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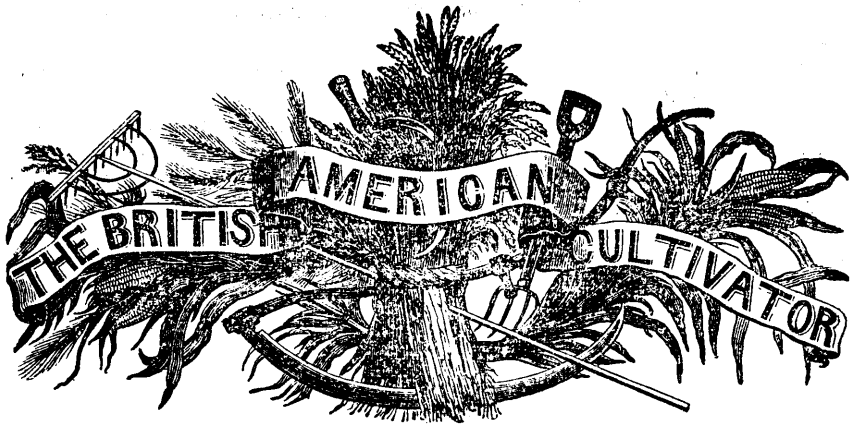
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"Agriculture not only gives Riches to a Nation, but the only Riches she can call her own."

New Series.

TORONTO, MARCH, 1846.

Vol. II. No. 3.

Lucern.

We have great pleasure in presenting to our readers the enlightened views favoured us by a Long Point Farmer, upon the culture of Lucern or French clover, and hope that our able correspondent will favor us with his views and experience upon other points of agriculture, from time to time, as opportunity may offer. The promised articles upon Northumbrian turnip culture, *sanfoin*, and winter vetches, will be most thankfully received, and shall be published as soon as they come to hand.

We rejoice to see the practical farmers take up their pens to advocate their own and their country's best interests, through the medium of the press; and we are greatly mistaken if there are not hundreds in Canada who are abundantly able to enrich an agricultural journal with matter that would be both creditable to the writers and entirely unquestionable in character.

It appears that it is quite impracticable to get correspondents to have their names made known to the public, and we are therefore compelled to publish anonymous communications, but in doing so it is imperative that the writer furnishes his address to the editor.

One half of the matter that is published in the *Cultivator* should be furnished by correspondents, which should be written in a plain, practical style, with the sole view of improving the agriculture of the country, or of affording appropriate

instructive hints upon the industrial resources of the British American Provinces.

The *Cultivator* should be nearly an original work; by the industry of its editor this might be accomplished, but it is not to be supposed that the opinions of one individual can have as much influence upon the mass of cultivators as though some hundreds should lend their aid in moving forward the car of agriculture.

We again repeat that we are highly delighted with the prospect of having some scores of intelligent and patriotic contributors to our Journal, and hope that great practical good will result from our co-labours in the cause of agricultural improvement.

SIR,—As an agriculturist I cannot but be deeply interested in the progress of the science on which a large measure of the farmers' success must depend, and therefore interested in the success and extension of your very useful publication, which has for its object the wide extension of modern and practical knowledge appertaining to it. Conceiving as I do, that most men of leisure, observation, and reflection, may aid you by their contributions, I think it my duty to proffer, through you, to my agricultural brethren, occasional articles upon subjects that I deem worthy of attention; and if they are written in such an intelligible, practical manner, as meet with your editorial approval, I shall be happy to repeat my

contributions. I have often thought from my acquaintance in England with the extraordinary productiveness of Lucern, and my own knowledge of the fact, that it has been long successfully raised by Col. Delater of the Falls, and my own limited experiments, that it may be cultivated in this part of Canada. I will venture to forward the annexed article upon it, not an original one, but from high authority.

I am, sir,

A LONG POINT FARMER.

Lucern, or *Medicago Sativa*, is a plant which will not bear superabundant moisture, and its cultivation is therefore restricted to dry soils;—but where it thrives, its growth is so rapid and luxuriant, that no other known plant can be compared to it. In good deep loams, or sandy soil on a substratum of loam, Lucern is the most profitable of all green crops; when properly managed, the quantity of cattle which can be kept in good condition on an acre of lucern, during the whole season, exceeds belief. It is no sooner mown than it pushes out fresh shoots; and wonderful as the growth of clover sometimes is in a field which has been lately mown, that of lucern is far more rapid. Where a few tufts of lucern happen to be, they will rise a foot above the surface, while the grass and clover which were sown at the same time, are only a few inches high.

Lucern sown in a soil suited to it, will last for many years, shooting its roots downwards for nourishment, till they are altogether out of the reach of drought. In the driest and most sultry weather, when every blade of grass droops for want of moisture, lucern holds up its stem fresh and green as in a genial spring. The only enemies of this plant are a wet subsoil and a foul surface. The first is often incurable; the latter can be avoided by good cultivation.

It is useless to sow lucern upon very poor sands or gravel, or on wet clays. The best and deepest loam must be chosen, rather light than heavy, but with a good portion of vegetable earth equally dispersed through it. If the ground has been trenched with a subsoil plough, so much the better; and if the surface is covered with some inferior earth from the subsoil, it will be no detriment to the crop, for it will prevent grass and weeds from springing up, and save much weeding. The lucern will soon strike below it. It is not a bad practice to cover the lucern field with

a coat of ashes, to keep down the weeds, where this can be done easily.

The soil in which it is intended to sow lucern seed should be well prepared. It should be highly manured for the two or three preceding crops, and deeply ploughed if not trenched: It should be perfectly clean, and for this purpose two successive crops of turnips are most effectual. In the month of April, or earlier if the season admits, the land having been ploughed flat and well harrowed, a very small quantity of barley, not above a bushel to the acre, may be sown or drilled into the ground, and at the same time from thirty to forty pounds of lucern seed sown broad-cast, and both harrowed in and lightly rolled. If the land will not bear to be laid flat without winter furrows, it will be useless to sow lucern in it. As the crop comes up it must be carefully weeded: no expense must be spared to do this effectually, for success depends upon it.—When the barley is cut, care should be taken to cradle it low, to prevent the stubble from interfering with the growth of the lucern plant, or if it is very strong, should be hoed out or removed with a light harrow, and if kept free during the first year, there will be little difficulty with it afterwards, when the roots have become strong; at all events it must be kept as free from weeds as possible. It must not be fed off with sheep, as they would bite too near the crown of the plant; it should always be cut as soon as the flower is formed. The second year it will be fit to cut very early, and in a favourable season it may be cut four or five times. After each cutting it is desirable to draw heavy harrows or a cultivator over the land—this process will not injure the plants even if it divide the crown of the root; but it will destroy grass and weeds. Liquid manure, consisting of the urine of cattle or the draining of dunghills, is often spread over the lucern immediately after it has been mown, and greatly invigorates the next growth; but if the land is a deep rich soil this is unnecessary.

The lucern will grow and thrive from seven to twelve years, when it will begin to wear out, and in spite of weeding the grass will get the upper hand of it. It should then be ploughed up, and all the roots carefully collected and laid in a heap with dung and lime to rot, and a course of regular tillage succeed. The sown land should not be sown again with lucern in less than ten or twelve years, and only then after a regular course

of cropping and manuring. Cattle fed upon lucern thrive better than on any other green food. Horses, in particular, can work hard upon it without any grain, provided it be slow work.—Cows give an increased quantity of milk when fed upon it. In the commencement of the season it is apt to purge cattle, but this, with a little attention, may be made conducive to health. If given in too great quantities, or moist with dew, they run the risk of being hoven. These inconveniences may be avoided by giving it sparingly at first, and always keeping it twenty-four hours after it is cut, during which time it undergoes an incipient fermentation, and the juice is partially evaporated—it is rather more nutritive in this state. An acre of good lucern will keep five or six horses from May to October, when cut just as the flower opens. If it should get too forward and then prove to be more than the horses can consume, it can be made into hay; but this is not the most profitable way of using it, and the plant, being very succulent, takes a long time in drying. The rain also is very injurious to it in a half dry state; for the stem is readily soaked with moisture, which is slow in evaporating; the produce, when well made, is very considerable, being often double the weight of a good crop of clover hay.

Many cultivators adopt the practice of drilling lucern in wide rows, and hoeing the intervals after each cutting. This is not a system calculated for obtaining the largest growth on a given space, but well suited to a part of the country where manual labour is dear and scarce, and a most admirable mode for effectually cleansing the land from weeds, which must be subdued to secure the free growth and maintenance of the plant.

Dryden Farm, Victoria, C. W.

To Agricultural Societies, Clubs, &c.

As it is highly probable that the TERMS upon which we afford our Journal is not yet fully understood, we therefore avail ourselves of this opportunity to apprise our patrons more clearly of its wholesale price.

Any society, club, or individual, who may order twenty copies and remit the sum of ten dollars, free of postage, to the publisher, will be entitled to any extra copies that may be ordered from time to time, for the sum of two shillings and sixpence per copy.

The first volume, (new series) is afforded neatly stitched for two shillings and sixpence per

copy, and substantially and neatly bound for five shillings. To agricultural societies and persons in trade, the liberal discount of *twenty-five per cent* is made, upon the bound volumes.

Agricultural societies would doubtless find it a great means of promoting agricultural improvement if they would afford the minimum prize of each class in a cheap work upon agriculture.

A Canadian publication may now be had, containing nearly 400 pages, neatly bound, for the extremely low price of three shillings and ninepence. We wish it to be distinctly understood that agricultural societies and persons in the mercantile trade, will be furnished with the *Cultivator for 1845*, neatly bound, for 3s. 9d. per copy.

We have a large edition on hand, and would be highly flattered to see the whole disposed of before the close of the present year.

Bertie Agricultural Society.

We have been favoured with a history of the rise and progress of this Society, by its talented Secretary, Mr. Richard Graham. It is truly cheering to a real Canadian mind to see such patriotic institutions efficiently supported in the several townships of this rising province. If a few such men as Mr. Graham could be had in each township who would devote a small share of their time and talent in managing and carrying out the objects of agricultural societies, there can be no doubt but that ultimate success would crown their efforts. While every proper exertion is made to diffuse knowledge and skill among the members of those praiseworthy institutions, measures should be taken to collect and report the various improvements made in agriculture and the mechanical arts in each locality, by the secretaries or others qualified for the task, which should be published abroad for the general good. This mode of transacting business would have a tendency to make those associations popular among all classes of our citizens, and would add largely to the productive wealth of the country. We trust that our esteemed friend, the secretary of the Bertie agricultural society, will favour us with a series of short practical articles upon the improvements of agriculture effected in his neighborhood; and whilst desiring this favour from him, we would also beg to solicit officers of all other agricultural societies in the province to furnish us with similar documents, by which means they would greatly enhance the value of our work.

County of Kent Agricultural Society.

The Constitution of this Society has been kindly sent us by the President of it, to whom we beg to tender our sincere thanks for the accompanied able and spirited correspondence. As soon as a favorable opportunity may offer, the constitution alluded to will receive a place in the *Cultivator*, with some remarks from the pen of the editor.

We can truly say, that we heartily wish that Canada was blessed with thousands of such zealous advocates of agricultural improvement as the writer of the subjoined article; his views upon agricultural societies are strictly correct, and unless those societies furnish the country at large with the improvements made in agriculture in their several localities, they will effect but little good. This view of the subject has at last received the sanction of the wisest and best men in the country, but it yet remains to be seen how far it may be acted upon by the societies throughout the Province.

Every Township in the Province should have its Agricultural Club and Library; and when those institutions can be efficiently sustained throughout the land, it will be found that 100 bushels of wheat or other grain can be raised for one half the expense that it now costs the producer.

The *smut* in wheat is evidently a disease produced by an insect. Gen. Harmon, of Wheatland, N. Y. made a similar experiment to the one reported by Mr. Smith, and the results have proved that thousands of small insects were produced from a few smut balls.

SIR,—

Enclosed I transmit you a copy of the constitution of the County of Kent Agricultural Society. If you deem it worthy of a place in the columns of the *Cultivator*, for the information of those who are about being formed into similar societies, you are at liberty to use it. I presented it to the Directors in the early part of 1845, when it was unanimously adopted, but its application was deferred till the present year, and I am happy to say, that under the auspices of this constitution, the most vigorous exertions are being made, with signal success, to have it extensively supported under the form of branches. But while I tender this for the benefit of other infant societies, it is but just to say, that a desire to avail ourselves of the excellencies of other

constitutional arrangements was generally expressed by the Directors at their last meeting; and this, Mr. Editor, was thought you would be pleased to favour us with in pamphlet form or in the columns of your useful journal.

It is not only necessary that Agricultural Societies be formed, with as little delay as possible, throughout the province, combining the principles of durability with the capacity for extension, but that the most friendly relations be cultivated in the communication and diffusion of every useful and practical information, not only in the permanent establishment of those societies, but in their practical working and beneficial results; their successful experiments in the cultivation of the soil with the varieties of grasses and grains; the rearing of the different breeds of swine, sheep, cattle and horses, with observations upon their general and peculiar characteristics, involving the interest of the farmer. It is not difficult to divine the fund of useful knowledge that would be brought to light through the medium of the *Cultivator*, drawn from every locality in the Province where a society is, or may be formed, and in which farmers of observation, experience, or scientific attainments exist, who, though deep trenched in gigantic forest, and years pent in secular employments, would catch the ambient spirit, emerge from slumbering indifference, and contribute to the social revolution of agriculture, gradually prepare the way, and eventually terminate in the consummation of a Provincial Agricultural Society, sustained by Government patronage and the several County and District Societies, upon a principle perhaps not very dissimilar to the enclosed constitution, with equal representation from each society. If those views should meet a favourable response, you may expect the energies of the Kent Society to be thrown into the scale for its support.

I have just received, since writing the above, the first number of the *Cultivator* for the current year, in which I find appropriate remarks and resolutions under the head of "Proceedings of the Home District Agricultural Society," in which a meeting is called on the second Wednesday in February inst., at the Court House, for the ostensible object of concocting arrangements, for the establishment of a Board of Agriculture, and a National Society. In the objects of the meeting I perfectly concur, and regret the probability of non-attendance from this County,

for want of time and preparation. Nothing within the sphere of my knowledge is better calculated to produce a union of feeling and interest among farmers, and to subvert the old-fashion, know-little, laborious, and unprofitable system of farming, by combining and diffusing experimental and scientific knowledge,—nothing better calculated to arouse the farmers of Canada from ruinous apathy to a sense of the progressive improvements going on in Europe and America, and of the necessity of immediately enquiring after all the knowledge that observation and experience can furnish, and the light that science can bestow, to enable them to participate in the great agricultural reform about being effected through the instrumentality of agricultural societies, agricultural publications, and the science of chemistry. If farmers would avail themselves of the more approved and productive system of farming, it is to these sources we must look for information. The old practitioner must consider himself a pupil in the school of his profession, forego his traditional notions and practices, and with indefatigable zeal—which seldom fails to accomplish the desired object—apply and exert himself in the use of the means, so cheap and accessible, to stand in the front rank of eminence in his honorable calling.

As time and business admonishes me to conclude, I would just remark, Mr. Editor, that in the varied employments of life, men are generally found to set an ideal estimate upon their own character and worth, proportionate to the imbibed opinions of the respectability of their occupation, than which nothing can be more disastrous and absurd: every man's usefulness and respectability depends upon the talent he employs in his own particular avocation. The tinker, or the cobbler, who preserves moral rectitude, and stands pre-eminent in his necessary, though humble calling, is more useful to society and honourable in himself, than the grovelling quack or swindling pettifogger! There is an excellence in every occupation; the way lays open to the bold aspirer, whose reward is peace and plenty, eminence and respectability.

I believe it is a received opinion, that the smut in wheat is a disease, and that it is infectious.

In reply to "any gentleman that has made or shall make any discoveries relating to insects injurious to wheat," &c., I inform you, that at our autumnal exhibition held at Chatham, in the ear-

ly part of October last, a gentleman, Mr. Eberts, showed me, with other farmers, several smut heads securely corked in a transparent glass, in the bottom of which a great number of very small animalcule lay,—some of which were creeping, and appeared to have escaped by a visible puncture through the capsula of each diseased grain; those insects, of a dark colour, were too small to be seen in ordinary situations.

JOS. SMITH,
President Co. Kent Ag. Society.
Cloverdale, Raleigh, February 3rd, 1846.

Manufacture of Bone Buttons.

We had an opportunity the other day of looking into the Button Mill of Messrs Kelly & Spring at Brighton, and of examining the process by which they manufacture a very superior kind of bone button, much superior, we are told, to those which are imported from Britain. They manufacture some dozen different sizes, the aggregate quantity being about 5000 gross a year. Their buttons, we believe, have a high reputation in the market, and in respect to polish particularly, they certainly bear a very favourable comparison with any we have ever seen, whether of foreign or domestic manufacture.

The raw material for the manufacture of these buttons, is furnished by the numerous and extensive butcheries in Brighton. The leg bones of cattle are those which are used in the manufacture; and about 250,000 of these bones are annually converted into buttons at this establishment. After being boiled out, they are transferred to the button mill, where they are first sawed into convenient lengths, and then softened by steam; after which they are sawed lengthwise into slabs of the desired thickness. From these slabs the buttons are cut by drills, running by steam, one side being cut first, and afterwards the other. Next, the four holes of the button are made, which is done by an operation of four distinct drills. Then follow the different processes of smoothing, bleaching, colouring, and packing. Girls are employed in several of the departments. In this manufacture there is no waste of material. Such parts of the bones as are not actually converted into buttons, are used for manure. A striking instance of the efficacy of such manure was pointed out to us in a turnip field near by. Even the bone dust which falls from the saws and lathes, is carefully preserved, and sold to farmers as a luxurious article of fodder for their cattle.

Boston Traveller.

Agricultural Protection.

No one is more sensible than ourselves of the injurious influence that the repeal of the British Corn Laws will have upon the future destiny of this colony, unless the colonists adopt a system of political economy adapted to the emergencies of the case. It is extremely doubtful that any decided action will be taken, by either colonial government or people, in establishing a spacious home market for the productions of the soil, and in developing the vast and numerous resources of wealth with which Canada abounds, so long as the present liberal policy of admitting our breadstuffs and other provisions into the British market is in force. The present Canadian Corn Law is a much more liberal measure than the farmers of this country had any right in justice to the British farmers to expect, inasmuch as the colonists pay no share of the expense of sustaining the Imperial Government, or of maintaining the poor of the British Isles. In many parishes in England the poor-rates alone equal fifteen shillings sterling per acre upon lands, and the other taxes and assessments at the same ratio—no share of which is borne, nor should be, by the Canadian farmer. It therefore must appear clear to every unprejudiced mind, that the low duty placed upon Canadian provisions is probably the greatest boon that was ever granted a colony. The carrying trade to be sure is principally in the hands of capitalists in Britain, yet the competition in this trade is open to the colonists; so that view the matter in all its bearings, every degree of justice is done the latter.

The manufacturing classes of the mother country argue, and probably with some reason, that with the present fostering care given to the various manufacturing trades on the continent of Europe, by the several governments, it will shortly be impossible for the British manufacturer with his high price of labor and provisions, to compete with the continental manufacturer with his low price of those commodities.

The deleterious influence upon the British manufacturer, from this quarter, has not yet been experienced to any great extent, but many clever statesmen apprehend the most disastrous consequences from the competition alluded to; and to avert the evil in some measure have demanded in a constitutional manner, that free trade in corn be enacted. The agriculturists of Britain are as firmly convinced that they cannot compete in

growing grain with the great corn growing countries of Europe, as are the manufacturers that they cannot compete with the cheap labor and provisions of those countries. The question at issue is between two powerful parties or interests in Britain; and although we are to a very great degree an interested party, it is extremely doubtful that we have any right to interfere in the contest. It is highly probable that an appeal to the British nation will be made upon this single question before many months:—the motto of both parties is "NO SURRENDER," and nothing short of a general election will amicably adjust the difficulty.

In this election the views and interests of the Canadian people will scarcely be consulted, and we see no tenable grounds for a general agitation being engaged in here so long as this is the case. If others differ with us in this view, and think that we should generally petition the British Parliament upon the Corn Law question, we have no objections to lend the columns of our journal and the little influence we may possess, in influencing the British Government if possible to continue the protective system, which has already done so much good for this colony. As there are so many difficulties in the way in getting petitions of this kind widely circulated among the farmers, probably the best course would be to petition the Provincial Parliament to memorialise the Queen on this important subject.

The following communication from Captain James B. Harris, shows in a most conclusive manner the importance which he attaches to the great question at issue at present in England; and if other leading agriculturists concur with him in opinion that we should petition, the sooner action is taken in the matter the better:—

Benares, near Credit,

Feb. 12, 1846.

DEAR SIR,—

Having noticed in the late files of the *John Bull* newspaper, that the Agricultural Protection Society of Great Britain, as well as a great many of the Agricultural Societies throughout the Kingdom had held meetings, which were very fully attended, at all of which it was determined to petition Her Majesty and both Houses of Parliament in support of the Corn Laws, I conceive that the farmers of Canada ought to do everything in their power to second the views of the agriculturists at home, our interests and theirs

being decidedly one in regard to agricultural protection.

Could we not therefore back them up by petitions from this country to the same effect, which I think might easily be done through the means of your useful and now widely circulated journal?

If I could consent that any representation coming from the mass of the agriculturists of this extensive and valuable province, would meet with that attention and respect from the authorities at home which it deserves and I have no doubt would have great weight in deciding a question of so much consequence to Great Britain, both at home and in the colonies, as that of protection to agriculture.

Hoping that you may be able to second my views in favour of the agriculturists of Canada, I beg to remain,

My dear Sir,

Yours truly,

JAMES B. HARRIS,
President of the Ag. Society,
Toronto Township.

An Excellent Method to Obtain Subscribers to the Cultivator.

Mr. Daniel McMillan, of Erin Mills, writes us under date of 15th January last as follows:—"I herewith enclose you six pounds ten shillings for *Cultivators* for the annexed names. You see if proper steps were taken by your patrons, your circulation might be increased in tenfold ratio. I tried in vain these last two years to get others in this township to take the *Cultivator*, but could prevail upon only one. This year, however, I have been more successful. I got a list ready for the Town Meeting, and brought the matter before the attention of the farmers, and by some persuasion procured on the spot forty-eight subscribers at a half a dollar each."

The Township of Erin is situated in a remote part of the Gore District, and is not so highly favored as some of the front townships for agricultural pursuits. We see no good reason why the settlers in the back townships should not prize knowledge as highly as those near market. Mr. McMillan, by the patriotic course that he has pursued in this matter, has shown most conclusively that he believes in the doctrine that a man in public business cannot succeed well unless those with whom he does business are successful in their pursuits. It is the interest of the

farmer, the merchant, and the mechanic, that the agricultural products should be doubled, if possible, yearly. The fostering care for the farmer and manufacturer has been sadly too much neglected by those who have influence in the country; but we rejoice to see indications of such a healthy reform being effected, and we have not the slightest doubt but that the public mind will become more and more informed upon those points, until an entire revolution be brought about in the present monetary and commercial relations of the country. By supporting journals that will independently advocate the true interests of the country, changes of no ordinary magnitude may be effected.

We will suppose it fair to infer, that what has been done in Erin and Whitby, could be as easily achieved in other townships of Western Canada. In the former there are nearly sixty, and in the latter upwards of four hundred copies of the present volume of the *Cultivator* in circulation. By taking those two townships as a data of what our general circulation might be, if a few spirited men in each township would adopt the proper method in obtaining for it an extensive patronage, it would give us the large circulation of upwards of 60,000 copies. For every five shillings benefit that the proprietors of this journal might obtain from this liberal support, the country would be benefited in increased production or wealth at least five pounds. We are to a trifling extent interested in the wide and general circulation of the *Cultivator*, but any little advantage that we may obtain by being liberally remunerated for the efforts we have put forth in the cause of agriculture, can be only insignificant when compared to the benefit that will accrue to the province. Our patrons in Erin will, we trust, never have reason to regret that they have taken such a united stand in the cause of agricultural improvement.

To Boil Eggs.—The boiling of eggs is a very simple operation, but is frequently ill performed. The following is the best mode:—Put the egg into a pan of hot water, just off the boil. When you put in the egg, lift the pan from the fire and hold it in your hand for an instant or two. This will allow the air to escape from the shell, and the egg will not be cracked in boiling. Set the pan on the fire again, and boil for three minutes or more, if the egg be quite fresh, or two minutes and a half, if the egg has been kept any time.

Newmarket Agricultural Club

Maple Sugar.—M. P. EMBLEY, Esq. was of opinion that sugar was one of the luxuries of life that could not well be dispensed with, and if by any means the country could be supplied with a superior article of its own *bona fide* production, it is truly a subject worthy of public notice.—From a number of successful experiments made in the manufacture of sugar from the Indian corn stalk, it may be fairly adduced that it might be engaged in in this country with a very fair prospect of success. The average value of common West India sugar is 50s. per cwt. or 6d. per lb. With this high price, the business of manufacturing sugar from the maple, corn-stalk, and probably the sugar-beet, would doubtless prove highly remunerating.

Mr. G. PLAYTER had for these few years past turned his attention to the manufacture of maple sugar, and he was prepared to say that it was a very profitable business. Some farmers have urged as an excuse for not engaging in sugar making, that they have an abundance of other employment, and that it would not pay to hire labourers to execute the work; but in his opinion the ordinary seasonable operations of a well regulated farm might be performed previous to the sugar-making season; and that when the business is carried on upon an extensive scale, and upon proper principles, there are but few branches of farm labour that would pay better for the amount of capital and labour invested. One of the strongest arguments in favour of extending the business of sugar-making is, that it can be so managed that it would not materially interfere with other needful operations of the farm.

Mr EDWARD RANDAL was of opinion that a man who had an abundance of maple trees might as well make 2000 lbs. of sugar as 50 lbs. All his thrashing and other winter work might be done before the sugar season came on; and to prove that it is a profitable business, he would only mention two cases which would sufficiently satisfy the most incredulous that it is a business that might be engaged in with a certainty of success. When he was under age he conceived the idea that he would ascertain what amount of sugar could be made in a season by only one person. He accordingly tapped a sugar bush, chopped the wood, gathered and boiled the sap, and made 500 lbs. of excellent sugar in the short space of two weeks. The other case that he

would mention was the experience of a friend of his, John Gilland, of the Township of Norwich, who made during the past season 4000 lbs. of very excellent sugar. The only assistance Mr. Gilland had in making this large amount of sugar was his own sons. Supposing it worth 50s. per cwt., he would realise nearly £100, which would of itself be a handsome income from a branch of labour that does not interfere in the slightest degree with the other needful operations of the farm.

Mr. P. PEARSON said, that the producer, merchant, and consumer, are alike interested in this subject. Large sums of money are annually sent out of the province for the article of sugar, all of which doubtless could be manufactured in the country. Some say they have tried the business and found it unprofitable; now this may be the case some seasons, or in other words, a greater amount of sugar can be made with a given amount of labour some seasons than others; but it by no means follows that the business should be abandoned, because it sometimes partially fails. What would be said of a farmer who gave up sowing wheat because sometimes his crops were less productive than at others? Such a farmer would become the laughing-stock of his neighbourhood. He was acquainted with a farmer who tapped only 200 trees, and had manufactured from 500 to 700 lbs of excellent drained sugar yearly for the past nine years. He and his boys performed the whole of the work, and they scarcely missed the labour required to properly carry on their sugar operations.

Mr. W. G. EDMUNDSON remarked, that he had listened to the views which had been advanced by the members of the club, with an unusual degree of interest. This subject had engrossed his attention to a considerable extent, and he was now quite prepared to state, that the Province of Canada might with all ease become an exporting country in sugar, or in other words, in an average of seasons, there might be a small surplus produced over and above what would be required for the wants of the country, provided that the business could be generally engaged in by all whose circumstances would admit of such an arrangement. The amount of sugar annually consumed in this province may be pretty fairly calculated by the following method. The duty on raw sugar is 14s. 4d. per 112 lbs., and on refined sugar about 30s. per 112 lbs. The revenue which

Government received upon this one article for the year 1845, probably amounted to £25,000. The amount of sugar imported could not have been less than three and a half millions of pounds. Supposing that the raw stood the importing merchant at 5d., and the refined at 7d. per lb., the entire importation would cost the province about \$300,000. The quantity of sugar manufactured in the country is about equal to the importations, so that it will be seen that the quantity consumed is about seven millions of lbs. annually. The *Aborigines of the country might, under proper encouragement, manufacture a very large amount of sugar, and if this branch of industry was generally adopted by the numerous tribes that are scattered through the country, it would be a means of cultivating industrious habits among them, and would doubtless add greatly to their domestic comforts.* On the Islands of Lake Huron, and upon the borders of the south shore of that Lake, there are not less than five millions of maple trees that are capable of yielding each two pounds of good sugar yearly, for a period of twenty years. This immense source of wealth is at present unemployed, and will remain so for a long period to come, unless the subject receive more attention from those who have influence in the country.

Sugar of as good quality can be produced from the juice of the maple as from the sugar cane,—the only thing required to make an article equal to the best crushed loaf sugar, is cleanliness and a knowledge of the best process of clarification. The specimens exhibited at the New York State Agricultural Show, were equal to loaf sugar both in appearance and flavour. The best of those specimens was manufactured by a Mr. Woodsworth, who stated that he used a gill of lime water to a gallon of sap, and clarified the syrup by the ordinary method of using milk and the white of fresh eggs. He drained the sugar in tubs that he used about 80 lbs., and after being well drained, it was dissolved in water and clarified, and again reduced down to wet sugar and drained. Sugar of this quality is worth to the Canadian producer at least 60s. per cwt. So long as the present high duty remains in force the Canadian producer may safely rely upon remunerating prices.—The only thing required to ensure complete success is skill—the fault will rest with the people themselves if they do not obtain some advantage from the experience of their neighbours.

A Railway Race.

The Editor of the *London Chronicle* gives the following account of an exciting scene :

“ A railway race is a sufficiently exciting and interesting event ; but it is rarely witnessed, and scarcely ever in perfect safety. Between a pair of well matched locomotives it would be sufficiently exciting ; but between a new system, like the atmospheric, and its rival, the locomotive, the character and reputation of both systems for speed depending on the issue, a well matched contest would be of no common interest. In this case we were lucky enough to see such a race ; and we believe any of our readers who leave London bridge station at twenty minutes past two, and take an atmospheric ticket, may any day see the same. We were standing at the Forest Hill station, preparing to start, when it was announced that the Dover express train was in sight ! Immediately we (the atmospheric train) made preparations to start, and were just in the act of starting from rest when the locomotive train ‘ whisked ’ passed us at, probably, some 35 miles an hour. We started, but before we got into motion at any velocity the Dover train was a mile ahead of us, and was evidently gaining rapidly in speed. However, on we went like a whirlwind, and it soon became evident that we were gaining on our rival. Three or four minutes decided the race. We passed the express train at a rate exceeding her own by 15 or 20 miles an hour. Our velocity could not then be less than 60 miles an hour. It was easily and steadily maintained, and we were over the Brighton viaduct and considerably beyond it before the Dover reached it.”

MARSH MUD AND LIME. — A Waterloo farmer writes as follows : “ I have made an experiment with marsh mud and lime, and found it to be a valuable manure for a light sandy soil. I took three bushels of lime to every load of soil, and mixed it alternately into a compost heap. I drew out the mud in winter and spring, and spaded it over several times before carting it on the land. In my opinion it will make a manure equally as valuable as the best stable manure for light sandy land. I carted my compost on the fallow after it was prepared for sowing wheat, and spread it evenly over the ground, and ploughed the seed and it in together to the depth of four inches, and the result of this experiment was a fine crop of wheat the past harvest.”

Hereford Cattle.

It appears from the following invective communication, penned by W. H. Soham, that the honest expression of our views upon Hereford cattle that appeared in the Report of the New York State Agricultural Show, did not meet his approbation. Mr S. has, on various other occasions, well earned the appellation of "bravado," and as such we shall in future treat him, unless he considerably moderates the unwarrantable high tone which he has assumed while discussing the merits of his favorite Herefords.

The opinions set forth in the Report were the unbiased sentiments of the delegation alluded to, who are practically engaged in agriculture, and were early trained and educated for this profession, and who are as well qualified to form a correct opinion upon the merits of this or any other particular breed of cattle as Mr. Soham. He has charged us in a most ungentlemanly manner with being "prejudiced, and solely without cause," and finally asks for proof. As we are to understand that those compliments are advanced towards us with "perfect good feeling," we shall content ourselves with giving the "proof" which he so much desires, and shall not occupy space with controvertible points, so long as more interesting and profitable matter is abundantly at our command.

In a work recently published by "the Society for the diffusion of useful knowledge," and edited by W. Youatt, on page 33 the following extracts may be seen:—"The Hereford cow is apparently a very inferior animal, not only is she no milker, but even her form has been sacrificed by the breeder." "They are far worse milkers than the Devons. This is so generally acknowledged, that while there are many dairies of Devon cows in various parts of England, a dairy of Herefords is rarely to be found."

On the 9th page of "the Complete Grazier" the following may be seen:—"The cows are ill calculated for the dairy." "On comparison with the Devon and Sussex, the Hereford breed will probably not be found equally active and hardy in the yoke."

In addition to the above proofs we would add another, which every judge of horned cattle on the Utica Show Ground, cannot but concur with us in opinion. A five years old heifer shown by Mr. Soham, exhibited such a propensity to fatness, that to all appearance it is doubtful that she

ever breeds a calf. Her rumps were so loaded with fat, that a person unacquainted with the breed, would have fancied that she was naturally deformed. The other animals of the Hereford breed exhibited, all gave evidence of great aptitude to fatten, and in our opinion, for the dairy they would be found altogether inferior to the common American breed. Where a breed of horned cattle is required, almost exclusively for the shambles, it is quite probable that the Herefords would compare if not excel all others. We say this without detracting from the opinions set forth in the report:—

American Hotel, Albany,
Dec. 17, 1845.

Mr. Editor:—It is very seldom I have an opportunity to read your paper, unless sent me by a friend to defend the Herefords.

I had intended to have been silent on that subject, and left them to have defended themselves; but I see plainly you are prejudiced against this breed of cattle, and solely without cause.

If the Herefords are not "good milkers," why do not some of the short horned breeders meet the challenge I gave them in the Cultivator? I then said I would milk ten cows for butter, against the like number from any breeders, or of any breed in the United States. This challenge is still open, and I extend it to Canada. And as you say the Herefords are not good working oxen, I am perfectly willing to test that point. I have just commenced breaking five yoke of two year old steers, and when they are five years old I will show them against any five yoke in the United States or Canada, belonging to one man, for beauty, symmetry, activity, durability, and strength, for a silver tankard, value fifty dollars. But I would wish you to understand, Mr. Editor, that this is not "bravado"—it is advanced with perfect good feeling towards their opponents. I ask for proof, and have no other motive but to test their true merits. If it is considered "gambling" to propose the silver tankard, we will go for the cause only. I want to see things as they really are, not as they are supposed to be.

I am, Mr. Editor,
Your humble servant,
W. H. SOHAM.

Suggestions to the Editor.

We have been favored with a few suggestions from our friend Levi Wilson, Esq. of Trafalgar, which are duly appreciated by us. Mr. W.

through his zeal in the cause of improved agriculture, has canvassed his neighborhood, and procured twenty six subscribers to the *Cultivator*. This is the true spirit to sustain an agricultural press. The ball should be kept rolling, and no subscriber should satisfy himself with having simply subscribed and paid the trifling sum of thirty pence for a work which is devoted to the development of the great industrial resources of the country. Every friend of improvement should prevail upon his neighbors to patronise this or a similar work, and by this means the great body of farmers would evince a desire to adopt the most modern improvements in their art, and would unite in endeavouring to promote the increase of individual and national wealth in this colony.

If the *Cultivator* was too dry in the estimation of some of its readers, it was because the support which the public gave it would not afford a sufficient stimulus to warrant its editor to engraft upon its columns a large amount of talent, and to devote much time or pains in its editorial management. These obligations, however, are happily removed, and he must be a dolt indeed, who cannot make each number worth to him in his business, more than the whole subscription price. A valuable friend to the *Cultivator* lately informed us, that if he had been in possession of the information which he had collected from the editorial articles in the last two volumes of your journal, ten years sooner, he would at this time have been worth one thousand pounds more than he is at present. This liberal patron to our paper has, by dint of perseverance, succeeded in obtaining upwards of one hundred subscribers in his township, and on every suitable occasion exhibits the claims of our enterprise to the attention of those with whom he has influence. This gentleman, it will be seen, values the knowledge which he obtains by reading a single copy of the *Cultivator*, at £100; and not being satisfied in acquiring an independent fortune himself by the improved system of agriculture laid down in its pages, has made much sacrifice in time in soliciting his friends and neighbors to also patronise it.

The objections made by some to Mr. Wilson, as an excuse for not subscribing to the *Cultivator*, will in due time be removed. This would long since have been done had the agriculturists of Canada backed our efforts as they should have done.

We hope that Mr. W. will not withhold his views upon the practical topics mentioned, "through inability to write," because in our opinion practical farmers are the best qualified to instruct others upon practical points of husbandry. Mr. W., as well as some hundreds of other kind friends, will please bear in mind that in our opinion one ounce of practice, although clothed in homely language, is worth more than a pound of theory penned by the most erudite writer.

Liming and Harrowing Wheat in the Spring.

A Hamilton subscriber begs to know if we would recommend harrowing fall wheat in the spring, sowing at the same time about forty bushels of lime to the acre and then rolling. On some soils this mode of management would be found highly beneficial, and would nearly double the produce, and on others no benefit would be perceptible. On strong clay soils which contain a large store of inert vegetable substance, the practice suggested by our correspondent, would act like a charm in bringing forward the crop to an early and abundant harvest. Some strong clay soils are so abundantly fertile, that harrowing the wheat, or pulverising the soil, would promote rust rather than retard this disastrous enemy to the wheat grower;—this may be understood, by stating that the harrowing breaks the crust which is formed upon the surface by the freezings and thaws which take place in the spring, and hence a more luxuriant growth of the plants, and also a great increase of straw. Lime added to such a soil in the quantity proposed, would doubtless have the influence of lessening the amount of straw, and increasing the produce of grain. Upon soils which are noted for their leanness in vegetable mould, lime would not have any favorable influence upon the growing crops unless it be upon obdurate clays, in which case a heavy application would lighten the texture of such soils. Some subsoils contain from fifteen to thirty per cent of carbonate of lime or mail, which lies so near the surface that it may be brought to the top and mixed with the vegetable mould or surface soil by a pair of strong horses with a single ploughing. Subsoils of this quality may be known by their power of effervescence when mixed with strong acids, or by their external appearance, which are generally of a cream color. It would be only a prodigal disposal of means to lime soils which naturally contain an abundant store of this substance. The course we would recommend is, to experiment upon a small scale with lime, and by a few trials thy experimenter will ascertain whether it can be advantageously applied to his soil or not.

Agricultural Education.

A modern writer hath said that a good education is the greatest of Heaven's gifts, with the exception of the redemption of man, for thereby men are enabled to develop and improve each latent virtue of the soul; whereas the uneducated man is like the spider which wraps itself up in its own dusky cobweb, insensible of the objects and glories with which it is surrounded. It is a well known fact that the liberal provision which was made in the early settlement of the Province for the encouragement of Common Schools, has been in a very great measure most prodigally expended, and that too without conferring much real benefit to the people. The past we suppose must be forgotten; but it is to be hoped that every true friend to his country will render every possible aid in encouraging and elevating the standard of common school education. Much is required to be done before it can be said that the rural population of Canada are scientifically acquainted with the several operations of their profession. Men, however, are more anxious to acquire useful information, and impart it to others, at this period, than has been the case heretofore, and we doubt not but before another generation passeth away, that the agricultural population of Canada will be characterised for their general and practical acquaintance with the principles which govern their noble calling. There is much in the social and intellectual character of the producing classes of this country, which encourage the belief that great and important changes will shortly take place in the public mind upon the subject of education, and we have not the slightest doubt but that the brightest ornaments to our country will be found among the agricultural classes.

We shall frequently bring this interesting subject before the notice of our readers, and in the mean time to show that we are not alone in attaching importance to education, we copy the following extract from a work just published, entitled "*Four Years in Canada*":—

"In leaving the subject of education, one is led to make the remark how singular it is, that, in a country so purely agricultural as Canada, which may fitly enough be compared to one great farm, the trades and professions being but the employed agents of the farmers, there is not in one of its educational institutions, means provided for any instruction either in the theory or practice of agriculture. The obvious consequence is, that

this important art suffers—and it is indeed far behind in Canada—and being more carried on at haphazard than otherwise, its legitimate dignity is greatly lost in mere drudgery, uninformed and prejudiced. People, whose circumstances will at all allow it, are led to give their sons what is termed a liberal education, which most frequently means spending some years upon Latin and Greek, and their being able, in most cases, in after life, to decline *penna*, and conjugate *amo*, instead of much more honourably as well as interestingly, employing those most precious years to investigate the properties of the hidden wealth, which a bounteous Providence has scattered around them for their benefit and pleasure, and their country's prosperity—in its soils and appliances, plants, flowers, forests, rocks, and minerals. Geology and agricultural chemistry, with their stores of wonders and wealth-producing facts, the ever-interesting and healthful details of rural husbandry, enlightened by science, are all as yet overlooked, where we might most expect they would hold prominent station. It may be, and every friend of Canada may well wish that the day will arrive soon, when professors of agriculture, will be considered indispensable in the Universities, model farms become common in every district, and those elements be taught in the schools, which the future farmer will carry through life, to dignify and make honorable, as well as more prosperous, the occupation on which depends the permanent welfare of his country. We may then see farming, in a great measure, relieved from being so mere a drudgery, and the ambition which over-crowds the towns with unsuccessful lawyers, doctors and shopkeepers, be more naturally and successfully directed to the pursuit of an enlightened agriculture, healthful and interesting, as it is calculated to be honorable and dignified, and on which so much of the future existence of the country, as either wealthy, happy or great, must surely ultimately depend."

No Time to Read.

How often do we hear men excuse themselves from subscribing to a paper or periodical, by saying they have 'no time to read.' When we hear a man thus excuse himself, we conclude he has never found time to confer any substantial advantage either upon his family, his country, or himself. To hear a freeman thus express himself, is truly humiliating; and we can form no other

opinion than that such a man is of little importance to society. Such men generally have time to attend public barbecues, meetings, but they have 'no time to read.'

They frequently spend whole days in gossiping, tipping, and swapping horses, but they sometimes lose a day in asking advice of their neighbors—sometimes a day in picking up news, the prices current and the exchanges—but these men never have 'any time to read.' They have time to hunt, to fish, to fiddle, to drink, to 'do nothing,' but 'no time to read;' such men generally have uneducated children, unimproved farms and unhappy firesides. They have no energy, no spirit of improvement, no love of knowledge; they live 'unknowing and unknown, and often die unwept and unregretted.—U. S. Jour.

Congress of Engineers and Manufacturers in France.—We perceive by the *Moniteur Industriel* that several of the most eminent engineers and manufacturers have formed the project of holding a congress, or general meeting, of the leading scientific men throughout France, for the purpose of discussing the improvements that may be made in mining operations, machinery, manufactures, and the general interest of the country, which will be represented by their respective members.

Important to Coal-burners.—A correspondent informs us of a very useful discovery he has made in burning wood coal, and requests that we make it public. The improvement consists in the use of ground bark in the place of dirt, as a covering for the kiln. Our correspondent, who is a practical blacksmith, in communicating the result of this experiment, says—"I covered with the old bark that had been used in tanning. I used leaves from the woods before the bark, the same as I would for covering with dirt—both leaves and bark should be made thoroughly wet. The advantages of this plan are: the kiln, if well set and well covered, will burn much sooner, will never "break out," leave fewer brands, and consequently turn out a larger quantity of coal. The coal is heavier, more thoroughly burnt, and entirely free from dirt.

So much impressed am I with the advantages of this method, that I would haul bark a distance of five miles rather than use dirt.—*Truth Teller.*

Ointment for Ringbone.—Take corrosive sublimate, Spanish flies, hog's lard, and Venice turpentine. Mix. This ointment it is said will dissolve a ringbone.

Remedy for Lockjaw.—Having seen in the *Argus* of the 21st, an account of the death of the son of Mr. Andrews, Wasson, from lockjaw from a nail accidentally run into his foot, I would state for the benefit of those afflicted from similar causes, that a cent or a piece of copper bound firmly upon the wounded part, and in actual contact with it, will cause almost immediate and entire relief, and cause the wound to speedily heal, whether it be made by rusty nail, steel instrument, splinter or any other cause, either in foot, hand or any other part of the body. N. B. Rusty or tarnished copper is preferable to bright copper, though either will answer.—*Correspondent of Albany Argus.*

Col. Randall's Merino Sheep.—Last season we noticed the enormous clip of the Merino Sheep of Col. Hy. S. Randall, of this village. This season we learn that his Pauley stock, including two rams, averaged over six pounds of well washed wool per head. A 3 years old ram sheared 13 lbs. 8 oz., (the heaviest fleece, we believe, ever taken from a three years old Merino in the U. S.) and a yearling 8 lbs. 8 oz. Many of the ewes sheared 6, 7, and 8 lbs. per head, and of the unparalleled weight of 9 lbs. $\frac{1}{2}$ oz. Col R. received the first premium on rams, and the first and second on ewes, at the State Fair at Poughkeepsie, (1844.) then the gold medal of the Society for the best managed and most profitable flock of sheep, at the annual meeting of the Society Cortland, against the world!—*Cortland, N. Y. Democrat.*

To Poach Eggs.—Take a shallow saucepan or fryingpan, and fill it about half full of water. Let the water be perfectly clean, not a particle of dust or dirt upon it. Put some salt into the water. Break each egg into a separate tea-cup, and slip it gently from the cup into the water. There is a knack in doing this, without causing the egg to spread or become ragged. A good way consists in allowing a little water to enter the cup and get below the egg, which sets the egg to a certain extent, before it is allowed to lie freely in the water. If the water be about boiling point, one minute is sufficient to dress the egg; but the eye is the best guide: the yolk must remain in liquid state, lying in the centre of the white. Have buttered toasted bread prepared on a dish, and cut in pieces rather larger than the egg; then take up the eggs carefully with a small slice, pare off any ragged parts from the edges, and lay them on the bread. They may be laid on slices of fried bacon, when preferred.

Black Sea Wheat.

John J. Mallock, Esq. President of the Perth Agricultural Society, has requested us to inform him where their society could purchase a quantity of Black Sea wheat. We beg to answer this enquiry through our journal, so that others may also have the benefit of the information.

A large quantity of this wheat was sown last spring in the neighborhood of Cobourg, and we presume it may be had there at the rate that other good wheat is selling for in the market. John Hawkins, Esq. near Cooksville, Township of Toronto, has a quantity on hand. The sample is good, and pure from other varieties. Mr. H. lately informed us that by steeping his seed in strong brine, and drying it in lime, he had entirely destroyed the weevil which had infested his Odessa seed wheat. Considerable of this variety was sown in the neighborhood of Newmarket, but good judges of wheat prefer the Siberian. The latter does not ripen quite so early, but it has in a number of instances proved a more productive variety, and its flouring quality exceeds it by expense per bushel. The Black Sea wheat would doubtless answer well in the Bathurst District, but it would be unwise to reject a known variety of good quality for an unknown. Siberian spring wheat requires the ground to be made rich, and in good cultivation, and the seed should be sown as early as possible in the spring. To illustrate this latter point we would only mention a fact that came under our observation. A farmer made ready twenty-four acres of ground in the fall for spring wheat, and as soon as the ground was in a fit state for harrowing in the spring, twelve acres was sown with Siberian spring wheat and harrowed in, and owing to frost and snow which immediately followed, the remaining twelve acres were delayed being sown for a fortnight. The ground was of a uniform quality throughout, and notwithstanding this, the first sown yielded forty bushels per acre of fine sample, and the last sown twenty-four bushels per acre of inferior sample.

Clover seed cannot be had in the neighborhood of Toronto. The Talbot District is the most likely locality to obtain it in large quantities. In many sections of Western Canada the farmers will have to purchase their clover seed, and unless it can be had west of Hamilton, the market will have to be supplied from the United States,

Bono Manuro.

The three first essentials of oratory, as defined by Demosthenes, were action, action, action. With no greater limitation to his definition than was designed by this celebrated master, we may say that the first requisite for successful farming is manure, the second is manure, the third is manure. With these existing naturally in soils, or artificially supplied, everything can be done; without them, nothing. I shall confine myself, in the present article, almost exclusively to illustrating the effects of the application of bones to poor clay pasture lands, as they are detailed in England, and especially in a recent article on the subject, in the *Journal of the Royal Agricultural Society*, by Wm. Palm.

He says: "Perhaps there is no county in England where the pasture lands, particularly the poorer soils, have been so much improved during the last twelve years, as in Cheshire, (the best dairy county in the kingdom) and this principally by the application of bone dust. This extraordinary manure has a peculiar effect upon the poor clay land pastures; for, on application of boiled bones, a sudden change takes place in the appearance of the fields, and instead of the carnation leaved or pink grass, which so much abounds in this kind of land, luxuriant herbage presents itself, consisting of red and white clover, trefoil, and other grasses, of which the cattle are so fond that they eat up almost everything before them; even rushes and thistles are very much weakened and eventually reduced by being constantly eaten off by the stock, after the pastures have been bone-dusted."

Again, through a correspondent, he says: "In the winter of 1836, I laid upon a field of eleven acres one ton of boiled bones, crushed small, to the statute acre; the field had not been ploughed for a great many years, and produced a coarse, bad grass, which I could only get eaten down during the winter or spring. In 1837, I sowed the field, and had a very good crop, with much red and white clover. In 1838, I had a most extraordinary crop; and, perhaps, the most extraordinary thing was, that it was an entire mass of wild red clover. I never saw a fuller crop of common clover. I continued to mow it for three years longer, and had fair crops but not very heavy ones. The field was not then under-drained."

Another correspondent says: "I have known many instances where an outlay of £7 or £8. (\$35 to \$40) per acre for bones had been made, the annual value had been increased three hundred per cent., and although a considerable proportion of the clover and trefoil may disappear after eight or ten years, yet an excellent herbage of permanent grasses remains very superior to what the land originally produced, and in my opinion, clay land, once well boned, will never again produce a bad herbage, if kept in pasture. I have known many instances where lands, which had been boned upwards of fifteen years, still retained a considerable proportion of the trefoil and clover. Before bones were introduced into the county, farmers made a point of selecting a hardy and inferior description of stock for their clay lands, observing that large well-bred cows did not at all answer on them, but they now find that the best of stock obtain ample support, not only to support the cheese tub, but also to do justice to their lineage, by retaining, if not improving, their size and symmetry. I have paid nearly £10,000 (near 350,000) for this manure, and the result has, in every instance, been most satisfactory. I have known many a poor, honest, but half heart-broken man raised from poverty to comparative independence, and many a family saved from inevitable ruin by the help of this wonderful manure."

A Lancashire agriculturist writes: "Cheshire is well known, is a great cheese making county, and within the last twenty years, a vast extent of its pastures has undergone an almost inconceivable amelioration from the application of bone manure." He cites an instance where, on a farm of ninety-eight acres, the number of cows kept had been increased from seven to twenty-four, by the aid of bones.

Mr. Smith, an excellent farmer, estimates from his own experience that a first application of one ton of bone manure to an acre of pasture land, will, in many cases, make it of three times its value for productiveness. An extensive observer says he never heard of a single failure of bone dust in that part of the county. On stony clays, ill covered even with the least nutrition of vegetation, bone manure soon effects a decided change. On many farms, bones do not so much increase the quantity as they improve the quality of the food grown; and a greater quantity of cheese is frequently produced from a given quan-

tity of land, rather than an increased weight of grass.

Another occupant says his stock was scarcely ever seen feeding on any other than the boned land, as it was so full of feed that it might have been mowed to advantage.

Instances occur where bone has been applied on wet land which had remained undecomposed and without producing any perceptible effect for many years; but when the land has been drained a few months, the coarse herbage began to disappear, and it was soon covered with the finest sort of permanent valuable grasses.

The value of bones for most tillage crops, turnips, wheat, &c., is too well known to be here repeated. The foregoing examples will suffice to show the immense advantage poor pastures derive from bones.

Much, and, it appears to me, very stupid controversy, has existed, even among scientific men, as to the comparative value of boiled and raw bones. An analysis of each shows conclusively that the raw are much the more valuable. The analysis of Fourcroy and Vanquelin gives to ox bones, of

Decomposed animal matter	- -	51.0
Phosphate of lime	- - -	37.7
Carbonate of lime	- - -	10.0
Phosphate of magnesia	- - -	1.3—100

The analysis of M. Gullott gives, for

Calf bones,	54.0 phos. lime,	0. carb. lime.
Horse do.,	67.5 " " "	1.25 " "
Sheep do.,	70.0 " " "	.5 " "

Yet, notwithstanding the great additional proportion of phosphate of lime, which has been maintained to be the sole fertilizing principle, by many distinguished scientific men, the experience of practical intelligent farmers, assigns much the most value to the ox-bones, which contain the lesser quantity of the phosphate. It follows conclusively that the decomposable animal matter extracted by digestion or calcination gives to them the increased value over other bones. The extractive matter, oil and gelatine, principally, is of much value in the arts, and is generally worth much more for this purpose than for the uses of agriculture, and where this is well understood, boiled bones sell for about 1-3 less than the raw.

The quantity usually put on an acre is fifteen to twenty five hundred weight, though eight hundred weight has produced in some instances surprising effects.

R. L. ALLER.
Buffalo, Feb. 1846.—Am. Ag.

Correspondence.

MR. EDITOR,—

In introducing myself to you, sir, and to your readers, I would just remark that, having engaged in the pursuit of agriculture for the past few years in Canada, and desiring to see it as conducted in Britain, I have recently come to Scotland, the agriculture of which is so justly celebrated. Thinking it might be interesting to your readers to know something of my movements, investigations and impressions of this country, I come before you at this time.

The practice of agriculture in this country and in Canada, naturally differs. This may be attributed to two causes—the difference of climate, and the length of time the soil has been under cultivation; this latter cause does not refer to the whole province, but only to those parts where the land is being reclaimed from its original state—in those places the practice necessarily differs very materially from that adopted in this country.

The principle upon which the agriculturist should proceed, is the same in all countries; his object being to obtain from a certain portion of land “the greatest amount of produce at the least possible expense, and without deteriorating the fertility of the soil.” The methods of attaining this object differ according to climate, soil, &c., but the principle is always the same. As this principle is more thoroughly understood and practiced in Britain than elsewhere, you will see the propriety of visiting this country to benefit by the superior skill of its farmers.

This was one of my objects in coming here, yet it was not the principal end I had in view.—Something beyond mere practice is now necessary to make a man a perfect agriculturist;—he must combine science with practice. I give practice all the praise it deserves, and no one will question that it alone has accomplished a great deal towards the advancement of agricultural improvement; yet none who have regarded the subject without prejudice, will deny that science, by assisting practice, has brought to pass in agriculture what a few years ago would have been considered impossible. Science assigns the reason why certain effects are produced; it shews of what the soil is composed; in what particular soils differ from each other; why one manure is better adapted to a certain soil than another;—

what the grain is composed of, besides many other similar points. It is true that practice alone by a lengthened series of experiments, has, by mere accident as it were, partially discovered certain things; for instance, it was ascertained some manures were better adapted to certain soils than others; and even here we see how deficient that knowledge was, for in soils apparently the same, the same manures would produce different effects. Here the man of practice alone is stopped—he can proceed no further, except after dearly purchased experiment. But the chemist now comes forward, and by his investigations shews, that the soil, though apparently the same, is not so in reality, there are ingredients in the one soil which are not in the other, and hence the different effects produced by the same manure.

But chemistry is not the only branch of science applicable to agriculture; geology, vegetable physiology, and zoology, are all connected with agriculture; they all render very great assistance to the agriculturist. Why is it that many consider the tilling of the soil not worthy their attention? It surely is because they forget that of all other pursuits that of the farmer is the most ancient—for our first parents tilled the soil; the most useful—for it is by the products of the soil that mankind is supported; and ought to be truly scientific, since there is no other occupation to which so many of the arts and sciences are applicable, and absolutely necessary to render it a pleasing and profitable pursuit.

Being impressed with the great benefits to be derived from a knowledge of agricultural chemistry, I have placed myself under the tuition of Professor Johnston, who stands unrivalled in this country in the application of chemical research to agriculture. In this institution, the agricultural chemistry association, which originated with the practical farmers of Scotland, I shall have the opportunity of working daily in the laboratory, for the purpose of becoming practically, as well as theoretically acquainted with chemistry. I shall also occasionally accompany Prof. Johnston on his excursions through the country, where I will have an opportunity of seeing the most approved methods of farming, and will also have the Professor's opinion upon these operations.

Being desirous if possible of interesting the friends of agriculture in Canada in this important movement, I propose from time to time to give an

account of my labors in the laboratory, and of my excursions through the country. I regret much that Canada is far behind in this branch of industry, but I trust the time is not far distant, when she, in common with other countries, will devote more of her energies, talent, and capital to agriculture. One most effectual method for accomplishing this object is the diffusion of practical knowledge, especially among the youth. I hope scientific agriculture will soon be considered an essential part of our youths' education. The Canadians must take example from their enterprising neighbours, who are now introducing into their schools Prof. Johnstone's Catechism of Agricultural Chemistry and Geology, and have likewise Chairs in their Universities for Professors of Agricultural Chemistry.

Greenock being my landing-place in this country, I had an opportunity of seeing part of the coast along the north channel of the Frith of Clyde. The coast of the North Channel and the Frith, in many places presented a very mountainous and barren appearance. I was struck with the care apparently taken to profit by every available spot of land, every place capable of tillage seemed to be under cultivation. I was told those tracks not fit for the plough were used as sheep pastures. When looking at the tilled fields creeping up the hill sides, the thought occurred to me, when will the land of Canada be so much occupied, that its inhabitants will be compelled to have recourse to such expedients to increase the quantity of acres of arable land.—Nearer the entrance into the River Clyde, there seemed to be some good farms, but not being near the shore, I could not judge correctly. In coming up the River Clyde mountainous scenery still presented itself, but there seemed to be some excellent farms. There was one thing that reminded me of not being in Canada, namely, the want of trees. In general in travelling in Canada you do not require to go very far without seeing patches of forest land—often you see nothing else for miles.

I travelled from Greenock to Glasgow by railway; this mode of travelling is too expeditious for seeing much of the country; the day was wet and disagreeable (which I am told is not an uncommon thing in this country) and the season of the year being unfavorable, I was incapable of judging correctly of the state of agriculture in that region. My impressions were rather unfav-

orable of Scottish agriculture after having heard so much of it. But I have been told there are some excellent farms in the neighborhood of Paisley, through which town I passed on my way to Glasgow.

I also travelled by railway from Glasgow to Edinburgh. The country from Glasgow to Linlithgow presented a very bleak and dreary appearance—there was also a large extent of bogs and few trees. Travelling this tract of country my former unfavourable impressions were by no means lessened, but rather more increased. I thought if this be Scottish agriculture it is not worth crossing the Atlantic to see; the appearance of the country in Canada in many parts being much better. From Linlithgow to Edinburgh the country presents quite a different aspect, and my impressions became much more favorable.—Here I entered upon Mid Lothian, an account of which I hope to give at some future time.

Having only arrived in Edinburgh a few days, I cannot give you anything interesting relative to my labours in the Laboratory. I have commenced an analysis of Indian corn, the results of which I shall give you from time to time.

Yours truly,

J. W. GILMOUR.

Lab. of Ag. Chem. Association,
8, Bank-st., Edinburgh, Dec 1845.

Lice on Cattle.—1. Mercurial ointment rubbed on the animal from the crown of the head to the root of the tail, down the back-bone, will effectually kill lice in a day or two. This, however, is a dangerous remedy to use, unless the animal is kept in the stable, and requires great care to preserve him from the effects of cold and wet.

2. Corrosive sublimate is another effectual remedy. This is to be applied as before prescribed, but, like No. 1, is dangerous.

3. A strong decoction of larkspur is also a sure and safe remedy. This should be applied as recommended for No. 1.

4. Spirits of turpentine is also a sure remedy. It should be applied as No. 1.

5. A decoction of tobacco, applied as No. 1, will destroy the lice.

6. A mixture of Scotch snuff and fish oil, rubbed on the affected parts, will destroy the lice.

7. A mixture of soft soap and Scotch snuff, well rubbed on the parts, will also eradicate them.

As an auxiliary to whatever remedy may be used, the currycomb and brush should be freely applied, after a day or two, in order that the hide and hair of the animal may be kept clean. No animal which is well fed, and daily curried and brushed, will either breed or retain lice; the latter operation, however, few who have much stock can regularly attend to.

Cholic in Horses--Cause and Cure.

I go a little out of my limits to speak of this disease. I do so for four reasons. In the first place, the disease is deadly; it destroys more heavy draught-horses than all others put together. In the second place, I can show it may be cured with infallible certainty, if it be taken in time. In the third place, the disease requires immediate relief; the horse may be dead, or past cure, before the medical assistant can be obtained. And in the fourth place, the nature of the disease and the treatment, are not known, or they are too little known by the veterinarian. These circumstances induce me to digress a little from the proper object of this work; and I think they are of sufficient importance to render apology unnecessary. I will, however, be brief. In another place I will enter into details which would be improper in this.

The causes of cholic are rather numerous. I have already said that an overloaded stomach is one, particularly when water is given either immediately before, or immediately after an extraordinary allowance of food; but water directly after even an ordinary meal is never very safe (It suspends digestion and occasions fermentation). Another cause is violent exertion on a full stomach; a third cause, is a sudden change of diet, from hay, for instance, to grass, or from oats to barley; but an allowance, particularly a large allowance, of any food to which the horse has not been accustomed, is liable to produce cholic.—Some articles produce it oftener than others. Raw potatoes, carrots, turnips, green food, seem more susceptible of fermentation than hay or oats, barley more than beans; wheat and pease more than barley. Such at least they have seemed to me; but it is probable that in the cases from which I have drawn my conclusions, sudden change and quantity may have had as much to do in producing cholic, as the fermentable nature of the food. Haste in feeding is a common cause; if the horse swallow his food very greedily, without sufficient mastication, he is very liable to cholic.

Heavy draught-horses are almost the only subjects of cholic, and among the owners of them it is difficult to meet with an old farmer or carter who has not lost more than one. Light-fast-working horses are rarely troubled with it, and few die of it. The difference is easily explained. Heavy, slow-working horses, are long in the yoke, they fast till their appetite is like

a raven's; when they come home they get a large quantity of grain all at once, and they devour it in such haste that it is not properly masticated, and the stomach is suddenly overloaded. Possibly the quantity may not be very great, yet it is eaten too fast. The juice by which the food should be digested can not be made in such a hurry, at least not enough of it; and add to this the rapid distention of the stomach; more deliberate mastication and deglutition would enable this organ to furnish the requisite quantity of gastric juice, and to dilate sufficiently to contain the food with ease. In fast feeding, the stomach is taken too much by surprise.

Light horses are usually fed ofener, and with more regularity. They receive grain so often that they are not so fond of it; not disposed to eat too much; and the nature of their work often destroys the appetite, even when abstinence has been annually prolonged.

The bulk of the food, however, has a great deal to do with this disease. An overloaded stomach will produce it in any kind of horse, but those who have the bowels and stomach habitually loaded are always in the greatest danger. Horses that get little grain must eat a large quantity of roots or of fodder, as much as the digestive apparatus can control. The stomach and bowels cannot act upon any more, and that which they cannot act upon runs speedily into fermentation.

This seems to me the principal reason why slow work-horses are so much more liable to the disease than fast workers. When the pace reaches seven or eight miles an hour, the belly will not carry a great bulk of food, and so much grain is given that the horse has no inclination to load his bowels with fodder. There is never, or very rarely, more food than the stomach, the bowels, and the juices of these, can act upon.

Symptoms of Cholic.—The horse is taken suddenly ill. If at work, he slackens his pace, attempts to stop, and when he stops, he prepares to lie down; sometimes he goes down as if shot the moment he stands or is allowed to stand; at slow work he sometimes quickens his pace and is unwilling to stand. In the stable he begins to paw the ground with his fore feet, lies down, rolls, sometimes quite over, lies on his back; when the distention is not great he lies tolerably quiet, and for several minutes. But when the distention and pain are greater, he neither stands or lies a

infinite; he is no sooner down than he is up. He generally starts all at once, and throws himself down again with great violence. He strikes the belly with his hind feet, and in moments of comparative ease he looks wistfully at his flanks. When standing he makes many and fruitless attempts to urinate; and the keeper always declares there is something wrong with the water. In a little while the belly swells all round, or it swells most on the right flank. The worst, the most painful cases, are those in which the swelling is general, sometimes it is very inconsiderable, the air being in small quantity, or not finding its way into the bowels. As the disease proceeds, the pain becomes more and more intense. The horse dashes himself about with terrible violence. Every fall threatens to be his last. The perspiration runs off him in streams. His countenance betrays extreme agony, his convulsions are frightfully violent, and seldom even for an instant suspended.

After continuing in this state for a brief period, other symptoms appear, indicating rupture or inflammation, or the approach of death without either. These, and the treatment they demand, I need not describe here. The horse may either be cured, or a veterinarian obtained, before inflammation or other consequences of the distension can take place.

Treatment of Cholick—The treatment consists in arresting the fermentation, and in re-establishing the digestive powers. There are many things that will do both. In mild cases a good domestic remedy in common use among old-fashioned people who have never heard of inflamed, spasmed, or strangulated bowels, is whiskey and pepper, or gin and pepper. About half a tumbler of spirits with a teaspoonful of pepper given in a quart bottle of milk or warm water, will often afford immediate relief. If the pain do not abate in twenty or thirty minutes, the dose may be repeated, and even a third dose is in some cases necessary. Four ounces of spirits of turpentine, with twice as much sweet oil, is much stronger, but if the horse is much averse to the medicine, turpentine is not always quite safe.

There is, however, a better remedy, which should always be in readiness wherever several draught-horses are kept. Take a quart of brandy, add to it four ounces of sweet spirits of nitre, three ounces of whole ginger, and three ounces of cloves. In eight days this mixture or tincture is ready for use; the cloves and ginger may still

remain in the bottle, but they are not to be given. Set the bottle away, and put a label upon it; call it the "cholick mixture." The dose is six ounces, to be given in a quart of milk or warm water every fifteen or twenty minutes till the horse be cured. Keep his head straight and not too high when it is given. Do not pull out his tongue, as some stupid people do, when giving a drink. If the horse is very violent, get him into a wide open place, where you will have room to go about him. If he will not stand till the drink be given, watch him when down, and give it, though he be lying, whenever you can get him to take a mouthful. But give the dose as quickly as possible. After that, rub the belly with a soft whisk, walk the horse about very slowly, or give him a good bed, and room to roll. In eighty cases out of ninety this treatment will succeed, provided the medicine be got down the horse's throat before his bowels become inflamed, or strangulated, or burst. The delay of half an hour may be fatal. When the second dose does not procure relief, the third may be of double or treble strength. I have given a full quart in about an hour, but the horse was very ill.

In many cases the horse takes ill during the night, and is far gone before he is discovered in the morning. In such a case this remedy may be too late, or it may not be proper; still, if the belly be swelled, let it be given, unless the veterinary surgeon can be procured immediately. In all cases it is proper to send for him at the beginning. You or your servants may not be able to give the medicine, or the disease may have produced some other, which this medicine will not cure. If the veterinarian can be got in a few minutes, do nothing till he comes. But do not wait long.

The horse is sometimes found dead in the morning; his belly is always much swelled, and the owner is suspicious of poisoning. I have known much vexation arise from such suspicion, when a single glance at the belly might have shown from what the horse died. There is no poison that will produce this swelling, which is sometimes so great as to burst the gurgling. On dissection the stomach is frequently burst, the belly full of food, water, and air, and the diaphragm ruptured.—When death is slow, the bowels are always intensely inflamed, sometimes burst, and often twisted. But these things will never happen when the treatment I have recommended is adopted at the very beginning.

The horse sometimes takes the disease on the road. If his pace be fast, he should stop at once. To push him on beyond a walk, even for a short distance, is a certain death. The bowels are displaced, twisted, and strangulated, partly by the distension, but aided a great deal by the exertion; and no medicine will restore them to their proper position. A walk after the medicine is good, and the pace should not pass a walk.—*Stewart's Stable Economy.*

Mechanics' Department.

We propose to give insertion to a variety of articles upon mechanism, by which means the mechanics and manufacturers of Canada will feel an interest in the success of the *Cultivator*.

In this department every new and valuable improvement in the mechanical branches will appear, as well as a series of articles illustrating the principles of mechanism.

A Mowing Machine.

Considerable inquiry has been made hereabout of late for a machine that would cut grass. It seems by the following, from the *Buffalo Advertiser*, that the want is in the way of being answered.

A new and important machine for the cutting of grass has lately been completed by Capt. Wilson, of this place, and is now to be seen by applying at the bar of the American Hotel for the inventor. It is well worthy the attention of all the farmers of the West, where it is destined to become of the greatest importance in performing the harvest duty hitherto so expensive and difficult to accomplish. There is also attached to the cutting wheel or tub, wings, which gather the grass as it is cut, and lay it in a swath regularly and in a most perfect manner for curing: it is most simple in its construction, and by no means liable to be put out of order. Indeed it is one of those labor-saving machines, which has so long been sought and anxiously looked for by our grazing farmers, particularly by those of the great western prairies; we would advise all the least interested to examine it without fail. The inventor has, in two instances, been awarded the gold medal of the American Institute, the highest premiums of the Mechanics' Institute, and has the certificates of the most respectable farmers of Long Island, and those of the different countries on the North River, for its complete success in operation.—*Prairie Far*.

Kyanizing Timber.

Some years ago, a Mr. Kyan of England, invented a process of preserving timber that was to be exposed, from rotting. This he did by filling its pores with a solution of corrosive sublimate. This process is now called Kyanizing timber. A correspondent of the American Rail Road Journal, states that the Taunton and New Bedford Rail Road Company, in the year 1840, prepared

1700 spruce cross ties, 7 feet long, and 6¹/₂ inches square, in this way.

Last summer, (1845) they were carefully inspected, and found to be perfectly sound. One of the sticks was taken up and split open and found to be in appearance like new wood. The spike holes were sound and the wood as elastic as on the first day the spikes were put in.

Why would it not be a good plan to Kyanize the wood of carriages and farming implements? The sills of houses and barns might be preserved in this way. In 1843, the same correspondent observes spruce timber was prepared in the same way with sulphate of copper, which is cheaper than corrosive sublimate. These last specimens have not yet been examined.

Sanford's Straw Cutter.

Mr. Editor:—I see that B. F. Smith & Co. advertise for sale "Sanford's Premium Straw Cutter." I purchased one of these machines of Mr. Chase, at our Fair, and I am perfectly satisfied with its performance as a "straw cutter." But what I want to say particularly is, that it is most admirably adapted to another purpose, and that is cutting *sausage meat*. I first cut about a hundred weight for myself, and then lent it to my neighbors. They all pronounce it first rate. The meat is as fine as if it had been grated, and perfectly mixed. A hundred pounds may easily be cut in thirty minutes.

It wants no adjusting or fixing in any way, but to elevate the hind end, so that the meat will drop into the dish on the floor. Cut the meat into slices and drop it into the middle, forward of the little board under which the straw passes. The meat will pass round and round the cylinders working towards each end as it accumulates, until it falls off more perfectly cut than by any other process I ever tried. Please satisfy yourself by the experiment. I think it a very valuable recommendation to the machine.

Truly yours,

M. ADAMS.

Adams' Basin, Dec., 1845.

—*Genesee Farmer*.

Now Substance--Gutta Percha.

In our notice of Messrs. Nickell and Keene's improvement on the atmospheric railway system, we alluded to a new substance introduced by them for the valves. Having had several inquiries respecting its peculiar properties, we subjoin

the following particulars: Gutta Percha (from Singapore) was produced last year by Dr. Montgomery, E I C, for which he received the medal of the Society of Arts. In many respects it resembles India rubber; is obtained from certain trees, from which it exudes at all times of the year. It is soluble in turpentine, and forms with it a kind of varnish, but peels off from metals. At the temperature of the atmosphere, it is hard, and only slightly elastic, but at boiling water heat it softens, and becomes pulpy, and may readily be moulded into any form, which it retains when cold. It is unaffected by acids and chemical re-agents generally, and is not altered by exposure to damp or atmospheric changes. It may be formed into threads, and cloth woven from it; and, to prepare the threads, it is only necessary to heat it, and press it through plates with small holes, when it passes out in a vermicelli form, of whatever shape the hole is, but in this state it is not very strong. Cloth woven from it, and mixed with flaxen thread, is exceedingly strong. In many cases it will advantageously supply the place of leather.—*London Mining Journal.*

Steam Power and Horse Power.

Mr. Andrews, of Kirkham Lodge, said: "I calculate a horse cannot last on an average above 15 years, whilst an engine with moderate care will last 100 years. Horses, whether working or not, are expensive in keeping; but when an engine stands still, it is costing nothing. A four-horse engine will do more work than eight horses—I mean yoked at the same time—for they never are all of one mind for pulling together. I recollect once employing 18 horses to do some work, that is, six at a time, in three sets, relieving each other as they required it; but it proved tiring work. I put up a six-horse engine and it did the same work well. Ten per cent. upon the first cost will keep an engine in repair which works every day for 20 years; but the cost of those used for farming purposes, as has been stated, may be about 7 per cent.—*Gar. Chron.*

Buttered Eggs.—Put a piece of butter in a saucepan, and melt it, adding a little milk. Break the eggs into a basin, and pour them into the saucepan. Season with salt and pepper, and continue stirring the eggs till they are sufficiently dressed. Serve on pieces of toasted bread,

A Useful Recipe.—The following extract from Col. Maaron's "Seasonable Hints," appeared in the *Mechanic's Magazine*, dated February 5, 1838.

He says.—"I will not conclude without inviting the attention of your readers to a cheap and easy method of preserving their feet from wet, and their boots from wear. I have only had three pair of boots for six years, and will want none for six years to come.

The reason is, I treat them in the following manner.—I put a pound of tallow, and a pound of rosin in a pot on the fire; when melted and mixed, I warm the boots, and apply the hot stuff with a painter's brush, until neither the soles or upper leather will suck in any more. If it is desired that the boots shall immediately take a polish, dissolve an ounce of beeswax to an ounce of spirits of turpentine, to which add a tea-spoonful of lampblack. A day or two after the boots have been treated with the tallow and rosin, rub over them the wax and turpentine, but not before the fire. Thus the exterior will have a coat of wax alone, and shine like a mirror. Tallow, or any other grease, becomes rancid and rots the stitching, as well as the leather; but the rosin gives it an antiseptic quality which preserves the whole. Boots or shoes should be so large as to admit of wearing in them cork soles. Cork is so bad a conductor of heat, that with it in the boots, the feet are always warm, on the coldest stone floor."

Pancakes—Pancakes are made of eggs, flour, and milk, in the proportion of a table-spoonful of flour to each egg. To make two small pancakes, take two eggs, and beat them well, and add to them a little milk. Then take two table-spoonfuls of flour, and work it into a batter with the egg and milk; add a little salt. Set a clean frying-pan on the fire, and put a piece of butter or lard into it. When the butter is quite hot, pour in the batter. Shake it frequently, to prevent it from sticking. When the under side is of a light brown, turn it. Serve the pancakes folded, with sugar strewed between the folds. This is the way of dressing the common pancake; when required to be lighter, use more egg and less flour; and grated nutmeg may be added.

To Trap Rats—Put a little valerian and cheese in the trap, and it will attract rats to the place.

Dutch Dairy Farmers.

The farms in the first district we passed through are all tenanted by farmers who are allowed to remain on the ground as long as they are regular in the payment of their rents. The men who occupy them are, in general, possessed of little capital. The farms are from seventy-five to eighty acres in extent. The price per acre is 34s. 4d. The number of cows kept varies from thirty to thirty-six, according to the soil and management. The one-half of the farm is kept for pasture and the other for hay. They are very careful of the dung about the place, and put it on when thoroughly rotted. This, with the submerging the fields get in winter, is all the return made for the good it does the farmers. The cows are beautiful, and kept in the finest order; indeed, many farmers seeing them would be apt to consider them too fat to give milk. They are black and white, and many of them are marked like the shetland breed of cattle, the colors being black and white, instead of brown and white, as in the latter. They are very small in the bone, have small heads, thin necks, and capacious carcasses, with large udders. This is the description of cattle found all over Holland. The interior of the farm-places show all the neatness and cleanliness generally spoken of by writers. When the door was opened for me to enter, I felt more inclined to undergo the process of purification than the worthy doctor did before entering the sacred temple of Juggernaut. We went through the byre first, which is unfrequented at the present season by its accustomed inmates. It is divided into stalls for two cows each, every piece of wood about which bore evident marks of hard scrubbing; many a dining-table is not so clean as was the floor of this cow house. In all the stalls there is a layer of clean shells as level as the newly gravelled walk which leads to some lady's bower. At the top of the stalls a rough built of bricks runs along the length of the byre, from which the cows drink water, and over each stall, attached to a beam in the ceiling, is a ring to which the cows' tails are tied up when they are in the house. A door opens from the byre to the milk-house where the cheese is made. This shews the same cleanness as the cow-house. Thence we went into the cheese-salting room, where they are kept in pickle or salt for ten days. We were led through a door-way which opened from the byre to the winter kitchen. Three sides of this room

were papered, and the fourth, as well as the fireplace, was adorned with square pieces of porcelain of different colors. Instead of having a grate, a large metal plate is placed on the hearthstone, and extends for a good way into the room, under it is placed some live coal, and in the winter nights, when the waves of Zuyder Zee roar without, the family sit round the blazing loggots with their feet upon this heated plate, and talk over the events of the day. The walls of the room are hung with Roman Catholic engravings, while the floor is all matted. We were shown into other two rooms, one a bed room and ordinary parlour, the other a parlour, used only on particular occasions. These were also matted on the floor, excepting the centre, where the well-cleaned slabs of marble were exposed to view. The walls were similarly adorned, and two or three handsome oaken cupboards and drawers were placed in the most convenient part of the room, while in the principal parlour a table stood in the middle with a nice set of tea things, all arranged, from the well-burnished heater to the silver spoon.

The following process are I observed from the farmer's wife about their method of making cheese:—After the cows are milked, and before the milk is cold, the rennet is added, till the curd is thoroughly formed. The whole milk is used for this purpose but a little, which is kept for cream. After the whey is separated from the curd, the latter is put into the *cheeserols*, which are of round form in the interior; and the cheeses remain under the press for four hours. The press is of the simplest form, being a beam used as a lever, with a weight at the end. It is in general gaudily painted and gilt. The cheeses are then removed from the press and put into a pickle of salt and water, where they remain for twenty-four hours. From the pickle, they are put into cups made of wood, and salt is sprinkled on the tops of them; they remain here eight days, being turned every morning upside down, and clean salt added. At the end of the eight days, they are put into the pickle again for twenty-four hours. After this, they are taken out and allowed to dry for three weeks, lincseed oil being rubbed on them every day to prevent the cracking of the crust. They are generally sold at the end of this period. The practice of pickling prevails only in this district, which is called Brucker Meer. This part of the country has not been reclaimed from lakes, like the Beemster and Parmer, or, if it has, it is not in the memory of man. The soil is of inferior

or quality, and the cheeses made here are not esteemed so good as those made in the other two places. In them they allow the cheese to remain two days longer in the salt instead of putting it into the pickle. The cows are never brought in in summer; in winter they are fed on hay and water, and some farmers give oil-cake. A few pigs are also fattened from the whey, which is churned before being given to them. More people are employed on these small farms than would at first sight be thought necessary. This is owing to the expedition required in the operation. Cheese is made twice a-day in all the farms, and from eighteen to twenty are made daily from thirty-two cows, at the height of the season. The men's wages are from £6 to £10, with their meat, some perquisites, such as calves, and £1 twice a-year as presents at fair time and Christmas. Women receive £6, with their meat.—*Quarterly Journal of Agriculture.*

Without Blindors.

Since some contributor to the *Visitor* pointed out the advantages of dispensing with blinders upon bridles, I have noticed a considerable number of horses in carriages with their eyes free from this incumbrance. They appeared a little singular and naked, but did not, that I noticed, shy at all; and I am inclined to the opinion that in this matter the Germans are right, and no people manage or treat their horses better. From some experience in horses, I should think it best not to trust a horse at once that has been accustomed to blinders, as he would be apt to take fright if at all skittish: but for colts I would prefer that they should see, and once so broken to the harness, no blinders would ever be required. A considerable number of horses are apt to be scared when they see the top of a carriage in motion, as if it were about to fall upon them, and this occurs only in those horses used to blinders. If the bridle has been lengthened in the head-stall for a larger horse, when the rein is pulled it opens so that he is enabled to see through under it, and is then very apt to run away.

There is also an advantage that I do not recollect to have seen mentioned. In descending a pebbly or stony hill, a horse should be enabled to see where to place his hind feet, especially if loaded with much weight. Most of the blinders used forbid this, as they fall below, as well as project above, the eye.

Very many horses have been permanently injured by placing their feet upon round or loose stones in going down hill. A saddled horse never or seldom does this, and they would if their eyes were uncovered, be as careful in harness as out of it.

Our race of horses are perhaps equal to any other on the globe, taking them altogether. In this I mean our northern horses; for they are here better than those of the Southern States. In the latter they have a few superior riding horses, the rest are much inferior to the horses with us. But it is the opinion of many that we much abuse our horses by fast driving. Horses that are almost constantly upon the road in large waggons with very heavy loads, and which move slowly along, keep very fat and last to a surprising old age. These same horses driven fast with small loads, would be lean and soon worn out. I do not mean of course that we should all travel at the slow pace of a loaded waggon, but, save our horses, flesh, save our expense in keeping them, and, by moderate and humane speed, make our carriages, as well as our horses, last double the time they do. In nine cases out of ten those who drive so fast as we see them doing daily, could not tell why it is necessary. No good cause could be assigned. And is it not almost always either a want of sense, or a maturity of years, that is evinced by fast driving? When I have seen a fine horse panting under the lash, the driver has always smiled in my estimation. One sensible man, the other day, said that he wished there was a law for rewarding those who used horses with kindness. His neighbor replied, there is no such a law, and what is more comfortable than in some other cases, it cannot be changed by our legislators, "It is equal to two hundred per cent. bounty, and is greatly more reputable into the bargain." "How is that?" "Why in the first place one animal well used, with moderate driving, will last as long as two in succession driven fast; this is one hundred per cent gain. Then one half the feed will keep the well treated horse in equally good condition; this is another hundred. And, furthermore, the man is esteemed for his kindness by all those whose esteem is the most desirable." And we will add the broken carriages and broken necks may be thrown into the bargain equal to another hundred per cent.

Better than all, and more valuable, is the satisfaction felt for kindly using a gift of Providence.
—*Farmer's Monthly Visitor.* AMHERST.

Ladies Department,

We have no opportunity of knowing whether the wives and daughters of farmers throughout the province are pleased with this new department of our Journal or not, nor have we heard an expression upon this matter from any of our patrons; we shall therefore have to exercise our own judgment in preparing matter for the press, and if it should so turn out that any of our fair readers should disapprove of any of the articles that appear under their own department, they would oblige us by pointing out the objectionable features.

The following recipe to make farmer's wives good natured, which originally appeared in the *Monthly Visitor*, will, we doubt not, be greeted as a timely hint to many a husband:—

“It is the every day events, the little things that touch the temper with a smooth or a rough hand, which principally fill up the measure of life, and makes us cheerful, smiling and happy, or cross, snappish and irritable. If we farmers would reap the best of harvests, we should sow the seeds of good nature. In vain we plough and subsoil, in vain for the main object do our fields grow yellow and our abundant corn hang down with weight its heavy head, if, when we gather under our roof at night, the wife is disheartened, the evening meal yet to be prepared, and the neat, tidy dress which is more than becoming, is still in the drawer. ‘A half an hour lost in the morning, we may pursue it all day, and shall scarce overtake it at night.’ The good farmer begins at home, and extends his circle of happiness from his domicile. If then we would save the half hour, if he would have all things ready when he returns, and a smile to greet him where either he must live or bear no life, see that every thing is convenient; good dry fuel and water at hand. Wood and water are, during the day, almost in constant demand. If they are at hand, do we not save the ‘women folk’ at least one hour in each day, or about one month in each year, taking the time that we are not asleep? This is equal to one whole year in twelve, which saved is more than equal to the expense of a good dry shed or wood house joining the kitchen, and water to the kitchen itself. Where these things are convenient, the wood dry and split to the proper size, the breakfast, dinner, or supper is ready on the table, the wife is sweet tempered, the la-

boringmen are contented, and get to work the sooner, and the farmer himself, while seeing such sunshine and cheerfulness all round, catches the agreeable sensation, and is happiness itself. How does it happen then, that some of us busying ourselves so ardently about our distant affairs, forget or overlook that which is so much used and has so great an influence every day and hour at home? A neighbor of mine, noted for his cheerfulness and thrifty habits, informed me that he owed it principally to attending to the suggestions of his wife. When we began, said he, we had little or nothing but youth and health. ‘Let us have a wood house, my dear,’ said she, (this was soon after we were married,) ‘joining the kitchen, and as our means run short, postpone finishing the chambers, for it is better to be comfortable and happy than to wear the hollow appearance.’ I took the hint, said my neighbor: the wood house was first attended to, and I have never had a late dinner from that day to this. This example has had more influence than with the family where it originated. When my wife and myself took tea there, now years gone by, it was observed how handy things were. ‘Plenty of good seasoned wood, for months to come, all piled up neatly, the pine by itself for kindling, and a barrel full of shavings to light the fire.’ ‘Ephraim,’ said she, as we were going home at a trot in our dear-born, ‘Ephraim, you must have a wood house. If you had only gone out and seen how perfectly convenient every thing is! Why, I really believe it was not ten minutes from the time the fire was started, that the water was boiling in the tea kettle!’ It is nothing to cook where things are so handy.’ I took the hint, and never laid out a small sum that produced me a better return.

“Another thing I also learned from my neighbor, and that was, that there is neither economy nor good sense in carting water, or endeavouring to burn it. I cut my fuel in the winter, split and pile it up when the frost is coming out, and leave it in the woods until the ensuing month of November. This was what my wife learned in addition to the wood house; and we carried out the whole plan. As my lot is at some distance, I gain about one day in the larger sized loads from the dryness of the wood, and I greatly prefer the waggon to the sled, and so do my cattle as I think. As to the advantages of using green or seasoned fuel, I am satisfied with the latter and leave those to burn water who like it.

"By and by, the little hand pumps were introduced among us, and all our good-natured neighbors copied each other in these advantages also, so that every body said what a thriving people they seem to be down there towards Haverhill.

"And I have become thoroughly convinced that while so much is said and written about cattle and crops, soils and manures, there is sufficient attention paid to the comforts of home, and the saving of labor and temper where we feel it the most sensibly. There is a commendable pride that manifests itself as soon as we give it a chance.

"When I had got every thing fixed, and nothing was happier than the process, then I saw that the uns were brighter, the floor was oftener scrubbed, the little flower garden was commended, and my wife was perfectly delighted when our neighbor Gooding came in last summer and said, 'Mrs. Smoother, how sweet and clean you all are here.'"

Woman.

Great indeed is the task assigned to woman; who can elevate us dignity? Not to make laws, not to lead armies, not to govern empires; but to form those by whom laws are made, armies led, and empires governed; to guard against the slightest taint of bodily infirmity the frail yet spotless creature whose moral no less than physical being must be deprived from her; to inspire those principles, to inculcate those doctrines, to animate those sentiments which generations yet unborn and nations yet uncivilized shall learn to bless; to soften firmness into mercy and chasten honor into refinement; to exalt generosity into virtue; by soothing care to allay the anguish of the body and the far worse anguish of the mind; by her tenderness to disarm passion; by her purity to triumph over sense; to cheer the scholar sinking under his toil; to console the statesman for the ingratitude of a mistaken people; to be compensation for friends that are perfidious, for happiness that has passed away. Such is her vocation. The cough of the deserted friend, the cross of the rejected Saviour—these are theatres on which her greatest triumphs have been achieved. Such is her destiny; to visit the forsaken, to attend the neglected; when monarchs abandon, when counsellors betray, when justice prosecutes, when brethren and disciples flee, to remain unshaken and unchanged, and exhibited in this lower world a type of that love, pure, constant and ineffable, which in another world we are

taught to believe, is the test of virtue.—*Blackwood's Magazine.*

Education of Farmers' Daughters.

In the families of many farmers there are far too many unproductive hands. In the changes which, since the introduction of extensive manufactories of cotton and woollen among us, have taken place in our habits of domestic labor, some of the internal resources of the farmer have been dried up, and new occasions of expenditure introduced. I cannot better illustrate this matter than by a recurrence to a conversation which I had with one of the most respectable farmers in the country. "Sir," said he to me. "I am a widower, and have only one daughter at home. I have gone to the utmost extent of my limited means for her education. She is a good scholar, and has every where stood high in her classes, and acquitted herself to the satisfaction of her instructors. She is expert in all the common branches of education. She reads Latin and French; she understands mineralogy and botany; and I can show you with pleasure some of her fine needlework, embroidery, and drawings. In the loss of her mother she is my whole dependance; but instead of waiting upon me, I am obliged to hire a servant to wait upon her; I want her to take charge of my dairy, but she cannot think of milking; and as her mother was anxious that her child should be saved from all hardship—for she used to say the poor girl would have enough of that by and by—she never allowed her to share in her labor; and therefore she knows no more of the care of the dairy, or indeed of house-keeping, than any city milliner; so that in fact I have sold all my cows but one. This cow supplies us with what milk we want, but I buy my butter and cheese. I told her a few days since that my stockings were worn out, and that I had a good deal of wool in the chamber, which I wished she would card and spin. Her reply was, in a tone of unaffected surprise, 'Why father, no young lady does that; and besides it is so much easier to send it to the mill and have it carded there.'—Well, I continued, you will knit the stockings if I get the wool spun? "Why, no, father! mother never taught me how to knit, because she said it would interfere with my lessons; and then, if I knew how, it would take a great deal of time, and be much cheaper to buy the stockings at the store." This incident illustrates perfectly the condition of many a farmer's family, and exhibits a serious drawback upon his property, and a great impediment to his success. The false notions which prevail among us in regard to labor, create a distaste for it; and the fact that, if the time required to be employed in many articles of household manufacture be reckoned at its ordinary value, the cost of making many articles of clothing would exceed that for which they could be purchased at the store, is deemed a sufficient reason for abandoning their production at home. In many cases, however, the time is turned to no account, but absolutely squandered. But the clothing, if not made, must be bought; and they who might produce it must be sustained at an equal expense, whether they work or are idle.—*Fourth Annual Report of the American Central Board of Education.*

Food of Plants.

Different genera and species of plants notoriously contain different proximate principles, composed of different elementary materials, or different proportions of them—supplied by the soil—by putrescent manures, and by the atmosphere—a truth undeniably established by chemical analysis, as well as obvious to all who enjoy the two natural senses of taste and smell.

The inorganic portion of the supplies is to be found in the soil; and the soil must contain them in quantity and variety suited to the wants of the peculiar species of plant, or the crop will perish; when other plants, wanting other elements of nutriment, may find an ample supply for their growth and maturity.

Though a different base may be substituted, as a vicarious and imperfect agent for the true one, which was absent, yet the plant in such case, will not flourish.

The organic elements are supplied by the putrescent manures and the atmosphere; and come within the scope of the same category, or class of conditions with the inorganic.

But, inasmuch as the nutriment furnished and that appropriated by the plant, must of necessity, be chemically identical, and different species contain different principles, it follows that one species continued in the same soil uninterruptedly, would consume and exhaust the peculiar elements of its food, sooner than a series of unlike species requiring different elements, or different proportions of them; and consequently, that a change, or alternation of species, is an essential point of economy in general culture, by which a "quasi repose," in the interval, is obtained for the recovery of the consumed materials of nutrition before the second series may have commenced: this was a truth known in the days of Mantuan Farmer, *sic quoque mutatis requiescunt setibus arva.*"

For example—one group—the leguminous, as beans and peas require, according to Liebig, but a small portion of the alkalis; the culmiferous, as wheat and oats, require much of the alkalis and phosphates; tobacco consumes much alkali and no phosphates.

From these examples may be deduced a set of principles unquestionably sound, and in accordance with rotation and manifesting its necessity.

The climate too must be consulted in the selection of our crops: for instance, the beet is more profitable in a cold climate; this root requires much

nitrogen; and as Liebig states—the secretion of sugar will be diminished as the supply of this element may be wanting; and, as the last product of animal decomposition is, in cold climates, ammonia, which is rapidly converted into nitric acid in the warm, the alkali of the plant, will engross the acid; and the supply of nitrogen will consequently be deficient, and the saccharine matter therefore not so abundant; hence a cold is more suitable to the beet, than a warm climate; and as Chaptal has remarked, nitre in such cases, takes the place of sugar; which, he says, is experienced in the Southern and warmer parts of France.

Holding in view these principles, the cultivator may mark his course in safety and confidence—he will adapt his crops to the climate and to the chemical and geological constitution of his soil, and he will distribute the alternations in consistence with the established laws, which the God of nature has ordained and conferred on him, the faculty of reason to discover and to apply, for his comfort and convenience.—*Fur. Cult.*

Soaking Seeds in Ammonia.

DR. HOLMES.—I have long been looking for the reports of our experimental farmers of Maine, on the result of the application of ammonia to their seed-wheat the last season. But I have looked in vain. It seems to me that a subject of that importance, coming as it did from so high authority, through the medium of the accomplished Colman, could not fail to so enlist the curiosity of the farmers of this State, where the wheat crop has of late been so uncertain, as to induce hundreds to give the thing a trial.

Experiments in doctoring seed have for several years been conducted in Germany by the most acute practical chemists, with, in many instances, wonderful results. But the subject in the most tangible shape in which it has been presented to us, comes from Mr. Campbell, of Scotland. His experiments with ammonia on wheat, oats, barley, &c., were attended with results so astonishing as to induce him to state with the greatest confidence, that one lb. of ammonia to a bushel of wheat, on poor ground, would cause as great a yield as any quantity of the best manure. The thing looked so 'cute' on paper, so simple in its nature and so easy to be tested, that I determined, last spring, to give it a trial in a small way. I procured two pounds of carbonate of ammonia and prepared it according to Mr. Campbell's direc-

sions, as given in Vol. 12, No. 41, of the *Maine Farmer*. I failed in one important point in my experiment. I judged the quantity of water directed to be used in dissolving the ammonia, would be sufficient to soak the wheat from a dry state, so applied it, but the water was all absorbed in five hours. I let the wheat stand 24 hours without adding more water, and then sowed. Five pecks of the wheat was sown to finish a field of several acres of moist, rough land, that had been long in pasture, and was planted to potatoes the year before. The remaining three pecks of prepared seed was carried to a field that was sowing to peas and oats. It was a piece of land too far from the barn to be easily manured, and had been mowed till last year, 1844, when it was not worth the mowing, and in Sept. we plowed it, and in the spring completed the culture with the harrow and roller; no manure. It was a piece of ground on which I could not have sowed wheat, having a reasonable measure of faith in reaping in autumn. And now for the result.

The piece first sowed proved to be full of this seed, which grew so stout that we cut the most of the piece while in a green state, for fodder. But the contrast through the season, between the wheat prepared with ammonia and the other, which was washed in brine, and then 1-4 lb. of nitre to the bushel, was so great that every plant could be selected by the most careless observer. This wheat was about a foot taller than the other, and when the rest of the field was killed by rust, and as to ruin the crop, this continued to grow and fill. The other piece, of the three pecks' sowing, was tall, good looking wheat—the leaves broad, of a dark green through the season—the heads long and fine, and but for the weevil, I should have had a fine yield. As it was, I estimated the return from the two lbs. of ammonia, equal to ten bushels of wheat. I intend this year to give the thing a fair trial, and hope others will do so.

C. C.

Foxcroft, Feb. 2, 1846.

—*Maine Farmer*.

Truth in the Education of the Young.

Truth is a vital element of primary education. The mind of the child, when first capable of comprehending a subject, has been aptly likened to the clay of the potter when prepared for the purposes of his occupation. It will readily yield to any impression attempted on it by a matured mind; and the impressions on clay made permanent by the

hardening process, these thus made on the mind become indelible. Confidence is characteristic of childhood. The mind, in its artlessness, does not suspect, what it often subsequently learns by painful experience, that *deceit* has a place in the world. It looks up to its elder spirits with implicit trust, and does not for a moment doubt the correctness of any statement they make in its hearing. Childhood is a critical period, and future years will be affected for good or evil as care or inattention predominates with the guardians of youth. Too much attention cannot be paid all that comprises elementary instruction. An error here, may be an error for life; or at best, its eradication will cost a long and painful process. A statement or illustration not having truth for its basis, may pervert the tender understanding, and greatly perplex its future investigations. The same is true of the more advanced stage of intellectual culture. The false statement of a principle in science may prove an almost insurmountable barrier to progress, and erroneous premises may lead to still more erroneous conclusions.

These remarks lose none of their force when applied to an exercise in education, more fascinating, perhaps, than any other—we mean reading. The selection of judicious books for the perusal of the young is of great importance. Modern literature in general, is by no means favorable to a right development of the intellectual powers. The press teems with periodicals and works in a more durable form, the tendencies of which are to vitiate the taste and corrupt the morals. One cannot read the police records, which are made the life and spirit of some public journals, and the vulgarisms with which their columns abound, without pain to the moral sensibilities. Much of juvenile reading is embraced in daily or weekly newspapers, and among much that is really useful and calculated to enlarge their views of the world, is also much of the character just named, the influence of which is decidedly bad. The police reports, for example, to which we have referred, by their exaggerations and levity are calculated to blunt the finer sensibilities, and make vice and crime subjects of amusement, rather than beacons of danger. But better, far better, to use the language of the eloquent Channing, "go to the hospital and laugh over the wounds and writhings of the sick, or the ravings of the insane, than to seek amusement in the brutal excesses and infernal passions, which not only expose the criminal to the crushing penalties of human laws, but incur the displeasure of heaven, and if not repented of will be followed by the fearful retributions of the life to come." This description of literature, in its general tone is antagonistic to truth, and the rising generation suggests the necessity of its reform.

The same is true of works of fiction, whose name is legion. These, by the false views they impart of human life, prepare the young mind only for pain and disappointment when it comes to know the world by experience; and by the attractive garb in which they clothe the most vicious of their heroes, they at once disarm the reason of the fear of wrong doing, and inspire a taste for vicious indulgences.—*Bost. Cult.*

On the Practical Use of Guano for Spring Crops of Grain and Roots.

The season for sowing spring crops of grain, seeds, and roots, having arrived, simple directions for the application of guano will be found useful. In giving directions for the application of farmyard manure, it would be wholly unnecessary to enter into a learned chemical analysis of its component parts, or to use any arguments to prove that it is most effective in affording the requisite nourishment to grain, seeds, roots, grasses, and, in fact, to all agricultural crops. It would only be requisite to advert to the various strengths of the different kinds of farmyard manure, inasmuch as a difference is found in the effect of that article where animals are fed upon ordinary food, and upon common cake—the latter being far superior. So, in reference to guano, its excellent qualities have been sufficiently proved by analysis, and its effects upon crops have been tried and proved by the best of tests—experience. It may now be regarded as an established manure of standard excellence, containing the essence of the best farmyard manure confined in a small compass. The advantage of smallness of bulk, both as regards cost of conveyance and application to the soil, is a matter of most serious importance when compared with the great bulk of ordinary manure, especially in those cases where the land lies at a distance from the homestead and is of a hilly character. In purchasing guano, there are two points which demand most serious and especial attention. To purchase the best sort, and to deal only with those persons upon whose honor and integrity implicit reliance can be placed. It has been abundantly proved that the Peruvian and Bolivian guano is by far the strongest and best. Other guano may approximate, but it is just the difference between the manure of cake-fed beasts and of those fed on an inferior description of food. Then, again, in purchasing the article, even if the best be sought and paid for, unless the integrity of the settler can be relied upon, there is no article, not even bone dust, which can be more easily adulterated without detection except by the process of analysis, and which cannot be gone into after the article is brought home and put where it is going to be used in the field. It may be well here to notice that the Messrs. Gibbs, of London, and Myers and Co., of Liverpool, are the sole consignees of the South American guano, they being agents for the contractors with the government; that none can come to this country except

through them; and thus, if the article is obtained from them, or from agents directly connected with them, the genuineness of the article may be relied upon. When purchased from dealers, only those of unimpeached character ought to be resorted to.

It is scarcely necessary that we should cite here any cases to prove the beneficial effects of the application of South American guano to barley, oats, potatoes, turnips, grass seeds, and natural grass; but we shall, nevertheless, quote a few cases at the conclusion of this article.

In the application of guano, it should be especially noted that it should be used when the ground is moist, or during or on the immediate approach of rain. Moisture is essential, not only to induce its beneficial effect, but to prevent injury to the plants when applied as a top dressing. Care should also be taken that it be not applied in its original state directly to the grain, seed, or plant. The failure of the guano, as represented in some few cases, can be traced to error in those points.

1. Procure genuine Peruvian or Bolivian guano from the importer, if possible, or if not, from respectable parties who buy directly from them.

2. If there are any lumps in the guano, pass them through a sieve, and repeat the same until they all disappear. Never mix slack or unslacked lime with the guano. In case of mixing bones and guano together, for a top dressing, it should be done only two days before being applied to the earth. In preparing different soils, &c., place always a layer of the ashes, earth, or otherwise most appropriate for the guano intended to be applied, and one of guano alternately. When done, turn the whole carefully over together; and after it is properly mixed with a shovel, pass the same through a garden riddle, and exclude the whole from the atmospheric air, or damp situations, until taken away for use.

3. It is advantageous to be applied immediately before or after rain. This is to be effected by strictly attending to the weather glass.

4 *Preparation for clay and strong soil.*—Mix wood charcoal, or coal ashes, pass through a sieve, peat sod, or turf ashes, if it can be procured, in preference, and sawdust, if the former cannot be readily obtained, the day before taken up for use, with as much farmyard drainings sprinkled over the whole, and after being regularly mixed together, so that they will pass readily through a

garden riddle, preparatory to their immediate application to the earth, and sufficiently dry to be used with the drill, if required.

5. *Preparation for gravel, sand, or any light soils.*—Strong clay or marl (not calcined), earth from ditch bottoms, decomposed soils, or good black garden earth, and if not sufficiently dry may be exposed to the sun, or open air, sufficient time to pass through the finest mesh sieve they will admit of.

6. *The April and May top-dressings, for grazing land*—Clay and strong soils, per statute acre, three cwt. of Peruvian or Bolivian guano, with three times its bulk of mixture named in rule 4.

7. *For meadow land, gravel, sand, or any light soils.*—Two cwt. of guano and two cwt. of gypsum, or two cwt. guano, with three times its bulk of rule 5.

Observe, when four cwt. of guano, &c., is applied to the acre, it will be better to divide that quantity and introduce two cwt. of guano, &c., before the land is laid down for meadow, and two cwt. of guano, &c., as early as possibly convenient after the grass or hay is taken from the field. Should, in any instance, a smaller or larger quantity of guano be preferred, as an experiment, in that case quantities of each, proportionately, according to the nature of the soils, and after applied to the ground, in all top dressings to be immediately well rolled and brushed.

8. *Moor, peaty, springy, or mossy grounds.*—Three cwt. of guano, with three times its bulk of mixture named in rule 4.

N. B.—All artificial grasses and clovers the same as meadow land, nature of the soil to be considered.

Although the increase of grass will be very considerable indeed, the aftermath and hay taken out of the field, it is not of a coarse quality, neither does it injure the crops for the following year; but it is recommended, the spring following, to apply two cwt. of guano, and three cwt. of soil, ashes, or what is properly adapted for the land, in quantity, as it will increase the crop and bring it forward considerably earlier, and the grass and hay will be of a superior quality. But if no additional top dressings are applied in spring, or after the field is cleared of grass or hay for three years, the crops will be stronger than those manured with farmyard dung—for manure is the mainspring in all farming and garden operations.

We may drain well, subsoil, or plough deep; but without a sufficient quantity of manure, land cannot be more profitably worked than a horse can that is only half-fed.

9. *Top dressing for wheat, barley, and oats.*—For April, May, and beginning of June, for all soils deficient in plant, or in a weakly state, the following application will prevent the wire-worm destroying the roots, and, in a great many instances, has destroyed the wire-worm altogether, and prevented mildew.

10. *For gravel, sand, and light soils.*—Two cwt. of guano, and two cwt. of gypsum, or two cwt. of guano with three times the bulk of mixture named in rule 5.

For clay and strong land.—Two cwt. of guano, with three times the bulk of mixture named in rule 4. The above, if applied to crops of corn in a healthy state, will give additional increase, render the quality finer, the bulk of straw greater, and earlier at maturity, than farmyard manure, with less labor and half the expense.

11. *Potatoes (for land generally).*—Three cwt. of guano, with three times its bulk in ashes or earth, with ten tons, or half the usual quantity of farmyard manure, to be strewed at the bottom of the furrows, by hand, before the sets are planted, will not only increase the crop one-third in quantity, but will be earlier, and render the quality superior.

It must be particularly observed, in drilling guano, or ploughing it in after being sown broadcast, previous to having been turned over, the depth of the furrows should be calculated according to the nature of the soils. If cold, nearer the surface than gravel, or light soils; and to those farmers who have not experienced the increase by the introduction of guano, it is advisable, to show the marked alternation, to leave a quarter of an acre of each in its original state, and to notice the difference in produce and quality, also that of farm-yard manure, if used in the same field as an experiment.

12. *For turnips and mangel wurzel.*—The machines used for drilling the manure and seed at the same time may be adopted, providing five times the mixture with the guano, laid down in the rules of this treatise, be strictly attended to; by which means the guano compost is deposited so much deeper, and so much in advance of the seed, as to allow a portion of the soil to intervene between the seed and manure below it.

It is highly important for turnips and rape not

to let the seed come in contact with the guano direct, as it will prevent the seed from germinating.

The result of all the experiments with manures is decidedly in favor of guano as a manure for growing turnips. So very apparent was its superiority in this respect in most of the fields, that we had no difficulty in pointing out the furrows in which it had been used. The general idea of its value in the commencement of the season, when it was applied, seems to have been that 1 cwt. of guano was equal to 5 yards of farm-yard manure, or 6 bushels of bones; and it is our impression, from the result of the experiments which it has been our privilege to observe, that its value as a manure has not been over-estimated.

1. The guano should never come into immediate contact with the seed; it should be mixed with ashes, or earth, and deposited below the seed, or lightly incorporated with the soil before sowing.

2. It appears to be more useful broadcast, than sown by a drill.

3. It appears most useful in a wet season, or during or immediately preceding rain.

4. It seems more adapted for strong lands than light.

5. It is peculiarly calculated to promote the growth of plants in their early stages, and consequently is a valuable application for turnips, in conjunction with other manures.

6. It appears to answer well for green crops, which arrive at early maturity, when used alone.

7. In ordinary crops it should be combined with other less rapidly decomposing manures.

8. It appears to be beneficial to all cultivated crops.—*Farmer's Magazine.*

Fritters.—Make a batter of eggs, flour, and milk, as for pancakes, but with a little more flour. Apple fritters are made by cutting large pared apples in slices, dipping the slices in the batter, and frying them separately. They are done when slightly browned on both sides.—Another, and perhaps a more common way, is to cut the apples in small pieces, and mix them with the batter, frying them, a spoonful in each fritter. Fritters may be made with currants in the same manner. Serve all fritters with sugar sprinkled over them.

Mushroom Catsup.—Mushroom juice, 1 gallon; allspice, 1 ounce; pepper, cloves, ginger, each $\frac{1}{2}$ ounce; salt, 4 pounds. Boil for one hour, strain, and bottle.

To destroy the Bee Miller.—To a pint of water, sweetened with honey or sugar, add half a gill of vinegar, and set it in an open vessel on the top or by the side of the hive. When the miller comes in the night, he will fly into the mixture and be drowned.

Ginger Beer.—Bruised ginger, 2 ounces; water, 5 gallons. Boil for one hour, then add, when sufficiently cool, lump-sugar, $2\frac{1}{2}$ pounds; cream of tartar, $\frac{1}{2}$ ounce, essence of lemon, 1 drachm, yeast, $\frac{1}{2}$ pint. Strain, bottle, and wire down the corks.

2. Loaf sugar, 1 pound, rasped ginger, 1 ounce; cream of tartar, $\frac{1}{2}$ ounce, boiling water, 1 gallon. Mix and cover them up close for one hour, then add essence of lemon, 15 drops, yeast, 2 or 3 spoonful. Strain, bottle, and wire down the corks.

Ointment for the Mange.—1. Lard, 1 pound; sulphur vivum, 1 pound; spirit of turpentine, 1 pound; oil of tar, 1 pound; suet, 2 pounds. Mix.

2. Sulphur of vivum, oil of turpentine, rapeseed oil, tallow, each, 7 pounds. Mix.

Omelettes.—Omelettes are composed of eggs and any thing that the fancy may direct to flavor and enrich them. For a common omelette, take six eggs, and beat them well with a fork in a basin; add a little salt. Next, take a little finely chopped parsley, finely chopped eschalot or onion, and two ounces of butter cut into small pieces, and mix all this with the egg. Set a frying-pan on the fire with a piece of butter in it: as soon as the butter is melted, pour in the omelette, and continue to stir it till it assume the appearance of a firm cake. When dressed on one side, turn it carefully and dress it on the other. It will be dressed sufficiently when it is lightly browned. Serve it on a dish. The flavor may be varied, by leaving out the parsley and onion, and putting in finely chopped tongue or ham, oysters, shrimps, grated cheese, or other ingredients.

To pickle Mushrooms.—Clean them with salt and water, then put them into the saucepan with a little salt, keep them over the fire until the heat draws the liquor from them, then put them to drain, next bottle them, adding a blade of mace, and distilled vinegar sufficient to cover them.

HAMILTON TANNERY,
(Directly East of the Court House),
HAMILTON, C. W.

They have constantly on hand Sole, Harness, Upper, Skirting and Bridle Leather, Calf, Kip, and Sheep Skins, also Strap Leather, &c. &c.

THE Subscribers thankful for all past favors, beg to remind their old Customers and the Trade generally, that they still carry on at their old stand as usual, and having taken all the principal Premiums at the Annual Fair, for the last three years, can therefore with confidence say, that they can supply them with us good, if not better Articles, and at as low rates for Cash, as can be bought in any other establishment in Canada.

☞ Cash paid for Hides, Calf and Sheep Skins.

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Hamilton,
March, 1846. }

Always on hand a general assortment of Lasts, Pegs, Boot Trees and Crimps, &c. Conch, Bellows and Grain Leather made to order

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THE Subscriber still continues the cultivation of the most choice kinds of FRUIT TREES, and has now a good assortment of *Apple, Peach, Plum, Nectarine, Apricot, Quince, and Cherry*. He is growing an extensive ORCHARD, consisting of all the varieties, which he offers for sale; and many of the trees have already borne Fruit, enabling him to cut his Grafts from such as are true to their names.

In this manner he hopes to attain that degree of accuracy in cultivation which will enable him to avoid those mistakes so unpleasant to purchasers.

Apple, Peach, and Quince Trees, are 1s. 3d. currency, each, or £5 per one hundred.

Apricot and Nectarine are 1s. 10d. each. Cherry and Plum 2s. 6d. A liberal discount will be made to any person or company that may buy one thousand.

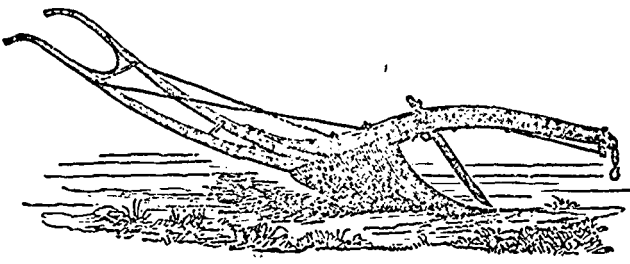
Catalogues will be furnished gratis to all who may apply. All orders by mail for Trees or Catalogues will receive the earliest attention if *post paid*.

Orders for trees must invariably be accompanied by Cash or a satisfactory reference.

C. BEADLE

St. Catharines, January 1st, 1846.

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THE Subscriber in addition to his business of WAGGON MAKER, makes all kinds of FARMING IMPLEMENTS, such as

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He would most respectfully state that he obtained the Second Premium for his WOODEN SCOTCH PLOUGH, (of which the above is a correct Drawing,) and also the First Premium for his REVOLVING HORSE RAKE, at the Spring Show of the Home District Agricultural Society for the year 1845.

☞ All Orders accompanied with the Cash, or a reference in the City, will be promptly attended to.

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Waggon Maker, Victoria Street.

Toronto, March, 1846.

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NURSERY AND SEED GARDEN,
ON THE KINGSTON ROAD,
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GEORGE LESLIE & Co., Proprietors.

THIS Establishment is situated as above, and was formerly carried on by GEO. LESLIE. The tract of land, twenty acres in extent, is admirably adapted to the purpose. Upwards of ten acres are already planted with Trees, Shrubs, &c. and arrangements are being made with a view to render this the most extensive and useful establishment of the kind yet attempted in the province. They have on hand, and offer for sale, a superior collection of *Fruit and Ornamental Trees, Flowering Shrubs and Plants, Green-house Plants, Bulbous Flower Roots, Dahlias, &c.*

The collection of *Fruit Trees* comprises the most valuable and esteemed varieties adapted to our latitude, either grown here or in the well known Mount Hope Nurseries of Rochester, N. Y., with which this establishment is connected.

The collection of *Ornamental Trees, Shrubs, Roses, Herbaceous Plants, &c.* is quite extensive, and is offered at moderate prices. Public Grounds and other places requiring large quantities of *Trees and Shrubs*, will be laid out and planted by contract at low prices.

To persons at a distance we would recommend to procure their *Fruit Trees* in the Fall, more particularly where the soil is dry and warm: October and November, immediately after the cold weather has arrested vegetation, is esteemed the best season of all for transplanting *Trees*. When *Trees* are transplanted in Autumn, the earth becomes consolidated at their roots, and they are ready to vegetate with the first advancement of spring.

All articles sent from the Nursery are carefully packed, for which a small charge, covering expenses, will be made. Packages will be addressed and forwarded agreeably to the advice of persons ordering them, and in all cases at their risk.

A large supply of *Fresh and Genuine Garden Field and Flower Seeds* constantly on hand at their Seed Store and Nursery Depot on Yonge Street, between King Street and the Wharf. Such *Seeds* as can be grown to greater perfection here than in Europe, are raised in the Nursery Grounds, and sold wholesale, at low prices.

Orders by mail (post-paid) from any part of the country, if accompanied by a remittance or a satisfactory reference in the City of Toronto, will receive prompt attention.

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Toronto, Sept. 1845.

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BRITAIN, also three TUPS, Leicester Breed,
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