The whole process is so well manipulated that all but experts might easily be deceived in the appearance of this "stuff," and take it for cheese made from normal milk. Were this the end of the evil, there would be less cause for complaint than now exists; but what do we find? The market for all kinds of cheese is demoralized, because the filled-cheese seller can afford to sell his product for much less than normal milk cheese can be made. Nor is this the greatest trouble, for if the filled product was wholesome and good, every factoryman could make filled-cheese, and thus realize more money than he now does; but filled-cheese is a greasy, indigestible article of food, and when eaten as cheese gives the consumer an idea that cheese does not agree with him, and from henceforth he leaves cheese out of his diet; thus one of the most healthful of foods is barred from a place in the market to that extent.

Filled-cheese, like bogus butter, is frequently sold from the factory under its true name, but before it reaches the consumer it loses its name and is ultimately eaten as normal whole milk product.

"Filled-cheese" has had a most disastrous effect upon the legitimate cheese industry of the States; and only recently we noticed that a warning circular was sent from the Liverpool Provision Trade Association to the Wisconsin authorities that unless immediate steps were taken to stop the manufacture and shipment of these "goods" it would be quite impossible to sell Wisconsin cheese at all in the British market. If our information is correct, Wisconsin has not been the only or the chief sinner of the States in this respect, and we are pleased to note that vigorous legislative measures are being taken in various quarters to stamp out this vile fraud. We have done so before and we do again warn Canadian dairymen to keep these "unclean things" outside the borders of the Dominion.

Farm Buttermaking.

BY F. J. S.

Churning.—We usually churn ripened cream in the farm dairy, and as a rule we think it best. Use dashless churn, and strain cream into the churn. Our rule for temperature is to churn as low as possible to get butter in 20 to 45 minutes, and avoid difficulties in the churn. From 56° to 60° are safe summer temperatures, and 60° to 65° in winter; it may, however, be necessary at times to churn lower or higher. These temperatures are for gravitation cream; separator cream, if taken with 25 to 30 per cent. fat, should be churned lower, say 50° to 54°. Sweet cream must be churned as low as possible to get all the butter-fat from the cream. Very large quantities of butter are weekly thrown away in farm dairies from lack of exhaustive churning. Low temperatures have at least two advantages: more thorough churning and better textured butter. Where shallow-pan cream is quite thick when creamed and close skimming is done, the product may be churned at quite low temperatures, the per cent. of butter-fat largely influencing this.

Really fine, properly ripened cream churns without difficulty and can be relied upon. Very thick cream should be thinned, using water or skim milk, to churn properly, thick cream usually churning too rapidly or too slowly. Objections are, however, rightly raised to the need of thinning, as there is almost always undue loss of fat in the buttermilk. Very rich cream churns quicker than cream low in fat. A sour but thin cream should be churned at a comparatively high temperature. Such cream does not usually thicken up much while churning, loses largely in the buttermilk, and if churned at a low temperature, froths or foams in the churn. Cream of rank odor and bad flavor usually gives trouble in the churn; either it will not break, or having broken, will not gather. Churn it at a high temperature. The larger the quantity in the churn the higher the temperature needs to be, and *vice versa*: do not fill more than half full. Frozen cream tends toward insipid flavor and paler color in the butter, which does not keep as well. Fast churning—less than twenty minutes—usually results in extra loss in buttermilk, and in poorer textured product. In the use of "color," suit your market; look well to your color that it does not get off flavor and spoil your butter. When the butter breaks, it is good to add some water to help get a separation, unless the cream is quite thin, as in deep-can setting. Add cold water in summer and 55° to 60 in winter. Churn till butter is about like small wheat (when you should have a good separation) and draw off buttermilk. In obstinate cases a little salt will assist in separation, and in fall and winter you may find it necessary to draw off some of the buttermilk early to assist the gathering.

Washing and Salting.—Wash just enough to get rid of the buttermilk. Do not allow the butter to stand long in the water while washing. Undoubtedly water injures the flavor, and there are those who successfully make an unwashed butter. Allow to drain for fifteen to twenty minutes in the churn, then salt (with the best salt you can buy) to suit the market. The butter should be kept in granular form until salted. We prefer dry salting; brine salting is twice objectionable: first, because inexact and not uniform from time to time; and secondly, because of the standing in water. Salting in the churn is an excellent practice, the barrel churn being very convenient and perhaps the best. To get uniform salting, weigh churn and butter and deduct the weight of the churn, or calculate your butter from the number of pounds of milk from which it has been taken. If cream is uniform from time to time and equally good churning done, it may be used as the basis of calculation.

Working.—Use a lever or roller worker, and not a bowl and ladle. Keep the hands out of the butter. If salted in the churn and allowed to stand an hour and a-half or two hours, once working is quite sufficient, stopping as soon as the streaks disappear. If salted in the churn, wash with water cold enough so that the butter will remain in the granular form while salted, when the butter will take the salt more evenly and need less working. When salted on the worker, more working is necessary and the need of a quick dissolving salt is more evident. In any case work the butter so that when examined twenty-four hours later no streaks appear; if much streakiness is present, re-work. On a roller worker it is best to count the revolutions. If intending to work twice, work just enough at first to thoroughly incorporate the salt, then set aside a few hours for the salt to dissolve, and work again. When the streaks fully *disappear*, *it is finished.*

Whey Butter.

Bulletin 85, of Cornell Experiment Station, treats of the process of securing the fat of whey and churning it into butter. The practice was commenced with the purpose of making some investigations as well as to give students practice in running the separators. From whey containing .25 of one per cent. of fat, 2.57 pounds of butter was made from 1,000 pounds of whey, which shows that practically all the fat that escaped from the cheese was recovered by the separator and churn. The manufacture of whey butter differs from ordinary buttermaking in only a few details. The whey had to go through the separator twice; the first time about one-tenth of the whole bulk was taken from the cream outlet, which was found to contain from two to five per cent. of fat, or about the same as normal milk. This so-called first cream was run through the separator a second time, when the cream extracted was about the proper consistency for churning. In all the experiments the whey was run through the separator immediately after it was drawn. At this stage it was warm and slightly acid, therefore in good condition for churning when sufficiently cooled down. The most complete churning was obtained when the churn was started at from 48° to 54° F. In regard to the quality of butter, the Bulletin states that it was sold along with the regular creamery butter at the same price. Good judges, who have seen the two kinds side by side, have been, in some cases, unable to detect which was made from whey and which from cream. In other cases inferiority in flavor and texture have been noticed in whey butter. Whether or not this product can be made at a profit is the practical question for the factoryman to settle. Not a few factories now have separators, etc., for winter buttermaking, which could well be used for extracting and making up the fat from whey. As most factories have the necessary steam power to run a separator, and as the butter might find a home market among the patrons of the factory, the extra equipment and labor does not appear to be much of a barrier to the industry. As the season advances milk becomes richer, and the loss of fat, in many instances, is no small item. The thickly-coated whey tanks stand in evidence of this. The careful makers, of course, endeavor to incorporate in their cheese as much as possible of the fat which the milk contains. "Whey Butter," we might add, is no new thing, as some Old Country dairymen are well aware.

The Use of Cream Separators—Easy to Run.

SIR,—I notice in the last issue of the FARMER'S ADVOCATE that "F. J. S." says that cream separators are hard to turn. That is not the case if you have *the right kind of separator*. I now use the De Laval No. 3 (which is really a power separator), and find it very easy to turn by hand. A boy ten years old can turn it and think the work fun. Deep setting is out of the question; I have used deep cans long enough to know that a separator is far ahead. One cow will make at least $2 a year more when separator is used instead of deep setting, not counting very much less work. With deep cans one does not know how much is being lost. Say a man was keeping fifty cows, and using deep setters, it would cost him $1 per day for washing cans alone. Having had considerable experience in creaming the milk of my pure-bred and grade Jerseys, and ordinary cows, I certainly would advise every dairyman to invest in a De Laval machine. I have succeeded in separating milk cooled down as low as fifty degrees with ice. I believe it will pay for itself in one year in saving of labor and extra quantity of superior cream. I would say that a dairyman with [illegible] cows could not afford to do without a separator, as only are the losses in cream saved, but [illegible]lk is left in perfect condition for feeding.

H. LAWSON,
Middlesex Co.

APIARY.

To Prevent Spring Dwindling.

Much of the success of the coming summer's honey crop depends upon the strength of the little workers when starting out in the spring. When the warm days come the active work of the bee-keeper commences. Colonies should be examined to see that none of them are lacking in stores. There is sure to be more cold weather, which should be guarded against by paper and cushion coverings to prevent chilling of brood, for lost brood means lost bees in the working season. One bee lost now means just so much less honey. When colonies are weak they may be doubled up by putting two swarms into one hive, and destroying the weaker queen. More brood will be reared and more honey gathered by one good, strong colony than several weak ones. The strength of a colony can often be told by the manner in which they come out of the hive on a bright warm day. They should come out with a vim and a rush that can be easily distinguished from the timid, half-hearted manner in which the members of a weak colony emerge. As long as the weather remains cold there should be some bright straw laid before the hives, upon which the little fellows can alight if necessary before entering, as they frequently return chilled and unable to make the hive. Many bees are lost in this way, which leaves a dwindled colony which becomes weaker and weaker until they become unable to do more than support themselves.

Experience is acknowledged to be the most effective teacher. I well remember my first swarm of bees. I protected them in the fall according to the best methods I could find, and had faith in their blooming condition the following spring. Alas! too much faith; I failed to see to them in spring, and they starved to death. When bees come out strong and in good shape, they can be helped by supplying them with artificial pollen in the shape of ground oats, rye or corn, placed in a shallow pan in a nice warm place near the hive, which they can be aided in finding by placing a little honey on the side of the vessel.

Water, too, is necessary for them while rearing brood. This they should not have far to carry, but it can be easily given them near at hand. Floats should be placed in the dish so that they can drink without getting wet.

Bee-keeping as a Business.

BY JOHN MYERS.

A correspondent asks the following question:—"Having about five hundred dollars at my disposal, and knowing scarcely anything about bees, but being desirous of engaging in some business which does not require a large capital, I thought of trying bee-keeping; but before doing so, I thought I would ask whether, in your opinion, I would be able to get a reasonable return for the time and money expended therein?"

In the first place, I would say to any one that has not had any experience in keeping bees not to think of investing five hundred dollars—no, nor even more than quarter that amount—until you have gained some knowledge of both the bees themselves and the bee business as well. A person might just as well expect to succeed by starting up a tailor shop, and after expending five hundred dollars in tweeds, say to the public: I am now ready to make you up the finest suits in the country; if you don't believe me, step into my shop and look at my fine stock of tweeds. Oh, but you say, that is all right—this man could hire some professional tailors, and then he would be able to carry on business. I tell you, my friends, in these times of keen competition, if a man does not understand his business, and know just how his cloth is being cut, in nineteen cases out of twenty he is going to fail. And so is the bee-keeper who is going to hire help to run his apiary while he stands around and looks on and learns the business.

But suppose my friend has keep a few colonies of bees, and feels he has had experience enough to be able to manage a large apiary. I would not even then advise him to expend that amount of money in bees alone, especially if that is the sum total of his bank account, or, in other words, if it is all he is worth in this world's goods, which I take for granted it is.

My friend above states that he is a young married man; and if I were going to map out a course for such as person, it would be about as follows: In the first place, I would purchase a piece of land and build thereon a small-sized house—say land and house to cost $600; I would pay thereon $250, and borrow the balance. I would then buy ten hives of bees, which should cost not more than $60; now spend the remaining part of the hundred dollars in good bee literature, hives and fixtures, which would buy enough for the ten colonies for the first season. He would now have $150 left; this could be profitably spent in some good poultry, some small fruit plants, vegetable seeds, etc.; and if he has any "get up" in him, he can raise more than his own supply of vegetables: at the same time he can increase his stocks of bees and poultry, sell his honey, eggs, fruit, and vegetables, and besides making a living for himself and family, he ought in a few years be able to pay off the money he borrowed on his place; and if he attends to the above as he should, he need not be without work the year 'round.

Having kept bees for the past fifteen years, with