

The Experimental Union Had 4,299 Experimenters in 1917.

The thirty-ninth annual meeting of the Ontario Agricultural and Experimental Union, held at the Ontario Agricultural College, Guelph, on Tuesday and Wednesday of last week, provided a program of great interest to the upwards of three hundred short-course and regular students of the College, and the small number of ex-students who availed themselves of this opportunity to refresh their knowledge of the work the "Union" is going. We must say again that it is unfortunate that more of the ex-students of the College and the experimenters who are carrying on the co-operative experiments on their own farms do not attend these annual meetings. Since the co-operative work started, thirty-two years ago, over 88,600 distinct tests have been made, and there is a fund of valuable information in each annual meeting for those who are privileged to attend.

Close Unnecessary Industry.

President H. Sirett, of Brighton, Ontario, pointed out the seriousness of the situation caused by the war and the necessity of Canada doing all possible in the production of foodstuffs. "Our efforts," said Mr. Sirett, "to do our utmost in the production of foods are handicapped by the ever-increasing difficulty in obtaining help on the farm. There has been an increasing demand in almost every line of production. The manufacture of munitions, the increased trade in all those commodities required for the equipping and maintaining of a vast army has taken men from the field whose services could ill be spared. But we recognize the need of these industries and have endeavored to spare the men to carry them on. Unfortunately, these necessary industries are not alone in feeling and impetus and many industries engaged in the production of what in no sense can be considered as necessities are competing with other manufacturers and with the farmer for labor. Unfortunately, too, many of these industries have been able to offer prices for their labor which has made it almost impossible for the farmer to compete against them. Laborers, who previously have been employed on farms, cannot be censored for leaving the rural districts to work in towns and cities when the reward received there is greater than is to be obtained at their previous occupations. . . . If it be true that there exists a crisis in Europe in connection with the food supply and there is not a sufficient number of men who will voluntarily accept the reward which the production of food offers, it is as necessary to conscript men to work in the fields as it was that men should be conscripted to fight in the trenches.

"It may not be necessary to resort to a law which will go into the factories and take the men out to the fields. It would be equally effective if the manufacturers of those things which are non-essential were placed under a restriction which would have the result of preventing them from competing with essential industries for what labor is available. If farmers are to be urged to produce 'Even at a loss', then manufacturers must be prepared to restrict their production 'Even at a loss'. Now might be a most opportune time for the manufacturer to invade new fields and establish himself in new territory; territory which the European manufacturer has hitherto controlled and from which he has been forced to withdraw in order that his employees might be liberated to bear arms or to engage in other industries of greater importance.

"It cannot be tolerated that labor needed in the production of those things which are most essential at the present moment and of paramount importance to the successful carrying on of the war, be diverted, in order that some might take advantage of an opportunity to place their industries in a better position to be maintained after the war is over. By so doing we are jeopardizing our chances of bringing the war to an early and most successful conclusion. It may be advisable to place all industrial activity under the control of a commission whose duty it would be to say in what industry labor may be employed. That would mean that every would-be employer of labor would have to obtain a license which would give authority to engage the number of employees, which the commission considered was justified by the absolute needs of the country at the present time."

Among the industries which Mr. Sirett mentioned as non-essential were the manufacture of automobiles and automobile accessories to be used for unnecessary recreation; the manufacture of confectionery, ornaments for personal adornment or other uses, clothing which is demanded only as a result of the dictates of fashion, and an innumerable list of such things as cannot be classed as necessities. Such industries must halt to make easier the production of necessities which should eventually tend to lower prices of those necessities. Mr. Sirett concluded by saying that the assistance offered by business men and other urban residents last summer, while a help, offered no dependable solution to the problem. The amount of labor cannot be increased; we must therefore see that what is available is employed only in those industries most essential.

An Economic Problem.

H. B. Webster, of St. Mary's Ont., Vice President of the Union, opened the discussion following Mr. Sirett's address. In his opinion the main question at the present time was an economic one. There is a marked economic uneasiness in the country, and farmers do not appear to have sufficient confidence in themselves. Labor is leaving the land to command higher wages in the city, and the farmer is not in a position to compete with the industries which are taking his

help. He did not believe that farmers were responding to the call for increased production as they would if the economic conditions were on a different basis and the farmer could compete with other industries. For his present condition, Mr. Webster believed that the farmer was himself to blame, although farmers as a class do not feel that they can launch out as they would like to do because of the uncertainty regarding markets, etc. "The great need in agriculture is co-operative organization and development of independent thought," said Mr. Webster. He believed that the Experimental Union should give the farmers' co-operative movement every sympathy and support, and that the organized farmers should demand the legislation which would eventually overcome the economic disadvantages under which the farmer labors at the present time.

The Secretary's Report.

The Secretary's report was very encouraging, showing a gradual growth of the "Union" work since its inception thirty-nine years ago, and particularly since the co-operative experimental work was started in 1886.

The increase in the number of experimenters in agriculture can be seen from the following figures which show the average yearly number actually engaged in the work in each of four eight-year periods:

Periods.	Years.	Average number of Experimenters per annum.
1886-1893	8	315
1894-1901	8	2,608
1902-1909	8	3,882
1910-1917	8	4,282

The total number of distinct tests made throughout the Province in agriculture alone during the past thirty-two years has been 88,604. The number of experimenters in the past year was 4,299. Even though the past three years have been abnormal as to weather and labor conditions the experimental work has not waned but rather increased.

The Co-Operative Experiments in 1917.

Dr. C. A. Zavitz, in giving the results of co-operative experiments in agriculture during the past year, pointed out that there had never been a year in which the people took a deeper interest and the number of experiments was a thousand more than in 1916, or 4,299 in all, and over 4,200 men conducted experiments on their own farms. There were thirty-seven distinct experiments sent out.

In speaking of oats, Dr. Zavitz stated that the market value of the oat crop in Ontario is about equal to the combined values of the winter wheat, spring wheat barley, rye and buckwheat, about one-quarter of the value of all the field crops grown in the Province, about one-half of the value of the horses, cattle, sheep, lambs, swine, and poultry sold or slaughtered annually, and practically double the value of the cheese and butter manufactured in the factories and in the creameries of Ontario each year. Referring to the O. A. C. 72 oats, the speaker pointed out that it started from a single seed in 1903, that it was first sent out in 1911 by the Union, and in 1913 there was sufficient of this variety to enter the Field Crop Competition and a first prize was obtained. In 1916 this variety took first place in the competitions carried on by seventy-six agricultural societies in Ontario, and it is gradually replacing the Banner variety. The O. A. C. 72 has yielded on an average over Ontario in tests for the last five years, 50.1 bushels per acre, while the O. A. C. No. 3 has yielded 45.7.

O. A. C. No. 21 barley and common emmer have been tested for five years, in which the barley has always surpassed the emmer; the average for 1917 being a lead of 89 pounds of grain per acre. This barley was started at the O. A. C. in 1903 and has been sent out by the Union for ten years in succession, and is now the most extensively grown barley in the Province.

In spring wheat the Marquis and the Wild Goose are the varieties distributed. In four of the last five years the Wild Goose surpassed the Marquis in yields of grain per acre, the average for five years being 20.2 bushels for the Wild Goose and 19 for the Marquis. It is interesting to note that the number of acres of spring wheat in Ontario amounted to 144,305 in 1916, and 182,957 in 1917.

Five varieties of winter wheat were sent out in the fall of 1916; the results have already been published in this paper, and five varieties were again sent out in the fall of 1917, including the O. A. C. 104; Improved Imperial Amber, Improved Dawson's Golden Chaff, Kharkov and Yaroslavl. In twenty-five experiments at the O. A. C., No. 104 came at the top of the list. It is a cross produced at the College between Dawson's Golden Chaff and the Bulgarian.

Two varieties of buckwheat were sent out. In the average of seven years Rye buckwheat gave 25.3 and Silver Hull 20.5 bushels per acre.

In spring rye two varieties were sent out. The average yield in bushels of grain per acre for 1917 and the average of the seven-year period are, respectively: O. A. C. No. 61, 22.5, 24.7; and common, 20.4, 21.6.

The Petkus winter rye and the Imperial Amber winter wheat were tested. The rye surpassing the wheat by an average of 380 pounds per acre in 1915 and by 344 pounds in 1916 and 265 pounds in 1917.

In each of the past two years three varieties of field peas have been sent out including the Canadian Beauty,

the Early Britain and the Potter. For the two years the Potter led with 21.9 bushels, the New Canadian Beauty coming second with 21.8, and the Early Britain third with 21.3.

Two varieties of field beans met a large demand in the co-operative experimental work, and also a variety of soy beans was sent out. Pearce's Improved Tree bean gave the highest yield per acre, namely 18.75 bushels, followed by Elliott's Pea Bean with 17.83 bushels, and the O. A. C. No. 81 soy bean with 14.81 bushels. Dr. Zavitz advised growers to plant the common white pea bean, because over Ontario it ripened a little earlier than Pearce's.

Only three good results were obtained in the experiments with corn for grain production, where the Golden Glow led in York County, the Wisconsin No. 7 in Norfolk County, and the Longfellow in Huron County.

In grain mixtures, the bushel of oats and bushel of barley was again found the best.

In 1917 co-operative experiments were conducted throughout Ontario with mangels, sugar mangels, swede turnips, fall turnips, field carrots, fodder corn, millet, grass peas, vetches, rape, kale, field cabbage, mixed grains, grasses, clovers and alfalfa. The season was abnormal and experimenters found it exceedingly difficult to carry on tests with corn, sorghum and millet. In mangels, the Yellow Leviathan with a yield of 24.86 tons per acre led Sutton's Mammoth Long Red with 24.78 and the Ideal with 24.16. In sugar mangels, Bruce's Giant White Feeding outyielded Carter's Improved White Sugar by almost four tons per acre, and in turnips Garton's Model was closely followed by Steel-Briggs' Good Luck and the American Purple Top; the range in tonnage being from 19.06 to 20.09.

In corn for fodder purposes the average results for the past two years are shown in the following table:

Variety	Tons Freshly-husked Ears Per Acre.	Tons Whole Crop Per Acre.
Wisconsin No. 7	3.4	13.0
Compton's Early	3.4	12.5
Golden Glow	3.3	12.2
Longfellow	3.2	11.8
White Cap Yellow Dent	3.1	11.7
Bailey	2.8	11.1
Salzer's North Dakota	3.2	10.7

As the two seasons were very abnormal, these results do not show high yields.

In sweet corn for table use the Golden Bantam still leads.

Two varieties of potatoes were tested on 263 farms in 1917. The Extra Early Eureka leading the Davies' Warrior by 20 bushels per acre; the yields being 167.8 and 147.8 respectively. Dr. Zavitz pointed out that there were too many varieties of potatoes in Ontario and an effort was being made to standardize the crop with the Irish Cobbler as the early variety, the Early Ohio as the extra early and the Green Mountain as the standard late variety.

Co-operative experiments with fertilizers were carried out with potatoes, mangels, rape and winter wheat. The results were only given with mangels. One hundred and sixty pounds of nitrate of soda applied when the plants were three inches tall increased the yield 4.3 tons per acre, and the same quantity applied when the seed was sown increased the yield 4.5 tons per acre. The highest average yield for five years was produced from 200 pounds applied when the plants were three inches tall, an increase of 6.2 tons per acre over the yield from unfertilized land.

Ontario's Agriculture in the Crisis.

Dr. G. C. Creelman, in discussing Ontario's agriculture in the present crisis, drew attention to the great necessity for a large production of grain, because no crop is so easily grown; because the price is good; and because we are asked to supply wheat and wheat substitutes in the form of oats and barley to meet the food needs of the Allies. Present indications are that the winter is going to be hard on fall wheat and there was not as much sown as we hoped would be put in. Dr. Creelman urged the sowing of more Marquis and Wild Goose spring wheat because wheat would be needed and he felt would be profitable. He also urged the production of our own root seed.

He referred to the shortage of labor and discussed the possibility of helping out with threshing gangs in the fall. Large gangs for large machines might be supplied, or the small threshing outfit might be used on some farms and the grain threshed as drawn in or left to be threshed after winter set in and the changing work would not necessitate stopping of teams. The drawback to sending out the large threshing gangs would probably be the expense. Dr. Creelman estimated that it would cost from five to nine cents per bushel to do the threshing or from \$50 to \$90 per thousand bushels, whereas threshers supplying two men and a machine are getting about \$20 at the present time. He asked if the farmers would stand the extra expense in order that their teams might be kept going an extra two weeks in the fall in place of a man being away threshing during that time. The drawback to the small outfit was also one of cost, the price ranging from \$1,100 to \$1,340. His suggestion was the employment of gangs where required, that nothing be done where the system was

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