

gave one of 10.02 ozs. Mr. J. Joyce won in the wether class, in which the highest average daily gain was 7.68 ozs., made by Sir W. G. Pearce's second-prize pen, the whole class giving an average of 6.74 ozs.

Suffolks.—The average daily gain of the lamb class of this breed was 10.48 ozs., and for the wethers 7.61 ozs. The heaviest pen of lambs, exhibited by Mr. H. E. Smith, gave an average daily gain of 12.17 ozs., and the same exhibitor's pen of wethers 7.65 ozs.

Shropshires.—The average daily gain of the lambs was 9.05 ozs.; the heaviest pen gave 10.20 ozs. The average of the wether class was 6.42 ozs., and its heaviest pen gave 6.75 ozs. Messrs. P. L. Mills and R. P. Cooper were the principal winners.

Oxford Downs.—The lamb class ranged from 12.25 ozs. per day in daily gain, and its average was 10.66 ozs. The corresponding figures in the wether class were 8.31 ozs., and 6.83 ozs. Mr. J. T. Hobbs was leading winner.

Dorset Horns.—Sir A. Cope and Mr. J. Kidner shared the honors in this breed. The former pen of lambs gave an average daily gain of 8.94 ozs., and the wethers owned by the last named an average daily gain of 6.65 ozs.

English Cross-breeds.—The development of these was very noticeable. Two pens in the lamb class gave an average daily gain of 11.75 ozs., and the whole class one of 10.96 ozs. The wethers ranged from 7.83 ozs. per day to 5.74 ozs., and averaged 6.98 ozs.

The Scotch crosses gave an average of 9.40 ozs. for the lambs, with the top average of 11.10 ozs., and the wether class showed an average of 7.34 ozs. The new class for Ryeland wethers, in which Messrs. W. T. Barneby and W. H. Davies were leading winners, gave an average daily gain of 4.99 ozs.

PIGS.

The several breeds were allotted two classes, one for pigs under nine months, and the other for pigs above nine months and under twelve months, and the average daily gain made by each of the breeds given below in their two classes are as follows: Small White, 12.95 ozs. and 10.80 ozs.; Middle White, 1 lb. 2.56 ozs. and 1 lb. 1.15 ozs.; Large White, 1 lb. 4.01 ozs. and 1 lb. 3.00 ozs.; Large Black, 1 lb. 6.98 ozs. and 1 lb. 4.28 ozs.; Berkshires, 1 lb. 3.87 ozs. and 1 lb. 3.54 ozs.; Tamworth, 1 lb. 1.58 ozs. and 1 lb. 1.00 ozs.; any distinct or cross breed, 1 lb. 3.05 ozs. and 1 lb. 4.42 ozs.

Breed Booming and Registers.

"Proposals that the headquarters of a breed society should become a trading propaganda will not do. The secretary of a breed society should be in a position to give all desired information to foreign inquirers when the questions are of a general nature. But he runs risk of getting into trouble when men expect him to act as pilot to those who come here to purchase. The analogy of what Mr. Thornton does for Shorthorns is precisely what the breeders of A.-A. cattle were not aiming at in their speeches on Saturday night. Mr. Thornton is not officially connected with the breed society. His business is a personal concern, and his work a propaganda for Shorthorns, in which he is not responsible save to himself and his clients on a purely business footing. The duty of a breed society and its officials is to keep the record clean. The less accessible it is, and the greater the need for doing business by correspondence, the more hope is there that the breeders will give careful heed to their own share of the duty."—[Scottish Farmer.]

FARM.

Wood Ashes as Fertilizer.

To the Editor "Farmer's Advocate":

Having noticed a number of inquiries as to the value of wood ashes used on the land for different crops as a fertilizer, I have waited for reports of some practical results from their use, but as yet have seen none in the different replies on the subject. I would like to give my practical experience with the use of them on my farm. The kind of ashes I used were from the ordinary woods, such as maple, beech, elm, ash, etc., and unleached.

In the spring of 1902 I had twelve acres prepared for spring seeding, being plowed the fall previous, and underdrained; and through the winter and early spring a moderate coat of manure was applied to the whole field. As my farm is only a few minutes' drive from the town, I had no difficulty in getting plenty of ashes from the factories and mills. We tested one acre of the field to see what the result would be from an additional coat of ashes. I might mention here that the soil was of the same quality throughout the field. On one acre was put eight loads of ashes, consisting of 25 bushels each, at five cents per bushel, making a total of \$10, plus the labor of hauling and spreading, making in all \$13.

Now, one would naturally look for good results from this outlay, but I am sorry to say I was much disappointed. The acre in question produced at threshing only five bushels per acre more than the rest of the field, and there was no apparent difference in the quan-

tity of straw. This first crop was peas, oats, spring wheat, and barley, mixed. Since then I have grown two crops, consisting of wheat and hay, and I must say I have not been recompensed for my expense and work.

I have tested ashes on meadows, orchards, and the garden, and have come to the conclusion that it will not pay to buy ashes, even at five cents per bushel, except for my apple orchard, where the growth and improvement has been very marked.

I think if we farmers allow no manure to waste,



Pure-bred Lincoln Yearling Wether.

First and breed champion at the St. Louis, Chicago International Exhibition, and the Ontario Winter Fair, 1904. Exhibited by John T. Gibson, Denfield, Ontario.

and grow plenty of clover, which is the cheapest fertilizer, it will not be necessary to buy ashes.

The inquirer about ashes reminds me of a farmer who once lived beside me. He had a fine crop of hay which he cut, and, being of an easy-going nature, left it in the field all winter. When starting to plow in the spring he burnt the cocks of hay, giving as a reason that "ashes is awful good for the land." Oxford Co., Ont. J. C. S.

The Grazing of Wood-lots.—III.

By Judson F. Clark, Ph. D.

The grazing of woodlands by live stock is always more or less injurious. The amount of injury inflicted in any particular case will depend on the kind of live stock grazed, the relative abundance or scarcity of food, the character of the soil, the age of the stand, and the kind of trees.

Grazing may be injurious in two distinct ways:

1. In destroying more or less completely the natural reproduction of young trees, on which the future of the wood-lot depends, and
2. In influencing adversely the moisture conditions



Pure-bred Lincoln Yearling Ewe.

First at London, St. Louis and Chicago. Imported and exhibited by John T. Gibson, Denfield, Ont. (See Gossip.)

obtaining in the soil, and thereby diminishing the rate of growth of the trees.

Every one who has observed a heavily-grazed wood-lot must have noticed an absence of young trees, which are so necessary to replace the mature trees which are removed from time to time. If the wood-lot has not been so heavily grazed there may be a fair representation of younger trees present, but on examination they will be found to consist largely of the inferior kinds. It is a point of prime importance that all kinds of live stock prefer the foliage of such valuable trees as

the tulip (whitewood), basswood, chestnut, maple, ashes and oaks, to that of the hop, hornbeam, blue beech, sassafras, beech, thorn, and the like, and wherever grazing is practiced at all, the young trees of the best species will suffer greatly, thus giving an undue advantage to the more worthless kinds.

The injury done the reproduction in a broad-leaved (hardwood) stand, is much greater than where the stand is of conifers, for the reason that domestic animals do not, as a rule, willingly browse on the foliage of evergreens. The injury is very great, nevertheless, even where the stand is coniferous, in that the young trees during their first two or three years are so tiny and resemble the grass in which they are growing so closely that they are unintentionally eaten in large numbers. Many others are destroyed by the treading of the stock, the presence of which also makes for unfavorable conditions for germination of the seeds.

An adequate supply of available moisture is the point of greatest importance in determining the quality of any soil for tree growth. That grazing is very effective in reducing the amount of available moisture in a soil may best be shown to the eye by examining a wood-lot in which the trees grew to their full height under natural conditions, and which was subsequently grazed. Under these circumstances it will be found that many of the trees which should still be in their prime are dying at the top. It is also a fact that their vigor of growth is greatly impaired. This latter, however, is not at all evident to the eye, for no one can, without a series of very careful measurements, determine how much wood is annually produced on an acre, and no farmer has either the knowledge or the skill to make such a determination. It may be stated in general terms that few wood-lots which have been grazed for ten years produce more than half their natural yield of wood; the heavier the grazing and the longer it be continued the less will be the annual product. Many wood-lots which have been heavily grazed for twenty-five or thirty years are yielding today less than 30% of their former production.

This injury to the soil moisture is due to the destruction of the young trees and other undergrowth, which is needed to act as a soil cover, and to the injury caused by the treading of the soil by the animals.

The destruction of the undergrowth allows much light to reach the soil, with the result (a) that it becomes clothed with grasses and other moisture-robbing weeds; (b) this light also gradually but certainly lessens the humus in the soil, and thereby its moisture-holding capacity; and (c) by raising the soil temperature increases the amount of moisture directly evaporated. The destruction of the undergrowth also admits the wind to the soil, drying it out by direct evaporation, and robbing it of its natural mulch and fertilizer, the fallen leaves, by blowing them from the exposed parts into irregular piles, or as often happens, entirely out of the wood-lot.

The treading of the soil by the stock largely destroys the mulch value of the fallen leaves, and compacts the surface of the soil, and thereby greatly increases the surface run off during heavy summer showers. The importance of this latter point will be appreciated when it is recalled that during the dry seasons a considerable proportion of the precipitation occurs in the form of thunder showers.

Sheep are more destructive in the wood-lot than horses, and horses than cattle. The fine-wooled sheep are more destructive than the coarse-wooled breeds. Hogs are not injurious, except when the nuts and acorns, of which they are very fond, are needed to secure a reproduction, in which case they should be excluded for a few years, till the young trees are well established.

Permanent Pasture.

A correspondent in Western Ontario asks for a suggestion as to what varieties of grass he should sow for a permanent pasture on a clay loam. Sheep will be the principal stock kept.

This question of permanent pastures is one upon which different opinions are held. Some farmers would not have such, but prefer to rotate the crops on all their land, while others prefer a pasture of natural grasses; and others, again, are loud in their praises of alfalfa and orchard grass, and blue grass and red-top. We rather prefer to keep the crops in rotation, except under certain conditions, as, for instance, where the land is rough, or where more land is held than can be cultivated thoroughly. For the purpose of our correspondent, we would suggest sowing about twelve to fifteen pounds of alfalfa per acre, five or six pounds of orchard grass, the same of blue grass, and white clover, and some red-top, in a thinly-sown nurse crop of barley or oats. The treatment we would give would depend upon the proportion of the grasses that grew. The first fall after sowing, no stock should be allowed on the field, and none the following spring, until the crop has become well established. If it were necessary, we would go over the field and sow seed wherever the stand was not thick enough as soon as the nurse crop was off. It sometimes requires a little perseverance to get alfalfa to grow, but it is well worth the trouble.

Enclosed find \$1.50, my subscription for the "Farmer's Advocate." I thought I could do without it, but it seems lonesome without it. JOHN COWAN, Charleston, Ont.