

and churned at once, it is fair to state that both of these are artificial rather than natural. It is told us also that souring cream destroys certain of the oils, and turns certain of them to acids, and the change in proportions affect the subsequent flavor, but as yet no chemist has told us the exact proportions of oil, myristin, caprin arachin, caproin, etc., etc., in sweet cream, sour cream, aired or "smothered" cream; even the best dairymen are in the dark respecting the affecting of flavor from this cause. This much is known, however, that at the start the flavor is different than when later the acid has changed the milk sugar into lactic acid, and it is then that we first get high flavor for delicate aroma. This first flavor is certainly acquired, for it is the result of changed flavor in the casein rather than in the butter fats, for, at first, casein is practically tasteless, but if present in the butter to any great degree, it soon gives a cheesy taste to the butter, and much of the butter of the past, imperfectly worked, after an exposure to the air, tasted about as much like cheese as butter. Upon this very point many persons assert that they do not have so good success with any system as by souring cream to produce artificial flavor. Granted, from the fact that souring cream makes it uniform in texture, because it "cuts" the cream into a common consistency, while it is rarely possible by average existing conditions to have the cream from different milkings of one consistency, and hence results varying flavor. So that is a remedy for a defect that can only be controlled by employing an acid; the taste of the consumers has actually become educated to high artificial flavor.

We are now brought face to face with the enquiry, What is flavor, is it of animal or vegetable origin? It is doubtful if it is actually a product or combination of what are denominated animal fats, which are influenced very little, if any, by food. Then the only alternative is left that it is of vegetable origin. If the food of the cow is of late cut hay, a white, tasteless, flavorless butter results. Feed the same cow on early cut hay, cornmeal, oats, or foods rich in albuminoids and oils, and a fine butter of remarkable texture, flavor and quality results. On cream thus produced, several changes in flavor may be rung by certain manipulations of the cream, and each delight the fancy and taste of the consumer. Give the cow the range of a well drained pasture, rich in its June grasses and clovers, and no art can improve the flavor of the fresh made butter. What subtle element does this grass contain to thus produce a result that skill or chemistry can neither approach nor counterfeit? Who can dispute true flavor is the result of perfect food that has been thoroughly assimilated and appropriated by well bred cows, whose butter qualities have been established by lines of heredity, and that other flavor is artificial, and is demanded by consumers who have, by habit, acquired a preference for higher flavors, just as we acquire the habit of adding sugar to improve the natural flavor of fruit, or pickle our cabbage into kraut?

The Working Dairies at the Royal Show.

Machinery in motion, especially butter making machinery, in an agricultural district, always attracts an interested and eager audience, and at the Royal Show, at York, Eng., thousands flocked to see the working dairies. There were three—a large factory, conducted by the society, and two competing for the prize of £50, offered for the best dairy in actual operation—one by Bradford, of Manchester, and the other by Ahlborn, of Hildesheim, Germany; the prize was awarded to the latter, a brief description of which will doubtless be interesting to our readers.

The factory contained a selection of the best and most popular of the appliances in the English and continental markets, both large and small, arranged in excellent order, considering that everything had to be put in a position to enable the audience to see it at work.

All was done on the very complete scale usual at a Royal English show, which some of our secretaries and stewards might study with advantage.

The building was over 80 feet long, covered and enclosed; entrance prohibited to all not actually engaged in the dairy. At one side there was free view to all spectators, and at the other a stand in tiers to accommodate about two thousand persons. Outside of all was a shed to contain milk cans full and empty, and further off a small shed specially devoted to cheese making, which was unfortunately crowded out of the main building. Motive

power for a maze of shafting and pulleys fixed over head for driving churns, butter workers, and separators, was obtained from a 12-horse power engine.

The first object in the dairy was a milk can cleaner, for quickly and thoroughly cleaning the inside and outside of milk cans. Very useful, no doubt, for a large establishment. Then came the Nielson and Peterson separator on a brick pedestal, to which the milk was hoisted by a suspended weighing machine into a huge tank holding over 100 gallons. From this the milk descended by gravitation to the other points at which it was operated on.

As the skim milk left the separator it passed over a large Lawrence refrigerator, and ran down into vessels which were conveyed away on a tramway, which passed right through the building.

The cream was stored in a ripening can to mature or churn sweet, according as it was desirable to show either system. The churning was done in a large Holstein vertical. The butter, after draining in the trough, was pressed with patters, and then placed in the Danish hardening box, one of the few novelties in the dairy, and a very valuable thing it appears to be. It is also so simple a contrivance that it could be used in any dairy, large or small. A plain wooden box about four or five feet long, and twelve inches deep, standing on legs, is fitted inside with movable laths resting on a ledge about two inches from the bottom. Upon these the soft butter is laid and a shallow tin cover filled with ice acts as a lid to the box. This arrangement not only admits of drainage from the butter, but also allows a free current of air to play round it. Where ice is not to be had the butter is covered over with a cloth and the tin tray filled with water, the evaporation of which makes a cool chamber underneath. After remaining here for about two hours the butter was taken out and finished on a butter worker, and packed for sale.

"I don't know," is too often the remark made by a farmer or a dairyman. "How much milk does this cow give?" "I don't know." "How much butter?" "I don't know." "How much feed do you use?" "I don't know." Suppose the grocer or the butcher is asked, How much sugar or tea in that barrel or box, or in that parcel, or how much does that quarter of beef or that side of pork weigh? and he should say, I don't know; we should contemplate him with amazement, and silently count up how long it would be before the "know-nothing" would be sold out by the sheriff. But farming is so good a business that it will stand all this neglect and ignorance, and the farmer still make a living. The owner of a cow should know to an ounce how much milk she gives at a milking in a day, in a week, each month, and in the year. He should know to an ounce how much butter each cow gives, and how much feed she eats to produce so much. He should also know the most he can get from the least feed, and the most feed, so that he can regulate to a cent the cost of his milk and butter. And a cheap balance and a note-book and pencil, used in this way, will be worth many dollars every year to him.

Milking in the barnyard is an old fashion that should be abandoned. It is inconvenient and unclean. It should go with the wooden pail and the hairy butter, and never be heard of any more; gone and forgotten, too. It is a wonder that any farmer would permit it, and still more a wonder that any farmers' wives or daughters would consent to it. The following complaint of a woman, which appeared in the *American Patron*, is almost beyond belief among decent, intelligent farmers and dairymen, and yet we know it is not an uncommon case:

"Some yards are so small, they are only mud holes through which we wade shoe deep; others are large enough, but the paths to them are hedged with weeds which, loaded with dew or a shower of rain, wet the clothes to the knees. These inconveniences are considered so slight we never mention them, and the men really think we do not know any better.

"A good sized lot, board fence, a large gate and a small one, the lot divided into two parts, one for the milk cows, the other for hogs and cattle, is my idea of a barnyard."

This is, indeed, a too gentle remonstrance; not only should this woman's idea of a barnyard be carried out on every farm, but there should be a clean shed for milking in.—[The Dairy.

Stock.

Fall Care of Stock.

In the fall of the year there is more danger of stock being neglected than most farmers think. The transition from the warm nights to the cool, and from the succulent grasses of the warmer months to the fall herbage, has quite an effect on the condition of stock. In permanent pastures the grass is dried up and gone, and only on second growth clover and grassy stubble fields can any kind of proper food be obtained. Hence between the autumn grass and the commencement of winter or stall feeding, stock are liable to suffer from a too scant diet. When this is the case, stock commence in the face of a hard winter in poor heart, and they consequently never gain up and there is a consequent loss. We are fully of the opinion that the neglect of proper management of stock in the fall is of more importance than any other season of the year. When the pastures are getting bare every farmer should have a rotation of soiling, and when the cold nights come, especially in the case of milch cows, they should be put in a comfortable yard or stable, and not allowed to rest on the cold damp grass. This has a baneful effect, and causes more harm than anything else. Besides putting stock in comfortable quarters, the system requires to be kept up by liberal feeding, and here is where the soiling system would come into effect. If farmers have not got sufficient accommodation in the stables for all their stock, let them have a sheltered yard or shed, and bed it liberally so that the animals may be dry at nights. Thus not only are they being made comfortable, but they are early commencing the work of manure making, which is so essential to all our farms. Put the cows in the stable or yard on cold nights, and give them a good feed of late sown corn, rye, or vetches, at night when you take them in; another feed in the morning. Every farmer can have a few acres of this green fodder; and we guarantee to say that one acre of this will make a greater return in feed for stock than five acres in pasture, and five acres in soiling-feed on one hundred acres would keep all the stock required on that quantity of land for the fall months, better than 25 acres of pasture. Of course there would be a little more work for the men, but it would be amply repaid by the extra manure so much needed, and the consequent increase of milk and beef.

Fattening Cattle.

"If it be the fall of the year it will be well to begin with the wastes of the farm. The pumpkins, squashes, small potatoes, turnips and even apples, if given in small quantities, may be utilized in this way to good advantage, not only because they are wastes of little value otherwise, but also because by loosening the bowels and quickening the secretions, they help to bring the cattle into a thrifty condition. If such food does not fatten, it is the best preparation for a course of fattening food. A single week of such food, with good hay, will make the animal look better, though it may not have gained a pound in weight. The giving of meal should begin from the first, and perhaps a good rule would be to use about thirty pounds of hay, fifty pounds of roots, and five quarts or ten pounds of meal for every thousand pounds of live weight. The proportion of the amount of food required to the live weight of the animal is not invariable, as the coarse, unthrifty, paunchy ox will require more to sustain life than such an one as described above would require to keep it fattening rapidly. Here the eye of the feeder needs to be trained again, and it needs to be on the alert to detect any symptoms of being over-fed or of a capacity to take more, and after a while the grain rations can be increased and the ration of hay reduced accordingly, the object in view all the time being to convert as much hay and grain into beef as can profitably be done. To keep the cattle thriving it