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THE
CANADIAN AGRICULTURIST,

AND JOURNAL OF TRANSACTIONS

OF THE

BOARD OF AGRICULTURE, AGRICULTURAL ASSOCIATION, &c.

VOL. VI.

TORONTO, MAY, 1854.

No. 5.

Reports, Discussions, &c.

COUNTY OF PRESCOTT AGRICULTURAL SOCIETY.

The Annual Meeting of the County of Prescott Agricultural Society, was held pursuant to public notice, at the Court House in L'Orignal, on Monday, the 6th day of February, 1854.

Charles P. Treadwell, Esquire, President, occupied the Chair. He declined re-election, and made some remarks on the occasion which will be found below.

Charles Hessey, Esquire, was unanimously appointed President for the ensuing year.

Chauncey Johnson, Jun., Esq., Treasurer, S. M. Cushman, Esq., Secretary.

James Cross, Philip Downing, Alfred Cass, Simon Cass, George Willis, James Street and Richard Allen, Esquires, were appointed Directors.

The following resolutions were put to the meeting, and carried unanimously:—

Moved by CHAUNCEY JOHNSON, Jun., and seconded by Mr. PETER STIRLING,

1. That the thanks of this Society be presented to Charles P. Treadwell, Esq., for his valuable services as President of this Society, for the district of Ottawa, and the Counties of Prescott and Russell for many years, and while we regret his retirement from the office of President of our County Society, we rejoice that his services have been appreciated by the Province at large, in his appointment to the Presidency of the Provincial Association.

Moved by Mr. WILLIAM BRADLEY, and seconded by Mr. EWEN McMASTER,

2. That Col. Thomson, R. L. Dennison, Sheriff Rutan, and John Harland, Esq., having been balloted out, and having retired from the Board at the end of last year, and as we acknowledge their services for the past, the Agricultural Society of the County of Prescott would most respectfully recommend these gentlemen to the Bureau of Agriculture, for a re-election as members of the Board.

Moved by Mr. JOHN PATER, and seconded by Mr. FARQUHAR ROBINSON,

3. That the thanks of the Agricultural Society of the County of Prescott be tendered to the Bureau of Agriculture for its exertions in favor of the Board and Association of Upper Canada, and also for the assistance rendered to the Agricultural Societies throughout the Province, and we would beg to suggest that a Bureau of Commerce and Manufactures be established with as little delay as possible.

Moved by Mr. SIMON CASS, and seconded by Mr. JAMES CROSS,

4. That the Agricultural Society of the County of Prescott acknowledge with great pleasure the unwearied exertions of the founders and members of the Agricultural Board of Upper Canada and they feel confident that they express the feelings of all the farmers of the County, in acknowledging the success of their labours and thanking them for their exertions in behalf of Agriculture.

Moved by Mr. H. WARD STORM, and seconded by Mr. ALFRED CASS,

5. That the thanks of the Agricultural Society of the County of Prescott be tendered to the Agricultural Association of Upper Canada, for their exertions in bringing before the public the productions of Canada at our Annual Exhibitions, and this Society is of opinion that the Association is entitled to the thanks of every farmer in the Province for its services.

Moved by Mr. CHAUNCEY JOHNSTON, and seconded by Mr. JOHN PATER.

6. That the late President C. P. Treadwell, Esq. be requested to furnish a copy of his address for publication, together with the proceedings of this meeting.

After the regular routine business of this Society was disposed of, the meeting adjourned until the first day of May, at the Court House in L'Orignal.

CHARLES HURSEY, *President*,
S. M. CUSHMAN, *Secretary*.

REMARKS

Made by CHARLES P. TREADWELL, Esq., at L'Orignal 6th of February, 1854, on the occasion of his retiring from the office of President of the Agricultural Society of the County of Prescott.

GENTLEMEN,—On declining a re-election to the office of President of your Society, which I have had the honor of holding for the last sixteen years, and whilst returning you my thanks for

that expression of your confidence, permit me to make a few remarks.

The first Agricultural Society for the Ottawa District, comprising the Counties of Prescott and Russell, (the latter at that time including the Townships of Gloucester and Osgood within its limits), was organized under the Presidency of the late Hon. George Hamilton of Hawkesbury Mills, and I held the office of Treasurer. The institution being then a novelty, the utility of which had not been tested, it was found difficult to raise the necessary amount of funds; this deficiency was made up by Mr. Hamilton, Dr. David Patter, Donald McDonald, Esq., then M.P.P., and myself. When, however, the Society became better developed, we were not allowed to contribute beyond the amount of our subscriptions, and our liberality was handsomely repaid by our increased subscriptions. Many who were with us then, have descended to their graves, but their estates with their good names and industrious habits have been left to their offspring. In taking a retrospect of the past, I would beg leave to direct your attention in the first place, to one department in which we do not appear to have made any advancement. In the early days of our society, the farm yards of Dr. David Patter, Donald McDonald, Elisha Cass, Joseph P. Cass and Elijah Kellogg, Esquires, could produce cattle fully equal to any in these Counties at present.

In the neighbouring County of Carleton, however, several farmers have earnestly entered into the business of breeding the best English and Scotch cattle, as well as improving the breed of horses.

Among them I would make special mention of Wm. Byers, Esq., of Goodwood Hall, near Richmond, and of Wm. Thompson, Esq., of Nepean. Our horses have improved, but in this respect we are still behind our neighbours in the United States, especially in carriage horses.

The establishment of Ploughing Matches has done much to improve our young men in the use of that most necessary implement of husbandry, the Plough.

This branch of Agriculture is much indebted to the exertions and example of Peter Stirling, Esq., who was the first to introduce the Scotch Plough.

In the production of grain and hay our farmers will bear a favorable comparison with those of any of the adjoining counties, and being provided with an excellent material for constructing fences (white cedar), some of our enclosures will vie with the best in the Province.

In reference to farm yards, stables, and out-buildings generally, the Eastern section of Upper Canada, far excels the Western; and the means by which the most complete specimens of these have been constructed, were derived from successful operations in the timber trade, for instance, those of Mr. Byers, which are decidedly among the best in the Province, combining economy with utility in a high degree. That gentleman, having now turned all his attention to Agriculture, will, I am confident, render great service to the farming interest.

While the lumber trade has in many instances furnished the means for improving our buildings, it has also secured to us a market for farm produce, and at the same time raised the price of labor to such a degree, that the work must be almost entirely performed by the farmer and his sons.

The great superiority which the Western part of Upper Canada possesses over the Eastern, consists in my opinion in this; that the farmers in the former section follow that branch of industry exclusively, and devote all their energy, bodily and mental, to secure its success. They take great pains to secure the best and cleanest seeds of all kinds, and prepare their soils as well as possible for the reception of the seed in the proper season.

They have more labor saving machines, both for the preparation of the ground and for securing the crops. They also carefully attend to the introduction of superior cattle, sheep, swine and poultry.

Among the more favourable symptoms connected with farming, I may notice the establishment among us of an excellent library, containing a large assortment of books treating of Agriculture, which I feel proud to recommend to every practical farmer. There is also, I am happy to find, an interest beginning to be evinced in favour of horticultural pursuits.

In a circular of mine, dated 2nd of January last, as President of the Agricultural Association of this Province, addressed to each of the County Agricultural Societies, I have made several suggestions to which I now beg leave to draw your attention, and solicit your co-operation, in so far as you may be pleased to approve of them.

I thank you for the confidence which you have so long reposed in me, and hoping that a kind Providence may give you favorable seasons, I wish you every success in your future efforts for the welfare of the Society, from the Presidency of which I now retire.

TOWNSHIP OF HAMILTON FARMERS' CLUB

ON ARTIFICIAL MANURES.

(ABRIDGED REPORT.)

The Township of Hamilton Farmers' Club, held a meeting at Cobourg, on February 24th, 1854, Wm. Richardson, Esq., of Cold Springs, was called to the chair. MR. P. R. WRIGHT said,

GENTLEMEN,—In the present position of farming here, there are comparatively few of sufficient spirit to make the attempt at an experiment with some of the expensive Artificial Manures; and I know full well that there are many wondrous wise and purse proud men, who will laugh at the attempt or argue the benefit we would derive from their use. I am of opinion, however, that we are on the eve of a complete revolution in Canadian farming, that the indolent and profitless system of bare fallows will give place to the enlightened and profitable *regular rotation* and *grass crops*, and that this again will demand attentive

to the *cheapest and best* modes of producing roots, and that result will only be brought about by a liberal use of some of the manures which the experience of others so highly recommends to our notice. The term Artificial Manure is generally understood to apply to all foreign substances not directly connected with the farm yard, that is—neither the product of vegetable growth, nor directly the residuum of the consumption of vegetable substances by animals. Thus Guano is primarily derived from the ocean, in the fish consumed by sea fowl, whose excrements having accumulated on islands and rocks furnish an almost inexhaustible supply of a manure so powerful and concentrated as to baffle all attempts at imitation; then the earth presents another class of manures, not the result of vegetable growth but the product of Geological events, as the limestone rocks, chalk, and marl beds, gypsum deposits, and sulphur, from which is derived sulphuric acid (oil of vitriol) now largely used to facilitate and economise the effect of bones. Again, there is another class to which the term 'Artificial' applies almost exclusively, they consist individually of different substances mixed in various proportions according to the special purposes to which they are intended to apply. Thus we have a variety specially compounded to promote the growth of turnips and other root crops in which phosphoric acid is largely employed; another variety, principally composed of nitrogen, is manufactured and sold to promote the growth and yield of cereals, and a third kind composed of salt, and gypsum. I have often used it, and can state from experience that it is peculiarly adapted for peas and other leguminous crops. To such manures the term Special is also applied. They are, or ought to be, compounded on the basis, which a chemical analysis of the ashes of plants furnish for providing their natural and peculiar food; success in the use of such manures will depend in great measure upon the attention which is paid by the farmer to the principles regulating the manufacture of the manure employed. The most profitable system is that which we ought to adopt, and in the case of Artificial Manures science has pointed out their true scope and object, and experience has already ascertained the advantage of employing them—first, in the cheapness of their application, and secondly, in the results. As a proof of the popularity of Guano in England, its sale in 1846 was 24,000 tons, and in 1853, 61,000! The English farmer is forced to calculate much closer than his more favored brother here, and we must believe that this great increase in the use of guano would never have taken place if its profitable application had not been an established fact! Its value is further demonstrated in the panic which has arisen in Britain from the prospect that the supply will in a few years be exhausted. The Royal Agricultural Society offered two years ago a premium of \$5000 to the inventor of a manure equal to guano; which could be sold at \$25 per ton, which is about one-half the price of guano. No one appeared to claim the prize till very lately. The *Times* of the 26th of January says:—"A new patent substitute for guano consisting of decom-

posed and concentrated sea weed, is about to be introduced by Mr. Longmaid with the view of claiming the prize offered by the Royal Agricultural Society, thus affording another instance of what science is likely to accomplish for us. The proud preeminence of Great Britain in the art of Agriculture has, no doubt, been obtained chiefly by cultivating green crops, in other words her turnip culture; it is within my recollection when the surplus fat stock of the County of Aberdeen, in Scotland, was not more than that produced by our County of Northumberland at present,—now Aberdeenshire ranks the highest county in Britain in the exportation of fat stock. How is this?—simply because the cultivation of root crops obtains in a similar ratio, the rotation followed entailing a fifth or sixth part of the arable acreage under green crops of some kind—without the aid of foreign or artificial manure this could not by any means be profitably accomplished, their use has therefore not only become general but almost absolute. The first great step in advance in the cultivation of turnips was the introduction of bones as a manure, the value of which as a fertilizer for this crop appears to have been totally unknown until about the end of last century when their use began in Yorkshire, Col. St. Ledger being the first person known to have used them, about the year 1780. In Scotland bones were not used at all until a very late period. As a manure for turnips their qualifications are abundantly evidenced in the results which follow their application, whilst their special capabilities are equally well established by the relations of their composition and the constituents of the turnip plant; their great certainty of action in a dry season has been observed by all who have ever had the opportunity afforded, and this quality alone would entitle them to the notice of the Canadian farmer, the great obstacle to root cultivation being the aridity of our climate; the influence of the manure upon the crop can be quickened by the form of preparation or the condition in which it is applied. The finer the bones are reduced the speedier their action, as has been fully established by many experiments, and this power of forcing the crop has been made available so as to hasten the period of hoeing ten days or more. As the turnip is a plant which in its earlier growth depends greatly on the manure and is at that period peculiarly liable to attacks of the bug, it follows that the more we have the manure under our control the more likely is our ultimate success, and an early feed of phosphate of lime, which bones can be made to supply, will push on vegetation to that state when it becomes capable of deriving assistance from atmospheric sources. I have been very successful more than once with dissolved bones, using for that purpose sulphuric acid, and although at considerable expence, still not in proportion to the benefit derived from its use. As an auxiliary to barn-yard manure used at the rate of 10 bushels, in dust, to the acre, where 20 wagon loads of dung have been previously well incorporated with the soil, a good crop of turnips, if not otherwise neglected, may be looked for with certainty. Canada is essentially a flesh consuming and consequently a bone producing

country; we must have the means of rendering the heads, horns, hoofs, and skeletons of our winter starved cattle, which disfigure the fair face of nature round many a rich farmer's steading available for the purpose of manure, and thus make the evil cure itself. Probably some may think I place too high a value on the turnip crop, but I am impressed with the conviction that this country will never be really great in agriculture until every farmer produces an abundant supply of turnips, or an equivalent in other roots! and this state of things will only be profitably accomplished by calling to our assistance the aids which science offers to us in artificial manures. I think, Mr. Chairman, that if our Agricultural Societies would offer liberal premiums for the best course of experiments with guano and bones applied to root crops, and furnish intending competitors with a certain quantity of each under certain rules, it would be the means of eliciting a large amount of practical information, as well as a test of their adaptedness to our climate, and on the principle that *seeing is believing* would, I have no doubt, remove much prejudice against a principle which ignorance only has the hardihood to deny. I thank you, gentlemen, for the patience with which you have listened to my remarks, those which will follow I trust will furnish complete evidence that the motto of our Club is "progressive improvement." (Cheers.)

MR. JOHN MASSON said—I had an opportunity of getting a large quantity of bones which had accumulated about the kennel where Mr. Boulton's hounds were kept, on my farm; these I carried seven miles to Mr. Allan's mill, where they were ground, then I placed them in a heap and mixed with them a quantity of animal refuse and wood ashes, covering the pile carefully with black muck, three or four inches thick, and left them for ten days, in which time the bones were reduced to a fine powder; the pile carefully turned and mixed and immediately applied in drill, followed by the turnip drill. Before or since I have never seen any such crops of turnips in this country, and from this I was induced to repeat the turnip crop the next year, which proved little inferior to the first, a proof that one crop was not sufficient to exhaust the manure. I have been in the habit of using ground bones since 1826, when I first applied them on four acres, part of a twelve acre field, all in turnips, eight acres sown manured with well rotted barn-yard manure; the season, as most of us know, was one of extreme drouth, and I had as many turnips off the four acres as off the eight. It was a serious loss to me when the hounds were sold, bones about the premises got very scarce, and I had no opportunity of getting supplied from any other source.—(Mr. Wade) "I think Mr. Masson was the only one who found the hounds profitable." (Laughter.)—(Mr. Masson) I did so, and would willingly have paid additional rent to have them kept on. He could, so far as his experience went, strongly recommend the use of bones for the turnip crop in preference to any other manure, and was quite prepared to state also, that it was the cheapest.

MR. JOHN WADE said he considered that arti-

ficial manures were of as great importance to us if not more so, than in Britain, from the circumstance of our working season in the fields being so short, seldom commencing before the middle of April, whereas in Britain the seedling is always finished, so far as the cereals are concerned, in March, leaving them a full month more than us to prepare their land for green crops, summer fallows, or other operations of that nature, than we have; consequently, we have to perform in the space of six weeks the same operations that they have three months to work upon. And it is on this account that hard manures become of such importance to us, particularly on green crops; when suppose on a farm of say 200 acres, if you grow twenty acres of green crops and break up twenty acres for summer fallow (a fair proportion in a five course shift), this must be all performed in from 3 to 4 weeks: and the usual amount of force commonly employed upon farms of this size is not more than 2 efficient teams, and probably 3 to 4 men. It is found that, supposing we have sufficient manure in our yards to put on our green crops, we have not time at that season to draw it out without neglecting other operations of imperative necessity. Consequently, if guano, bone dust, or any other hard manure of that description, could be procured, the time of putting in our turnip or other root crops would be shortened nearly two-thirds, as it will take two teams nearly a week to draw manure enough for eight or ten acres of ground for roots; and this serious amount of time, at that particular period, would be saved in that way, and be available in any other required. He had tried guano on two occasions with very satisfactory results, and considered 1 cwt. equal to 15 loads barn yard manure. He had not yet tried bone dust, and could not speak from experience of its results. He had used plaster for seventeen years with great success, and considered that it had doubled, and sometimes trebled his crops of grass; the effects in our neighbourhood have been almost like magic; and he could say with certainty that he has realised not less than 300 or 400 dollars a year from the simple application of from 25 to 30 barrels of Plaster, the quantity he commonly used. He had used it on peas, but considered the direct application to the crop rather dangerous in moist or wet summers, producing too much straw; and as he had so long applied it on his farm he found he could get enough of peas from the effect left in the land the second year. Mr. Wade concluded by recommending the Township Society to make use of their funds in importing guano and bone dust, by the quantity, and giving it to the members of the Society at cost and charges. (Cheers.)

MR. GEO. BLACK said that he had not much experience with artificial manures in Canada, but had experienced the good effects of bone manure in the old country. Mr. Blacker, in Ireland, made some experiments with manures on turnips, which may not be amiss to mention here; they were, 1st with pounded bones, 2nd, burned bones; 3rd, peat ashes; 4th, pure cow droppings; 5th, hot lime; an equal part of each being weighed. The result was—No. 1 gave 87 lbs., No. 2, 108,

No. 3, 76, No. 4, 88, No. 5, 54; thus showing that burned bones were superior to any of the others. He used 15 bushels of bones last year on $1\frac{1}{2}$ acres of turnips; the land got a light coat of coarse manure, ploughed in the previous fall; the other portion of the field was heavily manured in the rows with fermented manure, previous to sowing the turnip seed, likewise a quantity of ashes; the turnips on the bones were a good even crop, which he received a prize for, while the other portion was a very uneven crop. He had not used guano in this country, but from experience of its effects in Scotland and in Ireland he had no doubt of its efficacy in this country. As there is a great quantity of animal food consumed in Canada, an immense bulk of bones might be collected; also, from tanneries, horns, hair and other animal matter; there is another source from which, I am sorry to say, enormous quantities of bones might be collected, that is from dead animals; but this last source will diminish as the cultivation of green crops increases. He agreed with Mr. Wright as to the benefit of using salt with plaster on peas. He believed it would increase the yield; the plaster, at the same time, causing a smothering crop of straw. He had used two barrels of salt on land to be sowed with Barley, the same being very foul with charlock seed; it destroyed the charlock, and he had a good crop of Barley; but alongside, where no salt was used, the Barley was mostly smothered with yellow weed. His neighbour, Mr. Geo. Roddick, sowed some salt on part of a field which was very full of this yellow weed, it had the same effect as Mr. Wade had mentioned. The easy, portable, and expeditious manner in which they can be used, at a busy season of the year, certainly in itself is a great recommendation to use them. There are few farmers who can manure the 4th, 5th, or 6th part of their farm yearly, from their barn yards; and without a rotation, and a proper proportion of that rotation being manured, and some kind of green crop cultivated, it is impossible to keep a farm in a paying condition. He thought excellent manure might be had from distilleries; if the droppings of hogs and cattle at these places were preserved and manufactured so that they could be used as hand manures they would be of great value. Also, if the slaughtering of cattle in cities was all done at one shamble in each place, and all the blood and offal preserved and properly prepared, it would be a superior manure. He would recommend in sowing plaster to be just as particular as in sowing grain; every square yard missed with plaster on clover is a forkful of hay lost. M. Black concluded with the following caution: if guano comes in direct contact with seeds it will kill them, it has been proved that bones will not do so.

Mr. WADE recommended the use of a broad cast sowing machine for plaster.

Mr. G. BENNETT said that his experience in the use of artificial manures had been very limited, except in plaster, which he had used with very beneficial results. He had once tried an experiment on corn, with equal parts of gypsum, salt, and wood ashes. The result was a crop of over 70 bushels of shelled corn to the acre. He

could not say whether it would have the same effect on a different soil. His was a sandy loam.

Mr. RICHARDSON thought it unnecessary to take up the time of the meeting. He highly approved of all that had been said by Mr. Black and other speakers on the subject of grain crops and artificial manures.

A vote of thanks was given to Mr. P. R. Wright for his excellent and interesting opening speech.

W. R. RIDDELL, Secty.

REPORT OF THE EAST ZORRA FARMERS' CLUB.

ON CHANGE OF SEED, &c.

March 2, 1854.

A meeting of the East Zorra Farmers' Club was held at Donaldson's Hotel, 12th line, the 2nd March.

The Chairman introduced the subject, saying, it was one that deserved great attention at our hands—much more than it usually received.—Some had already began to change their seed, but some had been in the habit of sowing the same oats 10 or 15 years running, to save the trouble of going three or four miles to change them; but he thought all seed ought to be changed, oats as well as wheat.

Mr. JOHN SMITH then read as follows:—

I feel sorry that the duty of drawing up the paper for the present meeting should have devolved upon me—a person altogether unfit for so important an undertaking. In making a few remarks upon this subject, I shall first call your attention to the most important part of it, viz., Fall Wheat, which will divide itself into two heads:—1st. The different kinds of fall wheat, and, in my judgment, their respective merits. 2nd. The best mode of preparing such seed for being deposited in Nature's womb—the soil.

First, then, of all the different kinds which have come under my observation in point of yield, red chaff claims the preference, yet it has shown a disposition to rust, on account of being a few days later than some other kinds. With that kind known by the name of *Scipio*, I am best acquainted, having grown it for the last six or eight years, and have found it to stand the winter as well as any other; and being a little earlier than the red chaff, it has often escaped the rust and filled well, whereas had it been a few days later, it would have been comparatively worthless; yet it is more liable to sprout in wet weather. The *Soules* wheat is not so much known, having been grown but two years in the neighborhood. In 1852 it showed a disposition to rust, but in '53 it was very good,—but the season has been favourable. The *White Flint* has not given satisfaction—it inclines to lodge or lay down, and also to rust. The *Blue Stem* has been twice grown with us—has not rusted, has yielded well, and has the name of standing a wet harvest well.

I now come to consider the next proposition, viz., the best mode of preparing the seed. The first is Canadian or American, and consists in dipping the wheat in ley made from hardwood

ashes, sufficiently strong to bear an egg; the second is brine of the same strength; the third is urine of the same strength. Now, the best mode of application is to take a large kettle or pine tub, fill it with the selected liquid, then take a bushel basket and put it to the bottom of the kettle or tub containing the liquid, pour the seed gradually into the basket; skim it well, and dry it with lime. But lastly, there is another and a better preparation, viz., good clean seed, fully ripe; this is Nature's infallible law, and proclaims itself throughout the whole vegetable kingdom, viz., that those seeds or nuts that are sound and fully ripe, are most sure to reproduce a fair specimen. But another most important consideration immediately connected with the successful growth of all grains, is the judicious selection and frequent change of all seeds from light sandy and gravelly soils to heavy, strong loams, or even to clay. I would also recommend those changes of seeds, and soils in cases where it may be possible, to be from cold to warmer parts of our climate, or from north to south.

With regard to Spring wheat, various kinds have come under my observation. For some years past the *Siberian* wheat waxed and waxed, and is now no more. Next came the *Bearded Club*, and some years it was exceedingly productive, but its days are numbered and it is no longer patronized. The *Italian*, a bald-head species of Spring wheat, had its day and admirers, but like its predecessors it is out of date. A kind of Spring wheat known as the *Shell Wheat* has been and is still held in high estimation, as it seems well adapted to our soil and climate, but at the present it seems outrivalled by another kind known as the *Scotch* or *Pife Wheat*, which till the present has defied the power of rust, and is highly applauded by the house-wives. The millers say it is hard to grind. It has been known to yield 30 bushels per acre.

With regard to oats little can be said, inasmuch as there are so few kinds within our reach from which to select, and when selected there is little or no preparation required. The *Potatoe* oats are a fine looking sample, but are so liable to degenerate that they are not generally patronized. The *Yellow Golden* oats have their admirers and may answer well with some, but have not with me; they are said to be late in ripening. There are two kinds of black oats and of the common white oats, but in my opinion it would be better to turn our attention to securing other and better selections. Peas, demand our utmost attention, inasmuch as they are likely to be the very basis of our agricultural productions; as their successful cultivation forms a good preparation for almost every other crop. The best variety, in my opinion, is the *White Marrowfat*, if sown on Spring ploughing, as they are large and difficult to cover, and if sown on fall ploughing should rather be put in by a cultivator or by a light ploughing.

The small *Dints* or *White* peas answer very well on the farm, but are not in so good demand in the market. The selection of a good clean sample of either or any kind, together with frequent ploughing, will be found highly advantageous to the practical agriculturist.

The above remarks, feeble and inefficient as they are, I leave, Mr. President and Gentlemen, to the consideration of those more practically acquainted with the subject.

Mr. GRAFTON SMITH had found changing seed very beneficial. A few years ago he had brought some red 'aff wheat from the plains, which gave about 30 bushels to the acre, but the second year it was a failure, and rusted. Last year he had sowed *Scipio* wheat, which answered well; it did not rust, and bore well. Blue Stem wheat seemed not good—the straw being bad. He had seen a field sown half with the *Scipio* and half with the Blue Stem: the *Scipio* had been sown three or four years running on the same farm, the Blue Stem was a change of seed—and the *Scipio* did the best. Peas he had sown for 11 years, both the marrowfat and the small white, but the small white paid the best; it was very necessary to change the seed—for if not changed, some get grey and do not ripen at the same time as the others. This last lot was very good and he had had the same seed for five years, but this year some turned grey and came late into season. Oats require change of seed as well. *Potatoe* oats soon degenerated; and he had tried the black Maine oat, but they had no straw. The yellow and black common oats are liked best, and they grow good straw. As for *potatoes*, he preferred pinkeyes, but some sorts gave a more plentiful return, such as Irish cups, which gave much larger crops. Turnips he had cultivated largely, and thought the purple Swedes the best; mangels also had done well with him.

Spring wheat he had sown every year, and of all sorts. He had a sort called *Scotch*, which weighed 63 lbs. to the bushel, and made as good flour as the best fall wheat. Last year his was *got in, in a bad state, from the wet weather*, but it turned out very well, and never rusted to his knowledge.

Mr. DALE steeped his fall wheat in chamberley, salted, and limed as well. He sowed two bushels to the acre, and always got fresh seed, changing from light land to strong land, and from heavy to light, and always changed to better land. He once saw a man who had got what he called a very fine sort of wheat, and got some of the *Scipio* to match it, but the *Scipio* came out 14 days earlier, and grew 10 bushels more to the acre than the bald wheat. He always grew the *Scipio* himself, and it did well when sown well. As for spring wheat, he had tried both *Club* and *Scotch* wheat together; the club wheat was poor, the *Scotch* yielded 25 bushels to the acre; it seemed to turn bad in growing, but came round in time to yield a good crop, and he would sow it again. His first peas were the small white dints, and he had also sown the marrowfats. He had tried them both in the same field. The straw they gave was about equal in quantity, but the small early pea bore one-third greater crop to the acre. Oats he had tried a good deal. When in England, he and another man, had got some of the black Tartarian oat; he got 70 bushels to the acre, so he tried them again, but they degenerated, for the straw was small and the head short and they gave no more than 25 bushels to the

acre. Had tried the white Tartary oat, and they did well. He grew from 40 to 50 bushels of white, but only 30 of black, but black he thought might answer on wet loamy land. Sow them together on moderately good land, and the white would be much the best. Irish cups were the best potatoes he knew, either in England or here, but they were very scarce. Of turnips, one ought to grow two sorts, the white for fall feeding and the Swede. The seed required for the different grains was, for wheat, either fall or spring, two bushels; some say one, some $1\frac{1}{2}$, but two are little enough; many an acre was missed by the seed being too thin. Oats ought to grow thick; not two bushels, for then they grow tall and thin, but four bushels were required to grow a crop properly.

The Secretary had grown forty bushels white from two bushels seed, and the straw was very heavy, but it was on a very worn out fount piece of land that required a fallow to bring it into any sort of order at all, and was not fit for wheat; so, perhaps, they got better treatment than oats generally got.

Mr. TURNER thought white oats grew more to the acre, and did not shell out so much in carrying. He had sown black oats a good deal, but preferred the white, as they grew ten bushels more to the acre.

Mr. FRAZER found the black oats did best for him. He had grown the potatoe oats, but his land being low and wet, they grew rank and lodged. He had tried the black Maine oat too, but the common black oat did the best for him. He had sowed three kinds of wheat this year—red chaff, Scipio, and another sort; they were all equal. He was quite sure potatoe oats ran to straw too much in heavy soil.

Mr. DONALDSON considered Mr. Smith's plan a very good one, and would always change from light soil to heavy, and from heavy to light. He had always found the Scipio wheat the best for his farm, and Scotch wheat made the best spring wheat, yielding most to the acre, and to the bushel. As for oats, he preferred the black Canadian; had tried the potatoe oats, but in two years it degenerated, and one loses one-third in cutting it, if not very particular. He thought land might be injured by sowing too much seed as well as too little, and three bushels was enough if every plant would grow, though of course it depended on the quality of the seed. He preferred the Swede before any other turnip, for he had never seen the globe come out so well here as in England, but the Swede he had seen quite as good. His friend Mr. Jackson has produced this year as good a crop of turnips as he had ever seen in England. Mangel wurzel, he thought, could be raised better, heavier and cheaper than Swedes. He had sown the blue pea, but in two or three years they degenerated into a grey pea. Had tried marrowfat and white peas, and the white grew much the heaviest crop. He preferred the pinkeye potatoe, for though not the heaviest crop, they were much the best for the table.

The Secretary here remarked that though mangel wurzel were nice sweet roots, they were bad for cows and ewes in the spring, producing a

large flow of very poor milk, which did not nourish the calf or lamb, being little better than water; and in the case of the ewe, distending the udder unnaturally, and the lamb being unable to take it all, curdling in the bag, and bringing on inflamed bag, and all its concomitant diseases. It was very well where quantity was all that was required, but not otherwise.

The Chairman said that though we thought ourselves wiser than our forefathers, and perhaps were so in many things, they had still left us the golden rule of changing the seed. The advantage of the Scipio wheat was, that about the end of June, when the rust struck the wheat, the Scipio being an early sort, was past the danger.

Mr. COOKE had always grown the Scipio wheat, and had never changed the seed, but had sold some for seed wheat on account of its goodness. He took great pains to clean his seed, so as to drive out all the chaff. He had sown potatoe oats last year, and had taken the first prize, as his weighed 43 lbs. the bushel; and in consequence of cleaning his seed oats well the last two years, he had grown much better crops. He had got tired of sowing marrowfat peas, and getting back scarcely the seed, and had sown the small white pea for seven, or eight years; they certainly changed their colour, but they fed the pigs quite as well. Turnips he did not raise much; but he had good crops of potatoes, and had twice taken the first prize with them. Some talked about cutting and picking, but he planted whole ones. Last year he had picked out all fair-eyed potatoes for seed, but saw no difference from when he planted them all just as they came to hand.

Mr. G. SMITH had picked some of his best pinkeyes last year, and planted them whole, in the same field with his cut sets, placing them in the best ground and giving them every advantage, for he wanted some show potatoes. At first they grew better and looked better than the others, but after all turned out the lightest crop, being too full of roots and tops.

The Chairman mentioned he had some very fine potatoes once given him by a man who passed his gate with a team, called Mashanics, but by planting them year after year they had come to something very like pinkeyes.

Mr. GRAFTON SMITH thought dressing wheat for smut of no use; his brother dressed his, and he did not, and there was never any difference in their crops.

Mr. DALE had once got in 16 bushels of wheat from one man, which he sowed in three different lots; the first two were dressed for smut, the third was just soaked in ashes and water, and it was covered with smut, and it was only sown five days later than a seven acre field that showed no signs of smut.

The Chairman then, in summing up, regretted he would not have an opportunity of meeting the members of the Club again this winter, for this would be their last meeting. He trusted, however, that what had been said would not be entirely without effect, but would be of benefit to all. He felt deeply the honour of presiding over such meetings of able and intelligent farmers,

and hoped, though no one knew what might happen, that we should all be able to meet again some future day.

A vote of thanks was then passed to Mr. Smith for his paper, and to the chairman and secretary.

HUNTINGDON TOWNSHIP SOCIETY.

At the annual meeting of the Directors and members of the Branch Agricultural Society of the Township of Huntingdon, held in the Town Hall on the 21st day of January, 1854, the following office-bearers were elected.

P. Luke, Esq., President; Walter Scryver, Vice-President; Thomas Baker, Secretary; Owen Ketcheson, Esq., Treasurer.

John McCaw, Henry Ketcheson, James Foster, Henry Ostrom, James Archibald, Esq., Simeon Ashley, Philip Ketcheson, John Wood, Thomas Graham, and Nesbit Reid, Directors.

The Annual Report of the Office-bearers and Directors of the Society for the past year was then submitted to the meeting, together with the following remarks:—

We are happy to state that the financial affairs of this Society are in a prosperous condition; and we beg further to remark that the advantages arising to the community at large from the establishment of Agricultural Societies in the several Townships are not properly estimated by those who are not members of those Societies. From our own observation we believe them to be a benefit in a greater or less degree to all the Agriculturists of the vicinity, and varying, as the beholder is blessed with intelligence and means to appreciate and use, the improvements which must necessarily follow their establishment.

We feel justified in saying that there is a decided improvement in the mode of performing agricultural labour in the Township since the establishment of the Society; and that our last Annual Show of horses, cattle, sheep and swine proves fully that our agriculturists have exerted themselves to introduce stock and seed of a superior description. A number of visitors and buyers who attended our show, expressed their surprise at the quality and quantity of the stock and grains exhibited, and persons who have visited other township shows, state that we are not behind many more favoured localities.

Our list of premiums, although necessarily small, shows that those who have taken pains to forward the Society have not been wholly without profit. The exhibition of Domestic Manufactures and dairy produce proves that farmers' wives and farmers' daughters have resolved not to be left in the back ground in general improvement.

The vegetables exhibited exceeded all expectation for quantity and quality. The Swede turnip, rutabaga, carrots, beets, cabbage, and potatoes could not be surpassed, although the past season was a very trying one of long continued growth. We would recommend agriculturists generally to turn their attention more to the culture of green crops, as the climate and soil of this section of

country is well adapted for their growth, and as they prove exceedingly beneficial to all domestic animals during the long, tedious winters they have to encounter.

But whilst we endeavor to draw your attention to the benefit arising out of what has been done by the Society, we would wish to press more forcibly on your notice the fact that much still requires to be accomplished. You will bear in mind that the past season has been severe on all kinds of grain, and we should, as much as is practicable, adopt such measures as will prevent our lands from being so much affected by either the continued droughts or rains which frequently cause such a fearful diminution in the produce of our crops. We would earnestly recommend you to turn your attention to the improved system of cropping by rotation, now successfully used by the best farmers; and by draining, deep ploughing, and a judicious use of manure, make your lands and crops less liable to be affected by the changes of the weather.

In conclusion we would earnestly entreat you not to rest satisfied with what has been done, but continue in the onward course, saying "We have only BEGUN." If you expect to succeed as you ought, you must read, study, observe, compare and make the application.

COUNTY OF OXFORD AGRICULTURAL SOCIETY.

The Directors of this Society are taking energetic measures to make it useful to the County. Three hundred copies of the subjoined Circular have been issued by them, accompanied by a form of a subscription list, and with a request that the person to whom the Circular is sent will use his influence to get subscribers to the Society. Such a plan is well adapted to secure a large number of new members, and is worthy of imitation by other Societies. The Circular contains a good deal of interesting information in reference to the affairs of the Society, and is as follows:—

To the Members of the County and Branch Societies and all friends of Agricultural Improvement in the County of Oxford:

GENTLEMEN,—It is gratifying to observe the large number of Agricultural Societies which have recently been established throughout this Province. These and other agencies are silently but steadily awakening the best energies of our population. The prospects of the country continue to improve. The high prices being obtained for every kind of farm produce encourage the Farmers to bring their land up to a higher state of productiveness, and to aim at the introduction of the more valuable kinds of stock. All are becoming alive to the fact that it is almost the same trouble and expense to raise a common animal as one of the greatest value. A general anxiety prevails to get improved stock. It is the principle

pal object of our Agricultural Societies to aid the farmer in accomplishing this point. Combined efforts will effect what may be beyond the reach of enterprize. How much has the Highland Agricultural Society done for Scotland? Whether we regard the magnificent stock of every kind and description to be seen at their annual exhibitions, or the vast variety of Implements ingeniously designed to save labour, and enable the farmer to do his work in a more efficient manner, or whether we look at the results of the superior husbandry practised in that land, it must be remarked that under the fostering influences of such Societies, British Agriculture has reached its present eminence to become a model for the world's imitation.

It augurs well for the future greatness of this fertile country, that it has already commenced to manifest the same spirit and zeal for improvement. The Provincial Exhibitions during the last two years bore abundant testimony to the enterprize of its inhabitants, and while the different Branch Societies around us are prospering and striving which shall do the most good, the Directors of the Agricultural Society of this County would desire to see its sphere considerably extended. Under the provisions of the Statute, two-fifths of the government appropriation are retained for its support and the Directors cherish the hope of seeing such an accession of new members this year, as will enable them to issue a much larger list than heretofore; but this will depend upon the success of their present efforts. Proper time and attention shall be given to the management of its affairs, to prevent the existence of any just grounds of dissatisfaction, and every care shall be taken to secure for the annual Show, competent judges, whose decisions may be relied upon as just between the different competitors. The County Society owns at the present moment five Bulls, viz.: two Short-horns, two Ayrstures, and one Hereford, which will be hired out for the season or the day of the Spring Cattle Fair. The latter, it will be remembered, took the first prize at the Provincial Show last year. With respect to the recent purchase of the *Suffolk Punch* for the sum of £300, by the County Society, the Directors would claim permission to give a brief extract from the report of the last Exhibition of the Royal Agricultural Society of England, merely to show the high estimation in which this breed of Horses is held there:—"The first prize Stallion at the last Show held at Gloucester was a Suffolk Horse of very great power. He was active and muscular. The neck rather disproportionately short, and the head large. The bones of the legs were thin and flat, with large joints and broad caps—all signs of bodily vigour. The colour characteristic of the breed—chestnut. The body very compact, close and well ribbed, coming quite up to the character of the *Punch*."

The Directors hope that their new purchase will give general satisfaction, and would state in conclusion that their only desire is to aid in every possible way to render the Society useful in the County. Is it not truly the interest of all the leading farmers of this great Agricultural District to support their own County Society? Annual

subscription to the Society, 5s.; annual subscription, including the *Agriculturist*, 7s. 6d. The Directors confidently hope to see a large portion of the valuable improved stock, now to be found in every Township of this County competing at the next annual Show of the Society.

Geo. ALEXANDER, *President*.

JAMES SCARFF, *Secy., C. O. A. S.*

Woodstock, March, 1854.

Communications.

ON THE EDUCATION OF FARMERS' DAUGHTERS.

(Continued.)

To the Editor of the *Agriculturist*:

Second: School education should not be allowed to interfere with urgent claims of humanity. The writer of these lines has known cases, while residing in the State of Ohio, in which the sick have labored under much inconvenience, and in some instances absolute want of attention, not because there were not persons enough in health to take care of the sick, but because those young persons, who might have attended to this necessary duty, must be kept constantly at school. Now, when urgent claims of humanity, like the above, are unattended to, and the sick left to suffer or perish for want of care, because school education must not be interrupted, it appears to me to be carrying matters a little too far; besides, a young female, in learning to sympathize with the afflicted, and in administering relief to the sick and dying, is pursuing a proper education, much more effectually than if kept all the time at school, to the neglect of the afflicted.

Third: Education should be so conducted as not to foster habits of indolence. Almost every farmer knows, that if he gives his son an extended and liberal education, as school education is generally conducted, such education indisposes him for the labors of the field. And almost every farmer's wife knows, that if she sends her daughters to a female academy, for any great length of time, they become indisposed for household industry and domestic economy; and this seems to the writer, not an accidental, but a natural and almost necessary consequence, for the sedentary life of the scholar induces that physical debility which unfits him for the labors of the farm or the house. Besides, school education must generally be acquired at the precise period when the physical energies require exercise, that they may acquire that power of endurance which renders labor a delightful employment. The inference is, that mental education, and habits of industry must be acquired at the same time. From the above remarks it may be presumed, that I am greatly in favor of what are called manual labor schools, where the student devotes a certain portion of his time to agriculture or some mechanical art, and the rest to study,—thus acquiring knowledge, bodily health, power of endurance, and habits of industry at the same time.

A most interesting report appears in the *Agriculturist* of last year, page 339, from the Normal

School Experimental Farm, but it does not appear from said report, whether the work was, or was not, done by the students; if done by the students, the interesting nature of the report is increased by that circumstance an hundred fold.

What is true of male is also true of female education: mental cultivation, habits of industry, and the power of performing labor without too much fatigue, must be acquired together. All persons entrusted with the instruction of youth, should carefully instill into their minds, an abhorrence of uselessness and idleness. They should be taught that useful industry is honorable and christian, and that "The diligent hand maketh rich." But, after all, it cannot be expected that they will love labor if their health is debilitated by excessive study, so that they cannot perform it without enduring a great deal of fatigue. The question occurs here, can any plan be devised, by which females can acquire mental cultivation, physical energy, and habits of industry at the same time? The following plan, or something like it, would, in my opinion, be attended with advantage:—

Let young females who attend seminaries be obliged to cook for the establishment by turns, under the superintendence of an experienced cook. In the same way let them be obliged to do their own washing, under the superintendence of an experienced laundress. There should be also attached to each female seminary a garden, of sufficient extent, in which the young ladies might cultivate, with their own hands, such flowers and fruit as they delight in, under the supervision of an experienced gardener. By this means, or something like it, young females might acquire mental cultivation, bodily health and vigor, and habits of industry at the same time. Without some such plan, young females will often leave a seminary—as they have often done before—fine, lily-fingered, accomplished young ladies; capable of parsing grammar, speaking French, drawing, understanding music, and dancing, but being indisposed for domestic industry, do but little besides dress, attend parties of pleasure, go to balls, and read novels; while their mothers, and less favored sisters, must wait on them. When a young farmer chooses a wife, he wants, not an idol to be worshipped, nor a fine lady to be taken to balls and parties of pleasure, but a "helpmeet," one who is willing to share with him the joys and sorrows of life. Most readers of your paper, will subscribe to the following stanza, from the *Agriculturist* for the year 1848, page 34:—

Show me the wife that's on the watch,
For every little rent or scratch,
And cures it with a timely patch
Before you know it;
She is a woman fit to watch
A lord or poet.

And she is fit to match, not a lord or poet only, but a much more useful class of men than either, namely, farmers. The world can live on without lords or poets, but without farmers it cannot subsist.

A fine description of the results of a good education, is found in Proverbs of Solomon, chapter 31, 10th and following verses,—and as many of your readers may not be so familiar with the

above author, as they should be, I shall transcribe it for their instruction:—

Who can find a virtuous woman? for her price is far above rubies.

The heart of her husband doth safely trust in her, so that he shall have no need of spoil.

She will do him good and not evil, all the days of her life.

She seeketh wool and flax, and worketh willingly with her hands.

She is like the merchants' ships; she bringeth her food from afar.

She riseth also while it is yet night, and giveth meat to her household and a portion to her maidens.

She considereth a field and buyeth it; with the fruit of her hands she planteth a vineyard.

She girdeth her loins with strength, and strengtheneth her arms.

She perceiveth that her merchandise is good: her candle goeth not out by night.

She layeth her hands to the spindle, and her hands hold the distaff.

She stretcheth out her hand to the poor; yea, she reacheth forth her hands to the needy.

She is not afraid of the snow for her household; for all her household are clothed with scarlet.

She maketh herself coverings of tapestry, her clothing is silk and purple.

Her husband is known in the gates, when he sitteth among the elders of the land.

She maketh fine linen, and selleth it, and delivereth girdles unto the merchant.

Strength and honor are her clothing; and she shall rejoice in time to come.

She openeth her mouth with wisdom, and in her tongue is the law of kindness.

She looketh well to the ways of her household, and catcheth not the bread of idleness.

Her children arise up, and call her blessed; her husband also, and he prayeth for her.

Many daughters have done virtuously, but thou excellest them all.

Favour is deceitful and beauty is vain; but a woman that feareth the Lord, she shall be praised.

Give her of the fruit of her hands, and let her own works praise her in the gates.

When female education is conducted properly it will produce such examples as the above, not, perhaps, uniformly, but certainly very often. The character described above is virtuous, pious, charitable, wise, industrious and economical. A faithful wife, an affectionate mother, and a kind neighbor. It is sometimes objected against farmers, that they are indifferent to the claims of education, but let our educational establishments give promise of producing such examples as the above, and then will our farmers see it to be their interest to support and encourage them.

To be concluded in my next.

AN OLD FARMER.

Yarmouth, March 2, 1854.

FARMERS' DAUGHTERS.

Up in the early morning, just at the peep of day,
Straining the milk in the dairy, turning the cow away,
Sweeping the floor in the kitchen, making the beds up stairs,
Washing the breakfast dishes, dusting the parlor chairs;

Brushing the crumbs from the pantry, hunting for eggs at the barn,

Cleaning the turn-pots for dinner, spinning the stocking yarn,

Spreading the whitening linen down on the bushes below,
Hansacking every window, where the red straw-worms grow;

Stretching the "fixens" for Sunday, churning the snowy cream,

Rinsing the pails and strainer down in the running stream,
Feeding the little one's turkeys, making the pumpkin pie,

Jogging the greese and candle, driving away the flies;

Graze in every motion, music in every tone,
Beauty of form and feature thousands might covet to own,
Checks that rival spring roses, teeth the whitest of pearls,—
One of these county maids for a score of your city girls.

LETTER FROM THE PRESIDENT OF THE PROVINCIAL AGRICULTURAL ASSOCIATION.

L'Original, 4th April, 1854.

DEAR SIR.—Permit me through you to trespass on the pages of the *Agriculturist*, which are filled with most interesting matter to the farmer generally.

As the season for seed sowing is drawing near, I feel anxious to make some suggestions, which have for their object the inspiring of a greater degree of emulation among all farmers, and especially those who are proprietors of small farms of one hundred acres each, and also raise a spirit of rivalry among our population to induce them to pay more attention to the cultivation of vegetable gardens.

When I take a retrospect of the Province and see the rapid advancement it has made during the last thirty years, it is gratifying in the highest degree to all who have participated in bringing this noble country forward.

The noblemen who have been sent out to this Province from time to time to rule over it and guide its destinies, have rendered great service to this important branch of human industry in which we are engaged.

Since the formation of the Canada Company, under the auspices of the late Mr. Galt, assisted by Dr. Donlop, it has been in indefatigable in bringing out agriculturists and artisans to this country, and in improving the Agriculture of the Western part of Canada. Since that period all of its commissioners have been labouring in their exertions, particularly Mr. Wilder, to advance the agricultural interest of the Province at large, and they have adopted the wisest and most judicious modes of effecting this great object. Mr. Street, our President for the year 1852, has done much for the improvement of horses, and also by his judicious advice; and Mr. Matthie of Brockville, the President for 1853, has contributed by his exertions in his own county, much to improve the character and quantity of the produce of the grain, and has done much to create a degree of emulation in many other branches. The praiseworthy examples set by these gentlemen, I wish to see followed by one or more individuals in every County, irrespective of their position as President.

I have in a former communication adverted to the favourable results to Canada from its representation at the Crystal Palace in 1851, and from the exertions of Mr. Logan, our Provincial Geologist, and several other gentlemen, and it would be inappropriate to advert further to that subject at present.

You will pardon me for saying that I think few individuals have done more for the advancement of Agriculture, than yourself and Professor Hall of Trinity College, and I am also of opinion that the University of Toronto has just claims upon the public. I read with no ordinary degree of satisfaction the announcement that the Hon. J. H. Cameron had endowed two Scholarships in Trinity College, Toronto, and I trust that this laudable course will be followed by gentlemen of wealth in favour of every college and literary institution in the Province.

After reviewing the liberality of others, and especially that of my predecessors in the office of President of the Agricultural Association, I fear I shall be charged with inconsistency, when I feel bound to decline following the example which has been set me by some of them.

On declining a re-election to the Presidency of the County Agricultural Society, after having filled that office for sixteen years, I feel anxious to supply a deficiency in our own immediate vicinity, by offering premiums to the amount of twenty-five pounds in our own County and Township Societies, and it is my opinion that when it is considered incumbent on the President always to come out with a considerable sum from his own private means, it has a tendency to exclude many persons of great practical knowledge who could fill the chair with much greater benefit to the Association and to the country at large, than it has been in my power to do; and the sacrifice of time which is necessary to fill the situation, is all that should be required of them.

With this apology, I beg to make the following proposition, and I would feel pleased if gentlemen in other sections of the Province would sanction it by adopting the same course. As our County Society has within its limits four Township Societies, I propose to offer five pounds to each Township Society, subject to the direction and approval of the Agricultural Board and Association of the Province, to the best farm within each of the four Townships, comprising our County Society, the farm to contain one hundred acres of land and upwards, including its wood land, the competitors to be members of either County or Township Society, and the premiums to be awarded by the experts or judges of one of these Societies. That the ground on which the premiums be awarded be the best fenced, ditched and cultivated farm, producing the greatest amount of Agricultural produce with the least amount of hard labour.

Also a premium of one pound five shillings to be awarded to the best vegetable garden in each Township, containing not less than one-fifth of an acre of land, and generally to be laid out in a rectangular form. Neatness, variety and value of its productions being the basis on which the prize is to be awarded. The great object of these prizes to be the encouragement of farmers and farmer's sons.

The Agricultural Association is requested to furnish through its Secretary, the minutes upon which the foregoing premiums shall be awarded.

I am, dear Sir,

Your most obedient servant,

CHAS. P. TREADWELL.

GEORGE BUCKLAND, Esq., Professor of Agriculture, and Secretary to the Agricultural Association of Upper Canada.

MEASUREMENT OF HAY IN BULK.—Multiply the length, breadth and height of the hay into each other, and if the hay is somewhat settled, ten solid yards will weigh a ton. Clover will take 11 to 12 yards to a ton.

Agriculture, &c.

PRIZE ESSAY ON BUTTER MAKING.

BY MRS. TRAIL.

(ABRIDGED.)

If bread be the staff of life as it has most emphatically been termed, *butter* is certainly one of its greatest luxuries; it is the best substitute for meat that we possess, it enriches and improves many articles of food, in the form of cake, pudding, pastry, savoury dishes and sauces, to say nothing of its commonest, simplest, and most wholesome accompaniment to our table in the form of bread and butter.

Before entering upon the decidedly practical part of the business I will venture to make a few preparatory observations. It is a common saying in Cheshire, "It is not Cheshire cows, nor Cheshire dairy-maids, but Cheshire meadows."—Many expert dairy-women have told me that food and warmth had more to do with good cheese and butter than their labour, always supposing that cleanliness and a certain knowledge of the commonest nature was attended to. The difference both in quantity and quality of milk must depend a great deal upon the uniform treatment of the cows and the nature of their food. Those animals that are made easy and comfortable in respect to food, drink, and warm sheltered yards and sheds will give a better return than such as are compelled to wander far in search of milk-giving nourishment, and this stands to reason, the beast has to feed to supply its natural wants as well as for milk.—The first nature will supply as requisite for the life of the creature, and if the supply be not sufficient, less of the nourishment will go to make milk. Now the *feeding* and *general* management of the cows of course lie more with the farmer than his wife; a woman cannot choose the pasture, attend to the putting up winter sheds or fencing in yards; those that do are stepping aside out of their own natural department.

I do not hesitate to say that in this country the efforts of the women are not always seconded as they might be, and as they ought to be. Were the Canadian farmer to bestow a little more attention to the comforts of the milk cows, the process of milking would be carried on with a smaller amount of physical suffering to the females of the family. The cow yard in Canada is seldom the warm, cozy place that it is in England and Scotland; though the greater severity of this climate renders such care more needful both for the cattle and the milker.

While the horse, the working oxen, and the sheep, are fed with oats, hay and roots, the poor cows receive only dry straw and the refuse of the yard, the milking cows sometimes get a portion of hay, but those which have been starved into dryness or are in calf, are often left to shift for themselves through the long months of our inclement winter and capricious chilly spring.

This want of proper generous treatment is the fruitful cause of disease and death both before

and after calving. Another very material thing is the neglecting to supply the cattle with water from tank or pump, or by driving them on a path where they can obtain access to a neighbouring spring.

The want of succulent food during the long winter is one of the causes of a deficiency in the butter producing qualities of the milk. Where roots such as good sound turnips cannot be had, the deficiency might be supplied by boiling oats with a good quantity of water, a quart of oats thus given morning and night, will keep a cow in good order with her ordinary food, and greatly increase the quantity of her milk, or bran mashies made thin with boiling water left to cool down, twice a day, with a handful of salt once a week, will tell well; some of the careful wives of the small farmers, will take the trouble of boiling a loek or two of hay with water sufficient for a good drink; but I should think the boiled oats or the bran, or a handful or two of Indian meal boiled in water would be preferable, as affording nourishment as well as milk. Having thus far spoken in behalf of the treatment of the animals, as respects their food and general comfort, I would next observe that regularity in the time of milking is of great importance. In the morning as early as possible, the milking hour should be established, that the cow may go forth to feed *while the dew yet lies fresh upon the herbage*. This is of great consequence in the hot dry summer weather. It is soon after sunrise in the early spring time of the day, while the grass is wet with the clear refreshing dew of night, that the beasts of the field shake off their slumbers and rise to feed, they can then afford time to lie down in the shade during the noonday heat, for a minute and digest their food. A little occasional fodder given cows to encourage them to return to their usual milking place, will generally ensure their constant coming home, they should then not be kept waiting but be attended to at once. I have known much loss of time caused by the looking up the cow, loss of milk and butter, and what may sound strangely to some persons, *loss of life*. How many of the children that have at different times been lost in this Province have been sent out in the forest to seek for the cow, and straying from the beaten path, or bewildered by converging ones, have returned no more to their home but have perished miserably.

Cows can be taught to come home at the sound of a horn, and if food be given them at such times, the habit will be early established. I have known this practiced in Canada, and I have heard that it is common in the pastoral countries on the continent for the herd boy to collect his cattle in this way, no doubt the shepherd's pipe was used for this purpose, as well as for the shepherd's own amusement. I have heard of cows coming home in towns regularly at the sound of a Factory bell, which they learned to regard as a signal for the milking hour.

The coolness in summer and warmth in winter of the dairy, are two most essential points to be considered in the making of good butter. The dairy maid may be skilful and orderly, and yet if the place in which the milk be stored is

not perfectly cool and airy, her labour will do her little credit; with her superior knowledge she may make a *better* article than some of her neighbors, but not the best. In this country the dairy women often work under the greatest disadvantage. Frequently she has nothing better to keep her milk in, than a close damp cellar or root-house, where to preserve thorough ventilation is impossible, without proper utensils and conveniences for carrying on the process of the dairy, complete success can hardly be expected. Instead of being surprised that there is so little really fine butter sent to market, the wonder should be that under such disadvantages there is so much. Let the men look to the providing of a suitable place where the work of the dairy can be carried on, and the result would speedily repay the cost and labour bestowed upon it. The space allotted to the dairy is generally too limited, it should be large enough to admit of thorough ventilation, and room for carrying on the necessary work of churning, cheese making, &c. A sunk floor well paved with brick or stone, and a covered drain and grating are advisable to carry off any moisture; the floor can then be kept cool in hot weather by throwing a few pails of water down, which is a constant practice in the dairies of the home country. I have seen dairies built with good stone foundations, and the walls of squared cedars placed upright, forming a thick compact building, the windows latticed and each window supplied with a wooden shutter which could be lowered at pleasure to exclude the sun, wind, or rain; by this simple arrangement the sun's rays need never have access to the dairy. A porch with shelves and a bench is also a great convenience, on which the empty pans, trays, pails and tubs, can be set up to dry after scouring.

Pans of thick glass are much used in home dairies, also pans lined with zinc and a species of enamel, such as the iron stone pan, and preserving pans are coated with; trays of wood about four inches in depth with pegs for letting off the milk used to be much the fashion, but I think wooden ware is liable to crack and warp during the hot weather, and is less easily cleaned from the sour particles of the milk.

With respect to the churn a small volume might be written on the different kinds; in my opinion the simpler the machinery the better. The old fashioned upright churn worked with the stall and cross dash may be as effective in the end, but it imposes a greater amount of labour than such as are worked with a winch. The simplest churn and one that I have heard much praised by very good dairy-women, is a box churn, the sides of which are sloped so as to leave no acute angles and corners, always difficult to keep clean; the sides are provided with dashers, and a dasher is also affixed to the beam of the handle which passes through the churn, this can be unscrewed, the butter-milk is drawn off by means of a plug-hole near the bottom of the churn. I have also seen a churn with an iron wheel turned with a winch which is very easy to work. There is the old barrel churn which is also simple and effective. The advantage of this last being that

the butter can be washed before being removed from the churn ready for salting. Earthenware pots or good stoneware jars are best for storing the cream in, with each jar there should be a clean smooth wooden staff for stirring the cream; this is a matter that dairy maids pay little attention to, and yet it is of some importance in thoroughly mixing the cream together so as to prevent any sour milk or whey from settling below, thus giving a disagreeable taste to the whole mass of butter. Those persons who churn the fore-milk of the cows only, often keep it in the churn, but this I think is apt to injure the flavour of the butter. In cool weather scalding the cream just before churning, greatly facilitates the churning and obviates the necessity of putting hot water into the cream, a practice in very common use but which I believe is highly injurious to the richness, and good colour of the butter, giving it a white, greasy, poor appearance. In the winter season the cream jar should be brought into a warm room over night, which will thicken the cream and bring it to the required temperature for churning, frozen cream will make frothy butter, or no butter will be obtained after much labour. In hot weather the churn should be allowed to stand some time with cold clear water in it, and if the weather be very hot immerse the churn in water; if a plunge churn be used it can be placed in a tub of cold water during the churning; many excellent dairywomen are in favor of churning cream and stripping, while others prefer the cream only. I think myself that the richest butter is produced from the cream alone, but possibly a larger return may be obtained from the former practice.

When cows are fed on turnips, a small quantity of salt petre dissolved in a little water and mixed with the cream before churning, is said to remove the flavour of the turnips from the butter. I knew a farmer's wife who always practiced it in the winter season. This same person who was celebrated in the part of the country where she lived for good butter, used during the hot weather to put half a-pint of cold spring water into each of the milk pans or trays when she set them out to raise the cream, and in winter she put the same quantity of boiling water to raise the temperature for the same purpose.

Many approve of the Devonshire and Cornish plan of scalding the milk. Careless servants are apt to let the milk get *overheated*, which decidedly injures the flavour of the butter, but very good butter no doubt is made by heating the milk, and the largest amount of cream is raised from the milk. It has another advantage, that of keeping the skimmed milk sweet for the use of the family.

In a North Lancashire paper, I saw the following advice to dairy-women, which, as it is easily tried I will insert. "Heat two pans of the same size with boiling water, let them stand a few minutes, then pour off the water, and pour in the new milk, cover the pan that has the milk in it with the empty heated pan, this will raise the cream in less time and in a larger quantity than if put into cold pans—try it." Some persons never wash their butter, but absorb the

buttermilk in the following way. They place a lump of butter in a coarse linen cloth, and beat against the sides of the churn, wringing the cloth from time to time in cold salt and water, repeating the beating process until the milky particles are entirely removed. The famous Epping butter is thus treated; this butter has the character in London of being the finest in England, very little salt is used for seasoning it; but, as the sale of it is so rapid, probably the keeping properties have hardly been tested.

The following recipe was given me by a farmer's wife who made excellent butter. To 32lbs. of well-washed butter she allowed 3 oz. of the following mixture; 2½ lbs. of salt rolled fine, 6 oz. salt-petre, ½ lb. loaf sugar rolled fine; these ingredients to be well rubbed in a mortar, or rolled till they are thoroughly mixed. The butter after having been well worked to be put down in stone jars, over the top a strong bume to be poured and the jar kept well covered. Butter thus prepared should stand untouched for a month, and it will keep for a twelvemonth.

The thorough extracting of the milky particles and the working the salt well through the mass, cannot be too much insisted upon. Attention to cleanliness, coolness in summer, and a moderate temperature in winter are the three most important matters for ensuring good marketable butter.

Oakland, Rice Lake, 1853.

TARES OR VETCHES.

For soiling purposes, in suitable climate and soil, the tare or vetch is superior to any other plant. Loudon says:—"Tares, if cut green, draw no nourishment from the soil whatever; while made into hay they afford a fodder preferred by cattle to pea straw, and more nutritious than hay or any other herbage." The heavy land farmers of Great Britain cultivate the vetch for soiling purposes, to an extent hardly credible in this country. It is a legume, belonging to the same botanical order as beans, peas and clover: and like them exhausts the soil so little of those elements most needed to grow large crops of wheat, as to give rise to the opinion of THAER that it "draws no nourishment from the soil." Though this is, of course, not strictly true, yet it is certain that, like peas and clover, it is the best crop to grow as a preparation for wheat.

They do best on a rich, well-tilled, loamy soil. Three bushels of seed per acre, sown broadcast, early in the spring, is what we should recommend. White lupins are also leguminous, and closely resemble in many points the vetch. They are grown extensively in Italy for soiling purposes, and also for plowing in as a green manure. We think it is probable they may succeed better in this climate than the vetch, and be equally valuable.—*Rural New Yorker.*

MAPLE SUGAR.

In 1850, there was made in the United States, thirty-four and a quarter millions of pounds of maple sugar. This was about one-seventh as much as there was made of cane sugar,—so that

cane sugar is seven times as plenty as maple sugar, but maple sugar we think is seven times better.

Of this 34½ million pounds, Maine made but 93,542 pounds. New Hampshire made more than a million and a quarter. Vermont more than six millions of pounds. Massachusetts more than seven hundred and ninety five thousand pounds. Connecticut more than fifty thousand, and New York more than ten million pounds.—*Maine Farmer.*

[The quantity of maple sugar made in both the Canadas in 1851, was 9,772,199 lbs., worth at 4d. per lb., £162,870. Of the whole quantity, Lower Canada made nearly two-thirds.]

USEFUL TO FARMERS.

Weights of various articles of produce, and the rates by which they should be bought and sold:—

- A bushel of wheat, sixty pounds.
- Of shelled corn, fifty-six pounds.
- Of corn in the cob, seventy pounds.
- Of rye, fifty-six pounds.
- Of oats, thirty-four pounds.
- Of barley, forty-eight pounds.
- Of potatoes, sixty pounds.
- Of beans and peas, sixty pounds.
- Of bran, twenty pounds.
- Of clover seed, sixty pounds.
- Of Timothy seed, forty-eight pounds.
- Of flax seed, forty-six pounds.
- Of hemp seed, forty-four pounds.
- Of buckwheat, fifty pounds.
- Of blue grass seed, fourteen pounds.
- Of onions, fifty seven pounds.
- Of castor beans, forty pounds.
- Of dried peaches, thirty-three pounds.
- Of dried apples, twenty four pounds.
- Of salt, fifty six pounds.

THE COUNTRY NORTH OF US.—We have been favoured, by an intelligent friend, with some notes of a journey he has lately made through the tract commonly called the *Queen's Bush*, the Townships ranging to the north of us, and the country stretching towards the Saugeen. He tells us the settlements are extending rapidly in every direction. The road between Durham and Kincaidine, a distance of 57 or 58 miles has been settled mostly on grants from government of 50 acres each, and that in the Township of Carrick almost every lot is "squatted" upon, although not yet in the market, in order that the occupiers may secure the pre-emption of purchase. Even the Township of Brant, still further to the north, is rapidly filling up—on the line of the Durham road and for two concessions back almost fully occupied. A new road is now being cut out from Elora direct to the Saugeen, which will doubtless soon open up additional country. Our informant says there is a magnificent extent of hard-wood land, stretching towards the Saugeen, of which he has never seen the equal unless it be in some portions of this Country.—*British American, Woodstock.*

Horticulture.

CULTURE OF FARM ORCHARDS.

A late number of the *Woodstock British American* has some useful practical remarks on the planting and culture of orchards. As the subject is one deserving of every consideration at this season of the year, we make no apology for giving a portion of the article:—

The site or aspect of an orchard is a most important as well as primary consideration, and it should be any other than towards the east. A western or north-western aspect is the most preferable; and if the ground falls a little in that direction, all the better. Fruit trees, by facing the bleaker aspect, are of course not drawn forward so much in the spring—the sap is kept down, the blossoms are retarded and checked in forming, (the most critical time for young fruit,) and thus escape more frequently the action of the late spring frosts. But another and very important object is gained by avoiding for the orchard a look to the east; the trees escape exposure to the early morning sun, as it is the sudden action of the sun upon the plant or blossom, while affected possibly by a night frost, that does the mischief. It should be borne in mind that it is not the severity of our winters that destroys our fruit, for even that more delicate and delicious fruit tree, the peach, will stand our northern winters and thrive well in an exposed situation, whereas if planted in a warm southern aspect, it is a chance if we get any fruit, and the tree itself is often frost killed down to the ground.

The next thing to be considered is the soil for an orchard. In the first place, a wet sub-soil should be guarded against, as no fruit tree will thrive with water standing about its roots. Most trees thrive best on a gravel sub-soil. A summer fallow is the best preparation for an orchard. It should be ridged, or turned with a sub-soil plough to the depth of eighteen inches if the soil will admit of it, and made moderately rich by manure. The trees (apple or pear) should be planted at least thirty feet apart. In digging the holes for them, if the ground has been thus prepared, no further care is needed than to remove any hard or unsuitable substance, and to replace it with good surface soil; but when the intended orchard has not been worked over, as we recommend, the holes for the trees should be dug from six to eight feet in diameter, and from fifteen to eighteen inches deep; the soil at the bottom being well loosened with the spade and dressed with good loose mould. Every tree should be staked, to secure it from the wind, by the action of which its hold in the ground is loosened, and the young fibres disturbed as they are thrown out from the root.

In setting the young tree in the ground, care should be taken to pare or cut off with a sharp knife the bruised or ragged extremities of the roots, and to dispose them and their young fibres in a free and natural position in the loose soil;

but the earth, as the holes are being filled, should never be trodden down near the stem of the tree as by so doing the roots are liable to be torn and injured, while the air and moisture become in a measure excluded. The tree should be lightly shaken as the mould is thrown in, to admit of its finding its way snugly about the root. When the hole is about half filled with earth, some water should be poured into it, which occasions the new soil to find its way naturally about the plant. After this is done to several trees they should be gone over again, and the water having had time to filter through and the earth to settle, the holes may be rapidly filled up, and the earth at the top slightly pressed down as each is completed.

In planting out an orchard with apple or pear trees thirty feet apart, smaller and shorter-lived fruit trees may be planted midway between them—peach, plum, cherry, or dwarf pear,—this will fill up the rows one way, and will not hinder the use of the plough. Neither will the small trees interfere with the apple or pear trees until most of them will be found useless from age, when they can be grubbed up and dispensed with. A point yet to be considered is the cultivation, or cropping, of an orchard—for the better the ground is cultivated, the sooner will the trees afford remuneration for the labor bestowed upon them, and the finer will be the fruit. The writer has found by experience, that an orchard does best by being kept, for at least seven or eight years, under a hoed crop. By that time the trees ought to be in a good bearing state, and if the ground is rich and has been well cultivated, they will very likely show a disposition to grow too much to wood. To check this propensity, and again throw them back into fruit, the orchard may be seeded down for a couple of years, for which purpose clover will be found the best crop.

THE FARMER'S GARDEN.

Mr. Barry remarks, in the February No. of the *Horticulturist*, that “no one can be truly said to live who has not a Garden.” The garden, well supplied with its proper edibles, fruits, salads, &c., is indeed a luxury that, although easy to be had, is beyond price. It is really strange that so many farmers will forego the enjoyment produced by one. That they, who have abundance of land and can select the best location for it, and have at hand the wherewith to make it rich in the elements of vegetables, should totally neglect it, is indeed a marvel. As a matter of economy, the garden should take the first position on the farmer's books. The choice of edibles which it affords not only go a good way in lengthening out the meat and flour barrels—but what is of more importance, they go much farther in contributing to the enjoyment and health of the family, giving a healthy tone to the secretions, and a consequent buoyancy to the spirits, that enable one to meet the labors of each day with a will, and shed a halo of happiness on all around. This living on pork and potatoes is not the best diet in the world, for

the human system, though it may do well in its proper proportion.

And how much better it is to have the fruit of one's own planting, tending and picking—set fresh and crisp on the table. The zest of its enjoyment is greatly heightened, while its real value is far more than of that selected at the market, or begged of a neighbor. It does not require a large space of ground for a good garden, but it should be rich, well drained, the soil made deep, and kept in perfect cultivation. Not a weed should mar its face. In such a spot, whatever you may plant—the reward will be great in the abundance and good quality of the fruit. Your lettuce, asparagus, cress, peas, beans, onions, salsify, tomatoes, beets, carrots, parsnips, &c., &c., will come to their full perfection, and be relished above all that you can conceive from the same things raised in a half starved, half tended soil. And then the borders will yield you such a treat of the small fruits, that you will ever after vote your garden not only a luxury, but an indispensable necessity.

Another idea about it is, if you take the proper care of your garden, you will be pretty sure to have order and neatness introduced into all the affairs of your farm, and so find that your profits are marvelously increased. Order, which is only promptness and perseverance in their best form, is the key that opens the door to success.—*Rural New Yorker*.

STRAWBERRIES SIX MONTHS IN THE YEAR.

A late number of the *New York Tribune* has the following description of a new kind of Strawberries. The matter is of great interest to farmers, and indeed to every other class of the community.

"We have several specimens of this fruit lying upon our desk as we write, which were plucked from vines grown in the open air and fruit ripened without the aid of a hot house. The plants from which we plucked these berries were grown upon the plantation of George A. Peabody, about five miles from Columbus, Ga., and sent to this city some weeks ago, where they have been blooming and ripening ever since. Mr. Peabody has five or six acres covered with strawberry plants—plants, not vines, for they have no runner—from which he gathers fruit and sends to market regularly every day for an average period of six months in the year; making them, by his peculiar mode of cultivation, produce abundantly through the long hot summers, and sparsely through three or four other months. The variety cultivated is the Hovey seedling, impregnated with the early scarlet, and so changed in their character that they manifest no more disposition to throw out runners than the wild vines of the old pastures in their uncultivated state. Mr. Peabody endeavors to conform his cultivation as closely to nature as possible. He sets the plants in rows two feet apart, with a row of impregnators every sixth row, and in the fall spreads a slight coat of woods mould and covers the ground completely with leaves, but never afterwards digs up the surface or applies any other manure. Grass and weed are cut up with

a hoe, and runners which only occasionally appear are cut away, unless the old plant is failing, and then that is cut up and a new one started. Every day during the summer the vines are copiously watered by the assistance of a garden engine. This is the principal cause of success; of continued production and reproduction of fruit through such a long season.

We have seen upon these beds a growth of fruit ten times greater by weight or measure than all the vines and leaves producing it, and at the same time upon the same soil a few rods off, a growth of vines which would have afforded a good swath to the mower, upon which there was not a single berry. This bed was highly manured and bore vines. The other bed was highly watered, and bore fruit. Dr. Hall, of Newburgh, has mulched his beds with spent tan bark, instead of leaves, and found it eminently beneficial, increasing the productiveness, richness of flavor, and length of time of bearing. The question which naturally suggests itself to the minds of all is this: Can we lengthen the bearing season of the strawberry plant in this climate by pursuing the same course which has proved so wonderfully successful with Mr. Peabody?

DISTANCE APART TO PLANT TREES.

The *Agriculturist*, U. S., says:—After a long course of observation and experience on this subject, we have fully made up our minds to the conclusion that in any part of the United States and the Canadas, the following distances are the least at which trees should be required to stand:

Apples, 33 feet, or two rods—40 feet is none too far.

Pears, on their own stocks, 24 to 30 feet.

Pears, on quince stock, 10 to 12 feet.

Quinces, peaches, nectarines, apricots and plums, 16 to 20 feet.

English cherries, 20 to 24 feet.

Kentish, or common red, or pie cherry, 16 to 20 feet.

KEEPING SCIONS.

The only secret is to keep them cool and damp; not wet. The best course I have ever tried is to lay them on a brick floor in a cool cellar, and covered with thick, damp sacking—if the sacking becomes dry, sprinkle it. In this manner they are kept in perfect order from March until June, and easily taken as wanted. Many plans are recommended, some troublesome, and others unsafe. I once had more than 5,000 picked in damp pine saw-dust in a warm cellar, and though apparently in perfect order, they became worthless.

TRANSPORTATION OF SCIONS.

When ordered in large quantities, and by express, the winter is the best time—but if sent in the spring, they can easily be sent 1,000 miles or more, by being packed in damp moss, which is well understood by those who sell scions, so that any one wanting can order with the assurance of receiving them in perfect condition.

Natural History.

THE OX.—HISTORY, MANAGEMENT, &c.

THE MIDDLE HORNS.

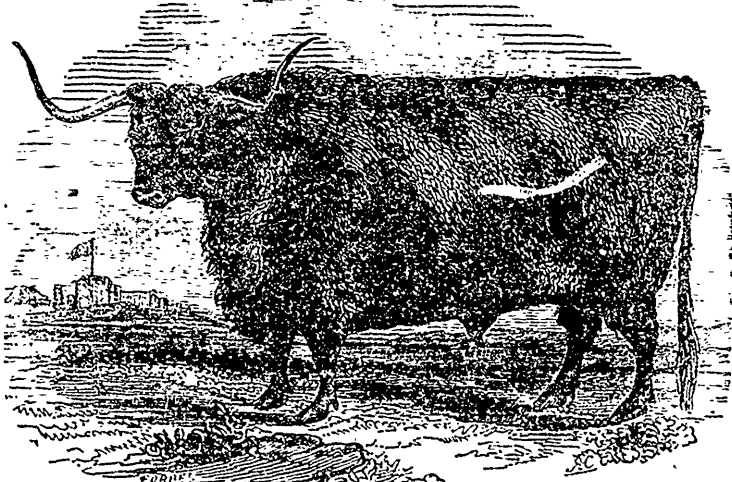
WEST HIGHLANDERS IN ARGYLESHIRE.

The county of Argyll stretches along the western coast of Scotland for 115 miles, but its average breadth is little more than 30 miles. The southern part is low, and comparatively level, and the temperature mild. The northern is rugged and mountainous, and the climate cold and ungenial, and there is much barren land, and little good pasture; but in Cantire, at the south, there is plenty of excellent feed; therefore the cattle differ materially in northern and southern parts. Among the mountains, the Highland breed is found almost unmixed; in the level country, there is the same variety and mixture of breed which is observed in other dairy districts.

In North Argyll the West Highlanders are larger than the Hebrideans, and are now bred to the full size which the soil, or the best qualities of the animal will bear. That fundamental principle of breeding is generally adopted here, that the size must be determined by the soil and the food; and that it is far more profitable to the farmer to have the size of his breed under, than over, the produce of his land. Both will gradually adapt themselves to the soil; but the small beasts will become more bulky, and improve in all his points—the large one will degenerate in form and in every good quality. Therefore, the soil and management of Argyll being, generally speaking, better than that of the Hebrides, it was found that a somewhat larger animal might be admitted; he was, however, procured, not by crossing with a breed of superior size, but by

careful selection from the best of the pure breed. Experience and judgment soon discovered when the proper point—the profitable weight—was gained; and then the farmer went back to the equally pure, but smaller breed of Skye, lest the form should be deteriorated, and the fattening should not be so equable and true, and the meat should lose some of its beautiful character and flavor.

There is no part of the Highlands where the soil and the climate are better adapted to the perfection of the breed than in Argyll, or where we oftener see the true characteristics of the best Highland cattle—short and somewhat strong in the shank, round in the body, straight in the back, well-haired, long in the muzzle, and with a well turned and rather small horn. There is no district in which the farmer so superstitiously, and yet properly, refrains from foreign admixture. Could the two great errors of the Highland farmer be remedied, namely, over-stocking in summer and starving in winter—there would be nothing more to desire for the grazier, except, perhaps, docility of temper; and that will be acquired when improvements in agriculture have rendered it unnecessary for the beast to wander so far over so wild a country, in search of food, and when he will be earlier and more properly domesticated. The Highlander, however, must be reared for the grazier alone. Every attention to increase his weight, in order to make him capable of agricultural labour—every effort to qualify him for the dairy, will not only lessen his hardiness of constitution and propensity to fatten, but will fail in rendering him valuable, for the purposes at which the farmer foolishly aims. The character of the Highlander must still be that he will pay better for his quantity of food than any other breed, and will fatten where any other breed would only live. This is the secret of profitably breeding or grazing Highland cattle.



THE WEST HIGHLAND FAT OX.

The management of both the cow and the calf depend much on the object which the breeder principally pursues. If he studies the character

of his stock, he makes little butter and cheese, and generally rears a calf for every cow, giving it the greater part of her milk. A likely bull-

calf is sometimes allowed the milk of two cows for a considerable time, and often for six months. When the calves are weaned, they are fed on the hills during the summer, and brought on the lower grounds in winter; and, if the pasture is not good, they are occasionally fed with straw and hay. It is after the first winter that the absurd and cruel system of overstocking and starvation commences. From the superiority of the soil, this is not carried to the ruinous extent here that it is in the Hebrides. In favorable situations, some farmers winter their calves in open sheds, where they are fed with hay in the racks. This makes them hardier, and does not cripple their growth.

The Argyleshire farmer is sometimes wrong in breeding from a favorite cow too long. Although the Highlanders fatten rapidly for a certain time, and begin early to fatten where the pasturage will give opportunity, they do not thrive so well when old. A cow ultimately destined for the drover, should not be permitted to breed after six years old. She may make fair meat for home consumption, but she will not fatten so quickly or so truly, on all her points; and the drover will seldom purchase her except at a very inferior price.

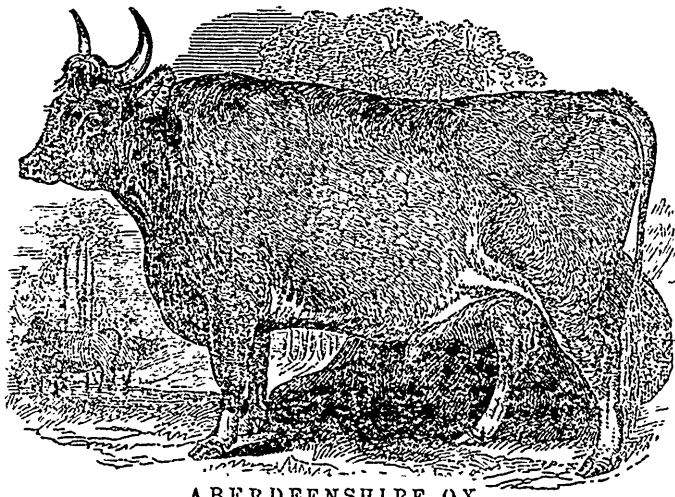
It is now also established as a principle, that the same bull should not be used too long. The hardness of the cattle has been thought to be materially affected by it. The bulls are generally disposed of at six years old, when they are in full vigor, and valuable for some distant herd.

The Ayrshire cow has, however, nearly superseded the native breed through the whole of Argyleshire for the purposes of the dairy. She is promising to spread as rapidly and as widely through the middle and northern parts of Scotland as the Short-Horn has done along the whole of the eastern part of England. The West Highland cattle are universally adopted for grazing farms, and the Ayrshire nearly as generally for the dairy. Some Galloways are found in Argyle and particularly in the southern part of the county; but they are not equal to the native Highlanders.

THE SHETLAND ISLANDS.

The Shetland Islands present a wonderful scene of rugged, black, and barren rocks. No tree or shrub relieves these dreary scenes, and only gray rocks appear rising from the marshes and pools, and shores, bounded by the wildest precipices. There are few or no artificial grasses or green crops, or enclosures protecting these crops, and grasses could not be brought to perfection in these islands; there is nothing but moss, heath, and sea-weed; yet there is a breed of horses, diminutive, but beautiful, hardy, and strong; and the cattle are of the same origin with the West Highlanders. They have been diminished in size by the coldness of the climate and the scarcity of food; but they have not been so seriously injured by the folly of men—they have not been domesticated to be starved outright. They are small, gaunt, ill-shaped, so far indeed, as their shape can be ascertained through the long, thick hair with which they are covered, and which forms an impenetrable defence against the snow and the sleet. They are rarely more than four feet high at the withers, and sometimes scarcely more than thirty-five or forty pounds a quarter.

The Shetland cattle contrive to live on their native moors and wastes, and some of them fatten there; for a considerable and increasing quantity of beef is salted in Shetland and sent to the mainland, the quality of which is exceedingly good. When, however, the Shetlanders are transported to the comparatively rich pastures of the north of Scotland, they thrive with almost incredible rapidity, and their flesh and fat, being so newly and quickly laid on, is said to be peculiarly delicious and tender. They run to fifteen or sixteen, or even twenty stones in weight. If they are carried still farther south they rarely thrive; they become sickly and even poor, in the midst of abundance: the change is too great, and the constitution cannot be habituated to it.



ABERDEENSHIRE OX.

ABERDEENSHIRE.

This extensive county breeds or grazes more cattle than any other of Scotland. The cattle in Aberdeenshire have been calculated at 110,000. More than 20,000 are slaughtered, or sold to the graziers every year.

The character of the cattle varies with that of the country. In the interior and on the hills, formerly occupying the whole of that district, and still existing in considerable numbers, is the native unmixed Highland breed. This breed, however, would be out of its place in the milder climate and more productive soil of the lower district of Aberdeen; another kind of cattle was therefore gradually raised, the origin of which it would be difficult to describe.

It was first attempted by judicious selections from the native breed, and some increase of size was obtained, but not sufficient for the pasture. The long-horn and the short-horn were tried; but either they did not amalgamate with the native breed, or a species of cattle were produced too large for the soil. There were exceptions to this, and one of them, the Kintore ox, was bred by Lord Kintore from an Aberdeenshire cow and a short horn bull.

This animal is a sufficient proof of what may be effected by the cross. The introduction of steam will probably tempt many of the northern breeders to try the first cross.

To improve the Aberdeen cattle, all the southern counties of Scotland were resorted to, but with doubtful success. The Fife, or Falkland breed, possessed enough of the old cattle to bid fair to mingle and be identified with the natives, while the bones were smaller, the limbs cleaner, and yet short; the carcass fairly round, and the hips wide, and they were superior in size, hardy, and docile, and excellent at work, and good milkers. These were desirable qualities, and particularly for mingling with the Highland breed. Accordingly, bulls from Fife were introduced into Aberdeen, and the progeny so answered as to be generally adopted, and become the foundation of what is now regarded as the Aberdeenshire native breed.

The horns do not taper so finely, nor stand so much upward as in the West Highlanders, and they are also whiter; the hair is shorter and thinner; the ribs cannot be said to be flat; but the chest is deeper in proportion to the circumference; and the buttock and thighs are likewise thinner. The color is usually black, but sometimes brindle; they are heavier in carcass; they give a larger quantity of milk; but they do not attain maturity so early as the West Highlanders, nor is their flesh quite so beautifully marbled; yet at a proper age, they fatten as readily as the others, not only on good pasture, but on that which is somewhat inferior.

AYRSHIRE BREED.

This county extends along the eastern coast of the Firth of Clyde, and the North Channel from Rentrev to Wigtonshire, by the former of which it is bordered on the north, and by the latter on the south, while it has Kircudbright, Dumfries and Lanark on the east. The climate

is moist but mild; and the soil with its produce is calculated to render it the finest dairy county in Scotland, and equal, perhaps, to any in Great Britain. There is a great deal of permanent pasture on the sides and the tops of the hills; but the greater part of the arable land is pasture and crop alternately. The pasture-ground is occupied by the beautiful dairy stock, a very small portion of it being reserved for the fattening of cows too old to milk.

Ayrshire is divided into three districts:—south of the river Doon is the Bailyary of *Carrick*—between the Doon and the Irvine is the Bailyary of *Kyle*, and north of the Irvine is *Cunningham*. This last division lays principal claim to be the native country of the Ayrshire cattle, and, indeed, they once went by the name of the *Cunningham* cattle.

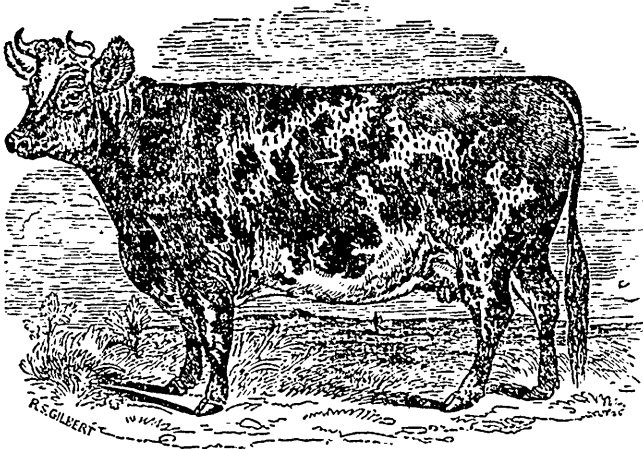
Mr. Aiton, in his "Treatise on the Dairy Breed of Cows" thus describes the Ayrshire cattle:—"The shapes most approved of, are—head small, but rather long and narrow at the muzzle; the eye small, but smart and lively; the horns small, clear, crooked, and their roots at considerable distance from each other; neck long and slender, tapering toward the head, with no loose skin below; shoulders thin; fore-quarters light; hind-quarters large; back straight, broad behind, the joints loose and open; carcass deep, and pelvis capacious, and wide over the hips, with round fleshy buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad and square, stretching forward, and neither fleshy, low hung, nor loose; the milk veins large and prominent; teats short, all pointing outward, and at considerable distance from each other; skin thin and loose; hair soft and woolly. The head, bones, horns, and all parts of least value, small; and the general figure compact and well proportioned." Mr. Rankine very properly remarks, that, "compared with other improved breeds, the thighs, or what is called the twist of the Ayrshire cow, are thin. She is, characteristically, not a fleshy animal."

The Ayrshire farmers prefer their dairy-bulls, according to the feminine aspect of their heads and necks; and wish them not round behind but broad at the hook-bones and hips, and full in the flanks. Experience, dearly bought, led to this, for the consequence of the crossing of the small native breeds with the heavy cattle imported from the south, was a bony ill-shaped animal, not much improved as a milk-er, and its disposition to fat lamentably decreased; it may, however, demand consideration whether the round and compact form of the West Highlander and the Galloway have not been too much sacrificed, and even the defects of the short-horn needlessly perpetuated.

Mr. Aiton says:—"The qualities of a cow are of great importance. Tameness and docility of temper greatly enhance the value of a cow. Some degree of hardness, a sound constitution, and a moderate degree of life and spirits, are qualities to be wished for in a dairy cow, and what those of Ayrshire generally possess. The most valuable quality which a dairy cow can possess, is that she yields much milk, and that

of an oily, or butyraceous, or caseous nature, and that after she has yielded very large quantities of milk for several years, she shall be as valuable for beef as any other breed of cows known; her fat shall be much mixed through the whole

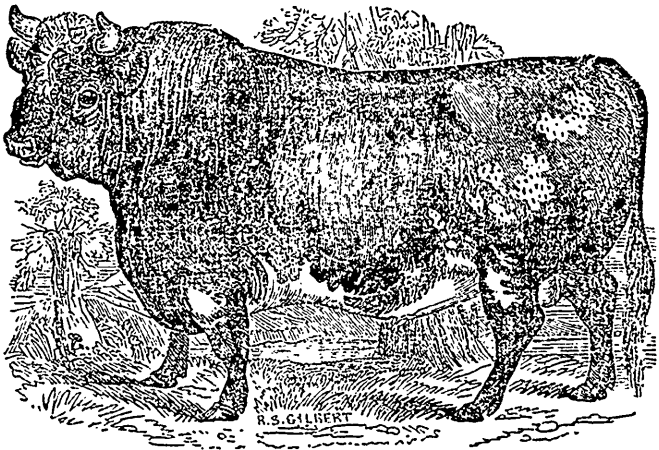
flesh, and she shall fatten faster than any other. This is high praise, if it can be truly affirmed of the Ayrshire cattle; we are naturally anxious to know the origin, the history, and general management of this valuable animal.



AYRSHIRE COW.

The origin of the Ayrshire cow is even at the present day a matter of dispute; all that is certainly known is, that a century ago there was no such breed in Cunningham, or Ayrshire, or Scotland. Did the Ayrshire cattle arise entirely from a careful selection of the best of the native breed?—if they did, it is a circumstance unparalleled in the history of agriculture. The native breed may be ameliorated by a careful selection;

its value may be incalculably increased—some good qualities—some of its best qualities—may be for the first time developed; but yet there will be some resemblance to the original stock, and yet the more we examine the animal, the more clearly we can trace out the characteristic points of the ancestor, although every one of them improved.



THE AYRSHIRE BULL.

Mr. Anton gives the following description of the Ayrshire cattle seventy years ago: "The cows kept in the districts of Kyle and Cunningham were of a diminutive size, ill-led, ill-shaped, and they yielded but a scanty return in milk; they were mostly of a black color, with large stripes of white along the chine or ridge of their backs, upon their flanks, and on their faces.— Their horns were high and crooked, having deep

ringlets at the root, the plainest proof that the cattle were but scantily fed; the chine of their backs stood up high and narrow; their sides were lank, short and thin; their hides thick and adhering to the bones; their pile was coarse and open; and few of them yielded more than six or eight quarts of milk per day, when in their best plight; or weighed, when fat, more than twelve or sixteen to twenty stones avoirdupois, sinking

offal." It was impossible that these cattle, fed as they then were, could be of great weight, well shaped, or yield much milk. Their only food in winter and spring was oat-straw, and what they could pick up in the fields, to which they were turned out almost every day, with a mash of a little corn with chaff daily for a few weeks after calving, and their pasture in summer was of the very worst quality; and that coarse pasture was so overstocked, and eaten so bare, that the cattle were half-starved.

If Mr. Aiton's description of the present improved Ayrshire is correct, the breed is very much changed, and yet there is so much indistinct resemblance, that a great deal of it must have been done by careful selection, from among the native cattle, and better feeding and treatment; but when we look closer into the matter, the shortness, or rather diminutiveness of the horns, their width of base, and awkward setting on; the peculiar tapering towards the muzzle; the narrowing at the girth; the belling; and the prominences of all the bones—these are features which it is impossible for any selection from the native breed to give. While the judge of cattle will trace the features of the old breed, he will suspect, what general tradition confirms, that it was a fortunate cross, or a succession of crosses with some foreign stock, and that, probably it was the Teeswater short-horn that helped to produce the improved Cunningham cattle.

In many other districts of Scotland the attempt to introduce the Teeswater breed, or to establish a cross from it, had palpably failed, for the soil and climate suited only the hardihood of the Highlander; but here in Ayrshire was a mild climate—a dairy county; the Highlander was in a manner out of his place; he had degenerated, and the milking properties of the Teeswater, and her capability of ultimately fattening well, amalgamated with his hardihood and disposition to fatten, and there resulted a breed, bearing the stamp of its progenitors, and, to a very considerable degree, the good qualities of both.

Who introduced the present breed is not very precisely ascertained; but the late Colonel Fullarton, in his account of the "Husbandry of Ayrshire," which was published in 1793, and whose authority is of considerable weight in everything relating to it, states that a gentleman of long experience, Mr. Bruce Campbell, asserts that this breed was introduced by the late Earl of Marchmont. The introduction, then, of this dairy stock must have happened between 1724 to 1740, and so far corresponds with the traditionary account. From what particular part of the country they came there appears no evidence. The conjecture is, that they are either of the Teeswater breed, or derived from it; judging from the varied color or from somewhat better evidence, the small head and slender neck, in which they bear a striking resemblance to them. Some breeders, however, have maintained that they were produced from the native cow, crossed by the Alderney bull. It requires but one moment's inspection of the animals, to convince us that this supposition is altogether erroneous.

These cattle, from which, by crosses with the

native breed, the present improved Ayrshire arose, were first introduced on Lord Marchmont's estates in Berwickshire, and Sornbergh in Kyle. A bull of the new stock was sold to Mr. Hamilton of Sandrum; then Mr. Dunlop in Cunningham imported some of the short-horns, and their progeny was long afterwards distinguished by the name of the Dunlop cows. These were the first of the improved breed that reached the bailliery of Cunningham. Mr. Orr, about the year 1767, brought to Kilmarnock some fine milch cows, of a larger size than any which had been seen there. It was not, however, till about 1780, that this improved breed might be said to be duly estimated, or generally established in that part of Ayrshire; about 1790, Mr. Fulton from Blith carried them into Carrick, and Mr. Wilson of Kilpatrick first took them to the southern parts of that district. So late as 1804 they were introduced on the estate of Penmore, and they are now the established cattle of Ayrshire; they are increasing in the neighboring counties, and have found their way to most parts of Britain.

The breed has improved since Mr. Aiton described it, and is short in the leg, the neck a little thicker at the shoulder, but finely shaped toward the head; the horns smaller than those of the Highlander, but clear and smooth, pointing forward, turning upward, and tapering to a point. They are deep in the carcass, but not round and ample, and especially not so in the loins and haunches. Some, however, have suspected, and not without reason, that an attention to the shape and beauty, and an attempt to produce fat and sleeky cattle, which may be admired at the show, has a tendency to improve what is only their quality as grazing cattle—and at the certainty of diminishing their value as milkers.

The excellency of a dairy cow is estimated by the quantity and quality of her milk. The quantity yielded by the Ayrshire cow is, considering her size, very great. Five gallons daily, for two or three months after calving, may be considered as not more than an average quantity. Three gallons daily will be given for the next three months, and one gallon and a half during the succeeding four months. This would amount to more than 850 gallons; but allowing for some unproductive cows, 600 gallons per year may be the average quantity annually from each cow.

The disposal of the milk varies according to the situation of the farm, and character of the neighborhood. If it is sold as new milk, the produce of the cow will be £20 per annum.—Others at a distance from any considerable town, convert it into butter or cheese.

The quality of the milk is estimated by the quantity of butter or cheese that it will yield.—Three gallons and a half of this milk will yield about a pound and a half of butter. An Ayrshire cow, therefore, may be reckoned to yield 257 pounds of butter per annum.

When the calculation is formed, according to the quantity of cheese that is usually produced, the following will be the result:—twenty-eight gallons of milk, with the cream, will yield 24

pounds of sweet milk cheese, or 514 pounds per annum.

This is certainly a very extraordinary quantity of butter and cheese, and fully establishes the reputation of the Ayrshire cow, so far as the dairy is concerned.*

The Ayrshire cattle are not yet sufficiently known, and cannot be procured cheap enough, or in adequate numbers, to undergo a fair trial in the south. Some have been tried in the London dairies. As mere milkers they could not compete with the long established metropolitan dairy cow, the short-horn. They yielded as much milk in proportion to size and food, but not in proportion to the room occupied, and the increased trouble which they gave from being more numerous, in order to supply the requisite quantity of milk. They produced an unusual quantity of rich cream; but there was so much difficulty in procuring them to keep up the stock and the price asked so great, that they were comparatively abandoned.

The fattening properties of the Ayrshire cattle we believe to be exaggerated. They will feed kindly and profitably, and their meat will be good. They will fatten on farms and in districts where others could not, except supported by artificial food. They unite, perhaps, to a greater degree than any other breed, the supposed incompatible qualities of yielding a great deal of milk and beef. It is, however, on the inferior soil and the moist climate of Ayrshire, and the west of Scotland, that their superiority as milkers is most remarkable. On their natural food of poor quality they give milk abundantly and long, and often until within a few days of calving; but when they are moved to a richer pasture their constitution changes, and they convert their food more into beef. In their own country a cow of a fleshy make, and which seldom proves a good milker, may be easily raised to 40 or 50 stones, and bullocks of three years old are brought to weigh from 50 to 60 stones. There is a lurking tendency to fatten about them which good pasture will bring forth; so that when the Ayrshire cow is sent to England she loses her superiority as a milker, and begins to accumulate flesh. On this account it is that the English dealers who purchase the Ayrshire cows generally select the coarsest animals, to avoid the consequence of the change of climate and food. It is useless to exaggerate the qualities of any cattle, and it cannot be denied that even in this tendency to fatten when their milk begins to fail, or which often causes it to fail, the Ayrshire must yield to their forefathers the Highlanders, and to their neighbors the Galloways, when put on a poor soil; and they will be left considerably behind their short-horn sires when transplanted to luxuriant pasture. It will be long, perhaps, before they will be favorites with the butchers,

In some experiments conducted at the Earl of Chesterfield's dairy at Bradley-Hall farm, it appeared that in the height of the seas = n. the Holderness would yield seven gallons and a quart; the long horn and Alderney, 4 gallons 3 quarts; and the Devon, 4 gallons. 1 pint per day; and when this was made into butter the result was, from the Holderness, 33½ ounces; from the Devon 28 ounces; and from the Alderney, 25 ounces. The Ayrshire yields 5 gallons per day, and from that is produced 34 ounces of butter.

for the fifth quarter will not usually weigh well in them. Their fat is mingled with the flesh rather than separated in the form of tallow; yet this would give a more beautiful appearance to the meat, and should enhance its price to the consumer.

Two circumstances, however, may partially account for their not being thought to succeed so well when grazed: they are not able to travel so far on the same keeping as the Highland cattle; and, from their great value as milkers, they are often kept till they are too old to fatten to advantage, or for their beef to be of the best quality.

Editorial, &c.

G. BUCKLAND, Esq., EDITOR.

. H. THOMSON, Esq., ASSISTANT EDITOR.

HINTS FOR THE MONTH.

This season has been hitherto somewhat unusually cold and backward, and it is probable that a greater portion of the spring sowing than usual, which should be performed in April, will have to be completed in May. Some valuable remarks will be found in reference to spring sowing, change of seed, cultivation of the garden, orchard planting, the use of artificial manures for root crops, &c., in other parts of this number.

After the farmer has got in, in good order, those crops which occupy the larger extent of the farmer, viz., spring wheat, barley, oats, peas, &c., he must turn his attention to the proper preparation of the ground for, and sowing those, which require a somewhat more careful and thorough cultivation, such as potatoes, Indian corn, turnips, mangels, &c.

The ordinary cultivation of the potato crop is so well understood that it can scarcely be necessary to enter into detail upon that point; but, judging from the census of 1852, which makes the average crop for 1851 only about sixty-six bushels per acre, the cultivation actually prevalent, if the return be at all near the truth, must be slovenly and defective in the extreme, or there must be some other great impediment to the obtaining of good crops of this plant. Former experience has shown that our soil and climate are both well adapted to the growth of the potato, so that the fault must lie between defective

cultivation and the potato disease. Against the latter evil, as yet unfortunately, no specific remedy has been found, although a good many nostrums have been prescribed. The disease is not now, however, so prevalent as a few years since. The best practical remedies will be found in the selection of good and sound seed, good fresh land, early planting, clean after culture, and taking up early in the fall. Although heavier crops have sometimes been obtained by planting somewhat late in the season, say during the first week in June, yet experience seems to show that as a precaution against the disease, early planting, that is, not later than the 15th or 20th of May, is to be recommended, and that a sounder, drier, and more wholesome root will thus be obtained. Land selected for potatoes should be dry, or at least such as will admit of good drainage. That newly broken up from sward is found to be favorable for the growth of a good crop; and very clean and fine potatoes have even been produced by ploughing up sod a few days before planting, harrowing the surface finely lengthwise of the furrow, and then putting in with the hoe two or three inches in depth.—Planting too deep is always to be avoided, in order that the roots may not be liable to submergence for several days together from heavy rains. If manure be used, it is better to spread it broadcast upon the surface and plough it under before making the drills, than to place it in the bottoms of the drills immediately under the seed, as is sometimes done. Lime and ashes, spread upon the surface, and ploughed under, have been applied successfully as preventives of the rot. The high price potatoes have recently sold at, will probably lead this year to an attempt at a more successful cultivation of this valuable root.

Indian corn is another crop which is not cultivated in Upper Canada to the extent, or with the success, that it should be. According to the census returns there were in 1851, 70,571 acres planted, which produced 1,696,513 bushels, or an average only of about 24 bushels per acre. Now every farmer who has cultivated this crop knows that in consideration of the more expensive cultivation and manuring required, he should obtain at least 40 or 50 bushels of shelled corn per acre to remunerate him for his trouble; so that

it would appear, unless the crop has grown almost spontaneously, that the above 70,000 acres have been cultivated on the whole at a positive loss, although there have been, no doubt, here and there very handsome crops obtained. In the neighboring State of New York, which is not better adapted to the growth of Indian corn, than Upper Canada, their agricultural societies' reports mention occasionally crops of 80, 100 or even more bushels per acre of shelled corn being produced—the crop being much more extensively cultivated than with us. But the average return there is also only about 25 bushels per acre, which tends to prove that if they cultivate a greater breadth, they do not do it in a much better manner, or their soil and climate cannot be much better adapted to the crop than in Canada.

We have here occasionally also, when an attempt is made at successful cultivation, crops of 60 or 70 bushels per acre, and the sample of the finest quality. The value of Indian corn, both of the stalk and of the grain, as a feeding crop, is well known, not to mention its wholesome and agreeable qualities as an article of family consumption; and when the depredations of the bug upon the pea, and the rot upon the potato, as well as occasional shortcomings in our hay crops are taken into account, there appears to be every inducement to pay more attention to the cultivation of a crop so well adapted to supply deficiencies. As an article of fodder, we should like to hear of some experiments being made in thick sowing of corn, with the view of cutting it green, and curing for hay. It can hardly be doubted that a large weight per acre, of very nutritious winter fodder could thus be produced. But the ordinary stalk, after a crop of corn has been obtained, is of considerable value, if properly taken care of, for this purpose. It must be confessed that the cultivation of Indian corn involves a good deal more of expense and trouble than some other crops, and the saving of it in the fall in a dry and sound state, is sometimes difficult, but the obtaining of a good crop is worth some extra trouble and outlay. It is well known that this crop requires the best quality of land, and that abundantly manured, and thoroughly cultivated. The ear-

lier ripening and medium-sized sorts are to be preferred, as more suitable to our seasons. The time for planting is when the warm genial weather of spring has arrived, as indicated by the blossoming of the apple trees, the opening of the leaves on the forest trees, &c. This will generally be from the 15th to the 25th of May, though good crops are sometimes obtained, planted as late as the first of June. A few scarecrows are required, joined with a little active watching, to keep off the depredations of the crows for the first week or two, and after that, attentive hoeing and cultivation to loosen the ground and keep down the weeds—and if a good return be not obtained, the ground will at least be left in splendid order for any other crop.

The cultivation of turnips, mangold wurtzel, carrots, cabbage, &c., has been so often brought before the readers of the *Agriculturist*, that we need not enter minutely upon the subject now, but every farmer will do well to cultivate what he can, in reason, of these crops, but to attempt no more than he can accomplish thoroughly.—The *modus operandi* is pretty well understood. A good, loose soil, liberal manuring, sound seed, and clean after-culture, are the principal items in the account. The fly is the principal enemy that the turnip has to contend against. Thick sowing and a vigorous growth at first, are the antidotes. In order to secure the latter, active manures, such as bone-dust and guano, are used with advantage. Swedish turnips may be sown from about the 20th May, till the 10th of June. It is sometimes found that they attain a more vigorous and early growth, and escape the fly better by being sown at the later period, but there is one advantage in early sowing, which is, that if the first experiment be not successful, it is not too late to make another. The cultivation of the mangold wurtzel is the same in all respects as that of the turnip, and the crop is equally or nearly as valuable for feeding purposes. It is moreover exempt from attacks of the fly, and if sound seed be obtained, may be counted upon as a tolerably sure crop. The seed should be soaked in warm water about 48 hours before planting, and then, for convenience of handling, may be dried in plaster. Carrots, parsnips, &c., require a deep friable soil, careful

hoeing as soon as they appear above ground, to prevent the weeds getting the advantage of them, and are, with proper cultivation, most useful and profitable crops.

All these little matters, together with attention to the garden, the orchard, the fallow, sheep sheering, and many other matters of farm economy, will occupy the farmer's time during the busy month of May, and he will do well if he can get them all done, and done well, before the work which more properly belongs to the next month, begins to press upon him.

TICKS IN SHEEP.

A correspondent sends us the following remedy for ticks in sheep, which he has successfully tried for a number of years.

“ Give the sheep sulphur with their snlt three a-week for a month before sheaving;—say 2 lbs. for twenty or thirty sheep. Sulphur is very beneficial for sheep otherwise.”

IMPORTANT SALE OF PURE BRED STOCK.

We have great satisfaction in calling the attention of our readers to Mr. Morris's advertisement of Sale of Short-Horn Cattle, on another page. Those who are desirous of obtaining animals of superior merit, derived from the best blood that England can produce, would consult their own interests by attending the sale. Mr. Morris's high standing, both as a breeder and an honorable dealer, is too well known to require any recommendation here.

STATUTE LABOR ON THE HIGHWAYS.

Section 29 of the Assessment Act imposes two days of statute labor on each person, not otherwise assessed in townships, with the following scale for those who otherwise appear in the assessment roll:

At not more than £50, be liable to 2 days' labor,	
More than £50, but not more than £100, 3 days	
“ 100	150 4 “
“ 150	200 5 “
“ 200	300 6 “
“ 300	400 7 “
“ 400	500 8 “
“ 500	600 9 “
“ 600	800 10 “
“ 800	1000 12 “
For every 200 above the sum of 1000	1 “

REPRESENTATION OF CANADA IN THE SYDENHAM CRYSTAL PALACE.

It will be seen from the subjoined Circular that the Government are disposed to render aid in collecting and transmitting specimens of the productions of Canadian soil, skill, and industry, provided that Agricultural Societies, and individuals more immediately introduced, will render their active co-operation. The raw produce of the Colonies, we understand, will be arranged and exhibited in the Sydenham Crystal Palace free of charge,—but mechanics and manufacturers will be charged at a uniform rate, for the space that their articles may occupy. It is of great importance that the very best specimens of what the soil and industry of Canada can produce should be collected and sent as soon as possible, in order that we may occupy a yet higher position than we did in 1851. The Sydenham Exhibition will be in many respects different from its great predecessor, more extensive and systematic in its arrangements, and as it is intended to be permanent, it will continue to reflect the progress of the world's industry and discoveries. As the very creditable position occupied by Canada, in the World's Exhibition of 1851, has contributed in various ways to our present prosperous condition, by affording to the people at home ocular proof of the capabilities and state of industry and civilization of this important member of the British Empire, let us hope that no exertion or reasonable expense will be spared, in doing full justice to this Province on the approaching occasion.

CIRCULAR.

BOARD OF AGRICULTURE,

Toronto, April 8th, 1854.

SIR,—The Boards of Agriculture of Upper and Lower Canada respectively, having been in communication for some time past with the Bureau of Agriculture, on the desirableness of having the Raw Produce of Canada efficiently represented in the Sydenham Crystal Palace, near London, England, which will be opened this Spring; I have the satisfaction to inform you that the Board has now received official information that the Government are disposed to aid this object by a pecuniary grant, provided the Agricultural Societies in the Province are prepared to give their active co-operation.

I will thank you to inform me immediately, or as early as possible, of the determination of your County and Branch Societies on this subject, and I have to request that in the case of a favorable decision, and that you can procure in your County articles of the necessary superior quality, that you will do so, and forward them to the Office of the Board of Agriculture, Toronto, addressed to George Buckland, Esq., with as little delay as possible.

I would suggest, with the view of securing a well selected assortment of specimens, that all articles should be collected from your County, and forwarded here, under the supervision of the President and Officers of your County Society.

The value of the articles and the expense of forwarding them to the City of Toronto, and finally to England, will be paid by the Board, aided by Government for that purpose.

Specimens of Raw Produce are required of the following descriptions, and in the quantities, or of the bulk named:—

GRAIN:

Wheat, Barley, Oats, Peas, Indian Corn, (in the cob,) Buckwheat, Rye, &c., of the different varieties, five pecks of each, of the best quality that can be obtained, and each carefully named,—also with the name of the producer and the Township where grown.

SEEDS:

Flax, Hemp, Turnip, Canary, Millet, Clover, Timothy, &c., one peck of each.

PRODUCE

Used in the Manufacture of Textile Fabrics, &c.

Flax and Hemp, five lbs. of the raw plant of each; and five lbs. of the hackled fibre. Wool, two lbs. of the best specimens of the fine, medium and long sorts, carefully chosen and put up.

WOODS:

Superior specimens of the rarer kinds of Wood are desired, in the form of transverse sections of the tree, with the bark on, the specimens to be about two feet in length, and of the entire girth of the tree. Longitudinal sections in the form of rough planks about four feet in length, and three inches thick, of the entire width of the tree, will also be acceptable. It is highly desirable that all our native woods should be represented in the Sydenham Exhibition, but the Board do not desire anything of this sort unless it be a very superior specimen.

NEW INVENTIONS, ETC:

The Board will be happy to communicate with Parties possessing New and Useful Inventions, or with Manufacturers of such articles as indicate our industrial state and progress, with a view of determining the expediency of transmitting such productions to the Sydenham Exhibition.

I have the honor to be,

Sir,

Your obedient Servant,

E. W. THOMSON.

President,

Board of Agriculture of Upper Canada.

THE RELATIONS OF GEOLOGY TO AGRICULTURE
IN NORTH-EASTERN AMERICA.

Two very interesting and instructive papers on the above subject have recently appeared in *The Journal of the Royal Agricultural Society of England*, by Professor Johnston.—One treats of the relations of Geological structure to Agricultural Capability, in the British Province of New Brunswick. The other relates to the same principle of illustration, in reference to the extensive country lying between the Atlantic sea-board, and the first slopes of the Alleghany Mountains;—comprising large portions of Virginia, the Carolinas, Georgia and Alabama. It is to the latter portion of the article, however, with reference to the Geological Structure and Agricultural Capability of *Western New York*, that we wish to call more particularly the attention of our readers.

The country referred to extends along the southern shore of Lake Ontario, from about Buffalo to Oswego, being in length near 200 miles, and its mean breadth about 30 miles.—The names of the rock formations of this belt of country, and the character of the soils derived therefrom, we will endeavor to give in as few words as possible.

1. *The Medina Sandstone* extends at unequal distances along the shore of the Lake, and consists of brownish or red sandstone intermixed with reddish shaly clay, forming a low flat belt of country, the soil being more or less red, varying much in composition and fertility, the eastern portion being generally poor and sandy, while that which lies between the Genesee and Niagara rivers is a good holding soil, and peculiarly adapted to wheat and grain in general.

2. *The Clinton Group* next forms a very narrow terrace of calcareous clay, the result of a mixture of the fragments of adjacent rocks, contributing a very productive wheat soil.

3. *The Niagara Group* has an enormous thickness of limestone above, resting on dark blue shales; the latter where they approach the surface produce still blue clays, which are heavy and expensive to cultivate, but under good management, after draining, &c., they become very productive soils. The escarpment of this limestone forms what is called, from Hamilton to the Niagara river, the *Mountain ridge*, affording near the latter, at Brock's Monument, a most commanding and magnificent prospect. "The view (says Professor Johnston) which the spectator enjoys from the top of the escarpment, is worth going a long way to see. Sheer down one looks over the scattered town of Lewiston, upon the broad flat forest lands stretching many miles back from the lake, and

eastward along its shores farther than the eye can reach. Here and there only, at the time of my visit, in all this distance, a clearing appeared upon this often marshy flat. Right in front lay the endless lake and its occasionally bolder shore beyond, with now and then a straggling sail or distant steamer's smoke, all mellowed and blended by a four o'clock sun. I was much struck both with the extent and with the unsubdued wildness of the prospect, when I unexpectedly reached the cliff on my way from the Falls; and I could not help thinking how some two centuries hence, when all this low plain before me shall have been cleared, drained and cultivated,—where smiling villages and cheerful homesteads, and scattered flocks and herds overspread its surface, and the blue smoke may be seen dying away from many chimneys as the Sabbath bell draws the gathering people towards the frequent house of worship,—how many, in those days, for broad pictures of natural beauty, intense with countless little episodes of still life, will yet frequent this mountain ridge, when the noise of the neighboring cataract has wearied them, and softer scenes are wished for to calm and compose their fevered spirits."

We have only to observe in this graphic sketch, that if the learned Professor had travelled a little further west on this same mountain ridge, as it stretches far into Canada, he would have beheld beneath his feet, smiling corn-fields, extensive orchards, comfortable homesteads, and neat and thriving villages, with many a spire, reminding man of his higher destination, without waiting a couple of centuries for the imagination to realise. The modern appliances of Agriculture, which are being daily brought into requisition, will, ere long, give to this truly picturesque district, the finish and principal charms of an English landscape, only substituting the broad expanse of Ontario for the ocean.

4. *The Onondaga Salt Group* next succeeds, and is of comparatively great extent. As its name denotes it is in some places of its western portion abundant in strong brine springs, particularly at Syracuse, where salt is extensively manufactured. This group consists of several members, often abounding in calcareous matter, and the commingling of the various materials along their lines of junction, constitute highly friable and productive soils, producing in abundance the very finest qualities of wheat.

5. *The Helderberg Limestones and Sandstone* form with the Marcellus Shale a narrow belt, rising immediately behind the Onondaga Salt Group. "When I drove along the edge of this limestone (remarks Professor Johnston) it formed a high escarpment, from which the view of the flat lands below and of the country towards the lake was beautiful and extensive. Though far from what it was half a century ago, this great stretch

of undulating plain still seemed strange and savage to an eye accustomed to the finished and picturesque appearance of an English landscape. Swamps and lakes, and rude natural forests, with intervening tracts of land under waving corn, remind the spectator how much nature yet rules, how long human industry must patiently labor still before the asperities of a new country can be rubbed off, how many generations of the enterprising men who now possess it must still toil and adorn this fine land before it will smile at their feet like that which their forefathers held."

6. *The Marcellus Shale* overlies the Helderberg limestone, and mixing with it forms very productive soils, fertile in wheat and other productions. It is narrow in the State of New York. "Farther to the west, however, it expands, and along the north shore of Lake Erie it forms a wide and valuable tract of land in the fast filling-up and fertile regions of Western Canada."

7. *The Hamilton Group* consists mainly of shales and clays, expensive and difficult to work, although in places where dry and calcareous, affording a pretty good arable and wheat soil. A large portion, however, is only fitted for pasture, and it is here the grazing and dairy country of Western New York may be said to commence.

8. *The Genesee Slate* is too thin to form an important agricultural feature of the country. It is itself poor, but where mixed with calcareous shales or marls it forms a productive soil.

9. *The Portage and Chemung Groups* consist of alternations of poor shales, flagstones and massive sandstones of enormous thickness, extending southwards into Pennsylvania, reaching to a height of 1000 feet above Lake Ontario.

"The district (observes our author) occupied by these groups of rocks presents a complete contrast to the wheat regions,—a contrast rich in evidence of the close relation between geological and agricultural capabilities. When first cleared the virgin surface produces crops of wheat, but after the first crops,—as is the case in many parts of New Brunswick, which rest upon similar rocks,—winter wheat becomes uncertain, and spring grain only can be sown. Being thus found naturally poorer, it is less cleared and cultivated than the more favored land in the plains which border the lakes. Like poor lands among ourselves also,—I may say like poor land in all countries,—it is occupied for the most part by a poorer race of cultivators, who direct their chief attention to the rearing of stock and dairy husbandry."

After speaking of the practical difficulties so often felt, in extinguishing or keeping down certain classes of weeds, from unfavorable seasons, courses of cropping, and a thousand other circumstances, which the farmer is often wholly unable to control, the Professor very justly observes:

No one will readily accuse me of a desire to undervalue the usefulness of *Chemistry* to Agriculture, and yet I have often had occasion to regret the evil influence of opinions hastily ex-

pressed by ill-informed persons,—as if this branch of knowledge alone were able to bring the most important and difficult of arts to speedy perfection. The longer a cautious and truth-seeking man lives, the wider will appear the range of knowledge, theoretical and practical,—the more numerous the circumstances to be taken into consideration before he can arrive at an accurate solution even of what some look upon as simple and superficial questions."

We must make room for the concluding paragraphs of this able and clearly written article, inasmuch as all we have ever said or written on what we believe to be the almost unparalleled natural fertility of the Canadian Peninsula, which is now fast filling up, and already teeming with a prosperous and contented population, is amply confirmed by the high authority of Professor Johnston.

"The second observation I wish to add, refers to the extension of the richest wheat-bearing formations of Western New York into the upper part of Canada West. The consequence of this extension is the reproduction in this new region of the great natural capabilities of the country I have been describing.

"Bounded on the east by Lake Ontario, on the west by Lake Huron, on the south by Lake Erie, and on the north by Manitoulin Bay, stretches a wide peninsula, occupying an area three or four times as large as the wheat region of Western New York, and covered entirely by those rocky formations on which the fertility of the latter region mainly depends. Proceeding westward from the head of Lake Ontario, we pass in succession over the surface of the Medina sandstone, Niagara limestone, the Onondaga salt group, and the Helderberg limestone and shales. On these, as the map and sections contained in this paper show, the principal wheat region in Western New York is situated. It will also be recollected that among these the Onondaga salt group is especially conspicuous for the natural fertility and friableness of its soils, and for the ease with which they can be worked and cultivated.

"Now in this peninsular portion of Canada West, the Medina sandstone and Niagara limestone expand a little after they turn round the western end of Lake Ontario, and then run towards the north in belts somewhat broader than those which they form in Western New York. But the Onondaga salt group widens to such a degree as in a line due west from Toronto to be upwards of sixty miles across, and to occupy almost the whole breadth of the peninsula between the two lakes Ontario and Huron. The natural capabilities of this new region, as a whole, may be inferred from what I have already said of the results of experience in the State of New York. So far as depends upon soil, it ought to be one of the richest agricultural regions in North America.

"Towards the southern end of the peninsula again, and along the entire northern margin of

Lake Erie, of the Lake and River St. Clair, and of Gratiot's Bay, in the southern part of Lake Huron the Helderberg formation extends. It will be recollected that I have above described this rock, as it occurs in Western New York, to be in some places covered with thin soils productive of wheat; but that over it lie certain calcareous shales (Marcellus shales) which when not entirely removed from the surface by the action of ancient waters, form a soil equal to almost any other in productive capability. The large portion of this Western Canadian peninsula, over which this Helderberg formation extends, must therefore, like that occupied by the Onondaga group, contain many tracts of fertile land, and this, as well as its neighbourhood to the Lake, is no doubt a cause of the rapidity with which it is in the process of settlement. Indeed, when we consider that nearly the whole of this peninsular region consists either of the Helderberg rocks or those of the Onondaga group; we cannot help predicting both a rapid filling up and a great future, in many respects, to this most interesting portion of Canada.

"Thus from the humbler task of explaining why certain regions have exhibited and still manifest a singular natural fertility, geology advances to the higher gift of prediction. United theory and observation enable it to point out where rich and desirable lands are sure to be found,—to inform the statesman of the true value of regions still wild and neglected, to direct the Agricultural emigrant in the choice of new homes, and, looking far into the future, to specify the kind of population and the processes of industry which will hereafter prevail upon it, the comparative comfort, wealth, numbers, and even morality, of its future people."

BUTTER MAKING.

This is one of the most important matters at this season of the year. We will all readily admit the pleasantness of good butter on our tables, and the farmer knows the advantage of having a good, fresh, sweet article, and plenty of it, for sale, instead of the wretched stuff under the name of butter which we so often see in our markets. We insert in another place, an excellent essay by Mrs. Trail, on Butter Making, to which the first prize was awarded by the Township of Hamilton Farmers' Club, and which is worthy of a careful perusal. We regret being compelled to condense this essay considerably: for this, the press of matter and our limited space must serve as an apology. We are happy to find that Mrs. Trail, who is so favourably known as a writer of a very pleasing description of light literature, can on occasion apply her talents to the elucidation of such useful subjects as this Essay treats of. We trust we shall hear from her again on similar topics.

FARMERS AND FARMING IN CANADA.

We are not disposed to dispute the truth of the following remark from the *Genesee Farmer*. We believe the statement that Canadian Farming is superior to that in the United States, to be perfectly correct. But our farmers must not therefore rest satisfied with their progress and conclude that there is no occasion for further improvement. There is still abundant room for that.

"It is with considerable reluctance that we admit the superiority of Canada farmers and farming as compared with those of our own much cherished Western New York; and we still hope that, taken as a body, our cultivators are in advance. But the more we learn of our neighbours across the lake, the higher is our respect for their general intelligence and skill as husbandmen."

Literary and Miscellaneous.

WILLIAM McDUGALL, Esq., EDITOR.

FAMILIAR CHEMISTRY.

BY MRS. M. F. H. THOMAS.

CHAPTER II.

The fifty-five elements of which I have spoken, are called "ponderable agents," because they can be weighed. They constitute all sensible objects—all that is tangible in our world. Their properties are, extension, form, divisibility, impenetrability, and inertia. Attraction is not an inherent property, but depends upon a power whose proportions increase and diminish it. These substances are all incapable of spontaneous change, and were there no extraneous force to effect them would remain eternally in the same condition.

There is another principle, which is imponderable, which cannot be weighed, or handled, or studied, except in its manifestations. Bodies imbued with it, gain no appreciable weight. Of its nature we know little, very little; yet its manifestations are a part of every-day life. Unlike the other elements of which we have spoken, its existence is action, in some form. All changes which cheer and beautify our earth—all the wonderful phenomena of nature, are produced by it. It is, under God, the *Architect of the Universe*. That principle has been variously called, light, heat or caloric, electricity, galvanism, and, in the animal organism, nervous influence, but these are, undoubtedly, but manifestation, mutuality, and correlations of one power acting under dif-

ferent circumstances—that *life principle* of which I have spoken.

LIGHT is composed of three primary, or complementary, colors—red, yellow, and blue. Of these all other colors are compounds, and their union constitutes white light. Light is decomposed by passing through a triangular piece of glass, called a prism. By this instrument, however, different shadings and blendings of the primary colors are also exhibited. It is a strange thought, that all the colors which deck our earth, exist, not in the objects which exhibit them, but in the pure white flood of sunlight which renders them visible. Such, however, is the case. The different colors depend upon the chemical property which objects possess, of absorbing rays of particular colors and reflecting others. Thus, for instance, the foliage of Spring absorbs the red rays, reflecting the yellow and blue. Now, it is by the rays of light, reflected from bodies, entering our eyes, that we perceive them, and if only the blue and yellow are reflected, the sensation must of course be given—the *only color on which the eyes can rest for any length of time, unrelieved, without pain.*

Caloric is heat considered in the abstract. Heat penetrates, and is contained in all substances; which it expands, more or less, in proportion to the quantity. By its expansive power it preserves all fluids and liquids as such. But for that principle, it is altogether probable, that all fluids—nay, the very air we breathe, would become solids, and our earth be one vast ball of ice, destitute of life or change. All gases are supposed to be but the vapors of substances which at some temperature are solids, as steam is that of ice. Carbonic acid has, indeed, been reduced to a solid. The expansion of metals by heat is a fact well known, and constantly applied in mechanics.

Heat exists in frozen water to a considerable degree, as is shown by the fact that a temperature above seventy degrees below the freezing point has been produced. The most intense cold is produced by “freezing mixtures,” or a preparation of a solid and fluid, or of two solids, which have an affinity for, and dissolve, each other, producing liquids, which by their much greater capacity for heat abstract it from surrounding objects, producing an intensity of cold proportioned to the perfection and rapidity of their change of form. By capacity for heat I mean the *absolute* quantity of heat which substances will contain at the same apparent temperature. Fluids have a much greater capacity than solids, as a considera-

ble quantity of heat becomes latent, or hidden, to preserve them in the fluid form. Thus, when a solid passes into the liquid form cold is produced when a liquid becomes solid heat is evolved. Hence the efficacy of water in preserving our cellars from frost. Salt and pounded ice make a very efficacious freezing mixture. The common Thermometer denotes but 32° below the freezing point, that being nearly the temperature at which mercury freezes, hence in those used to determine lower temperatures alcohol is substituted for mercury.

All substances are conductors of heat, though some in a much greater degree than others. For instance, place a lump of ice under an iron plate and another under a layer of clay of the same thickness, and expose them to the sun's heat. The first will melt in far less time than the second. As great a difference will also be perceived in the temperature of the two media. Who has not noticed how much warmer rocks and stones feel when exposed to the sun, than the earth around them. The metals are good conductors—the earth is a poor conductor. Yet when substances are colder than our bodies good conductors feel coldest, as they abstract heat most rapidly from them. Witness the apparent temperature of the wall and a flannel garment in a cold room. Air, earth, and water are poor conductors of heat. If it were not so, we should be literally roasted in summer, and frozen in winter. It is the air contained in the interstices of cotton wool which renders it a warmer article for clothing than solid cloth. Being slow to imbibe heat and slow to impart it, these substances preserve a comparative equilibrium, which accounts for the comparative warmth of well-water in winter and its coolness in summer. The frost can seldom penetrate many inches into the ground, and the retained warmth, beyond its reach, preserves the roots of plants from perishing with cold. Again, in summer a moist coolness is preserved a little below the surface, thus preventing their perishing with heat and thirst.

A considerable degree of heat is necessary to the activity of the animal functions. That class of animals which do not generate heat, called “cold blooded,” become torpid at certain temperatures, as well as those warm blooded animals which hibernate, or sleep, during winter, of which the common bear is an example. A too intense degree of heat, also, produces torpidity in cold blooded animals, and languor and exhaustion in warm blooded ones. The latter, however, possess

an almost incredible power of maintaining an equality of temperature through vicissitudes of heat and cold. A variation of a few degrees from the normal standard of internal heat proves fatal; yet, human beings have borne with impunity, for some length of time, temperatures ranging from below zero, or 0°, to 600°, or nearly that number. Of this power of resisting heat and cold, civilized society, in its present debilitated state, has little conception. While shivering under our furs, we can scarce credit the "tales that our grandfathers tell," or conceive, in our warm flannel and close rooms, how the hardy savage can expose his bare limbs to the keenest weather, and sleep cosily with no covering but his blanket, in his open wigwam. Strange, that civilization has hitherto degenerated physical man, while it has so largely developed the mental. Will not the time come, when men will learn that the noblest development of the spiritual must be based on a sound organism? Ignorance of this important fact has caused most, perhaps all, the concomitant evils of civilization. Sickly bodies will make sickly minds, and sickly minds will have sickly manifestations. Close, over-heated, ill-ventilated rooms, where the air is so loaded with carbonic acid, as to reduce the organism to the condition of those reptiles whose blood is but half aerated, combined with unnecessarily warm clothing, which, by retaining heat and moisture on the surface, debilitates the skin; and gross, concentrated food; over-eating, late suppers; late hours, tight dresses, neglect of bathing, indolence,—in one word of plain English, FASHION, has rendered us what we deserve to be, a race of shivering, nervous pigmies compared to what we might have been.

Brooklin, April 1st, 1854.

THE FARMER'S DAUGHTERS.

BY MRS. M. F. H. THOMAS.

What is the reason that the Farmers' daughters are so much more obnoxious to educational restrictions than anybody else's daughters? Or why should there rest a peculiar unction upon them, from which other females are exempted? Are they formed of different clay; or with different attributes from others? Do not like causes produce like effects upon them, with universal humanity? Are not their natures—their need, spiritual and physical, the same as the daughters of professional men? Why then should their time for education be shorter? Are their prospective duties, as wife and mother, any more sure and onerous than other females? I know that the *spirit of caste* is abroad in the land;

but there is too much good sense and radicalism in the public mind, for its undisputed sway. Its limits are perpetually changing; and *farmer's daughters do not always make farmer's wives*. They who were born and bred farmer's daughters, often grace the highest circles of society—wives of our statesmen, philosophers, and even, I am sorry to say of *genteel do-nothings*, while the daughters of professional men, and even so-called gentlemen, are often happy to become wives to our farmers.

But even were not this so, what is there so peculiar in the situation and necessary training of the farmer's daughters? Health, and perfect physical development, is necessary to all; for without it life is a burden, and usefulness is destroyed. All females should be educated for the situation of wife and mother. All females should be instructed in the necessary processes of house-keeping; for such knowledge is required in a mistress, to preserve a well-ordered household, and besides, who knows what turn the wheel of fortune may take? All human beings should have their intellectual and moral natures developed to the utmost possible extent. What more, or, what less, is required for a farmer's daughter? Surely, among the green fields, pure air, most wonderful phenomena, and choicest gifts of nature, the mind as well as body, should find its most perfect development. If there be a being whose situation I envy, it is the intelligent and educated farmer's daughter, whose home is in the great laboratory of nature.

Brooklin, March 30th, 1854.

Reviews, &c.

How to choose a good Milk Cow, &c.—Glasgow: Blackie & Son. Toronto: Maclear & Co., 1853.

This is an excellent treatise, abounding in valuable, practical information. The first part is a translation from the pen of J. H. Magne, Professor of the Veterinary School, Alport. It consists of a description of all the marks by which the milking qualities of cows may be ascertained. The second part, or Supplement, is written by Mr. John Haxton, and contains an interesting account of the Dairy Cattle of Britain; their qualities, management, and productive results; with practical hints for selecting. M. Magne's are founded upon the researches of Monsieur Guenon, the ingenious advocate of the "cucheon theory," and are designed to explain, modify, and render more practical the statements of the latter, and to disencumber them of certain fanciful hypotheses and wise-drawn refinements and calculations, which are otherwise calculated to engender scepticism as regards the entire system propounded. The work is illustrated by a large number of well-executed engravings, which render the text more easily understood, and the price is only 3s. 9d.

The Anglo American Magazine—Toronto: Maclear & Co. April 1854.

This Canadian production continues to show signs of a vigorous growth. Its original literature is healthful and instructive, and its selected matter, which forms a much smaller portion of each number than is usual in such publications on this con-

tain, is evidently made with care and judgment. The April number contains a large and clearly engraved map of the Seat of War, accompanied by a descriptive paper; an engraving of the Empress Josephine, and a capital view of Barrie, County of Simcoe; a place that is rapidly growing into importance. The style in which the engravings are executed reflects great credit on Mr. Maclear's establishment, and shows that this important department of Art is making certain progress among us. The meritorious effort to diffuse among our people the elevating spirit of a native literature, is richly deserving of a generous support.

Chambers's Journal of Popular Literature, Science & Arts—New Series: Part 2—March 1854. W. & R. Chambers, London & Edinburgh; A. H. Armour & Co., Toronto; H. Ramsey & John Armour, Montreal; P. Sinclair, Quebec; A. Bryson, Bytown; W. Allan, Perth; J. Duff, Kingston; R. R. Sniley, Hamilton; J. M. Graham, London, C. W.

The second part of the new series of this popular and long established Journal fully sustains the high opinion we formerly expressed on the merits of the first. It does not contain a single article which may not be perused with pleasure and improvement by all descriptions of readers. "Wearyfoot Common," an original tale from the well known pen of Leitch Ritchie improves as it progresses; and the monthly papers on the progress of science and arts, and the Library and the Studio, contain much useful and interesting matter, carefully condensed. It will be remembered that Mr. Wm. Chambers, made a tour through British North America and the United States during the latter part of last year, and we have two papers in the present part, the beginning of a series, as the fruits of his observations. These articles are entitled "Things as they are in America," and they cannot fail to interest deeply a large class of readers on both sides of the Atlantic. We shall probably notice them more particularly on future occasions.

The fourteenth Annual Report of the Restigouche Agricultural Society: Dalhousie, 1854.

We are indebted to the courtesy of Dugald Stewart, Esq., the Secretary & Treasurer of this Society for a copy of their Report, which indicates the steady progress the Society has made for many years. While grain and root crops have received due attention, it seems that very considerable improvement has been effected in the important classes of horses, cattle and other animals of the farm.

Norton's Literary and Educational Register, for 1854—New York: C. B. Norton, 71 Chambers Str. et.

Here is a publication of 200 pages filled with information of essential importance to every one interested in books, for the astonishingly low price of 38 cents! We have in the commencement interestingly written descriptions of several of the more important public libraries of Europe, accompanied by well executed engravings of the buildings; followed by a copious account of the numerous libraries in the United States, and a large mass of Library and Educational Statistics, possessing a general interest. Then follow alphabetically arranged lists of all works published in the United States, Great Britain, France, Germany, &c., during 1853, denoting size, price, publishers, &c. No individual in any way interested in literature and books, ought to be without *Norton's Annual Register*; and to Booksellers, Li-

brarians, Clergymen and Students, *Norton's Literary Gazette*, published fortnightly, at the small cost of \$2 per annum, bringing up to the latest moment all that is new and interesting in the literary world,—is equally indispensable.

Morton's Cyclopaedia of Agriculture. Edinburgh and London: Blackie & Son. Toronto: Maclean & Co.

The high opinion which we expressed on the merits of this work at the commencement of its publication in monthly parts, has been fully sustained as it has progressed towards completion. Unlike many publications of the kind, it is no mere compilation but every article is original, written by some person of eminence who is particularly acquainted with the subject of which he undertakes to treat. The list of contributors comprises several of the most eminent names among the living cultivators of British Science and Agriculture. The work, the fore, brings up every department of husbandry—theoretical and practical—to the present state of knowledge.

Parts 23 and 24, now before us, contain, in addition to a vast number of short articles, a copious treatise on "Poultry," illustrated by several excellent wood engravings; "Reaping Machines," with some well executed cuts; "Road Making" also illustrated; "Rotation of Crops;" "Salts and Saline Manures;" "Sawing Machinery;" "Historical Account of the Agriculture of Scotland;" "Sewerage Manure;" and a very elaborate article on the history and management of the "Sheep." Each part has two beautifully executed steel engravings, and the wood cuts, illustrating the Botany and Entomology of the Farm, are exquisite specimens of art. Whoever studies this work cannot fail to obtain a correct and comprehensive knowledge of the principles and mode of practice of the most advanced state of Agriculture as understood and pursued by the best farmers in Great Britain. It can be procured, as published in parts of Maclean & Co., of this City, or of any of their travelling agents throughout the country.

EDITOR'S NOTICES.

AGRICULTURAL REPORTS.

Reports have been received at the office of the Board of Agriculture to the present date, from the following counties: Addington, Bruce, Carleton, Dundas, Essex, Frontenac, Glengary, Grey, Haldimand, Hants, Hastings, Kent, Lambton, Leeds, Lennox, Lincoln, Middlesex, Northumberland, Ontario, Oxford, Perth, Peterboro Prescott, Prince Edward, Russell, Stormont, Victoria, Waterloo, Welland, Wellington.

April 19th, 1854.

TO CORRESPONDENTS.

Several interesting communications are unavoidably postponed.

Mr. Charnock's third article has been necessarily crowded out of the present number. It will appear in our next.

SALE OF LIVE STOCK.

We request the special attention of our readers to the advertisement of Mr. Parson's Sale of cattle, sheep and pigs, on another page. From the great attention which Mr. P. has paid to the selecting and breeding of his stock, and the general excellence and useful properties of his herd, we have no hesitation in stating, that parties desirous of improving in this important and remunerative department of Agriculture, would find this a most favorable opportunity of doing so.

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IMPORTANT TO

DAIRYMEN & BREEDERS
OF
SHORT HORNS!

IN consequence of the ill state of health of Mrs. Parsons, and she being recommended by her Physician to visit the Old Country, together with other family arrangements, the subscriber has resolved upon discontinuing his duty as editor, and there will consequently be no more of THE CANADIAN AGRICULTURIST, on Tuesday, 27th JUNE next at his residence, Caledonia Farm, near Oneida, C.W., the WIDOW of Mrs. VALUABLE HERD, comprising, Thorough-Bred Short Horn Cows, Heifers, and Heifer Calves, a two year's old, and yearling Bull and Bull Calves, with a number of choice Grade Durham Cows, Heifers with Calves, and two year's old Heifers, all neatly thorough-bred, and selected with skill and care for years past for his own intended use, from the deepest markets in his Herd.

The Farmers of Canada, therefore, will now have an opportunity, seldom offered, to supply themselves with a foundation of a well-bred Milking Herd.

The Subscriber thinks it desirable to state that, he at first anticipated selling only a part of his Herd, but has decided otherwise, that it may not be said he had reserved the choicest of his Herd for his own use hereafter, all, therefore, will be sold without reserve to the highest bidder. A credit of nine months will be given.

To make the Sale more attractive, the Subscriber has concluded on offering some of his thorough-bred Leicester Sheep—principally young, and part of them by Mr. John Watson's imported best ram. A number of his imported small breed of pigs (Leicester Badger's and Lord Durie's blood) not to be equalled for symmetry and quality.

Also a powerful Yoke of good Working Oxen.
H. PARSONS,
Caledonia Farm, near Guelph, C.W.

April 20th, 1854.
N.B.—The far-famed Bates' Duchess blood is infused more or less throughout this Herd, from the celebrated Stock of George Vail, Esq., of Troy, N. Y., and likewise the blood of the Herds of the Hon. Adam Ferguson, of Wood Hill, and of John Howitt, Esq., of Guelph. Any comment upon the Stock of either gentlemen would be superfluous here.

Catalogues, with further particulars and Pedigrees, will be shortly out.

DURHAM BULL CALVES.

THE Subscriber does not intend to rear any Bull Calves for sale this Season, unless to Order.

Five thoroughbred Cows, Duchess or Bates blood, are now expected to Calve.

Intending Purchasers will, of course, be at liberty to select.

ADAM FERGUSSON.

Woodhill, Waterdown,

PURE BRED STOCK
FOR PRIVATE SALE AT
MOUNT FORDHAM, WESTCHESTER CO
NEW YORK,

Eleven Miles from City Hall, N. Y., By Harlem R. R. Car

HAVING met with more success than I anticipated the past year, with the Catalogue of male animals at Private Sale, is the reason for offering lot of animals AND MY JUNE SALE BY AUCTION, NOT TAKE PLACE. A full descriptive Catalogue prices attached, will be published on the fifteen April, and I intend to be at home myself to see who may call. I will sell at Private Sale, about Short-Horns, 6 of which are young Bulls and Calves. The Cows and Heifers old enough, will in Calf, to the Celebrated Imported Bull "BALO (9918), or Imported "ROMEO," winner of the First Prize at Saratoga, in 1844; and also at the American Institute the same year.

The young Bulls and Bull Calves are some from them from Imported Cows, and sired in England the others are sired by the Imported "MARQUIS GARRABAS," (11789), winner of the First Prize Saratoga, the past year, as a two year old.

Also, about 10 head of Devons, consisting of yearling Bull, sired by "MAJOR," and 5 Bull Calves sired by my Imported First Prize Bull, "FRANK QUARTLY," and several of them from Imported Cows. The Cows and Heifers old enough, will be in Calf to "FRANK QUARTLY." Also 6 or 8 Suffolk Sows; and several young Suffolk and Essex Bows. Also 2 Southdown Rams, imported direct from John Webb, and 6 Yearling Rams, all bred by me from Stock on both sides, imported from Jonas Webb. Catalogues will be forwarded by Mail if desired.

All animals delivered on SHIPBOARD, or RAILROAD in the City of New York, free of expense to the purchaser. The Devons are at my Herdsdale Farm, five miles north, to which place I will take persons both to and from.

MY FRIEND MR. N. J. BECAR, who is interested in several of my importations, will also sell about 10 head of Short-Horns, consisting of 4 young Bulls and 5 or 6 Females. His young Bulls are also several of them from Imported Cows, and sired by "LORD OF ERYHOLMENE," (12205), and the celebrated First Prize Imported Bull "ROMEO." Becar's Cows and Heifers are in Calf to the Imported Bull, "MARQUIS OF CARRABAS," (11789). Becar can be seen at his Store, No. 187 Broadway, New York, at which place he will make arrangements to go to his Farm, at Smithtown, Long Island. His animals will be entered in the same Catalogue with mine, which can be obtained by addressing him at his Store, or to me at Mount Fordham. His animals will be delivered in the same manner as mine. Our Importations have been in almost all cases made at the same time, and at a price of equal merit except that I have more in number.

TERMS, Cash on delivery.

L. G. MORRIS

March 16th, 1854.

THE
CANADIAN AGRICULTURIST

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