

strain would be of poorer quality, and to obtain other good sorts it would be necessary to start from another variety not so good, but capable of improvement through its seedlings.

Knight believed that, in addition to selection, introduction of new blood by cross fertilization was necessary. Van Mons, in his fifty years' work, proved the importance of selection, and originated many fine varieties, but failed to show that his was a better method of improving plants than by cross breeding and selection. In the fifth generation, by selection, Van Mons was able to get pears to fruit three years from the seed, but this early fruiting was obtained at the expense of vigor, causing a weakening of the constitution. Some of Van Mons' seedling pears are among the best even at the present day, examples being the Diel and Bosc. Van Mons' work was confined mainly to pears, but Knight took in hand the improvement of most of the hardier fruits, and also vegetables. The information he gave to the world from the results of his work in the breeding of fruits by crossing has been of great value to more recent workers.

Examples are given in this bulletin of varieties of fruit which have been originated in America by selection and by cross-breeding. Some interesting chapters in this bulletin are "The Limits of Crossing," "The Influence of Soil," "The Use of Unripe Seed," "Breeding from Asexual Parts." In connection with the last-mentioned subject is discussed the question of individuality in fruits, the author believing that productive strains of varieties may be developed by propagating from individual trees or bushes which are more productive or better colored fruit than others. This line of work is being investigated at Ottawa, where trees of some varieties have proved themselves to be much more productive than others of the same age. Young trees, as well as top grafts, are now growing from the poorest and best-yielding trees, and definite information as to permanence of this apparent individuality will soon be obtained. This bulletin also contains chapters on the improvement of the strawberry, grape, pear, apple, plum and blackberry in America, with lists of representative varieties.

The writer, in conclusion, draws attention to the many unsolved problems in plant-breeding, which can only be solved by the classification of the present knowledge of the subject and by scientific research.

Mushrooms that I use for canning grow in the open air on the Sackville marshes without any cultivation or preparation whatever. Some years they are plentiful, and some years very scarce, but if they are plentiful we get loads of them in a day, and they have a far better and stronger mushroom flavor than any others grown that I know of. If you ever picked and cooked mushrooms down on the old farm, you have them in mind.

JAS. R. AYER.

Westmoreland Co., N. B.

POULTRY.

Successful Poultry-raising in 1906.

I set my first incubator of eggs on March 24th, the chickens hatching out about the 14th of April. The second hatching came off about the 6th of May, and a third about the 28th of May. When I started the incubator, I set some hens so as to have their chickens hatching out at the same time as those from the incubator. When the latter hatch out, I give the chickens to the hens. In one case I had not enough hens to take all the chickens, so I put the rest of the chickens in a brooder until other hens hatched out their chickens, and gave them to these hens. The hens mothered them just as well as if they had hatched them themselves. In this way I raised about four hundred chickens.

On the 21st of June I shipped the cockerels hatched in April to a produce company in Toronto. They weighed from 2½ to 3 pounds each, and brought 19 cents a pound live weight. The cockerels out of the second hatching I sent away on the 10th of July. These averaged 3 pounds, and brought 16 cents a pound, live weight. On July 23rd I sent 30 cockerels to the Central Ex-

perimental Farm, Ottawa, for experimental purposes. In all, I sold 97 cockerels. This left me with 80 to fatten. These I crated on the 15th of November, and fattened for four weeks. When they were ready for market, the largest weighed 9 pounds, and the smallest weighed 7 pounds. They all brought 15 cents a pound. About the 1st of September I started to kill off my chickens that were not fattened, for private customers. These also brought 15 cents a pound.

On November 12th I sent 40 pullets to New Ontario, and got a very satisfactory price for them. I have kept 47 of the early pullets for winter layers. These are all laying now, some of them starting to lay as early as August. I have a pen of one-year-old hens that are not laying now; they will not lay until March. These are the eggs I will use for hatching. I do not find eggs satisfactory for hatching from hens that have laid all winter. I never keep a hen over two years old.

In December I got 77 dozen eggs from my hens. Of these I sent 71 dozen to Montreal, receiving 50 cents per dozen.

For many years I raised Barred Plymouth Rock fowl, and found them most satisfactory. Being advised to try the Buff Orpingtons, I got a setting of eggs, and found them so successful that I continued raising them, also. I find that the Buff Orpingtons make good mothers, and, in raising fowl, this is an important item to be considered.

(MRS.) MARGARET YULL.

Lanark Co., Ont.

Sidney A. Denyes writes us: "By wetting the interior of my henhouse and roosts with water and applying dry ashes I got rid of the mites, but it would not kill the big red lice that sit on the roosts and bite the hens at night. I used coal oil on them, but it had no effect. A proprietary fly and insect destroyer killed them."

THE FARM BULLETIN.

Watch for the Index.

Those of our readers who have been obliged to write to us for the reprint of articles formerly published in "The Farmer's Advocate" will be especially pleased with the following announcement: Henceforth at the end of every half year we shall have published in "The Farmer's Advocate," and enclosed in one of the current issues, a complete index covering that period of time. This will, we trust, render the finding of articles and answers to questions an easy matter, while it will save us the space which would otherwise be devoted to reprinting. With such an index you may, simply by saving all your copies of the paper, speedily come into possession of a valuable and convenient agricultural reference library. This will cost us considerable, but we wish to do the best possible in every way for our subscribers. The index, covering July-December, 1906, will appear within a short time. Watch for it.

A. H. Jacobs' Shorthorn Sale.

The auction sale of the herd of Shorthorns belonging to Mr. A. H. Jacobs, at Blyth, Ont., on January 16th, was well attended, and the very useful lot of cattle were sold at fairly good prices. The four-year-old imported bull, Broadhocks' Golden Fame, falling to the bid of Mr. T. Mercer, Markdale, Ont., at \$805. The roan yearling-bull, Broadhocks' Victor, went to Mr. J. McDiarmid at \$150. Sir Broadhocks, a red two-year-old bull, was taken by Jos. Walker, Wingham, at \$125, and Broadhocks' Prince, by P. Campbell, Amberley, at \$105. The highest price for females was \$100 for Flossie, seven years old, secured by A. Stevenson, Atwood.

Short Courses at O. A. C.

The large number of interested and enthusiastic men who have been attending the short courses at the O. A. C., Guelph, Ont., indicates that the courses are not decreasing in popularity. In the two weeks' course of stock and seed judging there have been in regular attendance nearly two hundred and fifty students, while the special classes in poultry and dairying were crowded almost to the limit.

The number in attendance at these two latter courses is necessarily limited, in order that the instructors—Professors Graham and Dean—may be enabled to give each member personal instruction. A noticeable feature of the courses this year was the large number of younger men present, as compared with the greater number of older men present in former years. Practically all were new men, who had never on previous similar occasions taken the course, and the interest aroused in these will, no doubt, stimulate and accentuate their efforts for the betterment of agriculture.

The aim of those in charge was to give a maximum amount of information in a minimum space of time, and in order to do this it was necessary to crowd work considerably. From 8.30 to 10.00 each morning was spent in seed judging, under the direction of Prof. Zavitz, who has just returned from a trip to the continent, and his assistants, Messrs. Buchanan, Bell and Squirell. Some one of the staple farm crops was discussed each morning, their valuable properties emphasized, and several samples distributed for practical work in judging.

The classes for the judging of live stock were held in the live-stock pavilion, and, as a rule, commenced immediately the class arrived from seed judging, which was held in the new mechanical building. In order to make the course a success, Professors G. E. Day and H. S. Arkell spared no pains. College stock, of which there was insufficient, both of numbers and variety to equip all classes, was supplemented from the flocks and herds of well-known breeders: J. G. Hammer, Brantford, Ont.; H. Arkell, Arkell; Teller Bros., Paris, Ont., and Mr. Laird, of Guelph, were present with fairly strong representations of Shropshires, Oxford, Southdowns and Cotswolds, respectively, while J. E. Brethour, of Burford, and Mr. Moodie, of Guelph, aided with Yorkshires and Berkshires in the swine classes. Col. D. McCrae, of Guelph, had some of his best Gallo-ways present, in order to give the men a chance to see this breed. O. Sorby and A. Aitchison, both of Guelph, who for many years have assisted by loaning their Clydesdales, were present with some choice ones. The classes in the lighter breeds were filled out by horses from local men—McConnell, Harvey and Tovell. The classes were most of the time in charge of Prof. Day and Dr. Reed, assisted by Mr. Arkell, and the men who owned the stock before the class.

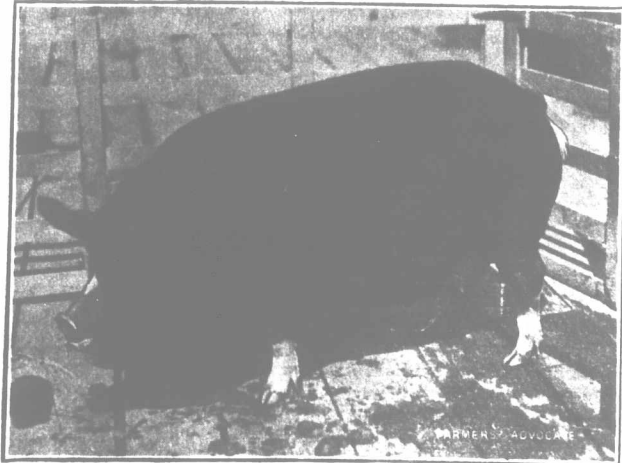
The block test, which is annually held in connection with the course, was conducted again this year. Four steers, two Shorthorns and two Aberdeen-Angus, were brought before the class, passed upon, and placed, and then slaughtered and their carcasses exhibited the next day. Mr. John Gosling, of Kansas City, Mo., took charge of the class, and acted as referee, giving all possible aid, and entire satisfaction. This is one of the most important features of the work done during the course, and the value of it cannot be too strongly emphasized, as it shows clearly why the development or lack of development in certain parts of the animal are desirable or otherwise. Block tests were also conducted with fat sheep and swine.

The courses in poultry-raising and dairying will continue for some time yet. The dairy school closes March 22nd, and the course in poultry-raising lasts four weeks.

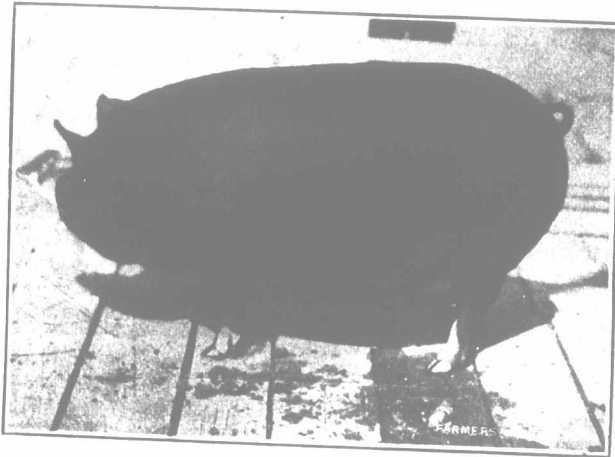
Iowa Farmers at School.

At the 1907 short course for farmers, at the Iowa State Agricultural College, at Ames, 654 students were enrolled in the stock and grain judging work, 79 in the dairy course, and 32 in the domestic science course, a total of 765 students.

Dairy Commissioner J. A. Ruddick is arranging for a fine display of Canadian dairy products at the big Irish exhibition, Dublin, this season.



Wandsworth Princess.



Bell of Balham XVI.



Countess of Wandsworth.

Young Berkshire sows, imported and owned by L. E. Morgan, Milliken, Ont.