

The Dairy.

Making Cheese from the Milk of a few Cows.

William B. Johnston, of Miami county, Ohio, describes simple condensed directions for making cheese in a private family where sixteen gallons of milk are obtained daily.

We shall endeavour to comply with the request, though it may be remarked in the outset that full directions cannot be embraced in a brief article. The making of good cheese depends upon a skillful manipulation of the milk and curds, and it is greatly facilitated by having a good dairy or cheese-making apparatus. The small-sized vat and heater of W. Ralph, of Utica, with its recent improvement for equalizing and distributing the heat through the milk and curds, is one of the best that has yet been invented. To make a nice quality of cheese, good rich milk is required, and during the process of manufacture, a slow even heat should be studied in conducting operations. Presuming then that our correspondent has got a good vat and heater, and that the night's and morning's meal of milk are added together in the vat, we commence operations. The milk is raised gradually to a temperature of 88 degrees, and a sufficient quantity of rennet put in and mingled with the milk to coagulate it in about 40 minutes. The rennet should have been previously prepared by soaking and rubbing three sweet healthy rennets in three gallons of water, containing sufficient salt to keep it from tainting. The skins, after having been rubbed out and soaked for several days, may be taken out and the liquor strained and bottled. Its strength should then be tested, and if good old skins have been used, a half teacup or less will be enough to curdle the milk. The coagulation of the milk having been perfected (which is determined by lifting a portion of the curd with the finger, when it should readily split apart, showing a clean fracture), then cut the curd lengthwise and again crosswise of the vat, leaving it in perpendicular columns, say half an inch thick. In the best dairy districts a curd-knife, composed of a gang of long thin blades, double edged and one-quarter inch apart is used.

The curd is then left at rest some twenty minutes, or until it settles and the whey begins to look clear. Then a gentle heat is begun to be applied, and the curd very carefully lifted and the columns broken with the hands. This part of the operation should be done very gently and very carefully, otherwise the oily particles will be worked off. The application of heat should be very slow, and very little manipulation is required in breaking, beyond keeping the curd from packing at the bottom of the vat. When the mass indicates a temperature of 92 deg., shut off the heat and let the mass stand thirty minutes or more, occasionally gently lifting, or stirring the curds to keep from packing. At the expiration of that time start the heat and raise to 95 degs., the curd being stirred gently, as before, to keep from packing. It may now stand another thirty minutes, with only occasional stirring, when heat is again applied, and the mass raised to 100 deg. No more heat, or at least this is the highest point to which it should be raised. After standing an hour or more, if the curd does not harden up, nor the whey begin to have a little acid smell, and the temperature has fallen, a little more heat may be applied, but not to raise it above 100 deg. We should remark that in coolish weather a cloth should be thrown over the vat, when the curd is remaining at rest, to prevent heat from passing off.

To make a nice flavoured cheese, the whey near the close of what is termed 'cooking the curd,' should have a little acid odour. It then should be drawn off, and the curd if right will have an elastic feel, and on taking a handful and compressing it, will, on opening the hand, readily fall again in pieces. Some dairymen try it between their teeth, and if the curd squeaks it is in condition to whey off. Where a vat is used, the whey being drawn and the water removed from under the vat, the curd is drawn to one end and worked over, so as to facilitate drainage, the vat also being canted up. Sixteen wine gallons of milk, well handled, will make about sixteen pounds of curd, and after it is worked over and properly drained, and cooled, say to 86 deg., nice fine salt is worked in at the rate of 2½ pounds to 100 of curd. Some use 3 pounds of salt for 100 of curd. After the salt is properly incorporated through the curd, it is at once dipped into the hoop and put to press. For a 16 pound cheese, a hoop about 10 inches in diameter may be used. If it is desired to have a larger cheese, a 15-inch hoop may be taken, and the curds of two days put together. The manner of doing this is as

follows: Press the first day's curd, and let it remain in press till the following day, when the hoop is slipped off and a thin rind from the upper side of the cheese trimmed off with a sharp knife, the edges of the cheese also being pared off. The top is then scarified with a fork, and the cheese returned to the hoop in a clean cloth. On this the new curd is placed, and the whole put to press. In a couple of hours it is taken from the press, bandaged and turned, and again put to press till the following morning, when it is taken to the dry-room and the top and bottom oiled with whey butter.

Where there is no convenient dairy apparatus for use, the milk may be strained in a tub. For heating, place a five pail kettle upon an arch or stove and have a large tin vessel made in the shape of a tin pail to set in the kettle, so as to be surrounded with water. A portion of the milk is dipped into the tin vessel, which should always be surrounded with water while being heated, and the milk raised to the desired temperature by being returned backward and forward in the tub. And so in heating up the whey and curd (a strainer being thrown over the tub) the whey is dipped into the tin vessel, and then back again to the tub, and the various degrees of temperature as described, effected in this manner. When a tub is used, a rack and sink is needed to properly drain the whey from the curd. Colouring matter is now generally used in the dairy districts. It adds nothing to the flavour or quality of the cheese, but makes it look richer. A nice article of carbonized liquid annatto can now generally be had at the shops for colouring the milk—or the crude annatto may be cut with lye and strained through a cloth. A quantity may then be added to the milk at the time of putting in the rennet, sufficient for any desired shade for the cheese to assume.

We have given here briefly the process of making first-class cheese. The whole art cannot be explained in one short article, but if the above outlines are followed, a little experience will in a short time enable the "new beginner" to make good cheese from a few cows.—*Country Gentleman*.

Poultry Yard.

Artificial Incubation in China.

M. Dabry, French Consul at Han Keoo, in China, has just published an interesting paper in the Bulletin de la Societe d'Acclimation on the process employed by the Chinese in hatching eggs artificially. The places where this trade is practiced are called Pao-jang; each consists of a mud hut, three yards in height, exclusive of the roof, made of tiles, the inside of the hut measures eight by four, and its entrance is situated due west; the north-east wind is provided against by a layer of straw applied to the wall; the door is made of planks, and measures one yard by two. Light is admitted through four apertures in the roof. Within, there are eighteen brick stoves, two feet and a half high, along the wall and close to each other. Each of these stoves supports a large earthenware dish, sunk into the brick work and just above the fireplace, and inside this dish there is a basket of nearly the same shape, resting on a layer of ashes about two inches and a half deep. It is in this basket the eggs are to be hatched; 1,200 in number are arranged in three layers, and the whole covered with a cane lid half an inch thick. Nine of the stoves are lighted at a time, but only eight have eggs, the ninth being intended to regulate the temperature of the room, which must be maintained the same throughout. The combustible employed is charcoal, and the temperature in the basket never exceeds 38 degrees Centigrade. The eggs are shifted five times during the 24 hours, viz. four times during the day and once during the night, the upper layer going to the bottom, and the bottom becoming the middle one.

On the fifth day a small hole is pierced through the door, and by the pencil of light penetrating through it each egg is examined, in order to ascertain which of them are in course of incubation. On the twelfth day the eggs are taken out of the baskets, and arranged on shelves above the stoves, provided with layers of straw, two inches thick, and mats over them. Upon these the eggs are laid with a cotton quilt nearly three inches thick between each layer, and another quilt just above, the whole being well secured by means of a thick straw rope to prevent the air from getting to the eggs, which are regularly shifted as before, five times a day. As soon as the eggs are taken out from the baskets, the fires are put out in the stoves which have been used; the nine

other stoves are lighted, and the process recommenced with a new batch of eggs. On the 21st the former lot is hatched, yielding about 700 chicks for every 1,000 eggs. Every egg is paid 6 sapeks, and each chicken obtained is sold for 14; the sapek being the 150th part of a franc.

Fowls of the Barnyard.

Most every farmer is down on the hens. More trouble than they are worth—cost more than to buy the eggs—no use to have them round. Such is the talk which the good housewife hears from the sturdy farmer: she bears it meekly, well knowing that he would grumble more if the cake was wanting the eggs, or if he was required to pull his purse every time they were used by the cook. Hearing often these complaints, is the reason that induced me to write this homily on the fowls of the yard. Edward Holmes, Esq., of Greenland, N. H., who, as a poultry-ter, stands as standard authority, says forty-eight pounds of corn, with the addition of some meat, will suffice for food for one year. He says that he placed corn and barley before them and there kept it; that at the end of a specified time, by looking at his books, he arrived at the result. He also says, after thirty-two years of experience, in the mean time having met every known variety, that he finds the black Spanish superior to any other breed for laying; that they produce the largest number of eggs, on an average 225, per year, while others not over 125. For meat, there are other varieties superior. As a general rule the eggs transported, however short a distance, will not hatch; that he considers it a much cheaper mode to buy the fowls for the purpose of propagating a species than to send any distance for the eggs. That a change of crower ought to be made every two years, and then from a flock at some distance.

The common duck which is generally reared in New England, produces annually about fifty-five eggs, which are worth ninety-two hen's eggs, so that ducks are not as profitable for eggs as hens. For poultry they bring about two dollars per pair, while chickens bring one. One peck of corn will fatten a pair of ducks sufficiently, after they have their growth, for market. Mr. Holmes says that the food ought to be kept constantly near, so that the fowl can have free access; that he prefers a mixture of barley, corn and rye. Hens are naturally industrious birds if you will but notice them when there is plenty of food before them, they are on the scratch, and will not take but a few kernels at a time, but if fed at stated hours are apt to overload their crops and put them in pain.—*Cor Maine Farmer*.

REARING CHICKENS ARTIFICIALLY.—A subscriber to the *Journal of Horticulture* has published the following account of his experience in rearing chickens artificially:—"Being only a half-believer I did not incur much expense in the matter, merely procuring a stout box made with the lid on hinges, and close-fitting, cut on a slope like a melon-frame, one-half of the lid only being glazed, and there was a hole in the side, with a sliding door. In this box I put two low stools with a thick, fleecy top, for artificial mothers, and I placed the box close beside a sparsely large garden frame, which stood on dry ground. I had the chickens close to my flower-frames, and looked after them chiefly myself. This frame, to which I admitted them at pleasure by drawing the slide, answered for their covered run or 'day room,' till they were a few weeks old, when I used to allow my pets to take a run in the garden several times a day. It was quite curious to see how fond they became of the frame, and how they used to flock to me from all sides to be let in, and to bask on the warm gravel under the glass. I took each chick from the hen the day it was hatched. I had not one sickly or drooping chicken the whole summer. The advantages I found in this system, even trying it in a small way, were these: First, they did not cost in feeding nearly so much as when carelessly fed in the fowl-yard, where stronger fowls, dogs, &c., robbed them of their milk and food. Secondly, they threw quicker and feathered better a great deal, from getting the full share of that food appointed for them, as well as from the genial and uniform warmth of the frame, instead of often being weary and wet, when enticed by the hen to walk about about all day through grass and elsewhere. Thirdly, I found the hens too so little in condition by merely twenty-one days sitting (being well fed once every day), that they laid and hatched a second time early in summer. These advantages ought to make the system worth a trial, even by those who might not count it, as I did, an amusement.