prof. Shuttleworth considered that Mr. Mulock had endeavored to teach two lessons: first, the nec-