

CHEESE-MAKING.—The production of cheese includes the making of rennet, the selection of a colouring matter, the setting of the curd, and the management of the cheese in the press.

The application of any kind of acid will cause milk to coagulate, as well as the infusion of several plants. The maw, or stomach of a young calf that has been killed before the digestion is perfected, is almost universally preferred as rennet. The bag or maw is cleaned and salted in different ways in different districts; but the following method described by Marshall, is considered the best:

"Take a calf's bag, maw, or stomach, and having taken out the curd contained therein, wash it clean, and salt it thoroughly inside and out, leaving a white coat of salt over every part of it; put it into an earthen jar, or other vessel, and let it stand three or four days, in which time it will have formed the salt and its own natural juices into a pickle. Take it out of the jar, and hang it up for three or four days, to let the pickle drain from it; re-salt it, and put it again in the jar, cover it tight down with a paper pierced with a large pin, and in this state let it remain until wanted for use. In this state it ought to be kept for twelve months; it may, however, in case of necessity, be used in a few days after it has received a second salting; but it will not be so strong as if kept a longer time. In order to prepare the rennet for use, take a handful of the leaves of sweet-brier, the same quantity of the leaves of the dog-rose, and the like quantity of bramble-leaves, boil them in a gallon of water, with three or four handfuls of salt, about a quarter of an hour; strain off the liquor, and, having let it stand until perfectly cool, put it into an earthen cessel, and add to it the maw, prepared as above. To this add a good sound lemon, stuck round with about a quarter of an ounce of cloves, which gives the rennet an agreeable flavour."

The strength of the rennet thus prepared will increase in proportion to the length of time during which the bag remains in the liquor; the quantity to be used for the purpose of coagulating the milk, can therefore be ascertained only by daily use and occupation. In general, however, it may be stated, upon the average, that somewhat less than a half pint of wine measure will suffice for 50 gallons of milk, for which quantity in Gloucestershire, the practice is to employ about one-third of a pint. Throughout the whole process of preparing rennet, too much attention cannot be given to cleanliness, and sweetness; for if it be kept too long, so as to become foul or tainted, the cheese will invariably become affected by it.

Spanish annatto, is unquestionably the best ingredient of the kind for colouring cheese. The usual mode of applying it is to dip a piece of the requisite size in a bowl of milk, and rub it on a smooth stone until the milk assumes a deep red colour. This infusion is to be added to the milk of which the cheese is intended to be made, in such a quantity as will impart to the whole a bright orange colour, which will become the deeper in proportion to the age of the cheese.

Setting the curd.—The proper season for making cheese is from the beginning of May till the close of September, or in favourable seasons till the middle of October. A certain elevation of temperature is requisite to the coagulation of milk, and it may naturally be supposed to be nearly that of the stomach of milk-taking animals. Marshall is of opinion that from 85 to 90 degrees of heat, and two hours of time, are the fittest for coagulation.

Climate, season, weather, and pasture, may require that these limits should sometimes be violated. Milk produced from poor clays will require to be coagulated at a higher temperature than that which is procured from rich pastures. In some dairies the milk is heated to the proper temperature; but the most approved practice is to mix boiling water in such a proportion as shall render the milk of a proper degree of heat to receive the rennet; for this the thermometer should be used to determine. In hot weather the milk in the cow's udder is liable to become agitated by their running about, or being driven too great a distance; so that if rennet be put to it in this state, the curd, instead of coming in one or two hours, will require three, four, or five hours, and will be so spongy, tough, and in every respect so imperfect, as to be scarcely capable of being confined in the press or vat; and when released from the press, it will heave or split, and be good for little. Whenever, therefore, cows are discovered to be in this state, which perhaps can scarcely be avoided during very hot weather, where cows are pastured abroad in unsheltered grounds, or where water is not within their reach, it will be advisable to add some cold fresh spring water to the milk as soon as it is brought into the dairy. The quantity to be mixed, in order to impart the proper degree of

heat, can in this case only be regulated by experience and the use of the thermometer. The effect of the water thus added will, in both cases, be to make the rennet take effect much sooner, and consequently to accelerate the coagulation of the milk.

The proportion of rennet and time requisite for coagulation have been already mentioned; too much rennet ought not to be put in, otherwise the cheese will be ready to heave, as well as become rank and strong; the same effect will also be produced if the rennet be made with bad or foul materials, or if it be too strong to operate in the given time, (two hours.) During the process, the milk ought to be covered so as not to lose more than five or seven degrees of its original heat. One or two handfuls of salt added previously to mixing the rennet, will promote coagulation. Some put in a bowl, which is an absurd, ancient custom, and injurious rather than useful.

When the coagulation has taken place, the curd is broken or cut with a cheese knife, which causes the whey to rise through the incisions; and the curd sinks with the more ease. After a short time the cutting is repeated, still more freely than before, and is continued until the curd is reduced to small uniform particles. This operation will require three quarters of an hour; the cheese tub is again covered with a cloth, and is allowed to remain for the same time. When the curd has sunk to the bottom of the vessel, the whey is taken off by the hand, or by means of a skimming dish; another quarter of an hour should now be allowed for the curd to settle, drain, and become solid, before it is broken in the vat, as it prevents the fat from being squeezed out through the fingers, and of course contributes to improve the quality of the cheese. Sometimes, in addition to the skimming dish, a semicircular board and weight, adapted to the size of the tub, are employed.

The curd is again cut as before, in order to promote the free separation of the whey, and pressure is again applied till it be wholly drawn off. Great attention is requisite in conducting this part of the business; and if any particles of slip curd should be seen floating in the whey, it might be carefully laded off with the whey, as it will not incorporate with the solid curd, but dissolving in the cheese, causes whey springs, as already mentioned, and materially impairs its soundness. If the whey be of a green colour, when loaded or pressed out, it is a certain criterion that the curd has been properly formed; but if it be of a white colour, it is equally certain that the coagulation is imperfect, the cheese will be sweet, and of little value, and much valuable caseous matter will be completely thrown away. In the counties of Norfolk and Suffolk, the cheese manufacturers have recourse to a somewhat different method for extracting the whey, which is worthy of notice. When they think the milk sufficiently coagulated, they lay a strainer in a basket made for the purpose, in which they put the curd, and suffer it to remain there for some time to drain, before they break the curd; when the curd is sufficiently drained, it is put into two or three separate vessels, and is broken with the hand as small as possible. During this part of the process, salt is scattered over the curd, and intimately mixed with it; the proportion, however, has not been correctly ascertained, and is regulated by experience.

Management in the Press.—The breaking and salting completed, a cloth is spread over the cheese vat, and the broken curd being packed into it, and covered up with the cloth, a smooth round board is laid over the vat, which is usually filled to the height of one inch above the brim, to prevent the curd from shrinking below its sides, when the whey is squeezed out.

The whole is then put into a press for two hours; and as it is of the utmost importance that every drop of whey should be expressed, skewers are thrust into the cheese through the holes in the lower part of the vat, to facilitate its escape. The two hours expired, the cheese is taken out and put into a vessel of warm or hot whey for an hour or two, in order to harden its skin. On taking the cheese out of the whey, it is wiped dry, and when it has become cool, is wiped with a clean dry cloth, of a finer texture, and again submitted to the press for six or eight hours. The cheese is now turned a second time, and is taken to the salting room where it is rubbed on each side with salt; after which it is wrapped in another dry cloth, of a finer texture than either of the preceding cloths, and is again pressed for twelve or fourteen hours; if any edges, these are paired off, and the cheese being laid upon a dry board, is turned every day. In the salting room, cheese should be kept warm until it has had a sweat, or has become regularly dry and somewhat stiff; as it is warmth that ripens cheese, improves its colour, and causes it when cut to have a fleaky appearance, which is the surest sign of superior excellence.