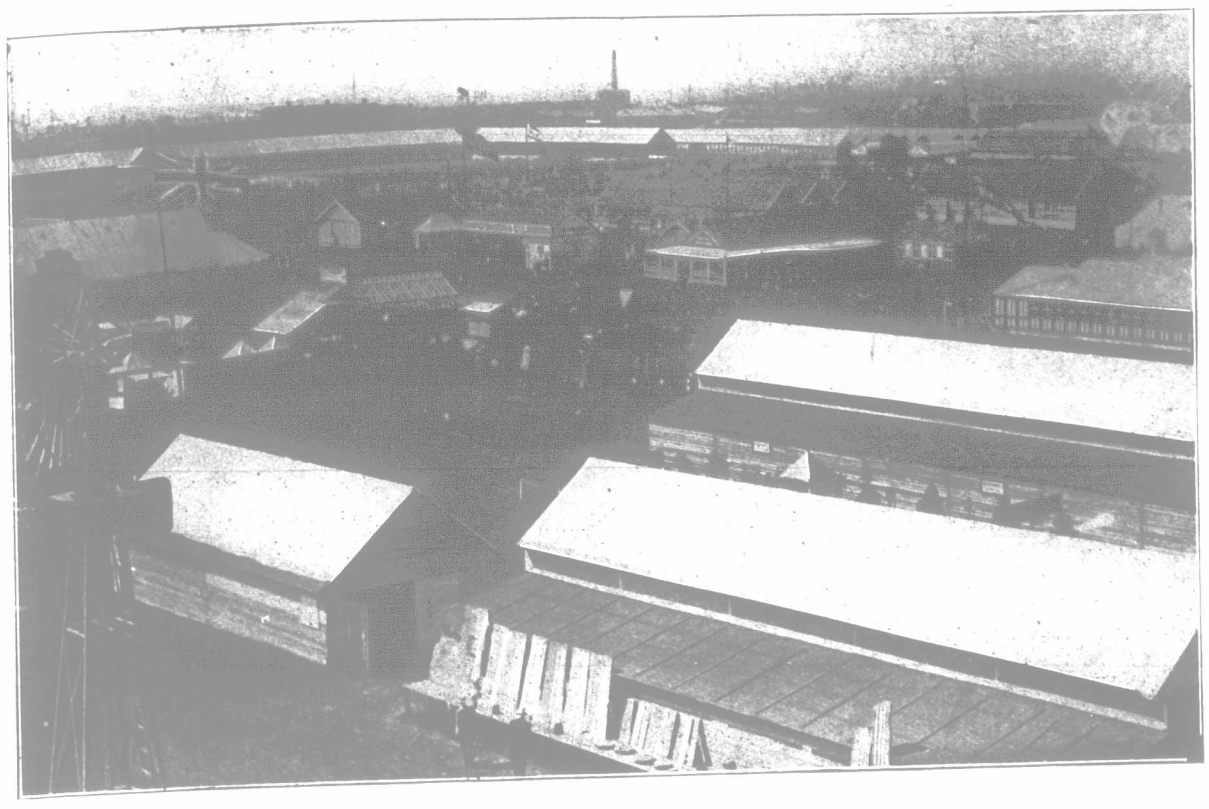


The Royal Show Grounds at Liverpool.

bushels) and three other varieties which resemble it very closely, and which have yielded as follows: American Wonder, 51 bushels; American Banner, 50.8 bushels; and Abundance, 48.6 bushels. The highest yields produced by varieties of other types in the five-years' experiment are as follows: Crimean Red, 44 bushels; Prosperity, 43.4 bushels; Kentucky Giant, 42.9 bushels; Genesee Reliable, 42.7 bushels; No. 5 Red, 42.6 bushels; Early Genesee Giant, 42.6 bushels; Turkey Red, 42.3 bushels; Egyptian Amber, 42.2 bushels; and Banatka, 42.1 bushels. The heaviest weights of grain per measured bushel in the five-years' test have been produced by the Northwester, 63.7 lbs.; Geneva, 63.1 lbs.; Banatka, 63 lbs.; Rudy, 63 lbs.; Genesee Reliable, 63 lbs.; Egyptian Amber, 62.9 lbs.; Kentucky Giant, 62.9 lbs.; Crimean Red, 62.8 lbs.; Turkey Red, 62.7 lbs.; and Imperial Amber, 62.7 lbs.

Of the forty-three varieties of winter wheat grown in 1910, the greatest yields of grain per acre were produced by the Grand Prize, 53.6 bushels; Crimean Red, 53.2 bushels; Banatka, 52.4 bushels; New Perfection, 52.3 bushels; Kharkov, 52.1 bushels; Red Wave, 51.2 bushels; and Buda Pesth, 50.3 bushels; and the heaviest weights per measured bushel by the Rudy, 63.3 lbs.; Bulgarian, 63 lbs.; Nigger, 63 lbs.; Northwester, 62.9 lbs.; Farmers' Friend, 62.8 lbs.; Kentucky Giant, 62.6 lbs.; and Michigan Amber, 62.5 lbs.

In each of the past three years, the varieties of winter wheat grown in the Experimental Department were carefully tested for bread production in the Bakery Branch of the Chemical Department of the College. The varieties of winter wheat which produced the largest loaves of bread from equal quantities of flour in the average of the tests made in 1907, 1908 and 1909 are as follows: Crimean Red, Banatka, Tuscan Island, Buda Pesth, Scott, Yaroslaf, Kentucky Giant, Tasmania Red, Rudy, and Egyptian Amber. These all possess red grain, and, with one exception, bearded heads, and, with two exceptions, white chaff.

From the results of experiments conducted with different varieties of wheat at the College, it seems to be generally true that white wheats yield more grain per acre, possess stronger straw, weigh a little less per measured bushel, are slightly softer in the grain, produce a more popular pastry flour, and furnish a somewhat weaker flour for bread production than the red varieties.

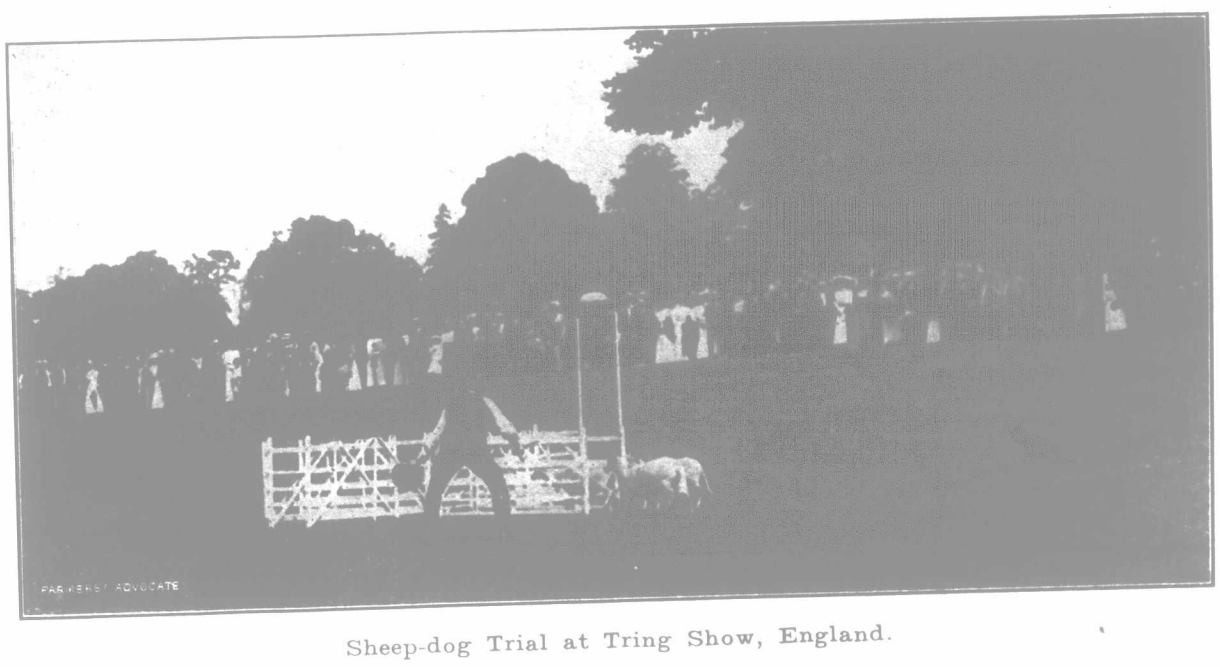
During the last few years a considerable amount of work has been done, with the object of improving some of the best varieties of winter wheat by means of systematic selection and by cross-fertilization. It is interesting to note that, during the last three years, the highest yields of all the winter wheat experiments, both in yield of grain per acre and of weight of grain per measured bushel, have been obtained from some of the new kinds originated at the College, either by pure selection or by the aid of cross-fertilization. Some of the most interesting hybrids have been obtained by crossing the Dawson's Golden Chaff with the Tasmania Red, the Buda Pesth, the Turkey Red, the Bulgarian, and the Imperial Amber.

The results of twelve separate tests made at the College show an average increase in yield of grain per acre of 6.8 bushels from large as compared with small seed, of 7.8 bushels from plump as compared with shrunken seed, and of 35.6 bushels from sound as compared with broken seed. Seed which was allowed to become thoroughly ripened before it was cut produced a greater yield of both grain and straw, and a heavier weigh of grain per measured bushel than that produced from wheat which was cut at any one of four earlier stages of maturity.

In the Experimental Department, winter wheat which has been grown on clover sod has yielded much better than that which has been grown on timothy sod.

In the average of eight separate tests, land on which field peas were used as a green manure yielded 6.5 bushels of wheat per acre more than land on which buckwheat was used as a green manure.

In the average of five years' experiments, varieties of winter wheat gave practically the same results when sown separately as when sown in combination.



Sheep-dog Trial at Tring Show, England.

Results of Co-operative Experiments with Autumn-sown Crops.

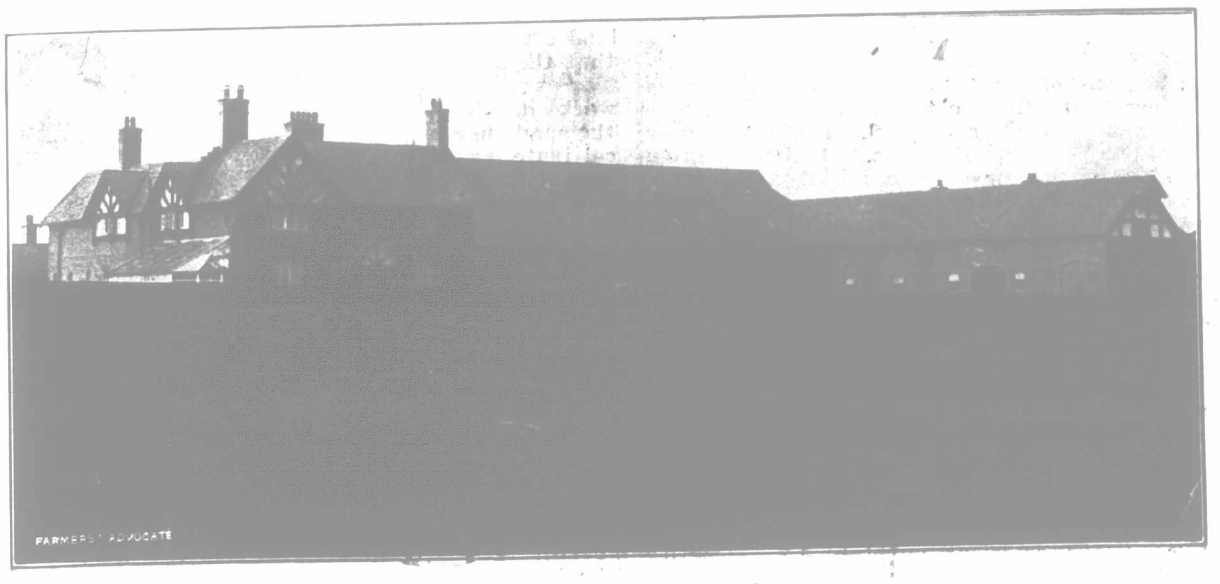
Four hundred and thirty-eight farmers throughout Ontario conducted co-operative experiments with autumn-sown crops during the past year. Reports have been received from thirty-five of the counties of the Province. The experimenters deserve much credit for the good work which they have done, not only for themselves, but for agriculture generally. Average results of the carefully-conducted co-operative experiments with autumn-sown crops are here presented in a very concise form.

Winter Wheat.—Four varieties of winter wheat were distributed last autumn to those farmers who wished to test some of the leading varieties on their own farms. The average yields per acre of straw and of grain are as follows: American Wonder, 2.8 tons, 31.0 bush.; Tasmania Red, 2.4 tons, 28.3 bush.; Imperial Amber, 2.4 tons, 26.4 bush.; Crimean Red, 2.3 tons, 26.4 bush.

The American Wonder resembles very closely the Dawson's Golden Chaff, both in appearance of the growing crop and in the quality and the appearance of the grain. The Tasmania Red is a bearded, red-chaffed, red-grained wheat. The straw is somewhat weak, but the grain is of excellent milling quality. The Imperial Amber is a bearded, red-chaffed, red-grained wheat, of fair strength of straw, and of good average quality for bread production. The Crimean Red is a bearded, white-chaffed, red-grained wheat, rather weak in straw, but excellent for bread production.

Winter Rye.—Three varieties of winter rye were distributed in the autumn of 1909. The results show that the Mammoth White variety came at the head of the list in yield per acre in 66 per cent. of the experiments. The Washington came second, slightly surpassing the common variety. In the experiments throughout Ontario, the Mammoth White surpassed the Common rye by an average of 5 bushels per acre in 1907, 5.4 bushels per acre in 1908, and 6 bushels per acre in 1909.

Fertilizers with Winter Wheat.—In the co-operative experiments with different fertilizers applied in autumn to winter wheat, average yields of grain per acre for six years are as follows: Mixed fertilizer, 24.9 bush.; nitrate of soda, 24.1 bush.; muriate of potash, 23.1 bush.; and superphosphate, 22.6 bush. On similar land, cow manure, at the rate of 20 tons per acre, gave an average yield of 27 bushels per acre, and the land which received neither fertilizers nor manure gave an average of 20 bushels per acre. The superphosphate was applied at the rate of 320



An English Homestead.