

The use of raw ground bone and ashes, in the place of acid fertilizers, also supplies a considerable quantity of animal organic matter to the soil, soluble and ready for plant use. And again, when you have made your soil rich, it becomes filled with angle worms, which swallow and eject vast quantities of earth, much enriched by passing through their bodies. The life of these worms is short, and their decaying bodies furnish an immense addition to the available organic matter of the soil. The French have a wise proverb, to the effect that "nothing succeeds like success." When land is well-farmed everything co-operates to make it continually grow better. Many may laugh at the notion of the land being enriched by the life and death of angle worms in it. But Darwin has shown, by actual tests, that the weight of living angle worms in a rich moist soil equals many tons to the acre. Once get the land rich enough to grow heavy crops, and after that the roots remaining from each crop, aided by the digestive action of the worms upon both vegetable and mineral matter, will render only moderate dressings of plant food necessary to keep up the fertility.

When we bought our present farm, seventeen years ago, we doubt if there was a single angle worm in the whole of it. At any rate we never could find any when we wanted to fish, or saw one when we were ploughing. Now, the ground is full of them. One cannot thrust a spade into it without cutting several of them in two. They have come in in consequence of the constantly increasing richness of the soil, and this richness has not been produced by large quantities of stable manure. As we have said before, we keep but little stock, and can buy but little manure. Consequently we have had to depend upon bones and shes. Of these we use from \$100 to \$125 worth in a year, with perhaps enough stable manure to fairly dress a single acre. The first is applied to about six acres, or half of the farm. The manure is mostly used for top dressing in that part of the orchard which is laid down to grass. For crops in tilled land, we used about a ton to the acre, every alternate year, of our mixture of ground raw bone and ashes (one part by measure, of bone to two or three parts of ashes), which we have so often spoken of, and which some of our readers say does no good for them—probably because they don't use it freely and continuously, as we do. With this kind of treatment we get constantly better crops of all sorts, including fruits, vegetables and seeds, which are supposed to draw so hardly on the soil. The land is plainly growing richer, year after year, under this treatment, and really all the organic matter accessible to the crops on the tilled land is that in the bone, in the roots left by the crop, and in the worms and insects that live and die in the soil.

Now if this is the case in a sandy soil, why may it not be (with suitable variation of management) equally so in a heavier soil? In general farming, the farmer would have this advantage over us, that he could occasionally turn down a sod, or plough in a fertilizing crop of clover or rye. We did that some at the first, with very good results, but do not now find it necessary, though it might be so in clay land, especially when the strawy stable manure recommended by Brother Cheever was not plenty enough. The point we are after in this article is that there are other sources of organic material besides manure, muck, sod and a green growth, which will stock the ground with a sufficiency of organic matter. The quantity really needed is not great at any one time, while too much makes the ground sour, and lessens its productiveness.

DR HOSKINS.

### Breeds of British Sheep—VIII.

#### HAMPSHIRE-DOWNS.

Hants, Wilts and Berks are the Hampshire-Down counties.

The chalk hills of Sussex extend westward into these, and they here present the same general characteristics already described. The soil, however, is here deeper and richer, and the lands generally are much more productive. The food favoured a larger breed of sheep than the South-Downs, and such would naturally have resulted from feeding the Sussex breed upon these richer lands, but this end was more speedily obtained by using the large native ewes of the district, and crossing them with rams from Sussex. The produce were found to combine the best qualities of both parents, being prolific and having size, great constitutional vigor, early maturity, good fattening qualities and excellence of flesh. They have become so popular in England that it is said no other breed, unless it be the Shropshires, has so much increased in numbers in recent years. They have received no aristocratic favours, and have not been pushed into notoriety by wealthy admirers, but have developed their excellence and come into general esteem in the hands of the rent-paying farmers themselves. Their more recent improvement has not been accomplished by any one noted breeder, although Mr. Humphrey of Oak Ash, near Newbury, (1) was rather the leader in the advancement. As a consequence of this, the prizes at the great shows have been distributed among a greater number of breeders than is the case with other sheep. This was so at the Royal Show held this year at Shrewsbury.

The farmers throughout these counties are careful to maintain the quality of their sheep, and during a rather extensive inspection of the district, I saw greater uniformity in the flocks, and a higher average of excellence than I saw in other breeds in any section of the country. At Hsley fair, I saw 33,000 offered for sale in one day, and while two or three lots were better than the rest, they were generally of very even quality. The hold that the breed has upon this section is shown by the fact that while as many as 80,000 have been on sale at Hsley at one time, not a sheep of any other breed could be seen. The importance of the sheep interest here is illustrated by this great number, being all driven from the surrounding neighbourhoods, Hsley being then ten miles or more from the nearest railway station. It is a most interesting sight to see the shepherds in their smocks (2) slowly leading their flocks across the common downs, feeding as they advance, the dog guarding the rear. As they approach the little town, the different lots draw closer to each other until in the narrow streets they become crowded together, but rarely if ever mixed, and one wonders equally at the skill of the men, and the intelligence of the dogs, who finally get them safely within their hurdle enclosures. Buyers of fat sheep are present from London, and of store animals from places near and remote, and the busy scene is alive with interest. There are similar fairs at Overton and Weyhill in Hampshire, and at Britford (3) and Wilton in Wiltshire. The English farmer, accustomed to meeting his fellow farmers and many buyers at such fairs, and selling his stock and grain himself instead of consigning them to some commission dealer or selling them upon his farm, is better posted on the markets, and is generally a better business man than his American brother. He buys and sells on a large scale, and turns his capital quickly. This is one of the chief reasons why he prefers to rent the land rather than own it. Many a one answered my inquiry with the statement: "We cannot afford to tie up our capital in land. There, it produces only two and a half per cent. We must do better than that. Only those should own land who have so much capital that they don't know what else to do with it."

(1) And Mr Rawlence.

(2) The oldest of all Old-English garments: the *gaberdine* of Scott.

(3) Pronounced 'Berford.'

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