CARE OF BREEDING EWES.

It is not so necessary to have the quarters for the ewes warm as it is to have them dry and free from draughts. They should not be too crowded, either in the building or at the feed trough. Large ewes should have at least one and a half feet of space at the feeding rack; if they do not have this amount they are apt to crowd one another, which often results in the birth of dead lambs. Every ewe should have from ten to fifteen square feet of space in the building.

The amount of feed to be given during the winter will depend on the condition of the ewes when they went into winter quarters. If they were thin in condition they will require more feed than if they were fat at that time. It pays to keep the ewes in good condition, for then the lambs will come healthy and strong. Handling the ewes is the only way of telling what condition of flesh they are in, and from a knowledge of this the amount of feed to be given can be determined.

A breeding ewe weighing about 150 lbs. and in good condition should have about one-half pound daily of bran or oats. She should also have some succulent food, about two pounds a day, and the same weight of dry fodder, such as clover hay or cut corn fodder. It is a good plan to weigh the feed occasionally, and thus know definitely what is being fed. Many farmers only guess at the amount they feed.

Over-feeding is to be avoided, especially if the ewes do not get sufficient exercise. Disease is likely to occur, and the lambs will be large and weak. Under-feeding is also favorable to disease, and gives undersized, weak lambs. The condition of the ewes as regards flesh should be the controlling factor in feeding. Of course the quality of the fodder will determine to some extent also how much of it should be given, and it will also affect the amount of grain to be fed. When within two weeks of lambing time the grain ration should be doubled.

Breeding ewes should have a supply of succulent feed at all time. There is nothing better for them than turnips, though sugar beets, mangolds, and corn silage can all be used with good results. Immediately before lambing the quantity fed should not be too large. After lambing they may be fed unlimited quantities, as it tends to increase the flow of milk. Three pounds for each ewe per day will not be too much before lambing time. Corn silage is a good succulent food, and if not more than three to four pounds per day per ewe is fed, will give very satisfactory results.

The most satisfactory grain to feed is oats the first part of the winter, and bran as lambing time approaches. Say half a pound of oats per ewe per day until near lambing time, then one pound of bran. This will be sufficient for ewes weighing from 150 to 200 lbs. Corn is not a suitable food for breeding ewes, it is too fattening. For best results in general thrift, growth of wool and production of lambs the breeding ewes should get some grain during the winter. You can't withhold the grain all winter and expect to get as good results by feeding a short time before lambing time. Feed a little all winter, even if it is only a quarter of a pound a day to each ewe. Among the coarse fodders for winter feeding, clover hay, pea straw, corn fodder, oat hay, oat straw, and millet rank in value in the order named, when everything is taken into consideration. Corn fodder (with the ears removed) is a very satisfactory food. From 1½ to 2 pounds of any one of the coarse fodders just mentioned, with from 2½ to 3 lbs. of corn silage or from 2 to 3 lbs. of roots and one-half lb. of oats will make a good day's ration for a good-sized ewe. If they waste too much of such a ration reduce the amount a little.

Give the ewes all the fresh water they want; keep salt in a box where they can get it at will, and with proper feed there will be little trouble at lambing time.

PREVENTING MILK FEVER.

Many a dairyman can testify to having lost his most valuable cow with milk fever. Where the cows are poorly fed nothing is known about this scourge of the dairy, but in those stables where cows are kept and fed to make a profit it is of frequent occurrence. We find a few dairymen are on the look-out for it, and the usual precaution that is taken is to withhold the greatest part of the rich, strong food for at least a week, often two weeks, before the cow is expected to calve. Some dairymen go so far as to reduce the feed to only straw and a little hay. As a general rule the cow is also well physicked a few days before and immediately after calving. This treatment tends to "cool the blood," or, in other words, a very large share of the rich, strong food that has been going into the blood is removed, and the cow's system is in a better condition to pass through the changes which occur at the time of calving.

A correspondent of the *North British Agriculturist*, in writing about a visit to Professor McConnell's farm, in Essex, mentions the way "coming in" cows are treated at this farm to prevent milk fever. All doubtful specimens are brought in and physicked, and if, after calving, there are unmistakable signs of milk fever, the following treatment is resorted to with a marvellous degree of effect:

FIRST DOSE.

Chloral hydrate.....	1 oz.
Potass bromide.	1 oz.
Tincture aconite.....	15 drops.

SECOND AND FOLLOWING DOSES.

Chloral hydrate.....	6 drams.
Tinc. of aconite	2 drams.

A dairyman reports good results from giving a cow threatened with milk fever 20 drops of tincture of aconite once every two hours. In less than twelve hours the cow was alright.

Another treatment is to give ½ pt. of whiskey, ½ oz. fluid extract of belladonna, and 2 drams of tincture of nux vomica every three hours on the first symptoms of milk fever appearing.

In all cases of milk fever it is well to blanket and keep the animal warm. A mustard plaster along the spine is also good, so are injections of soap and water, but these alone are not enough.

HOW TO BOIL POTATOES.

Professor H. Snyder, the chemist of the Minnesota Experimental Station, has been conducting experiments in boiling potatoes in some five or six different ways in order to find out what loss of food value occurs in cooking. The cooking of potatoes so as to retain the highest amount of food value is a very important question.

One of the most common ways of boiling potatoes is, first, to peel the potatoes, soak them in cold water for an indefinite period, and boil them, starting with cold water. Another way is to omit the soaking, and to place the potatoes directly in either hot or cold water to boil. Sometimes the potatoes are not peeled, but, after cleaning, are placed directly into the kettle of either hot or cold water for boiling.

From a number of trials made at this station some time ago and reported in Bulletin No. 42, it was shown that the loss of albumen was found to vary from 2 to 80 per cent. of the total amount in the potato. Further trials were made in which different kinds of water, as hard lime water, alkali water, and distilled water, were used. In each trial from three to five fair sized potatoes were used, and in all twenty-eight separate trials were made. Both the potatoes and the water in which the potatoes were boiled were analyzed.

When the potatoes were peeled, soaked in water five hours, and started in cold water, over 57 per cent. of the total nitrogen was extracted and lost. In the earlier trials, reported in Bulletin No. 42, when the potatoes were cut into medium sized pieces, soaked and boiled slowly, 80 per cent. of the total nitrogen was extracted and lost in the drain water. The losses of nutrients are the heaviest when the potatoes are peeled, sliced, soaked and then boiled slowly, starting with cold water.

The losses of nutrients are the least when the potatoes are not peeled, and are placed directly into hot water, or even cold water, provided the water is warmed rapidly. The loss of total nitrogen is then reduced to about one per cent. When the potatoes are peeled and placed directly into hot water, about eight and a half per cent. of the total nitrogen is extracted and lost. If the potatoes are peeled and placed into a kettle containing cold water, the losses are much greater. The smaller the pieces and the slower the rate of cooking, the greater the losses.

The losses were about the same with hard lime water, alkali water and distilled water. The losses of starch and dextrin are insignificant compared with the losses of nitrogen and ash. When the potatoes are not peeled, the combined losses of starch and dextrin are less than a tenth of one per cent. When the potatoes are peeled, the loss of soluble starch and dextrin ranges from .63 to 1.50 per cent.

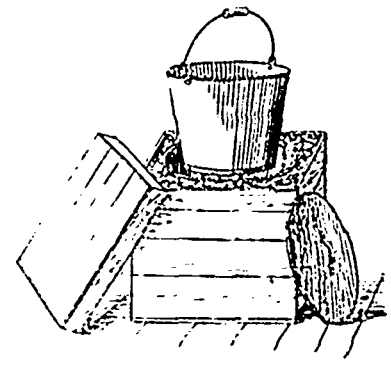
The loss of such a large proportion of the total nitrogen of the potato is a serious matter. Before cooking, there is about one part of protein to every ten or eleven parts of starch and starch-like bodies. After improper cooking, and losing half of the total nitrogen, the ratio is widened to one to twenty or more. In a bushel of potatoes a loss of 25 per cent. of the vegetable albumen is equivalent in food value to all of the protein in a pound of sirloin steak. In many cases the losses are even greater than 25 per cent.

These trials suggest, that in order to retain the highest food value: (1) Potatoes should not be peeled and soaked. (2) They should be placed directly into hot water. (3) The potatoes should not be cut into fine pieces. (4) An unnecessarily large amount of water should not be used for boiling.

A CHEAP FEED COOKER.

A warm breakfast is very desirable for the hens on the farm, also for the young pigs, but the trouble to get it is often so great that none is provided. Where there is a regular feed cooker there is no trouble, because if the food is cooked the afternoon before it will be just right to feed in the morning.

Where there is no feed cooker on the farm a very simple one can be made with a little labor, from a box and some straw or hay. Get a box a little larger in size than a vessel that holds the required amount of feed. Pack in four or five inches of straw in the bottom of the box, then place the vessel that is to contain the food in the centre of the box and pack around it with straw. Put in the meal and wet



it until sloppy with boiling water. Do this at night; cover tightly, and let stand until morning. The mass will cook during the night and be at the right temperature to feed in the morning.

If the quantity of feed wanted is small, a pail with a flaring side can be used. It can be lifted out and taken away, for the straw will keep its shape. If a larger quantity is wanted a permanent vessel had better be used, either a very large pail or half of a barrel. If the inside vessel is to be a permanent one, the packing can be made of chaff or cut straw. A close-fitting lid should be made for the inside vessel and another to cover the box.

A box made similar to this can be used for keeping cream warm so that it will ripen more quickly in the winter, and not have it standing beside the kitchen stove so long.

A CLEANLY WAY OF MILKING.

CLARENCE C. GATES.

The thumb and finger pressure on the cow's teat is not the cleanest way by which a cow can be milked, although it is the quickest and easiest. Indeed, a cow can hardly be milked in a dirtier manner, for all the filth on the teat must necessarily be scraped from it by the rapid, downward pressure. Neither is such a way of drawing the milk