not very large (three-quarter acre in both), but before sowing the bottoms were white with alkali, though not so bad as low places in other districts. A good many crops had been grown on the field prior to the grass being sown, and no doubt have had some effect on the alkali. It seems to me as if alkali washes out of the soil into low spots, for we find it in varying quantities in places where water stands for a few days and then settles into the soil. Last June we had a deluge of rain, leaving us a five-acre plot in one of the grain fields covered with water until September. That spot is covered with alkali now, and as far as I know there had been no alkali there before.

"'The crop of hay on the three-quarter acre was very heavy, but the land being moist would cause a good crop in any case. Part of this year's crop of Brome hay was grown on low places, upon which alkali is observed every year we plow them; and in these places the crop was very heavy. As no record was taken of the yield on the alkaline spots, I cannot give any exact quantity per acre, but there was at least one-third more hay on them than on the ordinary land.'"

DAIRY.

Milk and Butter Test at the Royal Show.

In the milk and butter tests at the Royal Show at Birmingham last month in the class open to Shorthorns, Ayrshires, and other pure breeds, except Jerseys and Guernseys, the first prize went to a Lincoln Red cow, which gave 59¼ lbs. milk in one day and a total weight of butter-fat of 31 4 ozs. In the class for Jerseys and Guernseys the first prize was won by a Jersey that gave 38½ lbs. milk in a day, testing in the morning 4.7% butter-fat and in the evening 6 2%, and a total weight of butter-fat of 32 8 ozs. The second prize cow, a Jersey, gave 41¾ lbs. milk, testing 4.1 and 5.65% butter-fat and yielding a total of 31.7 ozs. butter-fat. In the class for dairy cows, any weight, breed or cross, giving the largest quantity of milk containing 12% total solids, of which not less than 3% shall be fat, the first prize was won by a Shorthorn and Ayrshire cross, yielding 63¾ lbs. milk testing 3.45% butter-fat and 12.4% solids.

Care of Milk on the Farm.

It has often been said that milk when first drawn from the udder, if the cow is healthy and the milking done with strict regard to cleanliness, is perfectly pure and needs nothing to purify it. Farm practice, however, does not bear out this statement. This has been explained by the theory that milking is never done with absolute cleanliness, and this is why results fail to substantiate the theory of absolute purity.

Much might be said on both sides of this proposition, but as we are dealing with actual conditions rather than ideal conditions, it is evident that a study of ascertained facts will be more helpful than a theory based upon conditions which are said to be non-existent.

Milk is a perishable product. The rapidity of its deterioration we can modify. By learning what conditions hasten its decomposition and what delay it we learn the essentials.

In the first place, milk as drawn is charged with dissolved gases which will hasten decay unless eliminated. If we seal warm, fresh milk as it comes from the udder (seal it air-tight), it will become fetid and unfit for use.

This teaches us that the can cover must never be shut down tight upon warm milk. The milk becomes fetid; it soon begins to decay. It is not fit to be made into butter or cheese or any other article of human food.

Aeration and Cooling.—There are now on the market different kinds of aerators which are intended to purify the milk. Or, if the word purification is objected to, they aerate and cool it and greatly enhance its keeping qualities. They are not all alike in construction, but are alike in office, and all are guaranteed. To use them successfully one has but to do as the graduate of Vassar College replied when asked: How do you make biscuits? The blooming damsel replied: Buy a package of baking powder and follow the printed directions. So the use of an aerator is learned. Buy the aerator and follow the accompanying directions for that particular kind. Aerators are a matter of convenience. Milk can be cared for with success without one. Any method which cools it rapidly and allows the gases to escape answers the purpose. The most convenient method I have found is to strain it into the can and set it at once in a tank of cold water and stir it once or twice as it cools. The water cools the milk faster than air will cool it, and stirring it facilitates the escape of the gases.

The most convenient way for me to provide this cold water is to have a small building by the well; make it with double walls, set a tank inside and cause all the stock water to flow through this tank. The stock water passing through this tank all the year keeps the tank water pure and cold in summer and pure and above freezing in winter. So the milk can be handled uniformly all the year around, and with good results, regardless of climatic changes.

When there is a can only part full of milk some farmers strain in more milk at the next milking to fill the can. This is harmful. It is important that fresh milk and old milk be not mixed, at least unless the fresh milk is first cooled to the same temperature.

Healthy Cows and Proper Food.—The foregoing in regard to the need of cooling and aerating is written upon the assumption that the cow is perfectly healthy and fed properly. In practice there is a probability that at least a part of the herd for at least a part of the time will not be in absolute health, and then the need of these precautions becomes more apparent. A change from dry feed to green provokes looseness of the bowels, and this affects the milk. A showery time in summer makes the grass "washy" and unusually succulent. This will also cause rank milk. Any slight derangement of the digestive machinery is systematic in scope and affects and extends to the milk secretion and enforces the need of that treatment which will best free the milk from obnoxious gases and hold decomposition in check.

While upon this topic it may be added that a common "stick" is not the best thing for stirring the milk. The dash is a better form, and a good way is to take a tin disc about five inches in diameter and solder a handle about twenty inches long. I have a still different form which I have used for five years and which I like better yet. It is made like a dipper with no bottom; invert it and solder a wire handle to it. The dipper is about five inches wide at the wide end and three inches at the narrow end. The double wire handle is twenty inches long. The cost when made by a tinner will be about fifteen cents. This gives a "maelstrom" motion to the milk and thoroughly mixes it, driving the outside to the middle and the top to the bottom with two or three movements.

Milk should be kept in a room especially used for milk. The common practice of setting it in the barn all winter, covered with a horse blanket, is responsible for much of the low-grade butter. Setting the cans outdoors when the weather is warmer instead of cooling by setting in water is another cause of trouble. Setting the cans by the kitchen stove is another abominable practice. It is not only required that the gases found in the fresh milk be eliminated, but that undesirable odors be kept from being absorbed by the milk after it is cooled.

Sources of Contamination.—Warm milk is said to give out odors; cold milk is said to absorb odors. Whether this is scientifically correct in statement may be a matter for argument, but it at least approximately states well-known facts. Remove the milk from the stable at once. If it is left there until it becomes cool, and then taken away and warmed to about 110 degrees, the odors which it will throw off will bear testimony against it. A farmer killed a skunk beneath the floor of his cow barn. The stench was almost intolerable. But the cows had never been milked outside and would not stand. So he put them in the stable, held his breath as much as possible, and succeeded in milking them. The milk was removed to a non-infected place and butter made from the cream, and there was not a trace of bad odor in the butter.

A skunk was killed beneath the floor of a creamery in this county. Several tubs of butter already made absorbed the odor, and when they arrived in New York the expert saleman reported that the butter had a bad odor caused by letting the cows eat garlic.

Bad flavors are often caused by feeding musty fodder. Especially is this apt to be the case if the feeding is done before milking. If the hay or fodder is dusty it should not be fed until after milking; and, of course, it is still better not to feed that kind at all. Ensilage, turnips and all other feeds with marked volatile odors should be fed after milking instead of before. Feed such foods after milking, and in about ten hours the system will have eliminated the odors and the milk will be unobjectionable.

Among the other causes for trouble are rusty cans, wooden milk pails, unclean habits in milking, and lack of hot water in washing the cans and pails. Cold water will not do the work. Cans must be thoroughly scalded or steamed after they are washed, and they must be free from rust. Rust in a can or pail begets a distinctively fetid odor. Use only tin, and only bright, clean tin, for the pails and cans.

The above applies to milk to be hauled to the cheese factory or the separator creamery. If the cream is raised to be hauled to a gathered cream factory the same holds good, except that the milk should not be stirred when cooling. This will interfere with the rising of the cream. If a farm separator is used, the matter is much simplified. There should be a dairy house just the same, as a matter of convenience, but the milk should be separated at once, and only the can of cream need be set into the tank and cooled to await the coming of the cream hauler.

To recapitulate: Keep pails and cans clean and bright. Remove the milk without delay from the barn, and aerate or cool it in water, leaving off the cover until it is cold. Do not feed anything which imparts obnoxious odors without giving the cow ten hours to work them out of the system. Do not mix warm milk with old milk. Keep the cooled milk isolated from obnoxious odors. See that it reaches the manufacturer before deterioration has injured it for the purpose for which it is intended.—*E. C. Bennett, in N. Y. Produce Review.*

W. V. EDWARDS, Selkirk Dist., Man.:—"I prize your paper very much. It has been a great help to me in many ways. I wish you every success."

Care of Dairy Utensils in Hot Weather.

The importance of strict cleanliness in all dairy vessels and utensils cannot be too strongly urged or too closely watched, especially during the hot months of summer. Mrs. E. R. Wood, in a recent issue of the "*Jersey Bulletin*," presented some ideas that may be new to some of our readers and from which we quote the following: "In winter it is a comparatively easy matter to keep the pails, strainers, churn, etc., sweet and clean, but when July comes, with its hot, muggy days (and nights almost as bad), it is altogether a different thing. Eternal vigilance is the price of sweetness then, and to the inexperienced some instruction along these lines may not be amiss. It is much less difficult to keep the dairy utensils smelling sweet than to bring them back to that condition once they have been neglected.

We will suppose the milk to have been just strained through the wire gauze strainer and also through the folded cheese-cloth below it. The pails after being emptied must not be left standing for the milk to dry upon them, but shall be at once either filled with cold water or else rinsed in the same. Once a film of dried milk forms upon the inside of the pail, it is much more difficult of removal.

Never apply hot water to milk vessels of any kind until they have first been rinsed with cold or lukewarm water. The hot water cooks the milk at once, and that is what causes the yellowish formation which is sometimes seen adhering to the pails and strainer. Once on, it is difficult to remove. Dry ashes will remove it if well rubbed on with a cloth. So will baking soda or bath brick. Salt is good to cleanse the wire strainer if the little holes get stopped up. Use a new toothbrush, first removing the handle to make it more convenient in getting at the wire. Persevere until the gauze is perfectly clear. If necessary, use a pin to free the particles. These directions are in case a strainer has been neglected. With proper care they will never become clogged.

After rinsing with cold water, wash with warm water, using a brush rather than a cloth for the purpose, since the former reaches every crack and corner better. Then scald in boiling water, wipe thoroughly dry, and set bottom up—in the sunshine if convenient.

POULTRY.

Feeding the Chickens.

Practically every farm has at this season more or less chickens, and as a rule the more wisdom used in bringing them forward the greater profit will be secured from them. Generally speaking, the farm fowls that pay the best are those in which some one or two members of the family hold an interest. When they simply belong to the farm it is usually everybody's business to take care of them, and what is everybody's business is nobody's business, and the result is, as a rule, few chicks in the fall and poor specimens at that. We are sure, however, there are many readers of the FARMER'S ADVOCATE who do succeed well with their chickens, and many others who try but fail to get satisfactory results. To these latter the experience of the more successful would be a great help, and for that reason we repeat what C. H. Wyckoff, a very successful Leghorn raiser, has written for the *Reliable Poultry Journal* along the line of caring for chickens from the time they are six weeks old. He says:

"When the chicks are six to seven weeks old the brooders are removed and their place taken by perches four inches wide, placed four inches apart. These perches are strips of one-inch board sixteen feet long, laid on benches fifteen inches high. The whole floor under the perches and all is kept well covered with sand and cut straw; the feeding boards are replaced with troughs for the morning feed (ground) and the benches and perches are easily set to one side when cleaning the floor. When chicks are all partly grown and well feathered the yard fences are partly removed and they are allowed free range of a large pear orchard until the pullets are about ready to lay, when they are removed to the laying houses and yards.

"Our first feed for chicks is johnnycake baked from a mixture of two-thirds coarse corn meal and the other third a mixture of wheat, oats, peas and barley ground together. This feed is given often, about five times a day, but is given very sparingly, as there is great danger of overfeeding very young chicks, and I find it a much better plan to keep them somewhat hungry and lively, rather than allow them an opportunity to gorge themselves, as they certainly will do when allowed all they can eat and are closely confined. When they are a week or ten days old and have the run of the floor, a little whole wheat and cracked corn are kept scattered in the cut straw, where they quickly learn to scratch for it, and from this time on all whole or hard feed is fed in the litter, thereby giving them a large amount of exercise, which I consider of the greatest importance in promoting a strong, healthy growth in chicks, as well as indispensable for the health and vigor of mature fowls.

"At about two weeks of age a small portion of well-drained (pressed nearly dry) skim-milk curd is added to the cake when crumbled ready for feeding, and the amount is increased as the chicks get older. After the chicks are three to four weeks old the cake is omitted and the same mixture of corn meal and ground grain is fed raw, slightly moistened