

ment, and just that amount is admitted, and this has been found to be the smallest amount of light, coming from a northern exposure, with which one can see to read. The color of all the butter seen was uniformly good.

The daily make of butter in these factories is seldom weighed separately, so that in only a few instances could we ascertain the precise amount of milk required for a pound of butter. It is known just how much the tub holds, and they being of the same size, afford a sufficient guide for the manufacturer to salt by. Taking the average weight of a tub as estimated, and comparing it with the weight of milk received, it appeared that 22 1/2 lbs. of milk were being used for a pound of butter. September 19th, the Cold Spring factory, Malone, made 1701 lbs. from 4900 lbs. milk, getting one pound of butter from 22.63 of milk. In some other instances less was required. When the season is complete we shall have a full report of results. When we shall be able to give precise figures. Last year the Dairy Factory, Malone, made 1 lb. butter from 21.53 of milk. Union Factory, Panton, 1 of butter from 22.02 " Durand, " " " " " 21.87 " Barley Spg " " " " " 22.61 "

The year previous, the following was reported to the American Dairyman's Association as the result of the whole season:—

Union Factory 1 lb. butter from 21.53 milk
Barley Spg " " " " " 22.63 "
Cold Spring " " " " " 22.61 "

These are the best average results ever met with that have covered so long a time and such large operations. Occasional instances are known, of course, where less milk has been required; but in dairies and in creameries where all the cream is obtained that can be, the average is from 22 to 23 lbs. of milk for one lb. of butter.

The butter in all the factories visited was excellent, but none of it was strictly first class. Some of the little defects which have prevented their reaching that high standard have already been pointed out. The chief of these was cooling the milk too soon, thus condensing and retaining the peculiar odor of new milk in the cream and buttermilk, by which it is rapidly hurried on to rancidity and decay. Perhaps the most important defect relates to the circumstances of packing. The tubs in which it is packed are all made of spruce, a timber which is as free from sap, and imparts as little flavor as any other. But it has something of both, and if they are not removed before the butter is put in them, it will be sure to absorb whatever flavor they contain. Water will remove a part of it. Hot water will take out more than cold, and brine will dissolve out what water will not touch, whether hot or otherwise. But cold brine is slow in its action, and will require weeks to effect as much as it would do in a few hours if hot. Boiling hot brine is the only thing that will render wooden vessels safe for the contact of butter. First soak in weak brine, or hot water, for two or three days, and then finish by lining the vessel with boiling hot brine, letting it stand until it becomes cold, and the sap and flavor will all be removed, and the pores of the wood filled with salt, so that it will become impervious to air; and butter will then stand in it as safely as in glazed earthenware. To remove the sap is not enough. The pores of the wood must be filled in some way to prevent the air from working through them and coming in contact with the butter, otherwise it will be sure to receive injury, after a little, next to the wood, and finally involve the whole contents. These facts seemed either not to have been understood, or to have been neglected by those connected with the butter factories, for every tub we tasted was affected next to the wood, more or less, according to the time the butter had stood in it. Detriment was also occasioned by the use of lard-wood covers to the tubs. That variety of timber is unfit for such a use. It has a peculiar odor that is

readily taken up by butter, and it is difficult to remove it from the wood because of its great inclination to swell when soaked. Some inodorous wood, like white oak, is better for covers.

Another practice prevails in packing butter in the Franklin factories which is unfavorable to long keeping, and the perfect preservation of flavor. All tubs are made to cover the top of the butter with a lard-wood cover to prevent latter from deteriorating, and thus a lot of butter is in contact with the air. The cover is not so tight as it should be, but not wholly so, so that the air can get in to cover the top of butter for any length of time. If, in addition, the tub is not an inch of salt, as now used, the butter is enough to turn on to reach the top of the tub, the butter would be perfectly protected from the air, and well guarded against variations in temperature and outside odors. If, then, it is covered with something to shut out the light, (a lard-wood cover, because it imparts no flavor, and is perfectly clean) it will be in a good situation, so that packing is concerned, to keep sound.

In pointing out the defects which appeared in this new method of butter-making we do not wish to underrate or detract attention from its better features. Attention has been called to them only for the purpose of pointing out our readers points which we know are essential in making first-class goods. We regard the new system, with all its imperfections, a decided success. It has improved the common make from 5 to 10 cents a pound; increased the quantity from a given amount of milk; and reduced to a minimum the labor of manufacturing. It has made the production of butter more profitable than cheese. By using the Jewett pump, a man, with one woman's help, will run a factory of 400 cows, and make the butter, furnishing everything, for 4 cents a pound. It was raised first price in a factory of 25 cows. The butter is now worth 25 cents, or more. Putting the value of four milk at 2 1/2 times the value of whey, the four milk from 2800 lbs of milk, the amount required for 100 lbs. of butter, would be worth \$2.80; and deducting \$1 for making and furnishing 2,800 lbs. of milk, will net \$3.80.

The same milk made into cheese, taking the average of last year's reports, (2.53) would make 233.23 pounds of cheese, which, at 15 cents, would be worth \$3.50, and the cost of making and furnishing at 1.75 per hundred would be \$4.03, making the milk net when made into cheese, (adding 5) cents per 1,000 lbs. of milk for the value of whey, \$1.15, \$27.39. Difference in favor of butter \$6.44.

Auvergne Cheese.

There is a cheese made in the mountain region of Auvergne, in France, which is much esteemed, and in which the process of manufacture is peculiar.

The milk is immediately after being drawn strained into a tub and treated with rennet. The curd is not broken until it is translucent and firm, "like a well-made gooseberry jam," but it must not be allowed to stand until the whey separates of itself. The proper point is generally reached within an hour and a quarter. The operator then takes a spatula, consisting of a circle of wood with a rising shaft and a straight wing. It is placed in the vessel and rapidly whirled to and fro until the curd is completely broken and granulated. The whey is then carefully decanted into a copper, which is made of wood, and has a handle attached to its bottom. During this part of the process the curd must be disturbed as little as possible. When it is well freed of whey it is put into a draining-tub which stands on the cheese-table. It now undergoes a somewhat remarkable process. Two "vachers," with his sleeves rolled to the shoulders, and his trousers turned up to his thighs, goes on his hands and knees and paws away at it for at least an hour and a half—the idea prevailing that the warmth of the body gives quality to the product. Let us hope that he is not only warm but washed! There is a saying in Auvergne, "He is a bad workman; he don't use his knuckles enough." When the curd has had this savory manning it is put into a tub and allowed to ferment during forty-eight hours, being placed near the fire if the weather is cold. Under the influence of the fermentation the cheese becomes spongy. It is then carefully granulated, salted, put into the mould and pressed. During the pressing, which lasts twenty-four hours, it is several times turned. It is then put in the cellar. Here it is carefully attended to, wiped frequently with a damp cloth, and kept until it acquires a ruddy color, which indicates ripeness. The best esteemed Auvergne cheeses are those which are made on the spring hills at home before the cattle are driven to the mountains for the summer. The cellars used are underground, with no opening save a door to the north.—*American Agriculturist*.

Breeder and Grazier.

A New Yorker's Views on Pigs.

During the recent New York State Fair, according to custom, several evenings were devoted to agricultural discussions. On one of these occasions, the subject was "pigs." It was introduced by Vice-President Curtis, who, in opening the first division of the discussion, alluded to the vastness of the capital engaged in pig raising, it being estimated that there were 22,632,550 swine in the United States last January, valued at \$133,729,615; and in this State alone there were 631,700, worth \$5,631,627; the business is also fast increasing. Yet pork making east of Ohio is not really profitable, unless to a limited extent in the hands of skillful farmers. It could be made more profitable by paying closer attention to breeding, and exercising more care and economy in feeding. As to breeds, the wants of the western farmer are quite different from ours. He wants as large a hog as possible, without reference to the quantity of food consumed, it being cheaper to ship pork than corn. A breed has been established to meet these requirements—the Poland-China, which are heavy, spotted in color, and have been developed from crosses, last with the Berkshire, which was a decided improvement. The Poland-Chinas have been bred so carefully that they may be called nearly or quite thorough-bred. Another new breed has been started in Jefferson county, N. Y.,—the Cheshire, white in color. These two will suit the western farmer; and the large Yorkshires are also good, but there are very few of them. In the East, we want something quite different—a hog that produces not so much masses of pork, as the heavy hams, shoulders, and fat. There are several breeds of this kind—the Suffolk, which is white; the Berkshire, black and white, and the Essex, black. These make up the list of thorough-bred swine in America, though there are several valuable families which may become breeds in careful hands—the Chester Whites, for instance. We want especially a white hog, with desirable characteristics in other respects, the Suffolk being considered too small (though the speaker thinks none more profitable in proportion to the food consumed), while the Chester Whites are only bred to a very limited extent; they have had some popularity at the West, but have been bred so carelessly as to get mixed up with other kinds, and become unpopular. This has also occurred to some extent with the Cheshires, so that different specimens are exceedingly unlike. Pig breeders are remarkably careless, though attention to the breeding will pay as soon and as well as with any other class of domesticated animals. The color is matter of fancy, for if black pigs be well fattened and well dressed, their pork will not be black. A breed which will fatten readily and early, make a large quantity of flesh in proportion to the food consumed, and grow to a reasonable though not enormous size, is best suited to the wants of the West. As to breeding pigs, it must be borne in mind that no breed of any kind of animals can be kept uniform without a well defined standard of characteristics as the breeder's aim. Swine breeders have for the most part neglected this law altogether, and hence we have no distinctively American breed, as we might and should have. An excellent guide is given by the scale of points adopted by the National Breeders' Association at Indianapolis. As to feeding, there is often a great waste. Food, to be economical, should generally be cooked. In conclusion, Mr. Curtis remarked that it will not pay the eastern farmer to keep a great many pigs, but to have a few of the best kinds, and feed them well.

Fall Treatment of Sheep.

It is customary to give sheep the run of the fields till the snow cuts off their support. And even after that we often see them pawing up the snow to get at the grass. The result is, almost invariably, that the sheep go into winter quarters in a reduced condition. It requires then extra feed to bring them up again—grain at that; and grain is not generally a profitable feed for store sheep, or at least is less profitable than other cheaper yet nutritious feeders.

When the fall rains come, cold and often soaking; and later, the snows, damp and chilling, a still worse, shelter should be prepared for sheep—indeed they should have access to shelter the entire summer to avoid the heat as well as the spring and fall rains—and if they do not readily take advantage of it, they should be made to occupy it and feed there. Nothing is so good to feed as early-cut clover hay. If secured,