

It is gratifying to our Colonial industry, and a sign of how this country is rapidly adapting itself to its own and the general wants of the times, to find that the vast quantities of flax-seed raised in the middle and west of Ontario, are not thrown aside as waste, after the textile fabric has been secured. The village of Baden, centre of Wilnot Township, situated on the line of the Grand Trunk Railway, nine miles west of Berlin. That of a linseed oil mill, which enjoys the proud pre-eminence of being at present the only establishment of the kind in Ontario, or indeed in the Dominion of Canada, if we except a small affair in Quebec.

Four cords of wood are consumed every twenty-four hours, and the regular supply used up per diem is 300 bushels of seed, producing an average of fourteen barrels of oil, which is mostly shipped to Montreal, either in the raw or boiled state. From the above raw material six tons of cake are produced per day, which has hitherto chiefly found a market in England. The process is chiefly as follows: The seed is first run through four heavy rollers of 1,200 lbs. weight each, and is thus reduced to meal. The "meal" is then elevated to the "chasers" two enormous upright grindstones of four tons each, where it is still further ground down, while at the same time it is heated by steam. From these the now comparatively moistened material goes into the moulds, where it is fashioned into square flat cakes of the weight of 10 lbs. each. These are finally put up into a powerful hydraulic press, capable of being raised to no less a strain than 400 tons, by which the remaining oil is effectually squeezed out, and the cake turned out in marketable shape. Two presses are constantly in use, each weighing eight tons. The oil is run from the presses into a great tank in the cellar or basement, where it is allowed to settle for two weeks. It is then drawn off, either raw, or taken to the kettle-house, and boiled ready for market. During the whole process, it is of imperative importance that the temperature should be kept equally at 70.

Hitherto the whole of the cake used for home consumption in Canada is ground up into meal, which is retailed at \$2 per 100 lbs. It is to be hoped, now that this excellent feeding material both for cattle and sheep, can be procured in quantity at such a reasonable price, it will be more and more extensively used by our enterprising cattle-feeders and breeders. Oil cake is known to possess double the feeding and fattening qualities of any other substance employed as food for farm stock; and we trust when it is known it is a "home product," our farmers will see it to be for their own and the country's benefit to encourage native manufactures.—A. F. Blenheim.

FARMING IN ENGLAND.

At a late meeting of the Grand Clute Farmers' Club, Mr. Goodland gave the following description of what he saw during a recent visit to England:—

I visited my friends in England last fall. When I left Wisconsin, about the middle of August, the grain was all harvested and the grass on the pastures was dry and parched. As we came in sight of the lands off the west coast of Ireland I saw the wheat fields were not harvested, the straw just beginning to turn, and the pastures looked as green as yours here in Wisconsin do in the month of June. I thought it might well be called the Emerald Isle.

Farming is done mostly in England by tenants; and lands in that section of the country where I visited, rent from \$15 to \$28 per acre. With such enormous rents the American farmer would ask, How can the tenant do it? If you visit a farmer he takes you out to see his farm and stock. I saw a herd of cows in pasture, and asked if he could breed from them. He replied, "Yes." I think they are too fat. "How can I prevent it, unless I shut them up to keep them from eating?" The grass was just as thick as it could stand; green fresh and succulent. I asked the farmer what he seeded to. He replied, "I always use a half dozen kinds of seed and always have green feed." They have as large an acreage there of roots as you do here of corn; 60 tons of mangels per acre, 40 tons of common turnips. I would recommend a more thorough cultivation of roots here. Bullocks were formerly five years old when they are ready for market; now they breed to bring them to maturity earlier. This farmer with whom I was visiting, had 6 two and a half year old pure blooded Devon steers that would dress off 800 lbs. of beef

per head, which would sell for \$150 each. Our swine is far superior to theirs, though it be a fact it is hard to make them believe it.

I visited a farm of 240 acres. The tenant keeps five hands to the farm. They expend a much larger amount of labor to the acre than you do here. Almost all of their lands are underdrained at the cost of about \$25 per acre. These drains are usually 5 feet deep and 25 feet apart. They use tile (a member asks—"How long will tile last?")—tile is everlasting. There are many farmers that keep Cotswold sheep. I saw Southdowns that the carcass would weigh, when dressed, 300 lbs. Store sheep were worth \$15 per head. This high price for store sheep is owing to the fact that there is a large amount of fodder, and they practice feeding all they can on the farm.

I will call your attention to their manner of keeping up the fertility of the soil. Almost every nation is laid under contribution to England for fertilizers. The Superphosphates of South Carolina; guano from Peru; bones and oil cake from the west which ought to be used here at home. They are now trying to utilize the sewerage. As yet they have not been very successful.

VALUE OF TURNIPS AS FOOD FOR STOCK

In a little Pamphlet on "Turnips," recently published by David Londreth & Son, Philadelphia, the above subject is discussed as follows:—"The value of succulent food, in a hygienic or sanitary view, to man, and also to the animals which minister to his wants, need not be commented on. All who have paid attention to the subject agree in opinion as to its advantage, indeed absolute necessity, if the preservation of health be properly studied. The long winters of our country which arrest vegetation, and oblige us to provide green food to be stored up in anticipation of the severer season, has necessarily induced inquiry and examination as to the class of vegetables which can be produced in greatest abundance, at least cost, with least exertion, in the shortest space of time, and least liability to failure under unfavorable atmospheric conditions, and also, as of primary importance, with a capacity for preservation for months with slight danger of decay. These qualities appear to be united in a remarkable degree in the turnip—hence its very general culture; and, as naturally follows, the importance of selecting the varieties which experience has pointed out as better adapted to geographical divisions and special purposes. In Great Britain the culture of bulbs, more especially the turnip (in which we here include the *rutabaga*, or Swede, though not so classed in England) at assumed really gigantic importance; and it has been estimated by writers on political economy, years ago, when the turnip product was much below the present, and its annual value was equivalent to the sum represented by the interest on the national debt—no inconsiderable amount, as everybody knows. Until the culture of roots, as they are termed, was extended and enlarged in England, animal food was a luxury seldom within the reach of the operative classes, with whom vegetables and farinaceous compounds, not resources for sustenance. Now, meats in some shape are within reach of all, the poor factory operative, the industrious mechanic, and the wealthy landowner, alike participate; and this change has grown of—not national prosperity or increased wages, though both are indirectly affected, but the greater breadth of land in root culture, which has so largely, immensely, it may be said, augmented the productive capacity of the acreage under plow, thus practically bringing food to every workingman's door. Indian corn—with us the great meat producer, which has played so important a part in the civilization of our country, enabling the hardy emigrant from the older settlements to wrest the wilderness from the savage, had overcome the forest—is not a product of Great Britain or any portion of the north of Europe; there only being known as an import from our country. In this particular, we have an advantage impossible to estimate; but, great as it is, it should not lessen our exertion to produce succulent food, which augments the value of the farinaceous. We have given expression to our conception of the value of roots as stock food. Our own working stock, at present numbering fifty-six head, and a small herd of Albnays kept for the family dairy, we aim as regularly to supply with food of that character; whether it be turnips, mangolds, carrots, or beets, as with hay; and we should consider it most unfortunate if untoward

events should deprive us of the ability thus to contribute to the wealth and vigor of our working force, or the secretion of rich milk, or corresponding rich butter, as high colored in winter as that from grass, and almost as well flavoured. That turnips singly and alone will secure health and strength, and rich milk, we are far from maintaining; but we do contend, that, in proper proportion, in suitable condition, at proper times, mixed with corn meal, shorts, oil cake, or other farinaceous food, they will produce invaluable results. To feed roots of any kind in cold stables, or what may sometimes be seen, in the open air in inclement weather—the roots, perhaps, partially frozen—and expect favorable results, argues, to say the least, want of reflection; and where we find people say, and we sometimes do, "they can see no good in roots," we are sure to find, on inquiry, that some of the obviously rational and necessary rules of procedure in feeding had been neglected or disregarded."

OUR FARM WASTE.

It has been a serious question among many farmers whether there is actually any economy in buying reapers, mowers, threshing machines, and other costly farm implements—that is whether the same amount of money expended in the purchase of manual labor (where it can be had) to do the work with cradle, scythe, flails, &c., that these machines do, would not go farther than it does as now expended. Of course all recognize the fact that these machines supply what is difficult now to obtain—good laborers. But if the laborers could be obtained, would they not be the cheaper investment? We say this is a question about which there has always been controversy.

The foregoing is introductory to saying that the largest per cent of work that can be charged to any department of farm economy as at present practiced—must be charged to agricultural implements—or rather to the improvidence of farmers in purchasing and taking care of them. As a rule too many of these machines are around in a neighborhood—that is, for profit. In other words, an unnecessary number are purchased in proportion to the work there is for them to do. We speak of reapers and mowers especially. There is no reason why one reaper or mower may not do the work which, especially in districts where farms are small, five are now employed to do. We are not sure that we might not double the number and say that one reaper and mower might do the work that ten now do. Of course this remark would not apply to the large grain farmers of the west; but even there the number might be diminished if those purchases were employed all of the time during harvest—or run for a whole neighborhood, as threshing machines are run.

Here, then, would be a most important saving. If we say that one machine can do the work that five now do, and fix the price of the combined reaper and mower as low as \$125, there is \$500 saved on the original investment in a single neighborhood of five farmers, besides the interest on the money and the deterioration of the property. Thus if four-fifths of the investment in these machines were saved annually to the farmers of the United States the sum with interest and deterioration of property thus saved would be enormous. We are sorry we have not at hand the figures which show how many of this class of machines are annually made, so as to give this view of the case the emphasis of figures. But each farmer in a neighborhood may do a little figuring for himself, if he thinks our statement extravagant let him show us wherein.

But this surplus machinery thus purchased and lying idle and unproductive ten months out of twelve is not the only waste; for in addition to the wear from use and depreciation in value in consequence, is that resulting from want of care. Farmers can not afford to pay ten per cent. interest on capital that lies unproductive ten months in the year, unless they make enormous profits on it during the two months it is in use. But that is just what they are doing, it seems to us safe to say, on this class of farm implements; indeed we may include employments of all kinds, for we regard it a very modest estimate to say that the depreciation in the value of farm implements annually, from wear and want of shelter and proper care, is 10 per cent. of their cost. See what this amounts to! The census report of 1870 shows the value of agricultural implements made in this country, in that year to have been \$52,000,000. Sup-

posing these implements to have been sold that season and the deterioration in value during 1871 to have amounted to ten per cent. (which we do not think extravagant), they cost the farmers of the county \$5,200,000; add the interest on the money thus invested, at 7 per cent.—\$3,640,000—and we have the handsome sum of \$8,840,000 which agricultural implements are costing the farmers of the country, besides the \$52,000,000 of unproductive capital ten months in the year.

Of course some people will think this extravagant calculation; but we fear it is too near the truth.—*Iowa Homestead.*

AGRICULTURAL EDUCATION NECESSARY.

All kinds of education are desirable, but farmers require special instruction. There was a prejudice against agricultural colleges, because it was feared that the attention of boys would be called away from the farm. The like had been observed from attendance at other schools. There was a prejudice also against scientific treatises because the authors were investigators, seeking to show causes and effects, and not how to make money. We need to keep alive what has been learned as well as to find out new things. In 1585 a report on agriculture was submitted to the Senate of Venice, which, if republished today, would astonish people by informing them how much those people knew of farming. Knowledge moves in circles, and one age forgets what the previous one knew. By and by some of these things are re-discovered and old practices are revived. Men need to know how others have succeeded or failed. Many a man spends years of time and the larger part of his property to bring out an invention that had been in use for years, or discarded as of no value. Farmers are constantly doing the same thing.

We must take into consideration the circumstances of a farmer before we can give him correct advice. Underdraining may pay on land worth \$500 per acre, but not on land worth \$5. It is generally admitted that improvement is needed in Western farming, but exactly how there was doubt. The great defect in American farming is lack of system. We simply raise a crop because it promises to command a good price; we should do everything on a farm in relation to how it will influence other things. An English farmer makes his calculations not for one year, but for a series of years. He is looking out for the farm as well as for his pocket. There is a better return for food fed to swine, than for that fed to sheep or cattle, but it would be bad policy to keep only hogs on a farm. Mixed farming is best for a farm and best for a community, though a speciality might pay better for a single year, or be more likely to enrich an individual.

It is also the safest, as if one crop fails, another may succeed. Society demands that farm laborers receive employment all the year, but raising special crops furnishes employment but a few months. The wheat raised in many parts of the country is now so large in amount that it could not be harvested but by the aid of machinery. Men on wheat farms were employed but a few months and were idle the rest of the time. We must pay more attention to rotation of crops.—*Prairie Farmer.*

VALUE OF SCIENTIFIC KNOWLEDGE TO FARMERS.

We have not the slightest doubt that millions of dollars might have been saved to this country if all farmers had known that their barnyard manure contained a material called ammonia, which rapidly disappeared when that manure was exposed to the air and weather, but that a little ground plaster or even earth mixed with the barnyard manure would stop waste. It does not require any great depth of study for a farmer to learn that soda or potash put in his soil make a combination with the sand (silica) that causes it to dissolve, and that unless this sand becomes soluble the stalks of grain will not be firm and strong to hold up the heads or ears.

It does not require any great amount of brain though for a farmer to remember that soda, potash and lime, when combined with sulphuric acid, are called sulphates, when with muriatic acid, are called nitrates; and when with carbonic acid carbonates; and that all are valuable to him, but that the first three with fix the ammonia in his barnyard manure, and the last will not. We simply believe that if more science was written for farmers in a practical and plain manner they would make better crops.—*N. Y. World*

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