

broom grass always grew on limestone. He had seen a field where there was none of it growing except where some lime had tumbled down the side of the bank, so that by the broom grass they could tell where there was limestone with the greatest possible accuracy.

CULTIVATION OF MEADOWS.

With regard to the cultivation of meadows, he would premise by saying that they required cultivation as much as arable land. There was not the same amount of work or expense required, but they must be cultivated, and an intelligent mind only could get the best out of them. It was too much to expect that pastures would yield a good produce spontaneously, without wanting anything done to them: what would occur if left to themselves? The birds would carry haws, wildsloes, and other seeds, and the pasture would become a wild jungle. The only got their beautiful meadows by dint of careful cultivation. But generally they were not carefully enough cultivated, and he would point out the following conditions necessary to the proper cultivation of meadows:—If any one acquainted with the grasses would go over a meadow, he would soon find out whether it was dry or properly drained. He found a quantity of those "bullpates," as they are called, or large hassocks of grass, there were must then be a quantity of water, and if the land were drained all that would die out very quickly. There were a great number of grasses which could only grow under wet conditions, and as soon as the land became dry they slout as quickly as possible, leaving only a side here and there, and then, supposing the damage to get out of order, they would immediately see these single blades multiply, and the meadow resume its former state. With reference to irrigated meadows, most of them knew that a very great increase was given to the yield of pastures in this country by letting the water cover them wherever circumstances permitted.

In order to do this properly they must have plenty of water, and facilities by which that water could be got upon the meadow, and equal facilities for getting it off again. The meadows should not be flooded, but the water should run off so that it would percolate through the roots of the grasses. Wherever this was done, results were extraordinary, and land which did not be worth £1 an acre was made worth an acre. If the water were allowed to stagnate after the flooding, and they had not proper drainage, then they would have the evil results of the growth of sour grasses. The man who called "the drowner" ought to know when water was perfectly drained off, as he would not be able to see these sour grasses increasing if it were not. Draining was as absolutely necessary for pastures as for arable land, but fewer drains would be required generally for the former than the latter; where they wanted to have a meadow like a perfect pasture, they should have no stagnant water on the land. Another

important point was the rolling. Our pastures were only in a good condition when there was a uniform texture caused by the mixture of grasses. If the grasses were allowed to grow in patches here and there, then they began to grow wild, and like what was seen in the jungle. Rolling prevented this, and the more a pasture was rolled the better it became. There was nothing like exercise for it; and to prove this, he instanced Oakley Park, where the militia were trained day after day, and, instead of doing any mischief, they did an enormous amount of good to the pasture. It caused a mixing of the grasses, and they grew up together much more easily and evenly after such exercises as this. Harrowing was also a point that should be attended to, in order to prevent an accumulation of moss, and to clear away the decayed grasses which had been allowed to stop behind. If not, they would have a peaty kind of soil, which they should endeavour by all means to prevent, and where it existed to get rid of; for the grasses which grow in peaty soils were not the most nutritious, and therefore anything like a peaty condition, or decaying vegetable matter, should not be allowed on the meadow. Far better to take away all the grasses and sow new seed than to skim the land over lightly, and leave behind that which would produce peaty conditions. There were some meadows adapted for pasture and pasture only, and were not satisfactory for making hay. Only a few years ago he was on the estate of Mr. Barker, of Gloucester, and in taking a ramble across the country, in the Home Park, he met with a quantity of grasses, of which he took the name, and Mr. Barker asked him what he thought of the value of the land, and he told him it was exceedingly good for pasture, but not for hay-making. Mr. Barker said it was very curious that his own bailiff should tell him that from practical experience, and that he, (Professor Buckman) should tell him the same thing from examining the grasses. There were a number of species of grasses, the hay of which would not be nutritious. Some had long spikes when full grown, like barley and wheat, and this was always objectionable in hay, so that here one was enabled, merely by the grasses, to point out something of practical importance.

FOLDING ON MEADOWS.

With regard to the amelioration of pastures by "folding," he would make a few remarks. This was a subject to which he had paid particular attention. If they went on constantly feeding from a meadow with cows or sheep, and did not take hay from it, it would, under such circumstances, be very slow, indeed, to deteriorate. In fact, farmers very generally conclude that letting sheep upon the pasture was the way to revive it, however much deteriorated before. Year after year some carted away hay from the meadow, and returned no manure, but to compensate for that, they folded sheep upon it, as there was