FARMER'S ADVOCATE. THE

that the mouth was set to correspond with the depth of cream. By the mouth of the tap being level with the top of the cream, when the milk was all out, and that distance from the bottom of the can, it took away the suction and also stopped of itself when the milk was all out, thus saving the waste of other taps, and also enabled them to get milk when they wanted it without disturbing the cream.

I also insisted strongly, and do so still, that to get the best results as to quantity and quality the patrons of creameries must set their milk, completely covered over with water, by what is known as the Cooley process. This process keeps the milk and cream free from the dangerous in. fluences of the air, gives it the uniform cooling most effective to raise the cream, and the most perfect ventilation. The air under the cover keeps the water from going into the milk, and if fastened down so that the water does not lift it off, and yet allow the cover to tilt, will give plenty of space for the steam off the milk to escape into the water, and also to give it a slant for the condensed steam to run out into the water, instead of dropping back into the milk.

To enable the farmers to use the skim milk to best advantage to raise calves, I saw that it was necessary that they must do the skimming them selves. With the most perfect contrived apparatus in their hands, a great many did their work well ; others, through want of experience, know ledge and care, did it very incorrectly; and others, through greed, meanness and dishonesty, did shameful work. This caused a great deal of work and trouble, and forced the necessity of a system of testing. This, at first, caused quite a rumpus, as some were found wrong who were considered above suspicion, and who, in consequence, found fault with the incorrectness of the test. Time and patience, however, brought the conviction that milk can only be sold for cream at the risk of one's reputation, and the system is now universally adopted, and the cream paid according to its test value.

These, among many other difficulties, made the business very unpleasant, and took a great deal of patience and perseverance to overcome, and very trying to a man who knew that he was working up an industry in the success of which they should all be interested, and to which they could look hopefully for profit. Another great drawback and difficulty is the unpardonable fact that farmers, as a rule, will not provide anything to feed their cows during a drouth. The factory starts up with fair prospects in the spring. The teams come in with paying quantities. The weather is getting dry, the pastures go, the cows break off, the teams come in with less every day, and the season is crimpled. At heat the methods are the season is crippled. At best the creameries run only about five months in the year, and if three months of that is spoiled through poor pastures, who could expect a man to remain in a business with only two months of a paying business in the year? Neglect on the part of the farmers in this matter does not only hurt the factory, but it leads to the erroneous idea that cows don't pay. No business under the sun pays if run as our cows are. They are machines capable of turning out as much as 20,000 fbs. of milk in a year, but through miscalculated, or, let me say, stupid economy, the average is only about 2,500 fbs. -eight cows doing the work of one. This is an extreme case, but in all fairness, four should average what it is possible for one to do. In course of time, when farmers will feed their cows with the same prudence as they do their steers for beef, and keep not only one-half the number they should keep, then the creamery can be operated with profit and satisfaction. This we

up their minds to that effect, the better for them. may hope for, and the sooner the farmers make

Taking every possible view of our situation I cannot see anything open for our farmers to do, to make their farms remunerative, except dairy. ing properly managed. The question may be asked: "If the business is sure of success in time, why does it take so long to bring it about?" Differences of opinion emanating from selfish motives, is perhaps the principal cause. It does not matter what one is trying to build up, another will pull it down, if he can make money by it, or gratify, in some way, his selfish interests, regardless of the consequences to others. As soon as the Cooley system of setting milk became popular, men in all parts spring up with cans to sell, and although not one of them had ever made a pound of butter, or had any experience whatever, they were quite competent to lead the farmers in the direction of how to handle this milk, and explain the superiority of their cans. As long as experience is worth nothing, and farmers will be led by all sorts of frauds, it will take long to make any improvements. In consequence of this, farmers have now all kinds of worthless apparatuses, many of them not fit to be used by creamery patrons. Perhaps the most objectionable one is what is called the "Excelsior." This one has a funnel shaped bottom, with a spout from the centre to the outside, to which is attached a clumsy tap. This spout is about four inches in length, and so put in that it is impossible to touch with a cloth, and, therefore, from one year to the other that part of the can cannot be cleaned more than by running water through it. This same genius also puts a strainer in the lid of the can. Just imagine, with a part of the can never cleaned and the strainer never aired, what the cream will be like to send to the factory. Another tap, the shape of an ordinary molasses gate, was brought out, and the farmers bought it because it was cheap. Now, I give this as a fact, that nobody is using that tap without a loss of \$5 each year in wasting cream. If anyone is not satisfied with this statement, I can prove it to him to his entire satisfaction. This is what is called penny wise and pound foolish. With great care, judgment and ex-perience, the Cooley tap is so constructed that the look is related at the second if the term the lock is ridged at the can, and if the tap would not be kept quite clean, it is on the outside and does not interfere with the milk. The sourness which will gather in the spout of the can above referred to, acts on the milk like yeast does in bread, and stops the rising of the cream. A perfectly clean can will always raise more cream than one that is not, and very often when I hear of people complain-ing that they don't get all the cream by deep setting, I make up my mind that they either keep their cans clean through care lon't

creamery man, with an experience of about twenty days, and feeling the responsibility of his duty to his fellow men, gave them the benefit through his public lectures. He then strongly condemned the submerged process of setting milk, claiming that milk must have air, and also that the tin-lined tubs which we were using were no use, showing the people that these Canadians don't know anything. We had to grin and bear A Frenchman from Quebec was imported to take charge of the institution the second year. At the end of that year things were very quiet: the circulars were not so plentiful, for I did not hear of any one having seen them at all; but what I did hear was, that they were gradually changing into our system, and the profits did not pan out as well. The third year we hear from Professor Robinson, who had charge of it, writing to a farmer, "I think the submerged process of setting milk is preferable," and Professor Brown says, "we are thoroughly converted to the tinlined tubs." In a few other things they are yet behind. The brakes applied to the wheels by In a few other things they are yet all these influences, was more than I could bear any longer. The most of the difficulties, however, are over-

come, and those in the business have every reason to hope for fair success ; and if the farmers take the interest they should, and do their part to make the creamery profitable, I predict a bright success in the near feature; and when this is accomplished, your humble servant will have the satisfaction of knowing that he has been one of its earliest promoters, and one whose labors resulted in much good to his fellow men.

Of the details in the dairy to be attended to this month, it is very important that the cows should be milked regularly and as completely as possible. This rule applies with special force when the cows are drying off, and especially when they are subjected to extremes in temperature and changes of feed.

Overdoing has received its fatal reward. The depression in fancy stock still continues. At the Boad sales of Polled Angus cattle, 29 head, mostly cows and heifers, only totalled £434 3s. 6d., or less than £15 per head-just about butchers' prices. In Shorthorns, however, there is a more confident feeling. The Underley herd, 45 head, averaged £73 19s. 8d. But fancy prices appeared to be at an end, fancy stock selling at less than one-fifth of their former price.

To find the number of cubic feet in a mow multiply the length, depth, and width together. Five hundred cubic feet of ordinary clover and

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or because it is impossible to do so through a badly constructed can, or it may be owing to an insufficiency of cold water, or ice.

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As we were struggling amidst all these difficulties, and by this time there were about half a dozen creameries in the country, the Government undertook to start the one on the Model Farm. Perfectly ignoring us who were in the business, an out-and-out cheese man was sent to the States to import American ideas. Their plan was different from ours, and being adopted by the Government authorities, our patrons naturally concluded that we poor mortals were all wrong, and consequently were loud in finding fault with our system. Being afraid to start, or some other cause, they did not get started the first year till late in September, and only run for a few weeks. Happening to strike a good market with their few tubs, which sold as a novelty, and butter-milk at 10c. a gallon, they issued circulars and spread them all over, showing what profits would result for creameries run for five months in the year. They based their calculations on the profits of the few weeks and applied it on the whole season. The calculation is as unreasonable as if a storekeeper sold \$500 worth of goods on a special day in the year, and then based his amount of business on that for the whole year. This confirmed the idea that we either did not understand our business, or else did not give the farmers value for their cream. Professor Brown, now considering himself quite an authority as a

timothy hay, packed under ordinary circumstances, will make a ton. It is difficult to calculate precisely, owing to the existence of so many modifying circumstances. Fine new-cut hay, such as red-top and bluegress, will probably require a little less than 500 cubic feet to the ton. Timothy alone requires 550; clover, 650; coarse meadow hay, 700 or over. After lying in the stack for a month, the bulk decreases 5 to 10 percent.

The weight of milk can be ascertained from the volume sufficiently accurate for all practical purposes. With an accurate lactometer the exact weight can be obtained. Let it be supposed that the specific gravity is taken and is found to be 1.031, which is about the average, then a vessel which would contain 1000 lbs. of water would, if filled with milk, weigh 1031 pounds ; that is, the milk would be 3.1 percent heavier than the water $(1000 \times .031 + 1000 = 1031)$. A gallon of water weighs 10 lbs., and as milk weighs 3.1 percent more, a gallon would weigh $10 \times .031 + 10$ =10.31 lbs., and so on with any other quantity. Even if the specific gravity is not taken, these figures will not be far astray, for the specific gravity ranges only between 1.029 and 1.033.