to have to feed both the mothers and lambs : of course I have some pretty fat shoop. Anything you have in good at sheep. Anything you have in good sheep you have to feed them. My ex-porience is something like Mr. Han-mers: that rape is an excellent thing for lambs, and the way I feed it is to sow the rape with the grain in the spring. I sow a field of oats, and the rape with it ; we do not seed down to sod, and I find sowing rape in that way gives the best results. It is the cheapost pasture I can get, and it rushes my lambs ahead better than anything else. I think the last two years we should have been in bad hape it it had not been for the rape Wo had no young grass at all, and we were entirely dependent on the rape. I feed the mothers on peastraw in the winter scason." (1) Mr. Gibson :--- 1 just want to make

this statement: when 1 was in Wisconsin last year, they were slaughtering some lambs that had been under experiment A portion of them had been fed grain with the ewes, and another portion had been fed grain after they were weaned. There was nineteen pounds a head difference in the weight of the lambs. The ones that had been fed grain from the start, and had grain flesh, and, of course, in any subsequent on the pasture whonever they chose advantage derivable from this main

Mr. Arkell .- " I saw that experi-ment. Was not that feeding lambs grain against fee 'ing owes grain as well?

Mr. Gibson :- ' No ! It was lambs ; and the lambs were all sold to the later. Let me illustrate this. Six weeks never again as efficient a cow as forture made three-quarters of a cent per pound more."

An exchange says that we need English shepherds to tell us how to feed and care for our flocks. Of all the animals kept on our farms the sheep is the worst cared for, and the most improperly f.d, in order to produce mutton of a fine quality. It is not the breed that we lack so much as the rape, tares and turnips. can farmer has not yet learned that his corn and other carbonaceous foods will not make mutton of a fine taste and flavor.- Vt. Farmer's Ad.

## The Dairy.

## The Feeding of Milking Cows.

In the interesting article on " The Feeding of Animals, published in the following bad year with the same current number of the R. A. S. Jour- cow under the same system of treatnal, it is stated that the Rothamsted ment and feeding. But, speaking gene milking cows have for some years past rally, I respectfully submit that the received an amount of olcake graduat- period of lactation is prolonged by an ed according to the yield of milk. Sir increased amount of food. We are J. B. Lawes obviously adopted the bound to consider alongside with lactaplan of proportion so far as regards tion the period of gestation. Most of as oilcake from his standpoint as a cho have had experience of a cow continmist quito as much standpoint of a cowkeeper. There which she continued barren. With is, however, from the cowkeeper's such a cow an increased amount of however, from the cowkeeper's view one potent advantage deriv-

(1) Good --- Bo.

able from a system of graduation in the case of oilcake which recom-mends itself. Cowk epers know from experience that the drain is great upon the system of a cow whose yield of milk is large, and that the danger of an exhausted constitution is far greater with hor than it is in the case of a cow whose yield of milk, is small. When a liberal supply of oilcake is given to a deep-milking cow it seems to me that we have a two-fold object in view. We wish (1) to maintain our milk-producing animal in a condition of offectiveness for present and future work, and we wish (2) to raise the quality of the muk itself. (1) Messrs. Lawes and Gilbert tell us very truly that whereas during the months of May and June the influence of grazing is very mark-

edly shown in an increase in quantity, there is coincidently with this increase in quantity a decrease in quality. At such times the Rothsmsted plan of giving oilcake in proportion to yield would very considerably affect the condition of the cow herself, and also in a less degree, the quality of the milk which she was yielding. The liberal use of oilcake would be very plainly seen in the maintenance of the cows

end, and the selling out value of each animal has to be realised sooner or Eventually she recovered, but was She was in such condition hat ' seem ed more desirable to fatten her at once than to milk her through the summer. She is yielding about 3 quarts of milk per day, and she will be kept in milk until she goes to the butcher. We have graduated her oilcake by nearly dou bling it. Of course this is not feeding for milk, but it is a kind of feeding which the circumstance demands.

At Rothamsted, as elsow sere, "there The Ameri- remains the important question whether the period of lactation i. lengthon ed, or the yield of the higher yielding cows is maintained the longer by an increased amount of food ?" And it is "The point is, at any rate, added. deserving of careful experiment and observation. Here, it seems to me, observation comes in and precise ex-periment is shut out. You cannot carry on two sets of experiments with the same animal at the same time. Individual cows vary wonderfully. You may have a good year with a cow and a as from the ung in milk for several years, during keeper. There, which she continued barren. With

(1) So, we can enrich the milk by food. Bo.

food shows its results both in ment and in milk, and it seems to me that the increase in the weight of a milking cow is per se à decided advantage, so long as we avoid such undue fattening of an incalf cow as will invite puerperal fever. It has been already remarked that lactation and gestation must be considered together in all cases in which the cow is pregnant. For myself, I am convinced that it is unwise to prolong the period of lactation in a higher yielding cow by using the influence of increased ford so as to keep the animal in milk until she is near calving again. In my judgment, the old established rule of having a dead time of about three months when the cow was entirely idle had a reasonable foundation. (1) When consideration is had both to the well being of the cow and of the calf which she has to bear, I believe, as a rale, that it is decidedly unwise not to allow a period of dead time to the extent of at least ten weeks. So that our more generous system of feeding may be said to have given us only a shortening of two weeks from the three months of idle time allowed by our fathers to their milking cows. Once, and only once have I tried the non-feeding. This was not any forcing what they could do. It was a second the same. My own experience is that yc cannot feed grain to animals with the ewe." Mr. Arkell.—" I saw that experi-ment. Was not that feeding lambs experiment of milking a cow without milk only, and shuts his eyes to every. calving she dropped with puerperal thing else. To every cow there is an fever, and continued in almost an un calving she dropped with puerperal conscious state for a couple of days. butcher while I was there, and the age a cow in my herd was supposed to merly. I think we may take it as a lambs that were fed grain in the pas ou in calf, but has now preven harren. general rule that, if we encourage lactation in a cow beyond a period which does not allow a rest of ten weeks, we are burning the candle at both ends

T. C. S.

## THE DISPOSAL OF WHEY.

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Sir. — In your last number Mr. A. J. Meldrum, Dundas County, takes issue with Instructor Millar regarding the proper disposal of whey at cheese fac-The sour whey question has orics. been discussed in all its bearings at our dairymen's conventions, and in you, valuable paper in former issues, and the consensus of opinion of all those who have made an unbiased study of the subject, is that whoy should be disposed of by some other means than returning it in the milk-cans to the patrons. It is, therefore, a matter of some surprise to read the old stock argument advanced by our friend in opposition to the practice adopted by our best factories.

He speaks of keeping the whey sweet by having an elevated tank, and scalding it. The elevated whey tank is indeed something that every cheese factory should have, being a decided improvement upon the low, underground tank. It is almost impossible, however, even with these favo

(i) But only in the case of valuable cows the caives are better for it and sell higher. En.

rable conditions, to prevent the whey from souring. If a factory would go to the trouble and expense of connecting a steam pipo with the whoy tank, and heat the whey up to the boiling point every day, there might be a possibility of keeping the whey pure during the cooler weather. But it is the usual plan to elevate the whey by means of ejector." The best that is claimed an " for this method is that it will heat the whey to about 140° Fahr., and experience teaches that the much larger number of ejectors will not raise the temperature to much more than 110°. Everyone who has made a study of germ life, and especially of those "micro organisms" which cause the souring of milk or whey, knows that they will thrive best at a temperature of from  $95^{\circ}$  to  $100^{\circ}$ ; consequently if the whoy is only heated to about 115° or 120°, it will quickly cool to a point at which the germ life will begin to grow very quickly, and cause the whey to become sour. Even if a high enough temperature were reached in the process of elevation to kill the gorm life, before the whey could be taken home to the patrons it would have cooled sufficiently to allow the germ life, which is in the atmosphere, and more especially around whey tanks, to develop again Therefore, of necessity, if the whey is taken home to the patrons in the milk cans, it will be sour and contain bad flavors that will not roly injure the can, but be communicated to the milk if the cans are not thoroughly scalded and cleansed as soon as the milk wagon has returned from the factory.

Mr. Meldrum takes strong exception to Mr. Millars remark that all whey should be fed at the factory, and states that the surroundings of a great many factories are foul enough already, without having swine stalled and fed there. He must surely have reference to the condition of the factories in his own district. It is a noticeable fact that, in Western Ontario at least, the bestequipped factories, both as regards buildings and furnishings, and the factories where there is the least foul smell around, and where the finestflavored cheese are made, are invariably those where the sour whey is not retuined to the patrons in the milkcars. Feeding whey at the factory does not mean that it is necessary to have the hog-yard round the building, or to have the hors coming to the door "squealing for a drink." The very fact that the whey can be elevated to a con-siderable distance above ground, makes it quite feasible to have the hog-yard half a mile from the factory, if need be, and to carry the whey any distance to be fed. If this plan is adopted, there will be no risk run from having the milk contaminated by the sour whey flavor 50 injurious to the quality of the cheese.

What our friend says in reference to factories being in an unfit condition for a cheesemaker, to turn out A1 cheese.is well taken. It is undoubtedly true that a great many of the factories in On-tario are not in a suitable condition for making first-class cheese, and too much cannot be done towards inducing factorymen to put up better buildings, and to put in botter equipment. There seems to be, however, a decided im-provement in Westorn Ontario in re gard to better buildings. A number of factories have change hands this spring, and have been refitted, while many new buildings have been erected. Whatever may be the failings of instuctors in other districts, I think that both factorymen and patrons will bear me out in the statement that the instructors, and those who supervise