dressed meat export trade by the Dominion Government this year, there should be an even better demand for fat cattle and sheep during the coming season. Feeders would do well to prepare for the improved demand.

MISCELLANEOUS.

SHEEP NEED WATER.

A. C. H., Toronto: — "The late lamented Paul Peel, the celebrated artist, painted a picture representing sheep drinking water in a dell, under the shadow of trees. The picture is very pretty, and the subject very poetical, but the piece of art has been criticised as being contrary to nature, as most people are under the impression that sheep do not drink water. Please inform your readers whether or not sheep drink water in any shape or form outside of their usual food."

[Sheep drink water just the same as cattle or horses, when the amount of moisture in their food is below the demands of the system. With sheep the normal proportion of water to dry food is about 4: 1. Where sheep are receiving green grass, roots, or other succulent food, extra water may not be necessary, but where the food does not supply the needed proportion they drink large quantities We have carried hundreds of pails to sheep, especially ewes suckling lambs. They also drink liberally in summer when on dried pasture, and when water is not supplied them when needed their owner suffers a financial loss by their failure to do well!" "*Forming*."

On the Downs, near Brighton, Eng. and all along the range of chalk hills, we have often seen the sheep drinking from the curious *dew ponds*, which we described some time ago in the Journal, but only in very hot weather, with the short grass of the Downs parched up. In Kent, the next county, we never saw a sheep drink. Of course, when on full turnips, neither sheep nor bullocks drink.—Ed

WHAT BREED SHALL BE USED?

Improving a herd of cows—Shorthorn sires.

We have been readers of your paper for a little over one year, and it makes us feel that we should do better with our cows than we are doing. Our herd are mostly high grade Short-horns, with two Jerseys, and two pure bred Short horns. We sell butter to private customers in near by county town, at an average of 20 cents the year round. We raise our calves—the steers for beef, and heifers for cows. The latter are sold as herd increases to Eastern buyers, mostly from Philadelphia, for dairymen near that city, who prefer cows with large flow of milk. We have been using pure bred Short horn sire for several years. We must procure a different sire. Shall it be a Short-horn or not? We have been thinking very strongly of a pure bred Holstein, and would like your advice as to the advantage or disadvantage of the cross with our herd for our purpose. We want a good cow while we use her, and one that will sell well, and at the same time steers that will make good beef.

Alexandria, Pa. K. Bros.

If these inquirers know for a certainty of any Short horn bull that can trace through both dam and sire to cows that were satisfactory as butter makers, we do not not know of any surer way of accomplishing the ends they have in view than to use such a sire. If they do not know of such an animal, they have doubtless been thinking in the right direction. We advise them, however, before coming to any conclusion, to count up the cost of raising the steers for beef, and when this is done, they may conclude that it will be better to look for a dairy sire, pure and simple. In doing this, they do not necessarily have to go outside of the breeds named, but they will be likely to get as far as possible from the beef form.

(*Hoard's Dairyman.*)

If a "Dairy-Shorthorn" is wanted, the *K. Bros.* must go to the North of England for him.—Ed. J. of Ag.

WAUGH, ON THE TREATMENT OF IN-CALF COWS.

To what extent it will be profitable to feed chop or similar concentrated food to cows is a matter very largely to be left to individual judgment. It seems to me a very great mistake for any farmer to put his cows on dry straw or hay that is very little better than straw, when they dry up. A hearty animal in good condition may do with a less allowance of extra feed, but it is a great delusion to think that a cow in that condition is idle. She is not only nursing an unborn calf, she is resting and building up her own frame for the demand to be made on it during the milk season, and if in good health every pound of extra flesh laid on her will add to her value at the pail when the time comes. A thin cow will often drop a well grown calf, but anyone who has studied the laws of nature will tell you that Nature's great effort is to put all vital force possible into the new life of plant or animal, and if the calf is strong and the dam poor in condition she may eat a lot of good feed afterwards and make very poor profit from it.

MILK AND BREWERS' GRAINS.

With reference to the question of the milkmen of the island feeding their cattle on brewers' grains, it is to be remembered that a goodly number use peas and oats exclusively, which produce a much superior milk. These men complain that they appear to have been lumped in with those who use brewers' grains, which is a cheaper food, and which, though it produces a larger supply, does not make nutritive milk. Peas and oats constitute the best food for cattle, and those who use this food find their milk in great demand. It is richer, stronger and more healthful, and can be easily distinguished from the milk produced by brewers' grains'. Mr Thomas Hannah, the well known milkman, who uses peas and oats, exclusively, says that this food, besides being dearer, produces less milk than brewers' grains. It is very much better, of course, but they can only get the same price for it. The milk inspector, when he takes samples can always tell the difference between the two kinds. While neither he nor those who use the better food desire a higher price, they think there should be some recognition for those who are trying to keep up the milk standard. 'I seriously question,' said Mr. Hannah, 'whether the gentlemen who have pronounced in favor of brewers' grains, would like to have their children reared upon the milk which brewer's grains produce.'

Witness.

We do not suppose any one is so ignorant as to believe that the poorer milkman feeds his cows on grains alone. They are only use as a succulent addition to more concentrated foods.—Ed.

THE DRYER AND MOULDER.

How to use—Granular butter—12 % of water—No pressure or friction.

I have had opportunities of seeing the work and the results achieved by the new "dryer and moulder"—Bradford's invention—and consider it, to say the least, a very remarkable machine for use in the butter dairy. It appears to me likely to do a good deal towards disestablishing the butter worker in many of our best dairies, whose butter finds its way into the best establishments in the country, and it denotes a distinctly new departure in the art of butter making. Personally, I have no longer any doubt as to the preferableness and superiority of butter manipulated in Bradford's dryer and moulder, for it has not been crushed or bruised in any way after leaving the churn. The cream is churned in the ordinary way, and the butter is washed in the granular state and immediately brined. After resting half an hour in the brine, it is ladled out — still, of course, in the granular state—and put into tin moulds that are lined with muslin. The moulds are arranged around the inner periphery of a wheel that is made to revolve at a high speed. As the wheel revolves, the superfluous wetness flies out of the butter in the form of spray, and the butter can be made as dry as you like. Butter in good condition should not contain more than about 12 per cent of water, and this machine easily reduces the wetness down to this percentage in about 90 seconds. The moulding of the butter is simultaneously done, and within two minutes we have our pounds and half pounds of butter ready for the table, or fit to keep any reasonable time. Used at once, or kept a week, there is something winning and delightful which is seldom, if ever, found in butter that has been subjected to pressure and rubbing. It is still perfectly granular, though compacted into pounds and half pounds, as the case may be, and it breaks across freely under gentle pressure, and without the aid of a knife to cut a half inch gash as a starter. Its cohesive state is something like that of a slightly compressed ball of tolerably dry and fresh snow. I do not, however, mean that this granular state is the something "winning and delightful" already alluded to, but rather that in the aroma under the nose, and the flavor on the palate, there is an indescribable attraction which is not otherwise found in butter. For this and other reasons I am under the impression that butter made in this way, completely without any working at all, is destined to win its way well and quickly with people who wish to eat butter in the very pink of perfection. It is to some small extent crumbly; that is to say, it is still granular, free to be easily cut or broken. In use, however, I find no objection to this mechanical condition of the butter, but consider it an advantage rather than a drawback.

I have said that the butter granules are ladled out of the churn and put into the moulds, dripping with wet as they are; and it may be supposed that the moulds will hold more or less than a pound or a half-pound, as the case may be. Well, this depends on the dairy maid. A little practice will enable any person of average intelligence to gauge the quantity of butter put into each mould, gauge it within half an ounce of overweight in each mould. And this extra half ounce to the pound is what all dairymaids allow for loss of weight before the butter is marketed. On the other hand, it is easy to adjust each pound or half pound of butter after it comes out of the mould, if need be to do so. — J. P. Sheldon, in *Agricultural Gazette.*

The Farm.

HOPS.

(*Concluded*).

When *picking time* arrives if you have only one kind of hops in your yard, you will find it difficult to get them all picked in time, unless you begin the very instant they are ready; not before, for the reasons we mentioned last month. In England, each yard is, generally, planted with three sorts, which are so chosen as to ripen successively—here, if you do not arrange beforehand to have plenty of pickers, you will get into trouble, as you will probably restrict yourselves to one kind. The proprietor should have nothing to do with the manual labour of picking; it will take all his time to superintend the pickers, to see that they pick clean, do not put any leaves into the bin, and do not waste their time in chattering to each other; for although we pay so much a bushel for picking in England, here, it will probably have to be done by the day. A penny a bushel used to be the price for a good crop! In this country, as the hands are not accustomed to the work, you may think yourselves fortunate if you get it done for 6 cents. And that reminds us that the poles, here, are much too heavy and clumsy; not so great a trouble, one would think, to choose them with a little care at first. It is not in poling the hills that the annoyance is felt, but in the hurried work of harvesting. *Bins* should be large enough to take a cloth for a woman and two or three children to pick into; the poles, with the bines on, are laid on the bin, and as soon as the hops are off, the bines should be stripped from the poles, as they hold wet and rot the poles. You will soon see how important these apparently trivial matters are in connection with such expensive articles as poles are, even in this well-wooded country. The poles are drawn out of the ground by means of a stout bifurcated tool called, if we remember rightly, a *hop-dog*, the bines being first cut near the ground. A two pronged fork with *very* short, thick spines is about thing, with a *boss* behind to assist the leverage.

Drying.—How the hops dried on such kilns as we have seen in the Eastern Townships escape injury we cannot tell. Only six, or at most seven feet, from the fire to the canvas, is often seen, and hardly any draught; the hops are roasted, not dried, in such kilns. Take a good malt kiln for your model: 11 feet between the fire and the *kiln-head*, i. e. the cloth on which the hops lie; and the height of the *cowl*, 18 to 20 feet above the cloth! Four pipes, say, 3 inches in diameter, should pass through the cloth into the hot air chamber below, and stand