

ration is beyond my ken, which is used with fruits and as a sauce, and for which this region has long been famous. (2)

REARING STOCK ON A DAIRY-FARM.

Suckling calves—Autumn treatment—Carbonised powder—Drumhead cabbages—Selection of cows and bulls—6 calves reared from 1 cow—Calf meal—Milk-fever.

(We agree thoroughly with Mr. Hobbs in all that he says, except that we greatly prefer taking away the calf from the cow at once; even before she has seen it, if possible. Ed. J. of Ag.)

Mr. James T. Hobbs, Maisey Hampton, Fairford, Gloucestershire, read a paper at the Dairy Farmers' Conference, at Wrexham, on Wednesday, of which the following are the principal portions.—

The rearing and breeding of dairy cattle having been written and spoken on by so many people more experienced and better qualified than myself, it is with diffidence that I venture to place this paper before such an accomplished and influential body as the British Dairy Farmers' Association.

I shall not attempt to approach my subject from a scientific standpoint, but shall place before you some facts and matters that have fallen under my notice in the management of a large herd of pure-bred dairy Shorthorns. My custom is to allow the calf to suck its mother about a week or ten days after birth; it is then taught to drink from a bucket. A liberal allowance of milk at first being given, this is gradually decreased, and a calf-meal substituted. Mine is home-made, at a less cost than many of the calf-meals and splices can be bought at on the market. Many people prefer taking the calf from its mother immediately after birth; the calf at that time is taught to drink more easily, and the process of weaning is more easily accomplished. I do not think it makes much difference whether the calf sucks its mother or drinks from a bucket, so long as it has a sufficient quantity of milk. Nothing will do for the young animal so well as pure milk. In the case of cow calves it is not necessary, or at all advisable, to make them fat, as in doing so you decrease their milking properties and make them more uncertain breeders. The cow calves that are dropped in the autumn and early part of the year are turned into the grass fields the following summer, and given about 2 lb. of linseed or corn meal. I find the animals so treated do far better the second year than those kept in all their first summer. The younger cow calves are turned into the orchard by day and taken into an open yard at night. Great care must be taken in keeping the young animals in a thriving state, as nothing is more conducive to "black leg" or "murrain" than at one time stinting and at a later period over-feeding your calves. Avoid putting the calves on aftermath. By keeping them on the grass land that has not been mown, I consider you suffer less from "hoose" or "husk". The end of September, the calves should be had in at night, and given more dry food. Nothing is more wasteful than allowing animals to remain on the pastures late in the autumn without as-

(2) We have made lots of "Clotted cream" in our time, and butter from it too.—Ed.

sistance, and losing much of the flesh they have gained during the summer months. The second year the heifers are turned into the pastures, and should thrive on fairly good land, if not kept too thick, without any artificial assistance. I think moderate numbers carefully tended pay better than being over-stocked. I prefer to have the heifers calve at two and a half years old; they are more likely to become regular breeders, if brought into the dairy early, and in the end will make better milkers. If you consider your heifer small and weak, do not milk her too long, and let her have a little rest before she comes into the dairy with her second calf. The animals that are pregnant, and especially the young ones, should receive special care and attention. If the mother is in poor condition when she calves, she certainly cannot milk so well, and there is a danger of losing her altogether. Great care must be taken with the older cows to guard against milk fever and drop. Many are the suggestions and remedies, but after every precaution has been taken cases will occasionally, and sometimes frequently occur. Fasting and physic of a purgative nature, bran mash, and avoiding as far as possible draughts, help to ward off this dreadful malady.

After your cow has presented you with a calf, she cannot be treated too kindly. The better she lives, and in winter the warmer she is kept, in reason, the more milk will she give. In the winter months my cows are all tied up by the neck, standing on a brick floor with a gutter at the back, the manure is carted out each morning and put straight out on to the land, my experience is that this green manure is most beneficial, especially on grass land. A little carbonised powder sprinkled into the gutter keeps your houses sweet and tends to keep away disease. The cows that milk well are allowed about six pounds of artificial feeding-stuff per day, anything that is a good milk producer and, if possible, cheap. They also have pulped mangels and chaff mixed and one meal of hay. Drumhead cabbages are grown for autumn and early winter feeding. On heavy clay or any deep soil they produce an immense weight of keep per acre. I plant them a yard apart each way, so that they may be more easily horse-hoed. Rye is planted in the latter part of September for spring feeding. It is well to have two sowings if possible, as the one will follow the other. My cows and nearly every horned animal on my farm had a liberal supply of green rye this spring for a month; it saves an immense amount of hay, and prepares your animals for the young grass when they are turned out to the grazings. In spite of what some friends suggest to us, it is a happy day to the dairyman when his cows are turned into the fields to seek their own living, and he indeed must be a hard-hearted man who would deny his cows this pleasure. Few people, excepting those who keep dairy cows, have any idea of the amount of food they consume and the immense labour and expense it is when everything has to be drawn to them. In the summer months, when the cows are at grass, each cow that gives two gallons of milk per day has an allowance of about 4 lb. of cotton cake or some other good milk-producing and economical mixture per day. You will find this system improve your grazings, and more than counter-balance any loss that may arise through whole milk being sold. Each cow should have her milk weighed at least

once a fortnight, and those not giving nearly 6,000 lb. per year should be weeded out. In forming your herd of dairy cattle, after you have made up your mind as to the kind you will keep, buy as good females of that particular breed as your capital will allow. Select cows with nice-shaped udders and teats, well placed, and be most careful to have animals strong in constitution. A cow that gives a good, fair quantity of milk, and, after she has finished her dairy life, rapidly becomes fit for the butcher, is the animal that will generally make the largest returns. (1)

Having got your females together, too much care cannot be taken in selecting your male animal. See for yourself that he is from a dam with good milking properties, as I am certain that milking properties are hereditary. For an ordinary dairy herd do not be too particular about the shape of your bull; buy him long and low, with bold rib and strong loin, masculine head, grand carriage, and have some size about him. Should his offsprings be not a success, do not hesitate to get rid of him, although he may have cost a lot of money and you took every care in selecting him. I do not care how experienced or how good a judge a man can be, he will sometimes purchase sires that are a failure. The young calf should be carefully examined, as a good calf at birth is always likely to develop into a serviceable animal. Milking properties must be cultivated. I do not think the animal can be bred to keep fat and at the same time to be a deep milker, but she should be bred to milk well, and, when her milking days are over, make a good grazer.

In conclusion, I would urge breeders to be most careful in selecting docile, contented animals, and after they have secured them insist on their servants treating the animals with every kindness. The cow, especially when in full milk, is most sensitive, and it is extraordinary how she immediately decreases her milk supply if she has anything to irritate her. Nothing is gained by having second-class milkers at a low wage. I prefer men amongst cows to boys; they are more regular in their time, and more careful in seeing that no milk is wasted. In these days careful attention to detail means, with good fortune, a certain amount of profit, whereas carelessness and inattention to detail inevitably means loss.

Mr. Hobbs, said he had often reared six calves to a cow, with the help of calf meal. As to calf meal, the items he used were generally these: 3 parts linseed cake, 2 of linseed meal, 1 of malt, 3 of peas or beans, 1 of wheat and 1 of malze. This home made meal had been used on his farm for fifteen years. As to the temperature of a cowshed, he thought 60 degrees the best. With respect to milk fever, a remedy which may appear foolish carried out in his district was to refrain from milking a cow for twenty-four hours after calving. He had also tried a milk-fever drench, which he thought reduced the stamina of the cow too much.

FEEDING CALVES.

Embryones—Beistyn—Suckling—Skim-milk, &c.—Weaning, &c.

A wonderful provider is Nature! Few of our readers have probably seen a

(1) Mr. Hobbs knows what he is talking about.—Ed.

salmon just hatched: those who have will recollect that, attached to its belly, the tiny fish carries a finer sac, or pouch, filled with sufficient food to last the new denizen of the water for several days. And this is not the only duty performed by the food-reservoir: it serves as an anchor to prevent the rapid stream from sweeping away the little orphan into the sea, before the tender frame is fitted for the impending struggle with the dangerous embraces of its future nurse.

So, too, the embryo chicken feeds on the associated contents of its envelope; the imprisoned butterfly finds store of nourishment in its nymphal state; and the very "oyster spate" is not left unprovided. But, wonderful as all this watchful provision of the great Mother doubtless is, to our mind, the arrangement of the first food of newly born mammals is more wonderful still. If you examine the intestines of a still-born calf, you will find them filled with a peculiar glutinous substance, blackish green in colour, and of a pasty consistence. This, called in scientific language, "meconium," has been accumulating during the foetal existence of the animal, and must be speedily got rid of on the birth of a living calf. A means of doing this, without danger to the new born, has been provided: any ordinary observer must remark the extremely rich appearance of the first milk drawn from the cow, and other farm mothers, after parturition. This "colostrum," or "beistyn," as it is called in Scotland (we have no name for it in our part of England), is a mild aperient, and differs, materially, from the composition of the subsequent milk as will be seen by the following tables:

COMPOSITION OF COLOSTRUM.

	Water.	Albuminoids	Fat	Sugar.	Ash	Alb. Ratio.
Ewe	73.2	15.4	2.0	8.1	1.4	1.0.8
Sow	70.1	15.6	9.1	3.1	0.1	1.1.7
Cow	71.1	20.7	3.4	2.1	1.1	1.0.5

COMPOSITION OF MILK.

	Water.	Albuminoids	Fat	Sugar.	Ash	Alb. Ratio.
Ewe... ..	83.3	5.5	5.5	5.6	0.9	1.3.3
Sow.....	81.6	6.5	4.8	3.4	0.9	1.2.3
Cow.....	87.0	4.0	3.1	4.1	0.7	1.3.3

You will see at a glance that the beistyn contains an enormous percentage of albuminoids; to what it owes its efficacy as a mild aperient we confess we do not see, but an aperient it certainly is, and we presume no farmers throw it away, as used to be done in former days if they do, they run the risk of losing their calves from constipation. The ash of 100 lbs of cow's milk will supply about 20 lbs of phosphoric acid; 10 lbs of lime; and .17 lbs of potash; all necessary to build up the tissues and bones of the young animal.

But, it will be said, although I want to rear good calves, I really cannot afford to give them new milk. Butter and cheese are high in price, and meat is cheap. are there no means of rearing young stock with skim-milk assisted by other foods? To answer this question I must enter fully into the treatment of the calf from its birth, premising that no means known at present will make such good calves as the natural milk of the dam, and many calves reared at the pail are lost from greediness in feeding.

The calf is just born. If you want the cow to be troublesome, blaring