

Breeder and Grazier.

The Jersey Cow at Home.

BY G. B. WARING, JUN.

I have just made a visit of a week to the island of Jersey, and I have seen the Jersey cow on her native heath.

The farmers of Jersey have learned how to turn her to even more satisfactory profit than we have. That is to say, where they keep cows exclusively for the dairy, they achieve a better result than any one in America with whose dairy I am acquainted. The great fertility of their soil gives them one advantage and the mildness and uniformity of their climate another; but still more is due to the enormous extent to which they feed roots. Hay seems to form an insignificant part of their winter food. They use straw much more largely, and have a fair bite of grass all the winter through. They depend very much on a plentiful supply of turnips and parsnips. Indeed, so far as I could judge, these roots are the sheet-anchor of Jersey dairy-farming. The farms are small, rarely, I think, exceeding 40 acres, and very often not over the half of that. The team force of each farmer is very small, but they club together for what is called "the big plough," and do each other's ploughing, on a social plan similar to our "corn-huskings." If root culture is their sheet-anchor, deep ploughing gives them good anchorage. When land is to be prepared for a crop of parsnips it is trench-ploughed, and completely reversed, to a depth of fully 15 inches (and often 18 inches), and then such dressing of manure are used as would do credit to a market-gardener. In this way, a small farm is made to carry a large stock, the large stock furnishes manure for increasing production, and the cows partake of the generous richness of the soil and give a rich and abundant yield themselves. This remark applies more strictly to the older cows. A more magnificent lot of motherly, big-bellied, big-uddered, rich-skinned cows can nowhere be found than could be collected by the hundred in Jersey. They are of the race that has made the reputation of this famous breed. I do not exaggerate when I say that I firmly believe that if the present fashion prevails this race will soon become extinct. A few years ago these cattle were bred solely for butter. Color and form were scarcely thought of. The result was a class of cattle that the world has never equalled for the dairy simply. Then there arose two influences which have done some harm and will do much more.

1. The desire to convert the form of the animal to the standard which has been cultivated in England by the Short-horn. I was shown the prize bull of 1872. He was a miniature Short-horn, much fatter than a butter-dairy bull should ever be. Once give the breed the tendency to lay up fat in its flesh, and you may bid good-by to fat in the milk; as the one tendency increases, the other must decrease. I would as soon think to breed beef-stock by using a raw-boned, deep-flanked dairy bull, as to breed butter stock by using one who showed a tendency to lay on fat in his carcass. Of course, no perceptible harm will come of using such a bull for a single cross, but the longer the process is continued, the more mixed will the pernicious tendency become. Further evidence that "fat" is being too much cultivated is to be found in the fact that I was not shown a single cow in what I considered the right state of flesh for milk, whose owner did not apologize for her poor condition.

2. Much more important than this desire for fine form, is the fancy for color. It is playing the very mischief with the breed, and no one knows it better than the very farmers who are catering to it. They are (and not quite unconsciously) killing the goose that is laying their golden eggs. Of the best fifty cows that I saw in Jersey, not five were of the solid gray color (black points, etc.); fully twenty-five of them had white enough to condemn them in the "fancy" market, and nearly all had what would be considered an objectionable amount. Every farmer with whom I spoke sneered at the idea that solid color was an advantage, but they all said they must breed for their market. They all confessed that in so breeding they were marching on the direct road to inferior milking. One said, "I keep 6 cows, 3 good ones for the kitchen, and 3 gray ones to sell calves from." But even this will not save him. Ten years hence he may not find, in all Jersey, a really good bull to breed from. I did not see one bull-calf being raised that had not been selected *solely* for its color—which means that in a few generations of neglect the dairy quality must run itself out. Neither did I happen to ask after the calf of any superb milker without learning that if a bull it had been killed

because it had white upon it. In not a single case did the farmer deny that such a course is dangerous to the future prospects of the breed, but—"It is the color that sells them, and we must breed for our market."

Setting aside his errors in the matters of form and color, the Jersey farmer is a good farmer and a good dairyman. And he has a good breed of cattle, and no mistake. Good and beautiful, and lovable. Always tethered among the apple-trees, or in the little meadows, constantly handled, and talked to, and made much of, their dispositions have been sweetened and quieted through long generations of gentle care; and their mellow, mild eyes reflect a serenity and peace of mind that betoken all their ancestral ease and comfort. I saw cows milked, I saw milk skimmed, and I saw the butter that had been made from a certain number of cows. With fair opportunity for observation in various places and at various times, I concluded that the intense high farming and strong-feeding of Jersey, together with the almost perennial green bite out of doors, give results that we rarely attain where more than two or three cows are kept together. Yet I think that we have in America quite as good Jersey cows as they have in Jersey, and plenty of them.

In Jersey, the larger herds range from 6 or 8 to 25 or 30 milking animals. There are altogether over 12,000 head of horned cattle (all of the one breed), or about 1 to every 3 acres of the whole island, probably 1 to every 2 acres of the agricultural land. When it is further considered that there are over half a million bushels of potatoes (and lots of other products) exported annually, we see evidences of a thoroughness of cultivation which is worthy of our study. The cow plays a very large part in the economy of nearly every farm, and she aids very largely in securing to the Jersey farmer a degree of comfort and an independence that I have seen equalled nowhere else in Europe—nor is it equalled among farmers of the same class in America.—*American Agriculturist*.

How Ruminants Digest their Food.

Cows and other ruminants have a compound stomach containing four apartments. When coarse food, like grass, is eaten, it is only partially masticated at first, and is passed into the first stomach or paunch. This is the largest division and is about equal to the other three. It serves as a receptacle to hold the coarse, half-ground food until the animal has leisure to remasticate. While there it is kept in motion by the worm-like contractions of the muscular coatings of the sack, and is saturated and softened by a slightly acid juice that is poured out upon it, and undergoes a little fermentation, which is the beginning of digestion. From the first stomach it is gradually worked into the second, which is only an appendage of the first, lying close to the esophagus, and separated from the main part of the paunch by a partial diaphragm in the inside of the paunch that reaches in only a little way, and makes only a partial separation between the two divisions. From the outside appearance, one would hardly suspect the second stomach to be a distinct division from the first. In the second division the food is rolled into pellets and by a spasmodic action thrown back to the mouth, and when remasticated, instead of going into the first stomach as it did at first, it now goes into the third or manifold, as it is sometimes called. This is a nearly round body, attached to the branching termination of the esophagus. It is filled with a great number of folded divisions, in passing over which the food undergoes a further elaboration preparatory to the action of the fourth or last division, in which the digestive process is completed. It passes directly from the third into the fourth stomach, and the work of digestion is so far advanced that the labor of this division is quickly and perfectly performed. The fourth stomach is designed to receive the food only in the plastic condition it assumes on passing through the three other divisions, with the added influence of remastication. It is not calculated to take in, like the first stomach, food in a coarse, fibrous state, unfermented, unsoftened, and unprepared by the partial digestion of the third division. The food of the entire bovine race, when taken in its natural condition, as grown in the field or forest, always takes, in the process of digestion, the course we have described. The lower end of the meat-pipe branches out at its connection with the stomach, so that it can connect with any of the four divisions, and to aid and insure the passage of the partially masticated food into the proper receptacle, the termination of the meat pipe, at its connection with the first stomach is lined with papillae, bent like card teeth, the action of which helps the coarse food along to the place it should go.

But in their domesticated state cattle do not always take their food in the coarse condition their peculiar and huge digestive apparatus indicates it was designed to be received. It is desirable to feed them grain and other feed that is pulverized even finer than their remastication would make it. In this condition the papillae cannot grasp it to haul it along into the rumen and it falls directly into the fourth stomach. Perhaps the will of the animal may have something to do with the direction the food takes. But certain it is that very fine food, like corn meal, when fed alone, goes directly into the fourth stomach, missing entirely the other three, and the preparation for digestion they were calculated to give it. This I have repeatedly demonstrated, as any one else may do, by feeding meal to animals that were to be slaughtered immediately, and searching for it as soon as the stomach could be reached. It is always found only in the fourth stomach. Receiving food in this unprepared condition, the natural work of the fourth stomach is augmented and prolonged. If only a small quantity of meal is fed in this way, it will, nevertheless, be digested very well, but if fed in any considerable quantity the labor of this division is so much increased that the digestion is impaired and the meal goes out of the stomach and indeed out of the animal undigested. This is proved by an examination of the faeces. To prevent this occurrence, hay or straw, cut or long, may be thoroughly wet and mixed with it. The meal will adhere to the coarse food and be carried along with it into the rumen, and pass through all the stomachs and all the preparation they are designed by nature to give. The increased benefit derived from feeding ground food in this way where liberal feeding is desirable, amounts to considerable. Fed in this way, a cow can digest from one-fourth to one third more ground food, beside digesting it more completely, than when the feed is given alone. This is quite a consideration in feeding for milk or beef.

Regarding the animal as a machine for converting into milk, or beef the excess of food that can be digested over and above what it requires to supply the waste and wear of the body, it pays to run the machine up to its fullest capacity, converting into the desired product the largest possible excess. Apples or roots pulped or sliced serve the same purpose as wet hay in carrying meal into the first stomach. In feeding animals with a single stomach, this mode of feeding is not of so much consequence. The looser and more open the food can be kept in the stomach, the more readily and thoroughly will the gastric juice be mingled with it, and the more rapidly and completely will it digest.—*N. Y. Tribune*.

Sorting the Flock—Selling the Wool at Home.

Shearing time is undoubtedly the proper time to sort the flock, in order that the better ewes may be marked and saved for breeding, and that such wethers as show the best fleeces may be reserved, so that, in selling the surplus, those least valuable for wool and carcass, may first go to the butcher. Thus, when the wool is off, those sheep that, with equal chance, have not kept up with the balance of the flock, may be more easily distinguished, and may receive a permanent mark easily known.

If the shearing is done at so much per head, the shearers will assist in the process, for the more indifferent sheep of each new lot will naturally be sheared first, and thus the culls will be disposed of. In the examination, care should be taken to note the general excellence of the carcass and the weight, length, evenness and firmness of the wool, disposition to take on flesh, and especially the fineness of bone and breadth of loin—for a good loin is apt to be connected with other good points. Thus, in a few years, especially if you are careful in selecting none but pure-bred rams of the most reputable strains, you may secure a most excellent flock, even if the start be an indifferent one.

There is but little fear that sheep farming will be unremunerative in the long run. There will be years of depression, perhaps over-production, as in any other commodity, but wool is an article easily kept, and one that does not deteriorate by so doing; indeed the clip gets better, rather than worse, and the fore-hand shepherd, having a reserve stock of wool on hand, always has property as good as money, for the reason that at any time it can be turned into cash.

To do this, however, the flock master must have means of storage at home, and must be himself sufficiently expert to be able to sort and grade his own wool. In this case, with a stock on hand, it will not be necessary for him either to send his wool away from home to be sold, or to depend upon the ability or integrity of his commission man to sort, sell, and make returns. His best market will be right at home, just as the best markets for extra hogs, hogs,