

dition. Many inexperienced breeders call their sheep "fat" when in reality they are in low condition. What the average owner terms "fat" is none too high condition for the breeding ewes before lambing, and after that there is little danger of over-feeding.

No hard and fast rule can be laid down as to the quantity of food required by a sheep, but an average-sized breeding ewe to lamb in March or April should be fed daily up to a short time before yearning about one-half a pound of oats, from two to three pounds of roots or succulent feed and from one and one-half to two pounds of roughage, of which clover hay is perhaps the best. The condition of the ewes must, to some extent, govern the feeding. If they are very thin a little more grain is necessary. But it must be remembered that the more grain that is fed the greater the necessity for exercise. Heavy feeding without exercise has been disastrous in many flocks, and may even produce sterility, and is sure to bring poor success with the lamb crop. Too many roots must not be given, as they have a tendency to produce large, flabby, weak lambs, yet roots in small quantities are almost indispensable in the ration. The straw of cereals is a poor feed, and ewes obliged to run with the straw-stack as shelter and feed combined have a small chance to do themselves or their lambs justice. Clover hay, turnips, oats, bran, and sometimes a few peas, form about the best in feeds for sheep. Mangels or sugar beets may be fed, and other hays may be substituted, but with less success than with clover. Timothy is too coarse and woody, and is not readily eaten. Besides, it hasn't the proteid content of clover. Keep salt before the ewes at all times, and do not expect them to get their drinking water from the nearest snowbank. As lambing time approaches increase the feed; add one-half to one pound of bran to the grain ration and give more roots. After the lambs arrive, give all the roots the ewes will eat. At no time crowd them at the trough. Give each ewe plenty of space. Two feet is often none too much. Keep their pens well-lighted and well-ventilated, dry and comfortable. Warmer quarters are required for a few days when the lambs arrive.

Some American Hog Breeders' Experiments.

In a test with feeding hogs, at the Oklahoma Experiment Station, twenty pigs were fed for 160 days on a ration of corn-chop, buttermilk, and barley and sorghum forage. The average daily gain was .51 lbs., as compared with a gain of 1.22 lbs. on corn-chop and buttermilk. A lot of hogs turned into a field of corn, yielding at the rate of only 17 bushels per acre, made a gain of 1.2 lbs. per head. Estimating the value of the gain at seven cents per pound, the hogs returned a value of 63.15 cents per bushel.

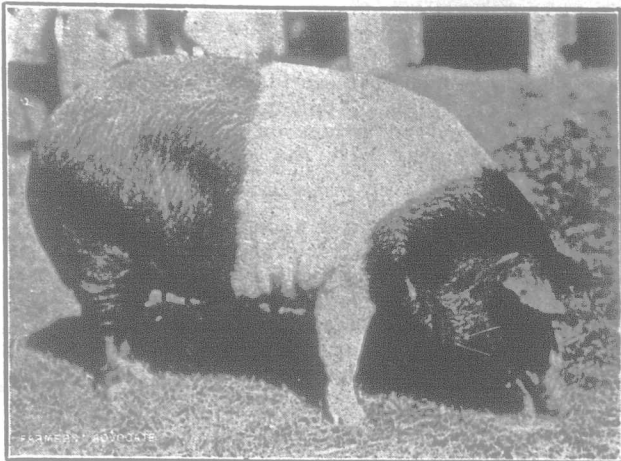
A test of ear-corn vs. ear-corn and supplementary feeds for sixteen hogs, averaging about 209.5 lbs. in weight, gave the following results: On ear-corn alone the average gain per head daily was 1.02 lbs., at a cost of 4.57 cents per pound; on corn and tankage a gain of 1.09 lbs. daily, at a cost of 4.74 cents per pound; on corn and alfalfa-meal a gain of 1.02 lbs., at a cost of 5.3 cents per pound; and on corn and alfalfa-hay a gain of .96 lbs. daily, at a cost of 5.76 cents per pound.

In a test of the value of alfalfa forage for hogs, with and without grain, pigs averaging about 75 pounds in weight were turned in an alfalfa field in April and at the end of 100 days the average daily gain was .26 lbs. per head on alfalfa alone; on alfalfa and all the dry corn-chop they would eat the gain was 1.28 lbs. per head daily; on alfalfa and a half ration of corn-chop the gain was .7 lbs. daily.

In a test of the value of cottonseed-meal as a supplementary feed, with three lots of four hogs each, weighing about 100 lbs., the average daily gain per head for seventy-seven days was as follows: On corn-chop and cottonseed-meal, in proportion of four to one, 1.05 lbs.; on the same feeds, in the proportion of six to one, 1.2 lbs.; in the proportion of eight to one, 1.18 lbs. The financial statements, however, were much in favor of the first lot.

A test was made with thirty-two young pigs with various feeds with the following results: On corn-meal, full ration, the average daily gain per head was .38 lbs., and the corn required for 100 lbs. increase was 407 lbs.; on corn-meal, full ration, and green alfalfa, the average daily gain was .52 lbs., and the corn required for 100 lbs. increase 294 lbs.; on corn-meal, half ration, and green alfalfa, the average daily gain was .38 lbs., and the amount of corn for 100 lbs. of pork 203 lbs.; on corn-meal, one-quarter ration, and green alfalfa, the average increase was .22 lbs., and the amount of corn for 100 lbs. increase 136 lbs.; on corn-meal, one-quarter ration, and green rape, the average daily gain was .12 lbs., and the corn required for 100 lbs. of pork 242 lbs.; on corn-

meal, half ration, and green rape, the gain was .26 lbs. daily, and 293 lbs. of corn was required for 100 lbs. increase; on corn-meal, full ration, and green rape, the daily gain was .46 lbs., and the corn required for 100 lbs. of increase was 333 lbs.; and on corn-meal, seven parts, tankage, full ration, one part, the daily gain was .39 lbs., and the corn required for 100 lbs. of pork was 347 lbs.



Hampshire Sow, Two Years Old.

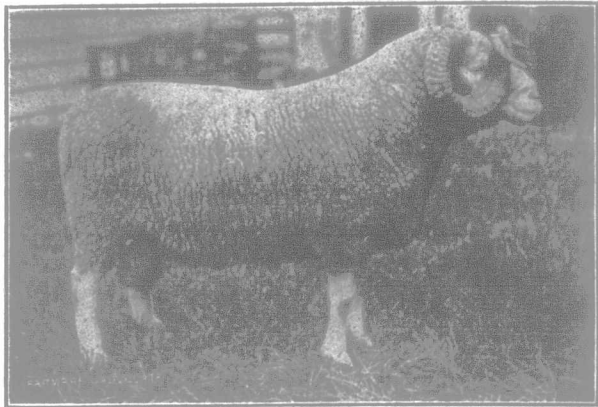
Winner of first prize and championship at Toronto and London, 1912. Owned by Hastings Bros., Crosshill, Ont.

THE FARM

An Irish Experimental Farm.

Situated in a fine agricultural district, about three miles from Ballyhaise Junction and six miles from Cavan, on the Midland Railway, is the Irish Government Experimental Farm and Agricultural College at Ballyhaise. It was an Irish gentleman's mansion and estate, and contains 820 acres, of which about 550 are arable and the balance in woods, etc., and was purchased by the Government to be used as an experimental station. There are, in the winter season, four masters or professors, two of them devoting the most of their attention to the creamery students, who get practical demonstrations at the co-operative creamery near by. There are generally from 15 to 20 students studying butter-making in the winter session from October to March, and they pay a fee of £10, which pays for tuition, board and washing. There are generally from 15 to 20 agricultural students for the yearly term. These students must be sons of farmers in Ireland, and must declare that they intend to follow farming in Ireland. A son of a farmer who pays £20 per annum of rent, gets a year's instruction, board and washing for £3. The son of a farmer paying £40 of rental has to pay £5, and the son of the farmer paying £100 and over of yearly rental has to pay £20 per annum.

The old baronial residence has been turned into a dormitory, class-rooms and rooms for the professors or teachers. There is accommodation for 40 students. There is a billiard-room, bath-rooms, etc., all lighted, as well as the stables and outbuildings, by electric light, from current generated by a suction gas engine. The threshing mill, grain grinder and milking machine are also



Dorset Horn Ram.

First in class at Toronto, and champion at London, 1912. Exhibited by W. E. Wright & Son, Glanworth, Ont.

run by the electric motor. About 80 cows are kept, mostly of good Irish stock, and the stock bull is a pure-bred Shorthorn of advanced milking strain. And there are a fine herd of young heifers growing up. I understood that the milking machine was out of repair at the time of my visit, but the manager thinks that it is a good

thing. The milk of the 80 cows is manufactured into cheese on the premises, and at the time of my visit cheese was bringing 64s. per 112 lbs. A number of fine pigs are fed on the whey and American corn-meal purchased at £6 12s. per ton of 2240 lbs. In the winter season the milk is made into butter, and the separated milk fed to young calves.

The agricultural students have to work in the fields during the day in the summer season. It takes about 20 men to do the work on the farm with the students' help, with several extra hands in summer. Three span of working horses are kept, besides several driving horses and odd horses. A very fine Irish stallion is also kept on the premises. There is on the farm a Canadian manure spreader, an American binder, mower and horse-rake. Experiments are made in the fattening of bullocks, and a detailed account is kept of the cost of food, attention, etc.

The present manager has been in charge for five years, and has a very comfortable house for himself and family at a short distance from the buildings. There is quite a large stock of drain-tile kept on hand and the land is being drained as fast as circumstances will permit. I was told that there were two or three other institutions of a similar nature in Ireland, and I believe that they are all doing good work, and will in time make an impression on agriculture in the Emerald Isle.

I forgot to mention that there is a fine garden on the Ballyhaise Experiment Station, which is well-kept, and several acres of orchard have been planted with fruit trees, which are sprayed and attended to by up-to-date methods. Instead of stacking out the hay, they have several large sheds, covered with galvanized-iron roofs, in which the hay is stored. They also have a narrow shed covered with galvanized iron, for drying grain which is not fit to put into a stack. This drier has rods on each side on which the sheaves are laid with the heads pointing inwards. It would, I was told, contain about six acres of grain, and was found to be a good thing in some of the very wet seasons they have in Ireland, when it is almost impossible to get the grain dry enough to put into a large stack.

DAVID LAWRENCE.

Out of a comparatively small percentage of the soils of the United States which have been surveyed and analyzed, more than 800 types of soils have already been discovered. The various suits. Yet some people still believe that agriculture is simple and easy.

THE DAIRY.

London Dairy Show.

The 37th annual London Dairy Show of the British Dairy Farmers' Association, held the first week in October, was successful beyond expectation, considering the disturbance caused by the recent outbreaks of foot-and-mouth disease in the country. The show combines the exhibition of cattle, milking and butter tests, goats, poultry, pigeons, cheese, butter, cream, skim-milk bread, honey, roots, etc. Notwithstanding the hesitation of many breeders to send their cattle from home under the prevailing circumstances, there were this year 210 entries in that class, as against 222 in 1911. The breeds represented this year were Shorthorn, Lincoln Red, Ayrshire, Red Poll, Jersey, Guernsey, South Devon, Kerry, and pairs of cows of any breed or cross. Short-horn entries catalogued were only 25, as against 41 last year. Fourteen of the nineteen pedigree cows entered came before the judges, and when four were weeded out; the remainder were an exceptionally level lot, although, says the Live Stock Journal, there was never any serious doubt as to the claim of S. Sanday's extremely neat red, Melody 12th, which is not yet four years old, and is a daughter of the late George Taylor's Musical Cran 9th, by Stephen Allen's Rowbury. She is described as a lengthy, shapely cow of sweet character, with a well-shaped, capacious udder, carried well forward and nicely hung behind. Mr. Sanday also took second prize with Greenleaf 32nd, a neat-bodied, roan, six-year-old cow.

Ayrshires from Scotland were absent, owing to prevailing health regulations, but English breeders were better represented than usual, and had it been possible for Scottish exhibits to have been present, the breed would probably have made a record display. In the class for cows there were eight entries, and M. E. Heaton won first with Castle Mains Betty 5th, a good-looking, white cow, with a splendid, symmetrical udder, second prize going to C. R. Dudgeon's Dalbible Rose 3rd, a deep-ribbed, shapely, brown and white. It subsequently transpired that the latter, being under three years of age, was in-