

float the curd, and it is a point of great importance to draw off the remaining whey before acidity develops. When the curd is gathered into a solid mass on one or both sides of the vat, it is cut into large pieces which are turned over on the top of one another, and when the curd can be pulled into fine threads about an inch long, it is passed through the curd mill, allowed to stand in the air, say for an hour, until mature, and salt is added, 2 or 2½ pounds per 100 pounds of curd. It is then ground again so as to mix the salt thoroughly, and is put into the press. The pressure is exerted gently at first, and increased every half hour. After two or three hours the cheese is turned and the bandages folded over the ends.

One of the most important considerations is the temperature of the curing room, and many an excellent cheese has been ruined by inattention to this part of the business. The cheese should be set at 60° or 65°, and the temperature should never be allowed to rise above 70°, or 75° at the most. No cheese should be marketed for a month after entering the curing room; if two months old, so much the better.

OBSERVATIONS.

1.—When the object of cutting the curd is understood, the work will be apt to be done properly. Cutting fine facilitates the separation of the whey, and it is important that as much as possible shall escape, for the pressing of the cheese will not force any out, as some makers suppose. Cutting the curd early, before it gets tough, greatly assists the expulsion of the whey.

2.—When heating the curd, the importance of equalizing the heat throughout the mass cannot be too strongly enforced. This is not an easy task, for curd is a poor conductor of heat, so that the heat must be introduced gradually, and the stirring should be gentle at the commencement. Let the temperature be gradually increased till it reaches blood heat, as this is the temperature at which the rennet is most effective. Too fast heating will cook the outside of the small masses while the interiors will remain comparatively cool, thus retarding the escape of the whey.

3.—The quantity of rennet is dependent upon the temperature, a large quantity at a low temperature having the same effect as a small quantity at a high temperature; but the cheese having much rennet and worked at the low temperature will cure faster than the other, if both cheeses are cured in the same curing room. This is an important point in making spring cheese, when fast curing is required, but the same result can be attained by varying the temperature of the curing room.

4.—An important point is gained in getting the start of the acid. This is accomplished by cutting early and fine, for reasons already given. It is usually difficult to know when acidity is about to begin; but a test may be made by which you need not wait for the acid to appear. If the previous manipulations have been correct, you can test the firmness of the curd and its freedom from whey by its elasticity, taking a handful and squeezing the whey out; if it falls to pieces on the opening of your hand, it is firm enough, and you may then remove the whey before acidity appears.

5.—In the old process of cheese making, the acid was allowed to develop, whereby the mineral matter was ignorantly swept out with the whey, and the hogs became the lucky recipients of the most nutritive and valuable portion of the milk. It is true that many a palatable cheese was made by this method, but when people come to know that a palatable food contains little nutriment, their tastes soon change. When the minerals or phosphates are in the whey, sourness causes the development of lactic acid, and by a chemical process which then takes place, these phosphates become useless for human consumption, and are even deleterious to the system. Therefore avoid drinking sour whey.

6.—To a successful cheese-maker the *why* is as important as the *what*, the former being the science and the latter the practice. The *what* may be sufficient so long as absolute rules can be blindly followed, but this cannot be done by a successful cheese-maker; and unless he knows the *why*, he cannot foresee the effect of a departure from the general rules, which variations are indispensable to success.

Breeding for the Dairy.

Before the breeding season arrives, you should decide what line of live-stock husbandry will be the most profitable for you to follow. At present there is an incipient boom for creameries; fat stock is losing its former interest, and cheese-makers are resolved upon maintaining the reputation which this Province has already established,—that of being the best cheese country in the world. Our creamery is a somewhat new institution,—so is the science of butter-making, and advice must therefore be tendered with caution. A beef herd can be built up in a few years, and little doubt exists with regard to the course to be pursued. Our native stock must be graded up with a prominent beefing breed. You must select your largest and beefiest cows, and put them to a Hereford, Polled Angus, or Booth Short-horn bull; but you must not fall into the blunder of those farmers who devote the offspring to dairy purposes, especially if you want to make a specialty of dairying.

You cannot steer your way so clearly in breeding for the dairy, but you must make some sort of a commencement now, if you have not already begun, for it takes several years to build up a good dairy herd. Efforts are being made by interested parties to weed our native stock out of existence, but no evidence can be produced to prove that it "must go"—out of the dairy business. The inflated records of breeds of the long pedigreed type are introduced for the purpose of extorting large sums of money out of your pockets. Pedigrees are good, records are better, but honesty is best. The days of inflated prices soon have their little run, but not until incalculable injury and loss are sustained by the innocent and unwary. If you are a judge of individual merit, and are personally acquainted with the performances of the animals for a few generations back, you had better not run the risk of dependence upon pedigree. You will certainly not select a bad animal with a good pedigree in preference to a good animal with little or no pedigree; although if all other points and conditions are equal, select the pedigreed animal by all means, but pay only the intrinsic value, not the market price. Bear in mind that the longer the pedigree the

surer the transmission of the weak points, so that pedigree should be associated with perfection. Meanwhile breed from the native best of your own or your neighbor's herd, and when there is evidence to prove that you should take a different course, we will let you know, remembering that by following this advice you will have less risk, and your personal acquaintance with the stock is better than a paper pedigree. In short, our native stock is sufficiently thoroughbred for all practical, though not for speculative, purposes. In addition to the other virtues of the sire, see that he also bears the reputation of being a good "getter."

Breeding for the dairy is complicated from the fact that cheese and butter are two distinct features. The time will come when the mere quantity of milk will not decide the value of a cow for cheese-making; the quantity and the quality of the solids other than the fats will be reckoned, as well as the fats themselves; but for the present your profits will be proportionate to the quantity of milk you can produce. As a rule, if you breed and feed for quantity alone, the milk will suffer in quality, and *vice versa*, but so long as your profits do not depend upon the quality, it is to your pecuniary interest to breed for quantity alone, and the rules for doing so have been given in a previous issue.

If, however, your locality is better adapted for a creamery than for a cheese factory, you should build up a herd of cows that are specially adapted to the purpose. Although it is a safe rule to breed for the greatest quantity of butter and not for the greatest percentage, yet the possibilities must be taken into consideration. For example, a fair average cow will give 4000 pounds of milk in a season, and about 7 per cent. of cream, so that $4000 \times 7 = 280$ pounds will be the quantity of cream produced in a season. Now it will be more difficult to breed from her so as to produce 6000 pounds of milk with 5 per cent. of cream, than to produce 3000 pounds of milk with 12 per cent. of cream, although in the former case the total quantity of cream will only be 300 pounds, while in the latter it will be 360 pounds, and the cow which gives the smaller quantity of milk with the larger percentage of cream will be the more profitable. She will be much easier kept, her offspring will require proportionately less skim milk for their support, and it is quite possible that her cream will produce as high a percentage of butter as that of the other cow. If you understand the principles of breeding and feeding for the objects named, you will find your herd quite plastic in your hands, and you can easily attain the figures above stated, the one extreme adapted for cheese, and the other for butter. By the use of a cream gauge you can easily weed out one or two of your cows every year, and the object sought can thus be easily and speedily accomplished. In selecting the creamery in preference to the cheese factory, there are two points to be borne constantly in mind, viz., (1) that it is just as difficult to overstock the markets of the world with good butter as with good cheese; and (2) that you can improve your soil by the creamery system, while you may impoverish it by the cheese factory. In all your calculations you should include more than the bare cash received, for in many instances a present surplus of mere money may bring final ruin upon your business.