

LIME AS A FERTILIZER.

At a meeting of the Elmira Farmer's Club, Nov. 23, in reply to an enquiry from the President as to what he should do with a quantity of air-slacked lime which he had on hand, Mr. Lewis Fitch said, as reported in the Elmira Advertiser:—

"About thirteen years ago I had a piece of ground ten or twelve acres in extent, which had been so badly run that it would not produce any useful crop. It was too miserably poor to raise weeds, except sorrel, and with that it was completely covered. I plowed it well and planted potatoes, and, of course, got no crop. Not being acquainted with its poverty, I had hoped that diligent care would bring a moderate crop, but I was mistaken; the worthless sorrel was the only thing that would grow, and that monopolized the ground in spite of my efforts to raise potatoes. The next season I bought three hundred bushels of lime and spread it on about one-half the ground, throwing it from the wagon with a shovel. That made a good thick dressing. My idea was that I should thus overcome the sorrel, for I thought lime was its antidote.

"I planted that portion again with potatoes, and was awarded with a very fine crop, and a total extinction of sorrel, which has never appeared since. From that time to this, whenever the piece is plowed, traces of that lime application are seen.—It has proved a complete renovation of the worn out land.

"Another remarkable instance of its good effect I witnessed many years ago on a land near Hoffman's Grove, which was then in possession of the Mechanics' Association, and my brother had a portion to sow to wheat. It was wet, cold and poor, so I felt impelled to say to him: 'You cannot raise wheat there.' He insisted on the trial, and as a preparation, gave it a liberal dressing of lime. The result was a fine crop of wheat, which was manifestly due to that lime. When we used to run lumber down the river, I had opportunities of observing the uses to which lime was put in the vicinity of Little York, in Pennsylvania. That is a limestone region, and almost every farmer had his private kiln in which he prepared lime for his own use. They drew it on so liberally, that the heaps dumped from a bushel and a half basket would lie not more than eight feet apart. I cannot say how much value it had, but it is certain that the region is agriculturally one of the richest in the State, and its excellence is supposed to be maintained, if not created, by the use of lime.

MAKING MANURE.

A New Jersey correspondent of the New York Tribune gives his plan for making manure:—

To carry it into practice I have a place for the manure heap convenient to the stable; clean the stalls every morning, or when necessary, and throw on the heap; always keep it well together, with a flat and broad top; it will soon commence to rot, and by the time there are eight or ten loads accumulated, take a day and haul it to some suitable place for manufacture. As the manure is hauled, keep it well together, and less than three feet deep; keep the top always flat or a little concave, as in this way the valuable quality is better retained. When manure is heaped conically or spread carelessly far around, and remains so, for any length of time, its value then would only be about equal to straw. The heap should be regulated in depth according to quantity. By hauling a day at intervals in winter, the yard may be clear by the time of turning stock out to pasture. When the pressing work of spring is past, turn the manure-heap over, mixing it thoroughly. It should be finished square or oblong, with straight and nearly perpendicular sides well packed all through, and not less than four feet deep, as the deeper it is the better; finish the top about level, with six or eight inches of soil, which will prove valuable in saving the good qualities of the manure. When application time comes there will be found a rich heap of manure, black and greasy. This plan is practiced by all of the best farmers of England, who obtain such heavy crops of roots followed by heavy and luxuriant spring grains and grass.

ASHES AND THE BORER about fruit trees do not agree, according to D. W. Kauffman, of Iowa, who says that during fifteen years' experience he has never seen the borer in fruit trees where ashes were freely used, and that he considers them worth \$1 per bushel for putting around trees alone.



TOCK & DAIRY

THE PULPER AND STRAW CUTTER.

Various plans have been adopted in different localities, in high farming districts in England and Scotland, in seasons of scarcity of winter keep, that might this season be worth the consideration of the Irish farmer. The pulper and straw cutter were put to work, and hay and straw a little damaged, when chaffed fine and mixed with turnip pulp, was eaten by the cattle with the greatest avidity, that would have been spurned as fodder if supplied in its natural state.

The use of the chaff-cutter and pulper for five years in the preparation of feeding-stuffs for from thirty to forty head of cattle, enables me to speak with authority on this subject; and I have no hesitation in stating that two cwt. of pulped roots, mixed with half its weight of chaffed straw, is of more value in the feeding of milch cows or young stock, than three cwt. of sliced turnips and double the weight of straw in its natural state. I have not been able to perceive the marked change in fattening stock that it had on milch cows, which may be easily accounted for.

It takes heat to generate milk, and when chaff and pulp are mixed about 24 hours (it depends on the temperature of the weather) fermentation sets in, and hence it is served out in a hot if not in a thorough cooked state, which supports the high nervous state of the animal, so necessary in the secretion of milk; whereas a feed of cold turnips on a cold winter's morning, with its ninety per cent. of water, chills the whole system of the animal, which must otherwise be heated at the expense of fatty matter which supports the animal's existence. Corn chaff, too, can be used to advantage in mixing the pulp along with broken oats, bean meal, palm-nut meal, etc. Although there is no great amount of nutriment in it, it assists to fill the pouch of the animal, without which it would not rest satisfied even had it consumed two stones of oil cake—five times as much as it could assimilate to its advantage.

There is also another benefit in the use of the pulper, which English feeders generally appreciate, and that is, the macerated or mealy substances incorporated with the pulp. As soon as fermentation sets in, it melts, making it in a soluble and easily assimilated state for the production of muscle and fat. The chaff cutter, too, takes its stand among the indispensable implements of the farm, where economy in feeding is practiced. Chemists tell us there is a considerable amount of gluten, albumen, gum and sugar in oat straw—all useful properties in cattle feeding; but that the mechanical labor necessary to macerate the straw from its natural state, neutralizes the beneficial effect it would have on the animal if it were supplied in a prepared state. This shows there are far more feeding properties in straw than most people are aware of, and that if it can be cut at a moderate expense, the more of it consumed on the farm the better.—*Irish Farmers' Gazette.*

CHEESE MAKING AS A BRANCH OF CANADIAN FARMING.

Abridged from a report in the Cobourg Sentinel of the Meeting of the Hamilton Township Farmers' Club.

Mr. H. Wade introduced the subject:—

Up to as late a period as 1864 (the year I mention as the first of the Factory System in Canada) we imported as high as 2,530,950 lbs. of cheese; in 1861, still earlier, we imported 2,165,000 lbs. The great change which has since taken place will at once be seen by placing side by side our exports and imports of cheese during the last two years but one, as the tables for the last season have not been compiled yet.

Year.	Imports.	Exports.
1869—70.	59,494	3,827,784
1870—71.	66,475	8,271,439

These figures indicate a complete revolution in this branch of Canadian farming, as up to that time we did not produce enough for home consumption. Now, taking the difference between the imports of 1870-71 and the exports, we have 8,204,964 lbs., representing in money value \$820,496, besides the enormous quantity used at home, which demand is steadily increasing every year as the article of cheese is much more generally used for food than formerly, as it was then used more for a relish; now it is proved to be

a very valuable acquisition to the working man, because it is an animal food, and may be substituted at any time for meat, as one pound of cheese contains more nutriment than one pound of meat, while the relative value per pound is about the same, assuming no waste. We, as farmers, especially in this grain growing locality, still are, I am sorry to say, in the habit of depending altogether on raising the cereals, and as a characteristic of our country, we as farmers are generally men of limited means, and not able to give the land that amount of working which is necessary, and not having stock enough to make manure sufficient, it is no wonder that our lands have become deteriorated. Now, the only cure for this that I can see is for us, as farmers, to raise more stock, work our land thoroughly, and then seed down more, giving the land a rest, while we will then be able to manure it liberally from our own barn-yards.

Many will argue that our land is not adapted to dairying; true, it is not as well as some parts of Canada, but then we have the advantage of being able at the same time to grow a large quantity of grain, while we find as a general thing where dairying is extensive, they neglect the other branches of farming, and my idea of farming is that you had better have several irons in the fire than to have any one speciality, for if that fails you have nothing to take its place, where with a certain amount of grain growing, a certain amount of dairying, which as a matter of course necessitates plenty of stock, which gives you plenty of manure to enrich your grain growing land and causes you to produce plenty of roots, and last, but not least, makes you look forward to the consequences of a dry season for your cattle, and the wherewith to feed them during that time, which in my judgment is one of the essentials of dairy farming in this locality. A liberal supply of green corn stalks for fodder to soil your cattle during the hot and dry months of summer and the bare months of autumn and early winter, as we find it quite impossible to keep a number of cows milking regularly through the season without this provision, and as you all know how very soon our pastures begin to give out under the scorching sun of July and August. I could say a great deal on the subject of soiling during the dry months; I do not mean altogether, as we have never tried that, but hardly think it comes under the scope of this article.

And now supposing we have all determined to keep more stock, the question naturally arises what are we going to do with the milk. We are not in the neighborhood of Toronto or Montreal, or we would at once know what to do with it, and could dispose of it to much more of an advantage than by cheese making. Again, we have another outlet, butter making. Who does not know the hard work that this enforces on our wives and daughters, whom goodness knows have enough to do in the house with the present evil of no servant girls, without slaving over butter making? Who amongst us have not tried on a hot day in summer to churn, when the butter would not come, and go away in disgust? Of course I do not mean to say that butter making is not profitable, but where a number of cows are kept it involves much more labor than cheese making.

We are all of course thoroughly conversant with the old tub method of making cheese, and I do not doubt that just as good brands of cheese are made that way as by the factory system, but not as a general thing, there frequently being about two cents difference in price for mercantile purposes; but that is only one reason for adopting the factory system, the other being economy of production or the saving of labor, the same process having to be gone through to make the cheese from fifty cows as it does from five hundred. And it is not too much to say that whereas ten private dairies of fifty cows each would require at least ten skilled cheese makers, while in the case of the five hundred, one skilled manufacturer with three or four assistants would do the work of the ten or more.

In conclusion, I have tried to show that the dairy business has increased in the last seven or eight years from less than nothing, in the matter of exports, to the enormous quantity of over eight millions of pounds, while our exports of grain have not fallen off in the least, showing that keeping a large stock of cattle does not diminish our grain crop in the least, in fact adding to it, as by manure we can have much larger yields of grain than formerly. I now speak from experience, and by cultivating less ground in the season we

have more time to do it thoroughly, which is the very essence of farming, especially in this locality.

Mr. A. McDonald said the establishing of cheese factories and working them on the combined system meant improved husbandry. He thought most of us were agreed that we wrought more land than we had manure for; we had been going in the wrong direction; we had been trying to grow too much wheat; yes, wheat after wheat, and the consequence was our average had fallen to a little more than half what it used to be; our cheese factories were a step in the right direction; it meant keeping more stock, and better stock, and keeping them better; it meant making more manure, and keeping more land in pasture, and hay and roots; it meant working the land better than we did, and also manuring it better. He thought no person need be afraid to invest in cows where they could send their milk to a factory, as our cheese was always becoming better and our cheese makers more experienced, and our markets were getting better.

Mr. Joplin did not wish to address them, but he was willing to answer any questions. In answer to enquiries he said that the general yield of milk to a cow would be about 20 lbs. a day, though he had seen them yield 45 lbs.; it took, in summer, from 10 to 11 lbs. of milk to a pound of cheese, but in the fall from 8 to 9 lbs. of milk would make a pound of cheese. Last season in their factory, on an average, 995-100 lbs. of milk to a pound of cheese. Cows would pay from \$20 to \$30 each; he had known a cow pay \$40 from the factory. A cow would produce about 280 lbs. of cheese in the season. They found this difficulty, that farmers did not get their cows to come in early enough in the spring, and very often took them out too soon in the fall (for the purpose of making butter) thus lessening the yield of cheese. He approved of growing feed for soiling cows; he knew a case where a man kept twenty cows and had only about five acres of pasture—he fed them on vetches, oats and corn, entirely, and his cows yielded a better average than any others sent to their factory.

Mr. Johnston said that in looking over the returns he saw that our Canadian cheese did not command near such a high price in the British market as their home made thing did; when at home a few years ago he found that they thought our cheese tasted too strong; however we might prefer strong cheese here, there they liked a milder cheese; if a milder cheese, one more suitable to their taste, could be made, it would take better there, and we would get a better price for it. What you receive from the factory is not all the profit you derive from your cows; you have the milk of every seventh day, the calf, and what you make from the cows after the factory stops in the fall. Then look at the large quantity of manure made, that enables you to grow more roots and more grain; if you can raise as much grain from twenty acres, well worked and well manured, as is usually produced by a hundred acres badly wrought, there was surely great profit in that.

Mr. Sidey had never tried the cheese factories; his farm was not well adapted to dairying. He believed where the soil was damp and they had a creek for water, it would be profitable to make cheese; there were other methods of using pasture besides dairying; they could turn their grass into beef and get their profit from it in that way; this plan could be followed in many places where they had not opportunities of sending their milk to a cheese factory.

Mr. Lapp said he thought it would be more profitable for us to make cheese than to raise beef; it was as great expense to raise a steer to three years old as to keep a cow, and then they would not give us more than \$40 or \$50 for the steer. Now, if a cow will yield from \$20 to \$30 each year from the factory, besides the other profits, if we put the extra feeding on the cow, they would pay much better than the steers. No doubt a creek was best for watering cattle, but they could be watered very well from wells. Then see what a great advantage cheese was going to be to the country; see what an amount of money it brings into the country. Even now he had no doubt it paid well to raise corn to feed to the cows when the pastures dried up. He had, this season, sown about half an acre of Western Corn, on rich land; it grew 14 feet high, and after feeding all they wanted in the fall, they cut and shocked up the rest and fed from it till the middle of January; he was astonished at the quantity of feed that half acre produced. It was so tall he had to