

hills to the acre, with three to four stalks in the hill, say 18,000 stalks. An average, therefore, of one good 8 inch ear to the stalk gives us 60 bushels of dry shelled corn to the acre. As the average crop of the country is less than thirty bushels, it is plain that our corn fields do not average one good 8 inch to two stalks. And yet there are strains of this corn that under good culture will average three good ears to two stalks, which gives a yield of ninety bushels with hill culture, and over 100 bushels when the crop is planted in drills, one kernel every six inches, or, as I prefer for convenience in cultivation, two kernels every foot. One great benefit that agricultural colleges and government experiment stations might confer upon the people is in the perfecting of seed corn by selection, and its distribution among the farmers. Corn requires so little seed, and is so prolific, that the distribution of improved seed in pint or half pint packages by mail, gratuitously, from such institutions, would probably increase the yield of corn from a grain average at least 25 per cent. It would be a profitable investment, and the principle is susceptible of indefinite extension. It is useless to expect that improvements in the seed of our staple crops will be to any great extent made by the farmers themselves. Under ordinary care and culture the tendency is to degradation rather than improvement. But a little money judiciously spent under government authority would give us a provincial fountain of improvement, and might become a standing exemplar of the profit of skilled methods, which could not fail to have its effect in raising the standard of agricultural effort, in addition to the direct benefits it would confer.

Our corn growers err and suffer loss in the use of inferior seed, but still more by adhesion to antiquated methods of cultivation. When the land first began to be cleaned of forests it was necessary to plant the corn by hand, and till it with the hoe. In that way a crop sufficient to give food for the family was painfully got. Now that the stumps are gone on our older farms, there remains much rocky and stony land upon which corn, if grown there at all, must be grown by hand tillage. But such land should be tilled as little as possible. It should be devoted to fruit or grass, or, in many cases, allowed to revert to forest, as its most profitable application. We have large areas of plain land which (especially when sandy, as much of it is), is the ground in which our corn delights, and upon which it is a delight to the farmer to grow it. On such lands all the work of producing the crop can be done by horse power, the farmer riding upon and guiding his implements with little fatigue, slight expense and superior crops. The sulky plow, the mechanical dung-cart, the horse corn-planter and fertilizer distributor, the smoothing harrow and the riding cultivator will do all the work, do it far better than it is usually done by hand, and at a tithe of the expense. Only when it comes to harvesting do we return to the old methods and slow processes which limit the crop and encroach upon the profits. I believe that corn will yet be cut and husked by machinery.

By the recent discovery of ensilage, maize is made - only to give us grain and dry forage, but it takes the place of root crops in giving us the soft and succulent food so essential to success in dairying, if not in stock feeding. Ensilage has passed the experimental stage, for it fills a painful gap that has always existed in American farming. Neither our climate nor the habits of our people are adapted to extensive root growing. The heat and sunshine that gives us the corn is unfriendly to the growth of roots, and indisposes the farmer to the slow, long continued and painful methods of tillage required by that class of crops. I believe that these points, and especially the latter, will defeat the efforts to domesticate the beet sugar industry on this continent. It requires more hand work and back-breaking toil than our farmers will give for so moderate a return.

Not the least of the valuable peculiarities of our great American cereal is that, properly managed, it is a renovating rather than an exhausting crop. Unlike other cereals, it roots deep and wide, and with its broad leaves and hungry roots forages for itself in way that makes it the surest as well as the most productive crop we have, and, at the same time, leaves the land in a superior condition and full of materials for the growth of the succeeding crop. Corn, grass, and clover, will make the American farmer who understand his business rich, with less hard work than any other species of agriculture. These crops make meat and manure, they make butter and cheese, and the farmer who makes these things is always prosperous.

Newport, Vt., January 12, 1882.

T. H. H.

LARD CHEESE.

The manufacture of lard cheese is increasing, and in the words of one of the proprietors of the patent covering its manufacture are, "it is bound to win," and there is no doubt there will be an effort made to introduce the system in the Dominion of Canada the coming season. It is my duty as a public instructor to investigate the matter and place the truth before the manufacturers so they may not be led to adopt the system until they know more of it than those who are peculiarly interested in the sale of machines and royalties choose to tell.

While in the States, recently, I took considerable trouble to learn all I could relating to the manufacture of the said cheese; and it was with a desire to arrive at a fair conclusion, as to the merits of the said cheese and its demands upon the public patronage and confidence. I do not think I am prejudiced in the matter, or influenced by any other motive than a sincere desire to advance the interest of the dairymen at large, so far as honesty to the consumer will permit.

In this article I shall not be personal; but will try and hold up the question to the scrutiny of the public in a fair and just manner. In the first place, the persons who are interested in the patent covering the manufacture of said cheese, and some others, claim that it is just as good, wholesome, and nutritious as the full cream cheese, and this being the case, it is perfectly honest to manufacture and sell such cheese without branding it so the consumer may know it is not the genuine.

They say, if it were branded or marked in such a way that some people would not purchase it from mere prejudice, and it would not have a fair chance to compete for public approval. They say, also, that it is much more profitable to the manufacturer and dairyman to produce the said cheese than to make the genuine, and it being made at so much less cost, it will be a great benefit to the consumer as it can be sold at a less price.

This last claim is a rather doubtful one, as the cheese is so good that the shipper can not detect it and pays the price of the genuine, and I cannot understand how it is going to the consumer at a lower price than pure cheese. Perhaps many of the readers of the Journal know the process of making this class of cheese but I will give a short explanation here, for the benefit of those who do not know; at the same time reminding them that it is from personal observation and not from hearsay. In the first place, the milk is set for the cream to rise and is skimmed as closely as possible, the object being to take out all the butter and have the skim milk remain sweet.

This sweet skim milk is now enriched with lard in the following manner. Two vessels, holding from 12 to 15 gallons each, and similar in construction, fitted up to heat their contents by steam and standing in a convenient place to the engine, now come in use.

Into one of them a quantity of lard is placed equal to 1½ lbs. lard for each 100 lbs. of milk to be worked up, and in the other, about double the quantity of sweet skim milk that there is of lard and now, both lard and milk are heated up to about 120 to 130 degrees Fahrenheit.

Now little faucets are turned, and the lard and milk run out and join in a spout leading into the bottom of a small machine which has an upright cylinder revolving at a speed from 2500 to 4000 revolutions per minute. This cylinder is bristling with little points, and the centrifugal force exerted by the revolving cylinder is so great that the lard and milk are thrown up and round this cylinder until it is discharged through a tube at the top, perfectly mixed and in a foam. The inventor of this machine claims that the fat is caught upon those points, and the skim milk is thrown round it, thus forming a new globule of fat similar to the globule in new milk. As for this theory, it is not sound, as the milk being heavier than the fat it would be thrown on the outside, while the fat would remain in the centre. But