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THE BRITISH AMERICAN



CULTIVATOR.

"AGRICULTURE NOT ONLY GIVES RICHES TO A NATION, BUT THE ONLY RICHES SHE CAN CALL HER OWN."—*Dr. Johnson.*

VOL. III.

TORONTO, FEBRUARY, 1844.

NO. 2



THE CULTIVATOR.

"Agriculture is the great art which every government ought to protect, every proprietor of land to practice, and every labourer to improve."—*Dr. Johnson.*

TORONTO, FEBRUARY, 1844.

MONTHLY CALENDAR.

Much of the business of the last month may still be continued. The thrashing and delivering the produce to market, will occupy most of the time of this month. This and the following are severe months for the stock,—they very commonly suffer more this and the next month by the weather than during any others.

Give your sheep, especially ewes, a supply of good hay and bran, or chop mashes, and also a few potatoes or Swedish turnips at this season of the year. Without extra attention of this kind, many of the ewes will die in lambing, and those that recover will not be able to furnish a sufficient supply of milk for their young. In most farm yards, there is an abundance of the common description of straw, which should be liberally scattered over the sheepfold, and the manure made from which, together with the additional comfort to the

animals, will amply remunerate the trouble.

Endeavour to provide a summer's supply of fuel. Recollect that every day spent in midsummer in chopping and loading firewood is worth at least three days in winter.

Choice varieties of scions may be cut during this and the two succeeding months for grafting, and may be carefully kept in a cool place till required for use.

Great trouble should be taken to procure the choicest varieties of seeds, roots, fruits, and shrubbery, and at no season can it be done with so little cost as this.

As scientific farming is becoming more popular than it was a few years since, the improvement of the stock should keep pace with the improved modes of culture pursued by the cultivators. A description of horses, horned cattle, sheep, and swine may be bred, which will give a return profit to the breeder of at least 25 per cent. greater than what is generally realized from rearing the common breeds of the country. This fact should stimulate the intelligent farmer to renewed exertion in carrying out improvements in this particular branch of his exalted profession. Lime, gypsum, ashes leached or unleached, soot, charcoal dust, and marl, should be collected and laid under cover for future use. There is scarcely a Township in the Province but what abounds with the richest and most valuable qualities of marl. Some specimens, which have lately come under the observation of the writer, contains upwards of 40 per cent. of lime. One bed, in particular, situated in the Township of Whitchurch, being eight or

ten feet in depth, and covering an area of some eight or ten square acres, contains upwards of 45 per cent of calcareous matter, and, in fact, appears to have been a deposit of shell fish. Wherever beds of this or less valuable quantities of marl are known, the farmer in the surrounding neighbourhood should procure a few loads, and test its adaptation to the soil they cultivate.

If you have not already become a member of an Agricultural Association, it is high time you had; and do not content yourself by merely subscribing to the funds of the society, but attend its periodical meetings, and endeavour mutually to assist each other in elevating your standing as agriculturists. Your noble calling has been too much neglected formerly, and it is only by a general concert of action, on the part of the practical farmers themselves, that the country can recover from the general depression of trade, which is so universally a source of complaint.

RAISE EVERY THING.—Every farmer should make it a rule to purchase nothing that he can raise or make on his farm. There can be no higher evidence of an unprofitable farmer, than to see him purchasing his pork, his beet, his horses, his corn, or his flour. He should be ashamed to have it said that he is a purchaser of any of these articles. If he thinks it cheaper to purchase than to raise it, it is only additional evidence of his folly. If we look through the district for our best farmers, we shall find them selling instead of purchasing these articles.—*Am. Ear.*

HOME DISTRICT AGRICULTURAL SOCIETY.

The Directors of the Home District Agricultural Society hereby give notice, that they have appropriated the sum of £150, which they will distribute for the encouragement of the Township Auxiliary Societies now formed, or which may be formed in connection with the Parent Society, previous to the 1st day of May next.

The said sum of £150 will be divided amongst the Township Societies in the proportion to the sums subscribed by the Township Societies respectively, which sums must be paid into the hands of the Treasurer of the Home District Agricultural Society, on or before Wednesday the 15th day of May next.

A further sum of, say £200, will be expended in prizes, to be awarded at a Grand District Exhibition, to be held in or near the City of Toronto, on a day to be fixed at the next regular meeting of the Society, at which meeting the Schedule of Articles to be shown, and the prizes to be awarded, will be arranged and made known. The arrangements for this exhibition will be upon a scale commensurate with the great object to be attained, and will comprise not only the showing of superior breeds of horned cattle, sheep, swine, &c., but also grains, grapes, seeds, roots, farming implements, the produce of the grower, and the domestic manufactures of the country, such as linen and woollen cloth, blankets, carpets, &c.

Gold and Silver Medals will also be awarded to the best and second best Essay on Agriculture; and also to the proprietor of the best cultivated Farm in the Home District. Notices to be sent to the Secretary of the Society, on or before the 1st day of July, when the Committee, to be appointed to inspect, will commence their duties, and will make their report on the day of the Grand Exhibition.

The regular Quarterly Meetings of the Society will be held on the Wednesdays of the week in which the District Council assemble, in the months of February, May, August, and November, at the City of Toronto; at which meetings, after the regular business of the Society has been transacted, a Lecture will be given upon the subject of Agriculture, and several papers read upon the results of experiment in the culture of Hops, Hay, Hemp, Wheat, &c.

On Wednesday, the 15th day of May next, a Ploughing Match will take place near the City of Toronto, when prizes will be awarded to the first, second and third best ploughmen, according to the following rates:—

No. 1—Open to all:
1st prize £2 10s.; 2d prize £1 10s.; 3d prize £1.

No. 2—Canadians and persons who immigrated to this Colony from the British Isles before they arrived at the age of 14 years:
1st prize £3 10s.; 2d prize £1 10s.; 3d prize £1.

No. 3—Open to youths under 16 years of age:
1st prize £3 10s.; 2d prize £1 10s.; 3d prize £1

SIBERIAN SPRING WHEAT.

Our esteemed friend and agent, David Smart, Esq., states, in a private letter, that he has in his possession 2,000 bushels of the above variety of wheat, which he will warrant pure.

GANANOQUE AGRICULTURAL SOCIETY.

We feel great pleasure in giving insertion to the following Resolutions, passed at a late meeting of the above Society:

That portion of the scheme, lately published in the *Cultivator*, for reorganizing Agricultural Societies now established in Canada, which relates to the Districts and Townships, appears to be highly approved of in every instance where the subject has been brought officially before the notice of the District and Branch Societies. A difference of opinion, however, exists regarding the character of the proposed Provincial Society.

The suggestion for sending Delegates from each Society to Toronto, to agree upon a plan for organizing a Provincial Society is a good one, and, we are authorized to say, will be acted upon at the earliest possible period.

We shall bring the subject before a Special Meeting of the Directors of the Home District Agricultural Society, to be called for the purpose, and shall in our next give our views of a plan, so that others may come prepared either to approve or offer such amendment as their Society may think proper.

Moved by W. S. Macdonald, seconded by John Finlay,

That this society concur in the objects proposed to be attained by the formation of a Provincial Agricultural Society, as explained in the December No. of the *British American Cultivator*.

Moved by Andrew Jarvis, seconded by J. W. Parmenter,

That this society are of opinion that it is not expedient to divert any part of the monies annually granted by Government in aid of District Agricultural Societies toward the support of a Provincial Agricultural Association.

Moved by J. W. Parmenter, seconded by J. L. Macdonald,

That in order to the formation of a Provincial Agricultural Society upon terms likely to be generally acceptable throughout the province, this society respectfully suggest that a meeting of delegates from all the Agricultural Societies now in existence in the province, be held at some convenient place, for the purpose of considering and adopting a constitution for said Association.

Moved by Hon. J. McDonald, seconded by G. Wood.

That in the opinion of this society Toronto is the most suitable place for the meeting of said delegates, and that a copy of the foregoing Resolutions be transmitted to W. G. E. Ingham, Esq., for the information of the gentlemen appointed to correspond with the different Agricultural Societies and that if these gentlemen approve of the suggestion made, that they do take such steps for convening said meeting as to them may seem fit.

J. LEWIS MACDONALD,
Secretary.

TOWNSHIP OF VAUGHAN AGRICULTURAL SOCIETY.

The farmers of this township have lately followed the example of their fellow farmers in the neighbouring townships in organizing a Local or Branch Society to the Home District Parent Society. No sooner was the scheme for reorganizing the District Society unfolded to the understanding of the most talented and influential portion of the farmers of Vaughan than they at once came to the resolution to exert their endeavours to set the stone in motion in such an efficient manner that every farmer in the township would not only be called upon to subscribe to the funds of the Society, but

would be solicited to attend the monthly meetings, which are to be held for discussing agricultural topics, and for adopting measures for mutually assisting and benefitting each other.

One of the officers, with whom we had some conversation, assured us that he would procure fifty subscribers to the Society, and another that he would personally call upon every individual in his concession, and point out to both farmers and mechanics the advantages that would accrue to themselves and the country, by becoming members to Agricultural Associations; and by a general combination of effort to elevate the standing of the productive classes.

The three principal officers for the present year are—Mr. James Brown, President; Mr. John Younge, Secretary, and Mr. Thomas Cook, Treasurer; and they have also appointed two Vice Presidents, and twenty Directors.

We shall be much mistaken if the Vaughan Society does not number some hundreds of members before the close of the present year.

We hope the example of the townships of Vaughan, Markham, York, Scarborough, Toronto, and Whitby, will be followed not only by the other townships of the Home District, but by every populous township in the Province.

TOWNSHIP OF MARKHAM AGRICULTURAL SOCIETY.

The intelligent farmers of this Township, have organized themselves into an Association for the purpose of encouraging Agricultural improvements in the Townships, and for mutually instructing and benefitting each other.—They have elected the following gentlemen as the three principal office bearers, for the present year:—Wm. Armstrong, President; George Hunter, Treasurer; David Reeser, Secretary; and also two Vice Presidents and 20 Directors. In the appointment of Directors, two were elected from each Concession, and in our humble opinion the selection will prove to be most honorable to the great interest which the Society has been established to promote. The Directors are expected to collect subscriptions to the Society in their respective Concessions, and also to distribute the Agricultural papers subscribed by the Society, to the individual members thereof resident in their particular Concession, which papers will be procured monthly from the Treasurer of the Society, who resides in the centre of the Township. They also intend to have monthly meetings for discussing Agricultural topics, and for adopting properly concerted measures for effecting Agricultural improvements within the circle of their influence, the first of which will shortly take place, and the proceeding will no doubt form matter to draft a most interesting and valuable practical Agricultural Report,

The Township of Markham is acknowledged to be one of the richest in the Province. It is upwards of 12 miles square, and there is not a single 200 acre lot within the limits of the whole Township, but what a considerable portion of it is under improvement. There are

between 500 and 600 cultivated farms in the Township, averaging each from 50 to 200 acres of cultivated land; and in numerous instances the latter quantity, being so perfectly cleared that scarcely a single stump can be seen in tracts of some miles in extent, and which land cannot be excelled in quality.

It is only necessary for us to add, that we anticipate most important results from the "sayings and doings" of this Agricultural Society—and we would not be much surprised if the intelligent and wealthy farmers of Markham, would continue to persevere in their laudable efforts to advance; strengthen and establish the character of their noble and exalted calling, in such a manner as will redound to their credit, and be a lasting benefit to their posterity; and a credit to our common country.

REVOLVING DRYING KILN.

Many of our readers will undoubtedly recollect that we noticed in a late number of the *Cultivator*, a most important invention by Mr. Hiram Bigelow, of Tecumseh, for the drying of Wheat and other grains, in a perfect manner. We feel an additional pleasure in being able to direct their attention to Mr. Bigelow's advertisement which may be seen on another page of the present number, which will explain the amount of work which the machine is capable of performing in a given time; and other particulars. One of the most important purposes for which this machine may be brought into almost immediate general use, is the drying of spring wheat, in such a perfect manner, that it may be ground into flour, packed and shipped to any part of the world, in equally as safe a condition as flour made from winter Wheat. The inventor feels confident that such will be the result from spring Wheat, after it has passed through his machine. If it be the case, which we have no doubt if we could judge from a sample which lately came under our inspection, we would venture to say that but few machines have ever been invented in this country, which have been of greater service to the country, than the one now under notice will prove to be. As soon as our wood engraver returns, a correct drawing will be taken of this machine, which will appear in the *Cultivator*, accompanied with a full description.

BROOM CORN.

Broom Corn.—The Canadian Farmers have heretofore paid but little attention to the cultivation of this crop, and nine-tenths of the brooms used are imported from our neighbouring country. We are happy to observe that some of the Farmers in the Western District have cultivated this crop on a scale sufficiently large to test its adaptation to their soil and climate, who appear to be of opinion that it would prove a most remunerating crop to the Farmers of their District, provided that a certain sale, at present prices, could be had for the article in the eastern towns and cities of the Province. The soil, best adapted to the growth of broom corn, is a deep moist alluvial or vegetable mould, this description of soil is

abundant in portions of the Western District, and if the Farmers there would pursue a proper system of cultivation, they might supply united Canada with brooms. We have a letter before us; from an intelligent farmer of the township of Gosfield, who states that he raised this crop to a limited extent for the past two years, and found it to answer his most sanguine expectations. The past season he raised brush enough to make 3000 brooms.

If we could have our will in the matter, we would not purchase a single article from our American neighbours, that could be profitably produced in this Province. We hope this spirit will grow with the growth of the country; and then we may hope to see all branches of industry in a most flourishing condition. Certainly we have the elements of wealth in this Province to an extent fully as great, if not greater, than any State in the American Union. The item of growing and manufacturing our own brooms is probably the least important among the catalogue of articles that is imported, but notwithstanding we should endeavour to curtail the immense importations of foreign goods in every particular where it is practicable, and probably if we begin with the smallest, and those in which the profits will be most certain, success will be more likely to crown our efforts, than if we should commence at first in manufacturing articles, which would require an immense capital, and a vast amount of skill to work them. The great thing requisite to secure success in almost any enterprise, is a combination of effort, and a will on the part of the public to sustain it.

TORONTO TOWNSHIP AGRICULTURAL SOCIETY.

The Farmers of the Township of Toronto have organized themselves into an Agricultural Society, in accordance with the scheme lately published in the *Cultivator*, and we have no doubt but that the wealth, respectability and talent of the Township, will concentrate their efforts in a grand movement to establish their Society, on a permanent basis. The principles upon which it is founded is unquestionably one wisely calculated to effect a lasting practical benefit upon all who take part in its proceedings; but to accomplish a great apparent good, a trilling sacrifice of both time and money must be made, by those who have talent and influence in the Township. We flatter ourselves that there are those in the Township who would go to any reasonable length in endeavouring, to arouse their supine neighbours to the importance of the immediate adoption of a more systematic and profitable mode of managing their naturally fertile lands. If there can be found in any one Township a dozen practical Farmers who will meet monthly, or semi-monthly, to mutually instruct each other, as well as their less favoured neighbours, in the highly important and honourable occupation by which they are mainly dependant for a livelihood, we maintain that such a course would produce a most powerful effect upon the entire Agricultural population of the Town-

ship, and if the principle were generally acted upon, the character of the Agriculture of the country would be materially improved. And shall it be said that twice that number cannot be found in the large, wealthy, and densely populated Township of Toronto. We venture to answer in the affirmative; and hope we shall not be disappointed in being able to treat our readers with a synopsis of the speeches which will shortly be delivered on Agricultural topics in the Township, at those conversational meetings alluded to.

GORE DISTRICT AGRICULTURAL SOCIETY.

To the Editor of the *B. A. Cultivator*.

Sir,—The exhibition of Grain and Fat Cattle, held annually by the Gore District Agricultural Society, took place in the Court House and Court House Square, on Tuesday the sixth instant. The samples of grain, roots, butter, cheese, &c. &c., were of a very superior quality, and gave ample proof of the onward march to perfection pursued by our intelligent farmers, and of the great benefit to be derived from the exertions of our Agricultural Society, which is now patronized by the leading and most influential agriculturists of almost every township.

A Short Horn Cow, in prime order—the property of Mr. Duff, butcher—was much admired; also an Ox, fed by Mr. Joshua Freeman of Nelson. Three one sheer Wethers (half bred south down), bred and fed by Mr. Wetenhall, of Nelson, took the first prize, and were much admired for their perfect symmetry of form and fine close fleeces. These sheep were purchased at a very high price by Mr. Smith, butcher.

After the several Judges had given in their decisions, the Annual Meeting of the Society was held, for the purpose of choosing officers for the ensuing year, when John Wetenhall, Esq., Warden, was elected President. Few changes were made in the Directors, &c. &c.

A number of respectable farmers afterwards partook of an excellent dinner, prepared by Mr. Mitchell, and much useful information was elicited from several gentlemen who addressed the party.

Mr. Osborne, of the firm of Osborne & McIntyre, one of the Judges, expressed his satisfaction at the samples of domestic manufactures. He was understood to say that the Blankets, manufactured by Mr. William Barber, Councilor for Esquimaux, were superior to those imported from Scotland, and but little inferior to the best English Blankets. He spoke also in high praise of the Cloth, Flannel, and Carpeting exhibited, and expressed his opinion that the day is not far distant when the Canadian manufacturer will be able to produce woollen goods sufficiently fine to supply the wants of this rising Colony.

These opinions, expressed by a gentleman of such high commercial standing as Mr. Osborne, produced an excellent effect upon the agriculturists who had the advantage of hearing him, and will undoubtedly tend to induce the farmers of this beautiful district to hesitate seriously before expending their money in the purchase of British Broad Cloths and English Woollens, instead of having their own wool manufactured for the use of themselves and families.

This letter is already much longer than I had intended. I shall, therefore, subscribe myself your old Correspondent,

B. A.

FOOD OF VEGETABLES.

[FROM THE GENESSEE FARMER.]

The following article from the *New Genessee Farmer*, will strike the intelligent reader, as being entitled not only to be read, but studied. It is written by Dr. Lie of Buffalo, New York, a gentleman possessing powers and original views upon all matters connected with science, and who has also, the happy knack of making people understand him. We commend it to all.

To understand the process of nature by which certain elements of earth, air, and water are transformed into living plants, and the best method of preparing these elements so as to produce the largest crops at the least expense, are objects worthy of the careful and profound study of every cultivator of the soil.

If we take 100 pounds of ripe hay, oats, wheat, or corn, including the roots, stems, and seed, and burn them carefully in the open air, we shall have only about 3 per cent. of alkaline earths left, most of which can be dissolved in water. If we burn a pound of candles, or a pound of oil, whether animal or vegetable, the whole of these substances (which are truly "the fat of the land") will be transformed into invisible air and vapor. The atmosphere and water are nature's great storehouse for preserving an exhaustless supply of vegetable food. By respiration, fermentation, and rotting, all organic structures are transformed into gases and soluble salts. It is from the lime dissolved in the ocean that the oyster elaborates its shell, and the coral insect rears its massive mountains of coral rock. It is mainly from the phosphate of lime held in solution in its mother's milk, taken from her food, that the sucking calf elaborates its solid bone. Without lime to be dissolved in her gastric juices, and taken into her circulating blood, the hen can make no solid shell to her egg. The unnursed infants in the great cities of London and Paris, brought up without milk, and fed on arrow-root and other food that contains little or no lime, have soft, cartilaginous, rickety bones, simply because neither animals nor plants can make *anything* from *nothing*.

As a general rule it is strictly true, and moreover it is a truth of great practical importance, that a feeble, diseased stem in wheat, liable to rust, &c., and a shrunk berry, are owing to some removable defect in the food of the plant. So different are the essential elements of the seed of this plant from those of its straw, that it is practicable to raise wheat that will yield twice as much grain in weight as there is weight of straw, taking it from the root. That it is also practicable to grow wheat which will give five times as much straw as grain, most farmers know by sad experience.

On page 254 of Transactions of the N. Y. State Agricultural Society, 1842, Gen Harmon, of Wheatland, states, that "In 1803 Pettin Sheffer, Esq., of this town, harvested 40 acres of wheat grown on the Genessee flats, that produced 621 bushels per acre." What elements did nature provide, and where did she get them, for the growth of such a crop? Manifestly they came from the mineral and vegetable matter washed down from the highlands above. These elements are just as abundant now as they were in 1803, or at the close of the creation. Having found out, within the last 40 years, since Mr. Sheffer harvested his famous crop, what these vegetable elements are, and how to combine them under more favorable arrangements for the production of cultivated plants that nature has anywhere done, men of science have greatly exceeded the above large product. From nature's crab-apple, that weighs less than an ounce, science has at last grown fruit weighing twenty times as much, or 2,000 per cent. more than the original

By the use of charcoal and lime, a Mr. Pell, of Goshen, in this State, has harvested this season at the rate of 78 bushels 24 quarts of wheat per acre. The ground was accurately measured by a surveyor's chain, and the grain in a sealed half-bushel and the statements are all sworn to by two respectable men. I notice this triumph of science with the more pleasure, from the fact that I have long and zealously urged the use of these abundant elements upon the attention of the readers of the papers for which I have written.

It is more than twenty years since I first began to use pulverized charcoal to absorb the gases given off by decomposed vegetable and animal matter, urine, and the like, to be applied to garden and field crops. Its value in correcting the taint in meat, and purifying rain-water in filtering cisterns, led me to believe that it would be just the thing to absorb the food of plants from the atmosphere, into which so much passes, and hold it about their roots in a condition that neither dew, rain, snow, frost, nor the heat of the sun, would injure it or take it away. To labor hard to save and draw out manure on to one's fields, and then lose 60 or 80 per cent of this vegetable food by its solution in water, and washing away to form something like the Genessee flats in the bottom of Lake Erie, I never regarded as very good economy—which, by the way, is the soul of good husbandry.

A pint of human urine contains ammonia enough to make, with the other necessary elements, 60 pounds of good wheat. Charcoal will absorb this liquid, and render it quite inoffensive to the olfactories of the nose. The direct application of urine to the soil, after the German practice, is bad economy, unless the soil contain a large portion of humus, or vegetable mold, for its tenacious retention. It is a better plan to have a reservoir filled with pounded charcoal under the stable floor, or near to the stable, into which the liquid excretions of all animals should be conducted like cider from the press. When nearly or quite saturated with urine, this coal will be manure of extraordinary power and durability—for nothing in the soil, but the roots of growing plants, will be likely to extract a particle of this vegetable food.

After wheat, corn, or grass has taken up all this nourishment, the coal (unlike lime, which has parted with its carbonic acid in the same way) is insoluble in water, and remains, as in a filtering cistern, to absorb and hold, for the benefit of the growing plant, more vegetable food from every rain that falls to the earth. For be it remembered, that dew, rain, and snow—the poor man's manure, bring back to the earth all the gaseous elements given off by all the fires, respiration, and other decomposition of solid and liquid matter.

For the same reason, coal should be largely used in the formation of compost heaps. And where the farmer has straw which he can use to make beds for his horses and cattle in the stable, this, with a quantity of coal pounded with a flail, can be spread upon the table floor, to absorb all liquid excretions. All these excrementitious substances should be kept under shelter. Wood ashes, lime, and muck, or vegetable mold, are valuable ingredients in all compost heaps. The coal stratum should be placed between the lime and the manure, and the whole should be covered with turf or more coal.

The analysis of soils abounding in fragments of limestone rocks shows a marked deficiency of this important element in their composition. The reason of this perhaps unexpected deficiency I will now explain:

Disintegrated limestone is decomposed by the vital action of plants, and its carbonic acid is

taken up by their roots. It will then combine with more of this gas which abounds in the air and soil, and will again give it out to growing vegetable. It is in this way that plaster (sulphate of lime) after it has parted with its oil of vitriol, often produces such wonderful effect, although the amount applied is less than one fourth thousandth parts of the soil from which plants draw their nourishment. The action of the sulphuric acid, as I understand the matter, I will not stop to elucidate. But I wish to fix public attention upon the circumstance, that when lime in the soil has parted with its acid, whether sulphate or carbonic, and especially the latter, it is soluble in water, and hence very liable to be washed out of the soil by rains, &c. All water that has passed through a soil possessing sufficient lime to be good wheat land, is hard, or holds lime in solution of which it has robbed the soil. The same is true, in a less degree, with regard to leaching of the soil, and its loss of allumina, potash, and soda. The cultivation of the earth, without allowing any vegetables to grow upon it, would exhaust its fertility very rapidly.

The remedy for this is, to cultivate less land in grain crops, and cultivate it far better; to remove all excess of water by draining; to plough deep, and turn up to the sun virgin earth from below, and apply thirteen manure, coal, lime, ashes, and salt. Instead of applying large quantities of quick lime at distant periods, it is far better to apply a less quantity and often; to make up for the loss that occurs from its being dissolved in water, and carried with it into rivers and the ocean.

Leached ashes are valuable, when applied to grass lands and are far from being worthless on wheat, rye, oats, and barley—all of which need their silicate of potash, to give them a good firm stem. Grass and wheat know as well how to convey the apparently insoluble elements in leached ashes up into their organic structure, as did the trees from which these ashes were obtained. D. L.

Buffalo, Dec. 17, 1843.

ON VEGETABLE PHYSIOLOGY.

[FROM THE EASTERN CHRONICLE.]

I shall now say something on the food of plants. In commencing this part of the subject I may remark, that to chemistry we are chiefly indebted for what we know of the food of plants; consequently it may be regarded as a modern discovery. Our forefathers knew the value of manure perhaps as well as we do; although they might not imagine that the whole virtues of 50 loads might be contained in a punchon. The celebrated Lord Sumnerville, once told an old farmer, that he did not despair of finding a manure, which he could carry in his snuff box. The farmer archly replied, "My Lord, when you carry your dung heap in your snuff box, I will carry your stack-yard in my pocket;" and I doubt not the farmer expressed the sentiments of Agriculturists in general, although my Lord's anticipations were well grounded, as modern discoveries have demonstrated.

First,—In endeavouring to explain the still mysterious operations of vegetation, the first and most important object of inquiry is, to determine, by what means the simple or inorganic elements of fossils and aerial origin which are received into the vessels of plants are there changed into vegetable compounds—by what means, from these simple elements or binary compounds, vegetables form those other matters by which they are nourished, increased in size, elongated and expanded, and which thus give occasion to all the successive phenomena of vegetable life.

Secondly,—It may be observed that in the

most of the circumstances of vegetable life, the materials which serve as primary nourishment to plants, seem almost reduced to nothing when we compare the tenacity of these materials with the solidity of vegetables.

A number of plants grow upon solid rocks from which we might suppose they can derive nothing. Such is the primary vegetation of lichens and mosses, upon quartz and granite, where it would appear their whole nourishment must be derived from the air, as it cannot be conceived that solid silix would contribute to their nourishment.

Thirdly—The same observation may be extended to those vegetables and trees (sometimes of great size) which grow in fine sand, or which grow and push deep roots into compact granitic rocks, or in the fissures of excessively hard lavas. Nor need we be surprised to find the stones of buildings covered with vegetation, when the contact of air alone, seems sufficient to their existence. Mustard may be grown for salads on board of vessels at sea in certain temperatures, by sowing the seed on wet cloths: some have supposed from the circumstance of plants growing in water, that the ground was only serviceable to plants in supporting them erect. This opinion however exhibits very superficial reasoning, as I shall now endeavor to demonstrate.

Air and water are undoubtedly the principal agents in vegetation. The ground not only serves the purpose of holding plants erect, but is also the great laboratory, where the food is prepared by fermentation and decomposition. Without the action of air and water, fermentation and decomposition cannot go on. When we say that air and water, are the principal agents in promoting the growth of plants, we must bear in mind that these are compound elements. Water is composed of two parts of Hydrogen and one of Oxygen. Common Air is composed of twenty parts, by bulk, of Oxygen, and eighty parts of Nitrogen. Humic acid is composed of carbon and Hydrogen. Ammonia is composed of three parts Hydrogen and one part Nitrogen. Lime is composed of a metal called Calcium, and Oxygen. Potass is composed of a metal called potassium, and Oxygen. Potass, Lime, and Ammonia, are often combined with carbonic acid gas, which is also contained in small quantities in common air.

Perhaps the most important of all these simple principles is carbon, the chief ingredient in humic acid. It is this carbon that constitutes the greater proportion of the solid substances in all plants, while water constitutes the chief fluid portion; and hence—Hydrogen, which is contained in water, in humic acid, and in ammonia, is so important.

The mineral part of the soil which, exclusive of lime, is composed of clay and flint, earth in the form of sand, and gravel of various degrees of fineness, together with magnesia, iron, and some other metals, contributes little or nothing to the food of plants. These portions of the soil appear to be chiefly useful in dividing and diffusing the nutritive particles arising from decayed plants in natural soils, and from various manures in artificial soils. This proves in another point of view, the usefulness of lime, when laid upon artificial soils. Plaster of Paris, is also an excellent agent in fixing the ammonia which escapes during fermentation, and which, if allowed to escape in large quantities, occasions a serious loss of plant food, as ammonia and humic acid are the principal ingredients in promoting the growth of plants. By the free action of air and water, these ingredients are prepared in the soil as I have already said, by fermentation, and reduced to such a state of fluidity as to be easily taken up by the spongellets of the roots.

Reasoning upon this principle, enables us to account for the beneficial effects of fine culture, which we are apt to think is only necessary for covering the seed. I have said that every good soil must contain a certain portion of air and water in an active state. Consequently to admit of this action, the ground must be loose and friable to imbibe the rains, and condensed vapours of the atmosphere and also to allow a free filtration of superfluous moisture,—which, if allowed to stagnate, gorges the sap vessels of plants, as will be seen illustrated in instances where people keep the saucers of flower-pots continually full of water.

This reasoning also proves the use of summer fallow, by breaking down the hard texture of the soil, and rendering it the more susceptible of heat and moisture. It also proves the advantage of frequent hoeing among green crops. It also enables us to understand why many unproductive soils are rendered fertile by culture alone.

This leads me also to remark, that great error generally prevails, respecting what is generally termed exhausted soils. Ground often becomes unproductive, by requiring it to produce plants of the same species in succession. Certain classes of plants requires a greater portion of lime, for instance, than others, and repetition soon exhausts the soil of that ingredient; hence the ground fails to yield that species of crop, although it would mature a good crop of a different one. This is not the only evil attending repetition. Every plant when growing gives out certain excrementitious matter, highly injurious to its own species, although harmless to other classes. By repetition, the ground becomes so highly charged with this excrement, that it acts as a poison to the crop, as the filth accumulated on the human body proves injurious to the system.—These remarks may enable us to understand the advantages of what is called alternate husbandry, and teaches us that we cannot violate the laws of nature with impunity,—and also, that until we know the kind of food best adapted to the system of different species of plants, and the best means of administering to their wants, we cannot boast of perfection in agriculture. By the valuable discoveries of Sir Humphrey Davy, Fourcroy, De Condoll, Liebig and others, many of the mysteries of vegetable physiology have been laid open, and great advantages to the human family must result. Indeed, I do not despair of seeing Agricultural chemistry introduced into our national system of education. But from the very nature of things, anything approaching to perfection in the science can never be accomplished, for Nature works by such imperceptible means, as to render it far beyond the reach of human capacity to trace her sublime and undeviating system.

MANURES.

The object of all well-conducted experiments in manures is to clear up doubts for the practical and experienced farmer, and to offer, to the young and unskilful, data, which may enable him to prosecute his labours with more confidence and a greater certainty as to his crop than he would otherwise be able to do. It is with great pleasure, therefore, that we see how frequently the results of various fertilizers are reported in the numerous agricultural works of merit which are continually issuing from the press; and though some, we fear, have seen the light through the instrumentality of those whose interest it is to puff into notice and so force a sale of the various inorganic materials in which they may deal, yet some are beyond any shadow of suspicion, and should be attentively considered by every farmer who is desirous of attaining eminence in his profession; amongst those latter we may

unhesitatingly class the Reports of the various Agricultural Societies, which, under guise of a small premium for grain crops and roots, have been the means of collecting information of the most valuable kind, in reference to the various manures and fertilizers. These reports are too often laid aside by the general reader, as interesting only to the members of the various societies, and of value but in their several localities. That this is a serious mistake we will show by reference to the report of *The Cornwall Agricultural Society*, for the present year, which now lies before us. By reference to it we see that 120 bushels of lime, 6 loads of sand, applied to 2½ acres, first combed, then skimmed and burnt; the seed sown broadcast, so late as the 2nd of November, produced 45 imp. bushels per acre of best white wheat.—That after Swede turnips, the land dressed with 20 loads of dung with a mixture of carweed, sea sand, and earth, and 1½ quarters of bone dust mixed with ashes, applied to the same extent of land, 36 imp. bushels per acre of other wheat were produced from seed sown in February.—That 78 imp. bushels of oats per acre were produced after barley, the land dressed with rich dung and earth mixed in equal quantities, 30 loads per acre, the seed sown on the 5th of March.—That an old lay field, skimmed and burnt, and dressed with 30 loads of dung and earth mixed to the acre, seed drilled eighteen inches apart in the rows, produced 25 tons per acre of Swedish turnips, sown on the 15th of June.—That on 2½ acres of mangold wurtzel, manured with 25 tons of compost dung, and 15 bushels of bone dust, the dung put into the drills and covered by the plough, and the bone dust dibbled in with the seed—dills 2 feet apart, sown the last week in May, the produce was 37 tons, 6 cwt., 20lbs.—That 1½ acre of barley arish sulsoiled, manured with 15 loads of dung, and 6 loads of sea weed mixed with earth, the seed drilled 12 inches apart, produced 30 tons of carrots per acre, sown on the 15th of April. All that is wanting to render this very interesting report complete is a statement in each case of the nature of the soil and subsoil; and whether any, and if any, what expense has been incurred in subsoil ploughing or draining?—*The Farmer's Herald*.

CARROTS FOR HORSES.

We were lately told by the proprietor of one of the most extensive livery stables in this city, that he has had an experience of several years in feeding the common yellow carrots to his horses, and that he considers them a most valuable article for winter feed that he has ever used. He considers a peck of carrots and a peck of oats worth more for a horse than half a bushel of oats alone; and for horses that are not constantly employed, the carrots alone are far preferable to oats. He would purchase carrots for his horses, in preference to oats, even if they cost the same by the bushel; the price of carrots, however, is generally about half that of oats. His horses eat the carrots with a far better relish than oats,—so much so, that if a peck of each are poured into the manger, they will eat all the carrots before they taste the oats. When fed constantly on carrots, a horse will drink scarcely a pail of water in a week. The culture of carrots is recommended to our farmers, as worthy of their attention.—*Farmers' Gazette*.

SCOTCH IN ANIMALS.—A writer in the *Maine Farmer*, recommends for this disease, fine pulverized bone. We have never seen it tried, but from the nature of the substances that constitute bone, such as lime to correct the acidity, and gelatine to smooth the irritated surfaces, it is probable its employment would be useful.

WESTERN DISTRICT.

We notice, in a late number of the *Western Express*, a powerful appeal to the yeomen of that naturally fertile, and, in many respects, highly favoured district, by our Correspondent, Major R. Lachlan. The Major, in alluding to the scheme for reorganizing Agricultural Societies, which has been published by the Home District Agricultural Societies, states that he "should be wanting in duty, as the nominal President of the long dormant Agricultural Society of the district, were I to refrain from requesting a place in your next paper for the accompanying Circular Letter. I entertain a hope, 'forlorn' though it be, that the farmers of Essex may yet be roused from the discreditable, nay, disgraceful state of apathy, with which they regard a matter of such vital importance to themselves as the support of at least one Agricultural Society."

• We lately had the pleasure of an interview with an intelligent gentleman from the Western District, who, in the course of conversation, remarked that he thought it very strange that their district, possessing the richest soil and the mildest climate of any portion of the Province, and bounded and intersected with large navigable lakes and rivers, was, notwithstanding those superior natural advantages, considerably behind the other districts in wealth and artificial improvements, and, in fact, would scarcely compare with the Huron, Wellington, Simcoe, Colborne, and other Northern districts, in the advance which those districts have made in improvements.

We pointed out to our friend the present superior state of agriculture and civilization in Scotland, which only a few centuries ago was considered an inhospitable and comparatively barren country, and held forth, in bold contrast, the present backward state of agriculture and civilization in Italy—a country acknowledged to be the most lovely spot on the habitable globe.

Before the close of the interview, we convinced our friend that that portion of the population of the Western District who are blessed with wealth, and a liberal or even a common education, are highly culpable for the indifference which they have evinced, in employing proper means to bring their valuable country into more respectful notice, both at home and abroad.

We pointed out to him, that among the most efficient of those means were the establishment of respectable institutions of learning, agricultural and social improvement societies, whereby the people would become better acquainted with their noble profession, and the reporting and publishing every fact, experiment made in agriculture, or any and every information calculated to benefit themselves and that portion of the country where they reside, which would comprise most suitable and valuable matter for the two respectable journals, already well supported in the district.

We convinced our friend that "knowledge

is power," and that the only reason for the great advancement made in agricultural improvement in the northern and remote districts from markets, was that those districts were inhabited by a tolerably well educated and industrious class of European settlers.

We would, in conclusion, beg to recommend the proceedings of the Home District Society to the favourable notice of the farmers, not only of the Western, but of every district of the Province. We feel confident that the great bulk of the agricultural community would engage heartily in aiding and promoting the interests of their profession, if means, similar to those referred to, were properly adopted.

FIRST AGRICULTURAL MEETING OF THE TOWNSHIP OF YORK AGRICULTURAL SOCIETY, HELD AT ROSSE'S HOTEL, FEBRUARY 2.

The President, WM. GURDLESTONE, Esquire, in the Chair. Subject—MANAGEMENT OF LAND FOR FALL SOWN WHEAT.

Mr. ALEXANDER MILNE was previously appointed to open the discussion. He considered the wheat crop by far the most important crop cultivated in this country, and therefore any information on this subject must be valuable to the farmer. He had, for many years past, been a close reader of agricultural works, especially the magazines published in the neighbouring country. He had noticed that rapid strides in agriculture had been effected through the agency of those worthy periodicals and associations for encouraging agricultural improvements, and in no instance has those improvements been more apparent than have been effected through the introduction of clover culture. It is now acknowledged, on all hands, both in Europe and America, that the clover plant is the best possible food for wheat. Ground, properly cultivated and seeded down with clover, might be ploughed, the second year, in the latter part of August, and after the inverted sod had been allowed to settle a fortnight, it will then be in a fit state for depositing the seed. This is the practice of the best farmers in England and the United States, and heavier crops have been grown from this method, than from the common method of making naked summer fallow. It appears to be the most rational, economical, and by far the most profitable mode of treating land for the wheat crop. By using a liberal dressing of gypsum on the clover, a great proportion of the food for the plant is received from the atmosphere, and, besides, the roots of the clover strikes to a much greater depth than the ordinary crops that are cultivated, and from these sources much of the food that is most natural for the clover crop is received, without apparently injuring the fertility of the soil. Indeed the soil is benefited, inasmuch as it receives rest, and hence the loss sustained from the evaporation of gases, heavy drenching rains, and exposure to the midsummer heat are avoided, which are the greatest objections urged against summer fallows.

A heavy crop of clover will as thoroughly free the ground from all noxious weeds as a thorough summer fallowing operation. As this fact has been often proved in this country to the satisfaction of the best experimental and most skilful farmers in it, it will scarcely be necessary for me to dwell on this branch of this highly interesting and important subject. I would, however, beg the indulgence of this respectable assemblage of my fellow farmers a little farther, by pressing upon them the importance of making a few well-conducted

experiments in sowing wheat upon inverted clover ley, and by engaging more extensively in the clover culture. Six quarts of clover, and three quarts of Timothy seed to the acre is a pretty fair seeding, and, to secure a strong and healthy growth, about one bushel and a half of plaster per acre should be sown on the crop with which the seeds were sown.

[Here Mr. M. read a number of extracts from modern agricultural works to prove his position, among others some remarks in the *British American Cultivator*]

Rust on wheat is one of the most fatal diseases that the wheat crop is subject to in this country. By cultivating clover in rotation with the wheat crop, this calamity is, in a great measure, prevented. Rust is caused by the overflowing of the sap vessel, which is principally brought about by too rapid a growth of the plant at that stage of its growth when the berry is being formed, or when it is in its milky state. By the ordinary method of manuring summer fallows with raw barn-yard manure, the ground which, in very many cases, has naturally too much vegetable matter for maturing the wheat crop, is then overcharged with material that will ferment in the hot days of July, and thus force a rapid growth, which operates on the wheat crop precisely the same as the fungus is created by an excessive fermentation of a hot-bed; but when the second crop of clover is ploughed down, the tender clover and roots have passed through their several stages of fermentation before the end of the month of June, or in fact before the plants have commenced to stool, the gases arising from this fermentation, ameliorates and pulverises the soil, forces a strong and healthy growth to the plants, and pushes out strong and healthy leaves, and the roots strike deep and become proportionably strong from the effects of the newly made soil created from the decomposition of the young clover and the roots of the clover plants.

If the agriculturists would study into the causes and effects, as I have endeavoured to do for the past number of years, they would then be enabled to remove obstacles which at present appear almost insurmountable. I am fully convinced, that both chess and smut may be prevented in every instance, and that damage from rust may be avoided in nine cases out of ten. By sowing clean seed, and thorough culture, chess may be entirely prevented; and, to prevent smut, there are nearly as many cures as there are to the most common diseases which inflict the human body. The most efficient preventives, which have come under my observation, are allowing that portion of the crop intended for seed to stand until it is dead ripe, and by thrashing it immediately when taken into the barn. If this plan is honestly followed, smut may be entirely prevented. When any portion of the seed is impregnated with smut, washing it in salt, and drying it with fresh lime will lessen the probability of smut; but a far more certain plan is to wash the seed in a solution of blue vitriol. Sir Humphrey Davy tried 14 experiments, and those in which he used blue vitriol, lime water, salt and ley, there were not a single grain of smut to be seen; but, in all the others, there were more or less of the grain injured by this disease. Clover culture, deep ploughing and liming, are among the most certain preventives of rust, and probably none is more effective than deep ploughing, especially when the ground is composed of a strong calcareous earth.

I have only directed your attention to a few leading features of this highly interesting subject, and, in conclusion, would say that each individual present should endeavour to impress upon his neighbours the importance

of becoming members of this Association, and aid in giving a general interest to its monthly meetings, by contributing to the general mass of information, thereby lending their talents and influence in furthering the great cause of agriculture, and thus aid in elevating its character, both in the eyes of the agriculturists and other classes of society. Every inducement is now held forth, for both old and young, experienced and inexperienced, to become members of Township Associations, and if each member now present would make it a point to call upon their next door neighbours, and point out to them the advantages which would result from a combined effort to effect agricultural improvement, they would thus add monthly to the list of subscribers, until nearly every farmer in the township would have enrolled his name among the list of subscribers to this Association.

DOMESTIC MANUFACTURES.—The President, Mr. Gurdlestone, remarked, in an able speech, that the importance of encouraging manufactures, has lately attracted the attention of the principal farmers and merchants of this district, and in his opinion something ought to be done to lessen the import of goods which are received in this country from the United States. One great cause of the slow progress of domestic manufactures is owing to the great scarcity of capital. Probably another, equally as fatal, is caused from the small amount of business done, and the inefficiency of the machinery employed in the establishments. But, in his opinion, those difficulties might be removed by a combined effort on the part of the agricultural and commercial classes. He highly approved of the plan of forming Joint Stock Companies for erecting and carrying into operation manufacturing establishments. This plan had worked well in Europe and the United States, and he saw no good reason why it would not be successful in this country. He trusted that active steps would be taken forthwith to organize a Joint Stock Company for the manufacturing of woollen cloth from wool, the produce of the country. It is out of the power of this country to profitably export wool to Britain, and it is discreditable in the extreme to sell wool to our American neighbours for the low price of nine-pence per pound, when it is really worth upwards of a shilling to be manufactured at home. In conclusion he would say, that, to set the example, he would subscribe for a quantity of stock as soon as a company could be formed for manufacturing woollen cloths and blankets.

FRANKLIN JACQUES, Esq., one of the Vice Presidents, said that he concided with the views of the President, on the subject of manufactures, and was astonished that the people of this country felt so spiritless in promoting the great interests of the country. For his part he felt willing to aid, both in exerting his influence among his neighbours, and in contributing to useful enterprises; and he considered, with the exception of agriculture, none had a heavier claim on the attention of the public than that of giving proper encouragement to domestic manufactures. He was happy to announce to that meeting that this spirit was gaining ground in the higher circles. At a late meeting of the Quarter Sessions, the Grand Jury, at a period whilst there was no official business before the Board, entered into a very interesting discussion on the important subject now under the notice of this meeting. All of the gentlemen then present were of opinion that no time should be lost in taking active measures to establish a market for the increasing quantity of wool that is produced from the sheep of this country. An American wool-dealer had purchased from the City of Toronto, during the past summer, not less than

\$10,000 worth of wool, a great portion of which was manufactured into grey cloth, and has subsequently been sold in this country at prices which would handsomely remunerate the Canadian manufacturer. Facts like those, coming under the notice of men of discriminating minds, speak much louder than words. If the Canadians do not engage unitedly and energetically in promoting this patriotic enterprise, they will, to say the least of it, show most conclusively that they are indifferent about advancing their best interests.

The same subject is to be continued at the next meeting, which will be held at the same place, and at the same period of the next month, and the Editor of the *Cultivator* will commence the discussion.

FROM THE ALBANY CULTIVATOR FOR FEBRUARY.

Results of Subsoil Ploughing.—Mr. C. N. Bement states that he a few years ago subsoiled a piece of ground which he planted to Indian Corn. The experiment was made on a light loamy or sandy piece of ground, and he subsoiled it in strips, leaving alternate ridges not subsoiled, all being manured alike. The season proved very dry, and where the subsoil plough was not used, the corn was so burnt up that it produced little or nothing; but where it was used, the corn remained green and flourishing through all the drought, and the produce was a good one. The same gentleman made a similar experiment on carrots, and the results were even more strikingly in favour of subsoiling.

Comfrey, a new article of food for Animals.—Mr. E. Rich of Troy, N. H., has communicated the results of some experiments made by him on the tops and roots of this plant, as food for cattle. Two cuttings, in June and September, yielded six tons per acre of good fodder, and the root which should be harvested only once in two years, produced 2,400 bushels per acre. Experience has showed both top and root to be very palatable and nutritious. Comfrey is easily propagated by cutting the roots into sets, as is done with the potatoe. We are not able to speak from experience as to the amount of produce, or as to the profits of this crop—it is at least worthy of a trial on a small scale.

Drilling and ribbing Wheat.—The editor gives a description and management of the farm of Mr. Thomas Noble, an Ohio Farmer. The crops principally grown by Mr. N., wheat and roots, and with the exception of horses and a few cows, the only stock on the premises are sheep. Nearly the whole farm is in its course, alternately pastured with sheep and sown to wheat. He keeps fifteen hundred Merinoes, and sows annually two hundred acres of wheat, which he drills and ribbs, which methods of depositing the seed, he thinks, possesses many advantages over the broad cast system—particularly in the security it gives the crop from rust and mildew. The great chance for the circulation of air through the drilled crops is thought to be the cause of this difference. Previous to ribbing, the ground is prepared as in the usual manner, and the ribbing plough is then used, as if the ordinary method of making drills for turneps, with the mere difference that the distance from the crown of one rib to the other is not more than sixteen inches. After the land is beautifully laid up into ribs, the seed is sown by hand, broadcast, and a light pair of seed hawks is passed lengthwise of the furrows or ribbs, which draws the wheat into the bottom of the furrows, and buries it with so much accuracy that one would suppose that it was sown with a drilling machine. He sows two bushels per acre, which he thinks is not too much on a land of a medium richness.

The editor states that Mr. Noble's agricultural implements are all of the best kinds, and when not in use are put under shelter from the weather. He pays particular attention to the substitutions of machinery, and the labour of animals, for that of men, wherever practicable. Chimerical or visionary schemes on the one hand, and the errors of antiquated habits on the other, he alike endeavours to avoid. With a far reaching glance, he clearly sees that the true course by which to attain the desired end, is the adoption of all real improvement—the observance of system and order—doing every thing in the right time and in the right manner. He superintends his business in person—constantly exercising a vigilant oversight of all, remembering the prompter's adage, "the eye of the master will do more work than his hands."

Our readers will probably recollect that in the First Volume of the *Cultivator*, we reported some experiments made by us in ribbing wheat, which gave a return of nearly one hundred per cent greater than the usual method. Those of our readers who prefer having heavy crops to light, would do well to adopt this system, or some other equally approved by the wisest and best Farmers of the present age.

Corn Crop.—The editor of an exchange Paper raised the past season, on a lot of two acres, a yield of 84 bushels per acre. The lot was clover sod, and was not ploughed till planting season, when the clover was growing finely. A dressing of common manure was ploughed under with the clover; and the rows were 5 feet a part, and the hills two feet apart in the row.

Preserving Potatoes through Winter.—An intelligent neighbour practices the following modes by which he rarely loses one bushel in five hundred. The potatoes are placed in a large heap on dry ground, and covered with straw in sufficient quantity to be at least one foot thick around the heap when closely packed. Three or four inches of earth are then shovelled upon it. During the mild weather of Autumn, a hole is made in the top for ventilation, which is closed on the approach of the severe frosty weather in winter.

To prevent cut worms from injuring Cabbage Plants. The best remedy appears to be the application of a roll of paper around the stems when the plants are set out, extending one inch above the surface, and three or four below. A burdock leaf around the stem will answer the same purpose where cultivators are so unfortunate as to have this plant on their grounds.

The Field Carrot.—The horse feeds and thrives well on this variety, and it gives to the hair a peculiar smooth and glossy appearance. The root is rather short and rough, often sending off large branches of roots. The soil best adapted to the carrot is a deep rich loam, free from gravel or sand, if it be too adhesive, ashes and lime may be mixed with it. If manure be used, it should be entirely decomposed or rotted, and intimately mixed with the earth. The ground should be ploughed often and deep, being made mellow.

The seed should be planted the latter part of April, in drills not less than twenty-two inches apart. When the plants spring up, they should be early freed from weeds, and the earth loosened around them. The feeble plants should be pulled, leaving only the most hardy ones. At the second weeding, they should be thinned again, leaving the most healthy to grow, and thus continue, leaving the most thrifty ones not less than twenty inches apart; so as to give an abundance of room for the tops. In this manner, the writer has raised the yellow carrot no less than seven inches through, and at the rate of seven hundred bushels per acre.

SPASMODIC COLIC IN HORSES.

The attack of this colic is very sudden. There is often not the slightest warning. The horse begins to shift his pasture, look round at his flanks, paw violently, strike his belly with his feet, lie down, roll, and that frequently on his back. In a few minutes the pain seems to cease, the horse shakes himself and begins to feel, but on a sudden the spasm returns more violently, every indication of pain is increased, he heaves at his flanks, breaks out into a profuse perspiration, and throws himself more violently about. In the space of an hour or two, either the spasms begin to relax and the remissions are of longer duration, or the torture is augmented at every paroxysm, the intervals of ease are fewer and less marked, and inflammation and death supervene.

Of the symptoms by which it may best be distinguished from inflammation of the bowels, we shall speak when we treat of that disease. Among the causes of colic are, the drinking of cold water when the horse is heated. There is not a surer cause of violent spasm than this. Colic will sometimes follow the exposure of a horse to the cold air, or a cold wind after violent exercise. Green food, although, generally speaking, most beneficial to the horse, yet given in too large a quantity, or when the horse is hot, will frequently produce gripes. In some horses there seems to be a constitutional predisposition to colic. They cannot be hardly worked, or exposed to unusual cold, without a fit of it. In many cases when these horses have died, stones have been found in some part of the alimentary canal.

Fortunately we are acquainted with several medicines that allay these spasms, and the disease often ceases almost as suddenly as it appeared. Three ounces of oil of turpentine, with an ounce of laudanum, given in a pint of warm ale, will frequently have an almost instantaneous effect. The account which we have just given of the cæcum will not be forgotten. Even a small quantity of fluid will seldom be detained in the stomach, but will pass through the ileum to the cæcum or water stomach, and in this passage will come in immediate contact with the spasmed part.

If relief be not obtained in half an hour, it will be prudent to bleed, because the continuance of the spasm will produce inflammation. Some practitioners bleed at first, and it is far from a bad practice, for although the majority of cases will yield to turpentine, opium, and aloes, an early bleeding may occasionally prevent the occurrence of inflammation, or serve to mitigate it. If it be clearly a case of colic half of the first dose may be repeated, with a full ounce of Barbadoes aloes dissolved in warm water. The stimulus produced on the inner surface of the bowels by the purgative may counteract the irritation which caused the spasm. The belly should be well rubbed with a brush or warm cloth, but not bruised and injured by the broom-handle rubbed over it by two great fellows with all their strength. The horse should be walked about, or trotted moderately. The motion thus produced in the bowels, and the friction of one intestine over the other, may relax the spasm, but the hasty gallop may speedily cause inflammation succeed to colic. Clysters of warm water, or containing a solution of aloes, should be injected.

When relief has been obtained, the clothing of the horse should be removed and fresh dry clothing substituted. He should be well littered down in a warm stable or box, and have fresh mashes the two or three next days, and lukewarm water.

Some persons give gin, and even gin and pepper, in cases of gripes. This, however, is a practice to which we strongly object; it may

be useful, and even sufficient, in ordinary cases of colic, but if there be any inflammation or tendency to inflammation it cannot fail to be highly injurious.

INFLAMMATION OF THE BOWELS.

There are two varieties of this malady. The first is inflammation of the external coats of the intestines, accompanied by considerable fever and costiveness. The second is that of the internal or mucous coat, usually the consequence of an overdose of physic, and accompanied by violent purging. We will here speak of the first of these affections. Inflammation of the external coats of the stomach is a very frequent and fatal disease, and it is of great consequence that its early symptoms should be known. If the horse has been carefully observed, restlessness and fever will have been seen to precede the attack; in many cases a direct shivering fit will be observed; the mouth will be hot, and the nose red. The horse will soon express the most dreadful pain by pawing, striking at his belly, looking wildly at his flanks, graining and rolling. The pulse will be quickened and small; the ears and legs cold, the belly tender and sometimes hot; the breathing quickened; the bowels costive, and the horse becoming rapidly and fearfully weak.

It may be useful to give a short table of the distinguishing symptoms of colic, and inflammation of the bowels, because the treatment recommended for the former would often be fatal in the latter.

Colic.—Sudden in its attack—pulse not much quickened, but fuller—legs and ears of the natural temperature—relief obtained from rubbing the belly—relief obtained from motion—intervals of rest—strength scarcely affected.

Inflammation of the Bowels.—Gradual in its approach, with indications of fever—pulse much quickened, small, or scarcely perceptible—legs and ears cold—belly exceedingly tender and painful to the touch—motion evidently increasing the pain—constant pain—rapid and great weakness.

The causes of this disease are, first of all, and most frequently, sudden exposure to cold. If a horse that has been highly fed, carefully groomed, and kept in a warm stable, be heated with exercise, and have been for some hours without food; and in this state of exhaustion be suffered to drink freely of cold water, or be drenched with rain, or have his legs and belly washed with cold water, an attack of inflammation of his bowels will often follow. An over-fed horse subjected to severe and long continued exertion, if his lungs were previously weak, will probably be attacked by inflammation of them; but if his lungs were sound, the bowels will, on the following day, be the seat of disease. Stones in the intestines are an occasional cause of inflammation, and colic neglected, or wrongly treated, will terminate in it. The treatment of inflammation of the bowels, like that of the lungs, should be prompt and energetic. The first and most powerful means of cure will be bleeding. From six to eight or ten quarts of blood should be taken as soon as possible, and the bleeding repeated to the extent of four or five quarts more if the pain be not relieved, and the pulse have not become rounder and fuller. This speedy weakness that accompanies this disease should not deter from bleeding largely. If the weakness that is the consequence of violent inflammation of these parts, and if that inflammation be subdued by the loss of blood, the weakness will disappear. The bleeding should be effected on the first appearance of the disease, for there is no malady that so quickly runs its course. Next to bleeding will follow clysters. Although the bowels are usually confined we can not administer a strong purgative; the intestines

are already in far too irritable a state. The clyster may consist of warm water, or very thin gruel, in which half a pound of Epsom salts or half an ounce of aloes has been dissolved, and too much fluid can scarcely be thrown up. If the common ox bladder and pipe be used it should be frequently replenished: but with Reed's patent pump already referred to, sufficient may be injected to penetrate beyond the rectum and reach to the colon and cæcum, and disperse them to evacuate their contents. The horse may likewise be encouraged to drink plentifully of warm water or thin gruel; and draughts, each containing a couple of drachms of dissolved aloes, may be given every six hours, until the bowels are freely opened.

Next it will be prudent to endeavour to excite considerable external inflammation as near as possible to the seat of internal disease, and therefore the whole of the belly should be blistered. In a well marked case of this inflammation, no time should be lost in applying fomentations, but the blister be at once resorted to. The tincture of Spanish flies, whether made with spirit of wine or turpentine should be well rubbed in. The legs should be well bandaged, to restore circulation to them, and thus lessen the flow of blood to the inflamed part, and for the same reason the horse should be well clothed, but the air of the stable should be cool.

No corn or hay should be given during the disease, but bran mashes, and green food, if it can be procured. The latter will be the best, and may be given without the slightest apprehension of danger. When the horse begins to recover, he may get a handful of corn two or three times in the day, and if the weather be warm, may be turned into a pasture for a few hours in the middle of the day. Clysters of gruel should be continued for three or four days after the inflammation is beginning to subside, and good hand rubbing to the legs.

The second variety of inflammation of the bowels affects the internal or mucous coat, and is generally the consequence of physic given in too great a quantity or of an improper kind. The purging is more violent, and continues longer than was intended; the animal shews that he is suffering great pain; he frequently looks round at his flanks; his breathing is laborious, and the pulse is quick and small; not so small however as in the inflammation of the external coat of the bowels, and contrary to some of the most frequent and characteristic symptoms of that disease, the mouth is hot, and the legs and ears warm. Unless the purging is excessive, and the pain and distress great, we should hesitate at administering any astringent medicine at first. We should plentifully administer starch, made thin, gruel, or arrow root, by the mouth and by clyster, removing all hay and grain, and particularly green food. We should endeavour thus to sheath the irritated surface of the bowels, while we permitted any remains of the medicine to be carried off. If, however, twelve hours should pass and the purging and the pain remain undiminished, we should continue the gruel, but add to it chalk, catechu, and opium, in doses of an ounce of the first, a quarter of an ounce of the second, and two scruples of the last, repeated every six hours. As soon as the purging begins to subside, the astringent medicine should be lessened in quantity and gradually discontinued. Bleeding will rarely be necessary, unless the inflammation be very great, and attended by symptoms of general fever. The horse should be warmly clothed, and be placed in a warm stable, and his legs should be hand-rubbed and bandaged.

Violent purging, attended with much inflammation and fever, will sometimes come

from other causes. Green food will sometimes purge. A horse worked hard upon green food will scour. The remedy is change of diet or less labour. Young horses will scour sometimes without any apparent cause. Astringents should be used with much caution here. It is probably an educt of nature to get rid of something that offends. A few doses of gruel will assist in this purpose, and the purging will cease without astringent medicine.

Some horses that are not well ribbed home, (having too great space between the last rib and the hip bone,) are subject to purging if more than usual exertion is required from them. They are recognised by the term of washy horses. They are often free and fleet, but destitute of continuance. They should have rather more than the usual allowance of corn, with beans, when at work; and a cordial ball, with one dram of catechu, and ten grains of opium will often be serviceable either before or after a journey.—Youatt.

(From the London Farmers' Herald.)

Much pains have been taken at various meetings of the Agricultural Societies, held during the last two months, to enforce upon farmers the importance of selecting improved breeds of cattle and sheep, to the exclusion from their stocks of any of doubtful pretension—and calculations have, in some cases, been made to shew the advantage of such breeds in point of profit. Now in selecting the stock for his farm, a judicious farmer has two or three preliminary enquiries to make—two or three important matters upon which to satisfy himself, before he stands committed to any particular breed of either cattle or sheep; and the most experienced must be aware, that a description of animal which on one soil and in one situation may do well and afford a fair return, yet, when removed to another, ceases to be so productive, and, in some instances, is even a source of loss instead of profit. In illustration of this, at a recent meeting of a Farmers' Club, we had the pleasure to sit between two members, one of whom was a successful exhibitor at all the neighbouring shows of Southdown sheep, which he had bred in and in for ten years; whilst the other, whose farm was within five miles from that of the gentleman just spoken of, had tried to breed them, but totally failed, and failed, as he rightly judged, in consequence of diseases incident to his more humid situation.

It has been our lot also to see splendid short-horn beasts, or rather what had been, in the previous generation, very fine animals indeed, grazing in pastures upon so poor a soil that our only wonder was how they lived at all. The breed from such stock must, of course, degenerate, and, instead of being profitable, are sure to become just the reverse. It is all very well to seek to awaken stock farmers to the advantage of improving their breeds by the judicious selection of well-blooded beasts; but it is much better to urge upon them the vast importance of seeking in the first place to acquire a knowledge of what their soil is capable of performing, and what their situation will afford—for, most assuredly, unless the stock be suited to the soil and the situation, loss instead of profit will be the certain result. Hitherto experience, too often dearly bought, has been the farmer's only guide—books have as yet been but little unfolded before him—the experience of others has been transmitted, if at all, orally from father to son—and certain lands have traditional value for the rearing of certain stock or the production of certain crops, whilst other lands have for ages been reputed to be fit to rear nothing but geese and feed only the fowls of the air. Now, however,

the press has been brought forward in aid of the agriculturist, and "SCIENCE WITH PRACTICE" has become the farmer's motto; reasons have been assigned for the various agricultural operations, and causes, with their certain effects, have been pointed out. To books then we would have the young farmer resort, if he would know why certain animals will not thrive upon some soils which are well suited for others—and why crops, which in the early stages of their growth, wear a promising and healthy appearance, should in their maturity fail to remunerate him for his labour. Why some soils which may have been in tillage beyond his recollection should continue to afford profitable employment, whilst others are apparently totally exhausted. If he would know why one animal, of a particular shape, size, and form, is more likely to feed quickly than another, and why that other may yet be more likely to suit his soil and his situation, and therefore be more profitable, although, perhaps, not a beast of such complete proportions: let him read what others, more experienced than himself, may have written upon these subjects, and let him compare their observations with his own.

It has been well observed, by an eminent writer, that "by the help of history a young man may, in some measure, acquire the experience of old age;" and it is equally clear that by the combination of theory with practice—or rather perhaps we may be justified in going further and say, that, by the help of theory alone a young man may, in some measure, acquire the knowledge which practice only can really supply. Let him then apply to books as he would to a friend whose knowledge will be freely imparted, and whose assistance may be at all times relied on without disappointment. The sweeping charge so often and so boldly made, that farmers are an ignorant and prejudiced class, will most assuredly hang about them until they are prepared to give reasons for the various operations they carry on, and the predilections they evince in the choice of stock—and there is no way by which they can so surely remove the stigma as by each man reading the opinions of others and recording his own for the benefit of his fellow farmers.

CREAM.

New method of obtaining Cream from Milk, by G. Carter, Esq., of Nottingham Lodge, near Elltham, Kent.—The process of divesting the milk of its component portion of cream, to an extent hitherto unattainable, has been effected by Mr. Carter, and is thus detailed by that gentleman in a paper presented to the Society of arts. A peculiar process of extracting cream from milk, by which a superior richness is produced in the cream, has long been known and practiced in Devonshire, this produce of the dairies of that country being well known to every one by the name of "clotted," or "clouted cream." As there is peculiarity in the milk from which this fluid is extracted, it has been frequently a matter of surprise that the process has not been adopted in other parts of the kingdom.—A four-sided vessel is formed of zinc plates twelve inches deep, with a false bottom at one half the depth. The only communication with the lower apartment is by the lip, through which it may be filled or emptied. Having first placed at the bottom of the upper apartment a plate of perforated zinc, the area of which is equal to that of the false bottom, a gallon, (or any given quantity) of milk is poured (immediately when drawn from the cow,) into it, and must remain there at rest for twelve hours; an equal quantity of boiling water must then be poured into the lower apartment through the lip; it is then permitted to stand twelve hours more, (i. e.

twenty-four hours altogether,) when the cream will be found perfect, and of such consistence that the whole may be lifted off by the finger and thumb. It is however, more effectually removed by gently raising the plate of perforated zinc from the bottom by the ringed handle, without removing any part of it with milk below. With this apparatus I have instituted a series of experiments, and, as a means of twelve successive ones, I obtained the following results; Four gallons of milk, treated as above, produced in twenty-four hours, 4½ pints of clotted cream, which after churning only fifteen minutes, gave 40 ounces of butter. The increase in the cream, therefore, is 12½ per cent, and of butter, upwards of 11 per cent. The experimental farmer will instantly perceive the advantages accruing from its adoption, and probably his attention to the subject may produce greater results. I shall feel richly rewarded if, by exciting an interest on the subject, I can produce any, the slightest improvement in the quality or mode of producing an article which may probably be deemed one of the necessities of life.

ICE-HOUSES.

[FOR THE AMERICAN AGRICULTURIST.]

PETERSBURG, VA., Dec. 5th, 1843.

A GREAT deal has been written on the proper construction of ice-houses, and yet there are very few who preserve ice in the best manner. The chief defect, as far as my observation extends, is imperfect drainage. Nothing can compensate for this; all the lining of roof and walls with tan-bark, charcoal, &c., will be attended with little benefit. As the season for cleaning out ice-houses, preparatory to putting away the ice, is at hand, I take the liberty of making a few suggestions on the subject.

The best site for an ice-house is at the summit of a steep declivity, with a northern aspect. If there be trees about it, so much the better. When the pit is excavated, it will not be a difficult matter to cut a drain on a level with the floor, either by ditch or tunnel. When the ground is level, the only drainage that can be effected is by absorption. If the earth be of a loose and porous texture, the absorption may keep pace with the supply of water from the melting ice, but if it be compact and retentive, I know of no remedy, not even by sinking a well of moderate depth. The ice-water and rain-water will destroy the ice long before the hot season is past.

The best ice-house I have ever seen, is one made in as cheap and rude a manner as the plainest farmer could desire. On the side of a hill a pit was dug; a simple pen of logs supported the walls; it was covered with rived pine slabs, and so open as to admit a free circulation of air. During the heat of the day, the sun shines full upon the roof. And withal, the pit is only 12 feet square, by 14 feet deep. It has been in use now for 6 or 7 years, and has never been clear of ice since it was first filled. Two years ago, when the winter was so mild, it was only half filled, with thin ice; and yet there was some remaining at the end of the next season. In the construction of this house, there is nothing to distinguish it, except the perfect draining.

Our ice-houses in Virginia generally become empty by the last of August or first of September; in many cases still earlier. There is no time when it is more desirable to have a full supply than in September; for the weather is then sometimes exceedingly hot, and more sickness prevails than during any other month. Since ice has become an article of necessity almost as much as a luxury, I trust these remarks may not be unproductive of some benefit.

T. S. PRASANTA

BOSTON CULTIVATOR.

This Journal is devoted to Agriculture, Literature, News,—and has a variety of useful and interesting articles on Domestic Economy. It is published weekly—has three talented editors, two of whom are practical farmers—and has a list of 8,000 subscribers, at 12s 6d each. In gleaning from this talented and respectable Journal, we feel confident that our readers will recur to that part of our paper,—headed *Boston Cultivator*—with as great delight and profit, as we enjoy in transcribing the essence of the various articles—original and select—to our own columns.

Winter Butter—The scalding of milk has been frequently recommended through the columns of the *Cultivator*. The difference between scalding in shallow pans, and in a deep iron pot could be easily ascertained by an experiment. The difficulty of obtaining winter butter of a good quality is so great that we trust the plan recommended will be tested.

When a sufficient quantity of cream is obtained for a churning, place it in an iron kettle over a clear fire, and scald it, but not let it boil. Stir it often, and skim off the froth as long as it continues to rise. The process of scalding, stirring and skimming, cleanses the cream of its impurities, and saves about three-fourths of the labor of churning, and produces good flavored butter, entirely free from that bitterish taste, uniformly found in winter-made butter in the "old way." When the skimming process has been completed take the kettle from the fire, and when the cream is cooled down a shade below the temperature of milk new from the cow, it is fit to put into the churn.

Best time for cutting Timber.—In an article copied from the *Farmers Cabinet*, four experiments are reported, which go to prove that the best time to cut timber for fencing and building, or for any purpose that durability is requisite, is the spring.

Salt as a Manure.—A correspondent states that he has for many years used salt as a manure, and had found the result highly beneficial. In mixing it with barn-yard manures he applied one bushel to a cord, and in applying it broad-cast upon the meadow and pasture grounds, he sowed it at the rate of 4 bushels per acre. We would recommend our Agricultural readers to make a few experiments with salt as a manure, on their pasture and meadow grounds, and a trial might be made with this stimulant upon their wheat, potato and other crops.

Fifth Agricultural Meeting in the State House, Hon. Josiah Quincy in the Chair. To their praise be it spoken, the members of the Legislative Assembly and the Senate of Massachusetts, by common consent, have set apart a portion of each week for the discussion of Agricultural topics, and in fact have formed themselves into a Social Club for exerting their influence in advancing the great cause of Agriculture. A subject for discussion for the following meeting is agreed upon a week previous to the period at which the discussion takes place, so that each individual who intends to take a part in the proceedings of the meeting, has an opportunity to prepare himself for the occasion. Not only the members of the two branches of the Legislature take part in the discussion but the most influential farmers in the neighborhood surrounding the Capital of the "Old Bay State," and no less than three editors of Agricultural papers, engage heartily in these discussions. The speeches are reported in an able manner, and published in the *Boston Cultivator*, and *New England Farmer*, and other Agricultural papers. We invariably

read those speeches with a great degree of interest and would gladly insert them in our own paper if the limits of our sheet would admit of such an arrangement.

If the statesmen of Massachusetts—a country of acknowledged celebrity for the extent which manufacturing interests are encouraged, and where the great proportion of the population are either directly engaged in manufacture, or dependent upon it as a source of livelihood—take so much interest in Agricultural matters, what course should the statesmen of Canada pursue in elevating the standing of the Agriculture of their country? We answer, that the least they should do, would be to cease wrangling about party strife, at least a few short hours in each week, while in session, and engage themselves cordially and energetically in endeavoring to excite a stimulus among the Agricultural classes, in effecting a radical change in the present defective system of Agriculture pursued in very many of the townships of this country. As these remarks may be considered rather unseasonable, we would merely add that, in the want of such a practical and laudable demonstration being made by the members of the two branches of the Provincial Legislature, as hinted at in the foregoing remarks, a course might be pursued which would act as a powerful incentive to induce not only the Legislative bodies to adopt the plan recommended, but the Agriculturists of the townships would feel a praiseworthy pride in following so noble an example—we mean that the District Councillors might devote one or two evenings in each session in discussing Agricultural topics, reports of which might be published in the local papers, and from which we could glean a vast amount of useful information for the readers of the *Cultivator*. We merely throw out this hint, and trust that it will be acted upon, by each District Council in the Province.

Without farther expatiating on what our fellow-countrymen might do, and we would tan hope that they shortly will do, in this important matter, we shall, for the present, content ourselves with the reflection that we have done our part, by directing the attention of our readers to the necessity of high-minded measures being adopted by the talent, wealth, and influence of the country in promoting the welfare of all classes of the land we live in.

To return to the State House, the subject for discussion was, *The Management of Stock.*—Colonel Jacques opened the discussion by stating, that in feeding calves they should be well fed the first year. He allowed them to draw the milk from the cow for three or four months. Then heifers would come in at two and a half years old, which was not the case when fed on porridge. He preferred them coming in at that age, as then their milking properties would be better developed.

As to cutting feed: when any bran or meal is to be fed to stock, he has found an advantage in cutting the fodder, but when no meal or bran is used, he prefers giving them long hay. In feeding 30 cows, 25 of which were in milk, he cut equal parts of salt hay, fresh hay, and straw, making in all 30 bushels. This fodder was moistened, and then he added 30 quarts of bran or shorts, and 10 quarts of oat and indian corn meal, and in addition to this one peck of mangel wurtzel was given daily to each milch cow. He fed a bushel of the above cut feed and chop to each cow morning noon and night, and they gave as much milk as though fed on grass,—some of them gave two pails a day.—Wheat bran is excellent for cows; it is good for the dyspepsia. When calves are young treat them kindly, in this way they become docile in a short time. In the management of stock cleanliness should be strictly attended to.

It is best for horses to stand on pavements of brick set on the edges, but stones will do. A horse should not stand and lie on his filth.—Great improvements have been made in our horses, and probably the most apparent and important of these have been brought about by a cross of the Normandy or French horses with our native mares. This cross gives us the various desirable properties in a horse for the different purposes for which a farmer has occasion. Kind treatment is important; in this way animals may be easily managed, our language to them should be uniform, always using the same word for the same purpose.—Colts should be accustomed to the halter the first season.

Mr. Chéven Newhall, remarked that soiling cattle was not much practiced. He had made some experiments in soiling with very good success. Last year he kept 17 cows 30 days on one acre of rye, allowing them, besides, 12 lbs. of hay and one quart of meal each; and the after crops of rye was sufficient to keep them 5 days. He recommended sowing rye for soiling the first of August, and not less than two bushels and a half per acre. They were next fed on clover, and then on corn fodder to the middle of September. They were then turned into a meadow field, in which a good crop of after-math was upon the ground, and were also fed with the tops of ruta baga, and beets, which tops were not laid in a heap so as to heat, but scattered. He feeds roots to his cows without imparting any unpleasant taste to the milk. He keeps his roots in a cool cellar, that they may not heat. Enough is put into the barn floor to last till the middle of December, and if the weather be very cold they are covered up. He sowed some corn the first of May for early use, and the seventh of June for his main crop—he sowed in drills at the rate of three bushels per acre. What was not consumed by the cows, was cut up at the bottom, the 17th of September, and after laying two days it was tied up and shocked. The yield was equal to 160 lbs. of dry fodder per rod. The cows ate almost the whole, leaving not more than from three to five per cent.

The Hon. Mr. Dodge said that he soiled with corn fodder. He used the Northern corn, and his cattle ate it up clean. Most all of the farmers in Essex County raise corn, sown broad-cast for their cattle. He raised nearly forty tons of green fodder to the acre.

Mr. French spoke highly of green fodder for cattle—he sows thick to prevent a rank growth. Turnips are easily raised, and they afford excellent food for stock. Some think that they impart an unpleasant taste to the milk; but if the cows be milked, and then fed with roots, which is his practice, the milk will not be affected. He feeds half a bushel to each cow in the morning, after which his cows are fed with salt hay—then they have a good supply of water, which is of great importance, as a cow will drink about one hundred pounds of water daily. At noon they have a pailful of bran or shorts, and good hay. The urine of cattle produces a large amount of valuable manure. When the advantages of soiling become known it will be generally adopted.—Cattle should be well tended and kindly treated—best for one person to have the entire management. In a free, porous soil, lucern is good for soiling, and will in our northern climate produce five crops in a year. It starts early, and bears the drought well; its roots extend deep and wide; some planted in May had roots 30 inches in extent in the following month of October.

Hon. Mr. Quincy, President of the Meeting remarked, that though he was not practically acquainted with Agriculture, yet he felt a great interest in the cause. His father's farm contained 200 acres, and by soiling he kept a

much stock on 15 acres as he had before kept on 20, and they were kept better. They were kept up the whole year. He had no interior fence, where his ancestors had seven miles of fence. This saving of expense was more than all the labor in soiling. His father was the first person who introduced the use of Indian Corn in soiling; also carrots for field culture. His mantle had not fallen upon his successor, but though he, himself, had not commenced a farmer, he hoped that he should end one. His father often remarked that Agriculture was the happiest occupation. He kept a regular account of his farming operations, and the balance was on the right side.

Mr. Garry Munson, said that three years ago he had 25 head of cattle which he kept in three pastures, changing them every fortnight, and on selling them to a butcher, he complained that they did not open well. The next year he divided his cattle, and kept a part constantly in each pasture, and they done better. He finds that cattle fat faster in the fall than in the summer.

The above will show clearly that the proceedings at the State House, on Agricultural matters, are highly interesting and useful.—Probably in a few years, when Agriculture becomes more popular, we shall have the inestimable privilege of reporting similar speeches delivered in some of the Committee Rooms of the Canadian Legislative Hall.

THE VERMONT STUMP MACHINE.

To the Editor of the Albany Cultivator.

Messrs. GAYLORD & TUCKER,—As your correspondent "M. A." cannot understand so simple a machine for stump pulling as the one of which I sent you an account, I hope in this article to explain his difficulties. When I wrote you first, I was building a machine on a small scale; wheel 12 feet in diameter, height 8 feet, breadth 10 feet; calculated for two horses to work among small hard wood stumps, which had been cut 4 years. I have had it in operation a good while, and I assure you it beat my expectations. If "M. A." is going to build one, let his shaft be the stiffest and toughest stick of second growth white oak that he can get; let the gudgeon fit the hole in the post as exactly as possible, consistently with its turning freely, and at the foot of the posts, instead of "firmly morticing them into the sills," let the tennon be round, about 4 inches in diameter, and not pummed; the weight will keep it in its place. This will allow the post to turn a little on the sill, and thus keep it from splitting, and the gudgeon from breaking. He must also have two good iron bands around the top of each post, one above and one below the gudgeon, and the same on the end of each gudgeon outside the posts. In drawing a stump, your machine must be directly over it, so that the chains will draw plumb. If there is any elevation or unevenness in the ground, have the same end of both sills raised or lowered alike, and never one sill higher than the other. He must have a notch in the outside of the posts, about 7 feet from the ground, and if a little cramping is unavoidable, let him put a pole or rail with one end stuck in the ground, and the other in this notch. He must not use frisky cattle at moving the machine, for if one team should stop and the other keep on, some mischief would follow. The machine, of which I sent a description, at first sight seemed to me to be the most rickety shackling old concern I ever did see. Its creaking could be heard a mile; it swayed over from one side to the other with great violence. The wheel was crooked and pointed out of shape, and it would stand as

much cramping, twisting and straining as any thing I ever saw. Yet it would raise a weight of 100 tons, and stand all that three yoke of cattle could draw. If "M. A." intends to build a machine, and follows my directions to the letter, I will warrant him a good, substantial and effective implement, which will neither "crush to the ground" nor "split in the post." It will not work, however, on a side hill, but only on level ground and gentle declivity.

H. T. C.

Burlington, Vt., Dec. 11, 1813

MAPLE SUGAR.

Mr. Joel Woodsworth, of Watertown, Jefferson county, N. Y., whose maple sugar, refined to the degree of loaf sugar, obtained the premium at the late Agricultural State Fair at Rochester, N. Y. thus describes the process of manufacture in a letter to the Society's Committee on that subject. We copy from the *Watertown Jeffersonian*:

GENTLEMEN:—I herewith submit to your inspection 57 lbs. of my maple sugar. The following is a statement of the manner of making and clarifying the same:

In the first place I make my buckets, tubs and kettles all perfectly clean—I boil the sap in a potato-kettle, set in an arch in such a manner that the edge of the kettle is defended all around from the fire; I boil through the day, taking care not to have anything in the kettles that will give color to the sap, and to keep it well skimmed. At night I have fire enough under the kettle to boil the sap nearly or quite to syrup the next morning; I then take it out of the kettle and strain it through a flannel cloth into a tub, if it is sweet enough, if not I put it into a caldron kettle, (which I have hung on a pole in such a manner that I can swing it on and off the fire at pleasure,) and boil it till it is sweet enough, and then strain it into the tub and let it stand till the next morning; I then take it and the syrup in the kettles and put altogether in the caldron and sugar it off. I used to clarify, say 100 lbs., of sugar, with the whites of five or six eggs well beaten—about one quart of new milk and a spoonful of saleratus, all well mixed with the syrup before it is scalding hot; I then make a moderate fire directly under the caldron, until the scum is all raised, then skim it off clean, taking care not to let it boil so as to rise in the kettle before I have done skimming it; I then pour it off, leaving it so damp that it will drain a little. I let it remain in the kettle until it is well granulated. I then put it into boxes made smallest at the bottom, that will hold from 50 to 70 lbs., having a thin piece of board fitted in, two or four inches above the bottom, which is bored full of small holes to let the molasses drain through, which I keep drawn off by a tap through the bottom. I put on the top of the sugar in the box a clean damp cloth, and over that a board well fitted in, so as to exclude the air from the sugar. After it has done or nearly done draining, I dissolve it and sugar it off again, going through with the same process in clarifying and draining as before.

I do certify that the above is a correct statement of my mode of making maple sugar.

JOEL WOODSWORTH.

A MOTH-PROOF BEE HOUSE.

[TO THE EDITORS OF THE WESTERN FARMER.]

GENTLEMEN:—I observe in several numbers of your valuable work, observations on the management of bees, and having had some experience myself in the treatment of these useful and interesting domestic creatures, I would inform your readers that the worm, which is so troublesome and destructive to them, may be entirely kept out by making a perfectly tight-bee-house—so tight that the miller cannot enter except at the place where the bees go in and out. For instance, make a house about four feet wide, and eight feet and a half or nine high in the clear, and as long or short

as you please. Weather-board it, and ceil it on the inside with good seasoned plank, so as to have it completely close and free from any crevices or cracks, both at the sides, ends and over head. Lay a tight floor, well tongued and grooved. Make a door at the back, large enough to take in and out the hives. Have this also tight by making two doors, one fair with the ceiling, the other with the weather-boarding. Let these doors be only wide enough to take in the hives, as the narrower they are, the less they will swell or shrink, and therefore the less likely to give room for the miller to get in. Make two benches or shelves in the house, one above the other to set the bee-hives on. Place these close to the ceiling on the front of the house, so as to give room to pass behind them. Place the lower one five or six inches from the floor. Make a hole through the bench under each hive, and affix a spout to the hole, and let it run through the ceiling and weather-boarding, for the passage of the bees. Place this spout with a declination of about forty-five degrees—this is easily found—for example, if your spout is eighteen inches long, then let the outer end be eighteen inches lower than the inner end. Fit this tight in the ceiling, &c., so that the miller cannot get in only at the end, and I will warrant you they cannot enter there, for they only fly in warm evenings, and then the bees will guard that place.

I have during the last three seasons, taken a great deal of pains to ascertain the nature and habits of these ravaging insects, and find that the females lay their eggs in the joints and under the edges of the hives. They have a tail, through which the egg passes, about the size of a common brass pin, and about half an inch long; with this they place the egg in the joints against the bees-wax; there they hatch and crawl into the hive. By an experiment which I made, I am satisfied that all the eggs that do not come in contact with the wax perish, and never hatch; thus you see the desirableness of having a tight house or a double hive.

Your's &c.,

JAMES C. WOOD.

Jacksonville, Ohio, Dec. 30, 1843.

CURE FOR SWINEY.—The following cure for swiney in horses is given in the *Southern Cultivator*: Take three ounces of rusty bacon, fry it over a slow fire till brown; take out the cracklings, and when milk warm add the yolk of three eggs and a table-spoon full of turpentine, stir all together—apply one table-spoonful to the shoulder by rubbing well, and take a piece of cloth several folds thick, lay on the affected part, and with a hot iron bathe the shoulder once a day.

GREASE SPOTS.—A correspondent of the *Southwestern Farmer*, who signs "J. E. W." gives the following as a good receipt for taking grease spots out of clothing, &c.

"Take the yolk of an egg, entirely free from the white, (be sure not to scald the egg,) and with a soft brush apply the mixture, and rub it on the spot until the grease appears removed or loose. Wash off the egg with moderately warm water, and finally rinse off the whole with clean cold water. Should not all the grease be removed, which may arise from being on a long time, or not sufficiently washed, dry and repeat the operation."

The writer of the above, says that a fine Merino shawl, which had been badly smeared with tar and grease, (gudgeon grease,) was perfectly cleaned by this process in a few minutes.

A FARMER'S EDUCATION.

(From the *N. Y. American Agriculturist*)

We can not think that the present system of educating the rural population of the country is what it ought to be. There are many things which might be taught in our district schools, which, so far as our information extends, seem never to have been thought of, things which may not only be made extremely interesting and instructive to children, but at the same time prove of great individual benefit when grown up, and they come to act for themselves; and such also as would add largely to the wealth, strength, and resources of the country. Here is one item, for example—apples. We find one person in this vicinity growing and shipping these to England, and realising \$9 per barrel; another selling them in this market from \$4 to \$5 per barrel; while apples of an inferior kind are not worth over \$1 to \$2, and many are so poor that they could scarcely be given away.

Now a child knows good and poor fruit by its taste; but there are other points about it to which it is important to direct attention. Suppose, then, any person residing in the school-district who may have paid some little attention to this subject, should take a dozen apples, pears, or any other fruits of the season of various kinds, good, bad, and indifferent, and make his way with them to the school-house, call up the children around him, and point out their relative value, and the true reason why one should be cultivated in preference to the other. He would explain that a good apple should be of a suitable size; regular, even shape, with a small stem, smooth, thin skin, rich, juicy, solid pulp, pleasant flavor, either tart or sweet, a small core, and few seeds. In short, that it should possess as much pleasant nutritious substance as possible, combined with the least amount of stem, skin, core, and seed. Now this, if a good bearer, would be a superior apple—worthy of a name, and of propagation. Then, by way of contrast, the children should be shown a poor apple, and their attention be called to that—not only by allowing them to judge of the difference in taste, but also by pointing out the long, large stem; the thick, coarse skin; the dry, tough, sour pulp, the large core, and the small amount of really nutritious substance in the fruit. After this they might be taught to graft, and be instructed upon fruit-trees in general, and the best system of their management. Boys from 12 to 15 years old may learn all this as easily as grown men, and when they come to be grown up and manage their own farms, the great majority of them would not only have plenty of fruit around them, but that also of a first-rate quality, although they might expect no foreign market for it. If good fruit were universally cultivated throughout the country, this alone would be adding to its annual wealth several millions of dollars. In the same simple manner, the children of every rural district could be taught to judge of the relative difference in the value of vegetables; that a dry, mealy potato is not only more agreeable to their own taste, but twice, or perhaps thrice as nutritious for their stock-feeding as a poor-flavored, watery one may be. How few, if asked, can tell the difference in the value to animals of sugar-beet and mangel-wurzel, or the succulent ruta-baga and the coarse, pulpy, white turnep. There is as great a difference in the nutriment of various kinds of winter-squash, and pumpkins; and yet scarce any one thinks or speaks of it. The same in the grasses; in wheat, rye, barley, oats, and corn; in cotton, and, we are not sure, in rice and sugar; the different breeds of horses, cattle, sheep, swine, and poultry, the plough, and, indeed, all agricultural imple-

ments. These may be called very homely subjects to be taught a child; but are they not of vast consequence in the aggregate to the man and to the country? We believe that persons may be found in nearly all our school districts, who would be quite capable of lecturing intelligently on the subjects herein-mentioned, and willing to do it gratuitously; and if one hour a day for three months in the year could be given to these, the farmers of our country would greatly increase their stores of knowledge in a few years, understand the reasons of their practice better than they now do, and be working to much more profit and advantage.

When the young men had attained a mature age, they might form themselves into classes, and devote their winter evenings to obtain a knowledge of manures, soils, and the best method of improving them; and the best system of a rotation of crops. To this might be added an acquaintance with the elementary principles of chemistry, geology, botany, and mechanics. It really seems to us, that all the subjects of education which we have here mentioned, are easily attainable by every person before arriving at 21 years of age, however humble his circumstances, and without detriment to the course of studies already pursued at the district schools.

Books for reading, in the country schools especially, ought to be different from what they now are generally. They should contain more upon the subjects of agriculture, horticulture, stock-breeding, and mechanics; and less of mere literary matter. Poets, orators, and fine writers, are not as much wanted as good farmers and mechanics. We have a burning desire to see every child in the republic, male and female, educated in such a manner as to be able to make the most of the resources of nature which surround them. A thorough education in the theory and practice of agriculture, the great business of our country, and, indeed, of mankind, is what our children should be taught. As the products of agriculture may be improved and cheapened, so will it follow with everything else—manufactures, arts, literature, and time, also, to avail ourselves of their pleasures and advantages.

HINTS TO YOUNG FARMERS.

CULTURE OF THE MIND.

You know well that one piece of land, a garden for instance, yields vastly more than another piece of ground of equal natural fertility. And you know equally well, that one man abounds more in knowledge and usefulness, than another to whom nature has been alike bountiful. It is culture—it is the industry and perseverance of man exerted in one case and not in the other, that produces the marked contrast in both. The cultivator is sure to be rewarded in his harvests, for the care and labor which he bestows upon the soil—and the reward is no less certain to him who devotes his leisure hours to the culture of the mind. The soil administers to our annual wants.—Knowledge not only greatly assists in supplying these wants, but is the primary source of intellectual wealth, which dollars alone cannot give; and when consoled with good habits, tends to refine, elevate and distinguish men above their fellows. Talent is not hereditary. You will see on looking round, that some of the most distinguished men of our country have sprung from the humblest parentage. They are indebted for the distinction, to the culture which they themselves bestowed upon their minds. The road to usefulness and honorable distinction is equally open to you, and the time has arrived when you must decide, whether you will compete for the noble prize,

If you wish to prosper in your business—to

know and profit by the improvements of the age, cultivate your mind; for this is the great labor-saving machine. If you wish to see your children intelligent, thriving and respected, teach them, by example, to cultivate the mind. If you would be useful to your friends, and merit the confidence and esteem of your neighbors, seek early to qualify yourself for the duties of social life, by the culture of the mind. If you aspire to intellectual enjoyments which flow from the study of the material world—from the order, harmony and beauty, which meet us in every walk, in the manifold and wonderful works of the creator, cultivate the mind. In fine, if you would prosper in your business, your family, and in society, cultivate your mind.

But knowledge is not always wisdom, and therefore, be as scrupulous in regard to your studies, as you are in regard to the seed which you deposit in the soil. You will reap whatever you sow, and the mind is as liable to be cumbered with weeds as the soil. Read, therefore, whatever tends to instruct you in your business, to establish you in good habits, and to fit you for the responsible duties of life. Acquaint yourself with the inventions and improvements of modern art. Make yourselves acquainted with the general facts of science, with the wondrous laws by which the Almighty governs all these around us; and with the endless illustration of laws, in the world and all its parts. The facts of natural history will afford abundant matter for agreeable and useful knowledge. The plants, the animals, the minerals, the soils of your country—the changes of the seasons—the make and composition of all that surrounds you duly observed, and made the subjects of reading, of conversation, of reflection, will at once store your mind, and raise your ideas of the wisdom and goodness of Him who formed you such as you are. Temperance, self-government, moderation, avoidance of all abuse of the body, are written in the very make of the body itself. And it will hence plainly appear, that when our maker says, abstain from all impurity, he does but say "Do thyself no harm."

Who aims at excellence, will be above mediocrity; who aims at mediocrity, will fall short of it.

BACON AND CABBAGE.—This is a very common dish in this country, particularly in the south and west. The articles are commonly put into the pots separately, but the Journal above referred to, says "it will be found a great improvement, if, instead of that, a hole be cut in the head of the cabbage, and a quarter or half a pound of fat bacon is thrust into it as a plug. The head of the cabbage should then be tied over so as to confine the leaves, and the cabbage boiled in a napkin, to prevent all escape of fat, which will thus be imparted to the vegetable, and render it so much more mellow and savory, that any housewife who tries it will never dress it in any other way."

SOUSE.—Take pigs' ears and feet, clean them thoroughly, then soak them in salt and water for several days. Boil them tender, and split them—they are then good fried. If you wish to souse them when cold, turn boiling vinegar on them, spiced with pepper-corns and mace. Cloves improve the taste, but turns them a dark colour. Add a little salt. They will keep good pickled five or six weeks. Fry them in lard.—*Id.*

PULVERISED ALLUM possess the property of purifying water. A large spoonful stirred into a hog'shead of water, will so purify it, that in a few hours the dirt will all sink to the bottom, and it will be as fresh and as clear as spring water. Four gallons may be purified by a tea spoonful.

APPLYING MANURE TO THE SURFACE.

Whether putrescent manures should be applied to the surface of the soil, is a question on which the opinions of distinguished agriculturists are far from being unanimous. The right decision of the question depends in our view, upon the following circumstances.—

1. The condition of the manure to be applied.
2. The character of the soil for which it is intended.
4. The nature of the crop to be benefited by it.
4. The time of the year when the manure is to be carried out.

1. If the manure to be applied has been composted, or if the process of fermentation has already spent its force upon it, there can be no serious objection to its being spread upon the surface; since the gaseous exhalations having already escaped, it is chiefly secured against the ravages of the atmosphere; and from infiltration there is nothing to fear, as that is the very process best adapted to bring the decomposed particles in contact with the mouths of the plants which are to feed upon it.

2. If the soil for which the manure is intended, be very porous to a considerable depth, the nearer the surface the manure can be deposited, without too much exposure to the atmosphere, the better; it being evident that the nutritive juices will soon descend beyond the reach of the plants, if it be in the first place buried too deep.

3. If the crop to be benefited consist of any of the finer grains or grasses, the application of the manure to the surface (harrowed in, in the case of grain) will have a greater present effect than any other mode of application, as the roots, that is, the mouths of the plants, lying close to the surface, will have the readier access to their food. That natural meadow land can thus be made to yield a greater burden of grass than by any other means, scarcely admits of a doubt.

4. If the manure applied is summer-made manure, which must be carried out in the fall, this mode of application will have another argument in its favor. By being spread at this season of the year, after the heats of summer are past, the fermentation and evaporation will be but slight, and the rains and snows which may be expected to fall upon it in succeeding months, will either wash it into the soil, or so imbue it among the roots of the growing crop, as quite effectually to shield it from the wasting action of the atmosphere the succeeding season.

One thought more upon this subject. With the relation of plants to the atmosphere as a source of nutriment, we are as yet much less acquainted than with those which they sustain to the soil; and agricultural science, in its onward progress may develop the fact, that manures applied to the surface, by exerting a direct and powerful agency upon the leaves of plants, and thus promoting an increased absorption of the nutritive particles of the atmosphere, may prove more beneficial, especially in the case of grasses and the finer grains, notwithstanding the losses they sustain from evaporation, than they would if buried beneath any portion or the soil. *Foot's Prize Essay.*

BOOK FARMING.

"I pity the stupidity of the man who thinks that if we use books, we must close our eyes against the light that is beaming upon us from other sources; or that we must become mere theorists, and the victims of ruinous experiments. What! does a man lose his own common sense, his prudence and his judgment, whenever he takes up an agricultural paper, or opens a book upon husbandry? Cannot one make himself acquainted with the doings of others, without losing his power to judge

whether it would be well for him, in his circumstances, to copy their examples? Our brains are not so weak as this. The knowledge acquired from books does not make us all mad. But if it did, there would be more zest and true enjoyment in the learned mad-man's course than in that of him who has learned without, and who thinks that books cannot make him wiser. I ask what book-farming is? Common book farming is, learning by means of books, new facts, opinions, results of experiments, modes of operation, and the using such parts of the information as can be turned to profitable account in our individual situations. If this be folly, we are content to be called fools. An agricultural paper will be worth to you every month, if not every week, more than its annual cost."

GARDENERS' DEPARTMENT.

As the season will shortly be at hand for gardening, we consider it our privilege, as a conductor of an Agricultural Journal, to devote a portion of its columns to subjects which will have direct reference to the science and practice of gardening. The operations of Horticultural pursuits are most interesting in all their details, and, in point of profit, no labour gives a better reward, to say nothing of its comforts and luxuries, than that performed in the garden.

No family can sufficiently appreciate the advantages that result from a well-stored garden of vegetables, fruits, and flowers. The former might easily furnish half a support to a family, and at the same time constitute the most healthful and agreeable diet; and the latter would improve the taste of the junior members of the family, and make home agreeable and inviting. The most scientific, of both sexes, throughout the civilized world, have been celebrated for the delight which they evinced in gardening pursuits.

We are sorry to say that the people of this country have not cultivated their taste in this respect to any extent. This, perhaps, may be attributed to the fact, that the subject has not received that attention that it deserves from the Canadian Press. We shall endeavour to make up this loss, by devoting about two pages of each number of our Journal to Horticultural subjects. With the exception of a short Calendar, which we shall prepare monthly, the articles will be principally selected from our contemporaries and standard authors. Those selections will be made with a view to profit our readers.

CULTURE OF FRUIT.

We propose to furnish our readers occasionally with directions for the cultivation of fruit, embracing everything of consequence from the apple to the strawberry; with the culture adapted to each, and a selection of the most desirable varieties, for those who have but little land, as well as for the farmer's orchard. We intend to furnish one number of the proposed series once in each month. To those who have large fruit gardens and orchards, every thing relating to their management, every thing by which their culture may be improved, must of course be a matter of importance; and to those whose whole farm perhaps consists of but half an acre, or even less, and there are many such among our subscribers, it certainly cannot but be an object of interest to make the best of that little. To such, it is indeed far preferable to have fine, well bearing trees, of excellent and seasonable varieties, than to have their limited grounds occupied by trees whose only product is small unpalatable fruit.

No one, however limited his means, or how ever little the land he occupies, should be deterred from the cultivation of *first rate fruit*. A tree of the best variety costs but little more than the worst—and will grow in the corner of a small yard, as well as on the richest domain. A dozen trees of the finest selection, will cost but three or four dollars, and may be properly transplanted for half that sum. In five years, if well taken care of, they will afford a return for the labor bestowed; and few would then be willing to part with them for five times their cost. The proprietor of the village garden, will find many pleasant hours of recreation in their management, and an agreeable and useful occupation will be furnished to his children. Indeed, the culture, propagation by budding and grafting, and a knowledge of the diseases of fruit trees, should be considered as an indispensable accomplishment in a young man's education.

The first thing to attend to in planting fruit trees, is the *selection of the ground*. This, it is true, is often in a great measure beyond our control; but still, even in a quarter of an acre, if there is any difference in the soil, there is some choice; as each kind may be more nearly furnished with its appropriate soil, than where no such attention is given. Whenever, therefore, a choice can be made, the apple should have ground which is rich and moderately moist; the pear, cherry, apricot, and peach, a deep loose soil, more sandy for the cherry and peach, and the quince a rich moist soil. But if the ground be of tolerable fertility, much more depends upon a preparation by digging and filling the holes, than any selection.

There is probably no natural soil in the state well adapted to the proper extension of the roots of fruit trees, without previous loosening by digging. We have seen peach trees transplanted into soil naturally loose, linger year after year with little growth; while on the other hand, trees set in a heavy soil, properly prepared, have made a growth the first shoots an inch and a quarter in diameter. In the former instance, the trees were put in holes barely large enough to receive the roots; in the latter, they were dug six or seven feet in diameter, and fifteen inches deep, filled chiefly with the loose soil thrown out. In the former the roots had to work their way through the undisturbed subsoil; in the latter they penetrated freely through the artificial bed of mellow earth. Much of the success in growth depends on digging very large holes, (at least 7 feet in diameter,) yet there is nothing we have found more difficult to induce others to practice.

The distance asunder, is a point which should

"For a Fruit Garden, a western aspect is generally best, because it is the least subject to sudden transitions of temperature. Severe vernal frosts often prove injurious, or otherwise, according to the weather that follows. If the sky be overcast in the morning, and the air continues cold, little or no damage occurs; but when the sun breaks out warm, the injury is greatest; and the more so, when the trees are most exposed to his rays. For this reason, a hill or a wood on the east side, may prove very beneficial.

"A northern aspect would go far towards insuring regular crops, of the peach, nectarine, apricot, if protected from the sun and warm winds by a belt of evergreens. On sandy soils especially, the reflected heat is often sufficient in autumn or winter to start the buds; and snow and ice have been successively heard round trees to prevent this disaster; but a northern aspect would probably render such labor unnecessary.

"Dry, firm ground should be chosen, preferring a sandy or gravelly loam, though clay will do with good culture. Wet, peaty, or spongy soils are apt to be frosty; for the radiation of the heat is much greater than from firmer lands.—D. Thomas, in Trans. N. Y. State Ag. Society

be attended to in transplanting. It is desirable that no ground should be lost by too great distance; and not less so; that the trees be not crowded. It is much better, however, that they be too far than too near; for the same evils result from close planting as from want of pruning—the fruit will be small and of inferior quality. But by allowing plenty of space, it will be properly exposed to sun and air, and become fine and well grown. Another advantage in distance is, that it admits more freely of the cultivation of the ground for other crops. Different species of fruit require different distances, according to their respective size of growth. As a general rule, apple trees should never be nearer than 25 or 30 ft., but better if further—pears 15 or 20 ft.—peaches not less than 20 ft.—apricots 15 ft.—plums 12 or 15, and quinces 10 ft. Different varieties of the same species often vary considerably in size; thus the Bough apple and Tallman sweeting are small trees, and the Spitzenburg and Pennock are large—the early white Nutmeg and early Ann peach are small, while the Early York and Grosse Mignonne are more than twice their size. But this in general need not be taken into account, as mere varieties do not commonly differ greatly in size.

Guarding from the attack of the *Curculio*, is another important requisite. This insect rarely touches other than smooth stone fruit. The nectarine, apricot, and plum, are most liable to injury; but the cherry, and the earlier varieties of the peach frequently suffer from its attack. It is most effectually destroyed, if hogs are allowed to feed under the trees during the season the punctured fruit falls; for as this immature fruit contains the larvæ or worm for next year's insect, it is eaten and destroyed by the swine. Hence all smooth stone fruit should be placed in a separate part of the fruit garden, to be enclosed by a temporary fence, for confining the necessary number of hogs. Poultry, and especially geese, will accomplish in some degree the same end.

An important point in selecting varieties, is to furnish a regular succession in ripening. The whole value of some kinds of fruit, depends almost entirely on their time of ripening. Thus, if the cherry matured at the same time as the peach, it would be but little esteemed. The importance of early varieties of the best species is therefore obvious. A proper selection will yield a constant supply of some kind of fruit throughout the year. Strawberries may be had from the latter part of the fifth month (May,) till winter.* Raspberries for six weeks preceding wheat harvest. Cherries, from early in sixth month (June,) till the same. Apricots and plums commence ripening a little before harvest, the former continuing for a few weeks, the latter three months. Peaches may be obtained from wheat harvest till autumnal frosts. Pears and apples will furnish a supply from harvest till the season of strawberries and cherries the following summer. Selections, as complete as practicable, of varieties for succession, will be given hereafter, when we come to speak of the various kinds individually.

Transplanting properly, is a point of the very first importance. When the trees are taken up, care should be taken that the roots are mutilated as little as possible, especially the small fibrous roots which contain the feeding mouths or spongioles. If large trees are to be removed, they should have all the larger roots cut off at a convenient distance from the centre, the previous year, so that a new set of fibrous roots may be thrown out near the tree. Great care should be taken that the roots never become dry; to prevent this they should always be immersed in mud as soon as dug up, and

then dusted with sand or dry powdered earth. Should they accidentally become too dry, cover the roots and most of the tree well in moist earth, till the moisture is restored; or should they be frozen, burying the roots before they can thaw, will save them by gradually extracting the frost. The holes in which they are to be set, should never be less than seven feet in diameter, and fifteen inches deep; turf inverted, or muck, should be placed in the bottom, and finely pulverized rich mold, but never manure, should be well shaken in among the roots, so that they may be well packed on all sides, leaving no cavities. A pail of water thrown in before the hole is quite filled, has been found highly beneficial in settling the earth well about the roots, and should never be omitted. Less fertile earth, may be filled in most remotely from the tree. After the tree is set, which should incline a little to the south-west to protect the stem from the hot sun, it should be braced with one or more stakes inclining towards it, and secured by tying. Or only one stake may be driven close to the tree, before the whole is filled.

Transplanting in autumn, is generally preferable. When trees are to be transported to a distance, there is not sufficient time in spring; and when the distance is small, if they are removed early in autumn, while yet in a slowly growing state, the spongioles which may have been broken off, will be replaced before the growth ceases. The only case in which fruit trees should not be transplanted in autumn, is where the more tender kinds, such as apricots and peaches, are taken to a colder region of country, in which instance there would be a danger of their destruction by the frost of winter.

The subsequent management, consists chiefly in keeping the ground well cultivated, and free from weeds. This may be effected in large orchards, by plowing and planting low crops; in small gardens by spading once a month, for several feet on each side of the tree. This is of the greatest consequence; nine-tenths of the losses of transplanted trees in many parts of the country, arise from neglected after-culture, and the destructive influence of contiguous shading crops, weeds and grass. And even where the trees live, a miserable stunted existence, instead of a healthy, vigorous, and free growth, is the result of such careless treatment. Sown crops of grain are highly detrimental.

To prevent trees being gnawed by mice, tread the snow repeatedly round them. This is an effectual remedy, and should not be neglected, as the labor is small in comparison with the loss of fine trees. Clean culture will promote the same end, by destroying the hiding places of these animals.

Insects upon the trunk, may be destroyed by white-washing, or by washing with soft or weak lye.

Before closing our remarks for the present, we wish again to urge the importance of proper transplanting and culture. Many suppose that a period of fifteen or twenty years must elapse before an orchard is in a good bearing state. This opinion results from the general practice of digging small holes, and neglected after-culture. Proper management would bring most fruit trees in good bearing condition, in five or six years at farthest. Indeed, so much depends on previously preparing a broad deep bed of loose soil, that for obtaining a speedy growth of ornamental trees on a plantation, Loudon, (whose authority is first among the first,) greatly prefers a proper preparation of ground and planting young trees, to Sir Henry Stewart's celebrated method of setting out at once, large trees for this purpose.

The best methods, and essential requisites,

for successful budding and grafting, pruning; and the remedies for the diseases and injuries of insects, will be treated of hereafter.

J. J. T.

Macedon, Wayne Co., N. Y.

[FROM THE TENNESSEE AGRICULTURIST.]

1. The matter first to be studied is the location and character of the soil. For early vegetables it is preferable to have a southern exposure. The morning sun brings forward plants much faster than the evening rays, and therefore, when practicable, the land should incline to the south-east. For late roots, Gooseberries, and Currants, a northern protection from the scorching rays of a mid-summer sun, becomes necessary. The soil is of much moment. Frequently there is a superabundance of clay. When this is the case, no application is better than sand. Pulverized charcoal is excellent, on clay (I have tried it). When sand superabounds, clay may be put on advantageously. But for an unproductive soil, well rotted stable manure may be indispensable. Fresh mould from the woods has advantages over all other applications. It is free from insects, and injurious seeds of weeds and grass, than stable manure, and has no tendency to fire the plants.

The most important point in a country garden, is to obtain a sufficient quantity of manure.—In towns it is not so, and not unfrequently there is so much put upon gardens that neither vegetables or flowers are good. There is little fear though to be anticipated on this score in our country gardens. To get enough vegetable mould is the important matter. This will correct most evils of a soil.

2. No time should be lost in spading the ground, and having it made ready for sowing. In our judgment the more the soil is exposed to the frosts, the easier it will be of cultivation; and the more abundant the crops. We think it no economy to plough a garden. Potatoes, beets, carrots, &c., may be cultivated as field crops, and then ploughing is preferable; but in the garden, the spade, hoe; fork and rake should be the chief implements. Land can be put in better state by one spading, than four ploughings, and when the plough is the reliance, we generally find it inconvenient to use it after the seed are sown, and the consequence is, too often, the weeds take entire possession. But whatever instruments are used, the soil should be thoroughly pulverized to a considerable depth, and always kept friable and free from weeds, which drink up the soul of the earth.

3. The first preparations should be for early peas, radishes, lettuce and potatoes. The soil for peas should not be very rich in stable manure. One third of sand and two-thirds of vegetable mould answer admirably. We call attention also to another item in the cultivation of peas which is not generally regarded. Commonly the drill is too deep and narrow for early peas. Raise the soil about four inches, and open a trench, at least six inches broad, and scatter the seeds plentifully over the whole.—By this mode the sun will have the greater effect; the rows will be broader; the stocks will mutually assist each other; fewer sticks will be required for support; and the crop will be three or four times as great as in the ordinary plan. Early peas may be protected by planks or broad rails during freezes, and the sun should exert all his influence in the heat of the day.

For radishes and lettuce when not protected by glass, open beds should be made. Their construction is simple and cheap. Mark off a bed the size wanted, take out from six to ten inches of the surface, fill it two-thirds full of unrotted stable manure, old tan or fresh leaves

* We have seen a dish of them picked the first day of winter.

Some eight or ten days afterwards, put on about six inches of good garden mould, rake it to a level, and the sowing may commence the first open day. If cheap frames were put around such beds, and they could be covered with plank in bad weather, the plants would come forward a little sooner.

Cabbage seed might be sown in the same manner for early crops. But in all these operations, judgment, and many circumstances dependant upon the season, must of necessity have a contrary influence.

FORMATION OF HOT BEDS.

Though nearly all the kinds of manure which have been enumerated may be used occasionally for hot beds, the only materials in common use in gardens are stable manure, dead leaves, and tan. The first of them, which is by far the most general, consists partly of horse dung and partly of what gardeners call long litter, that is, straw moistened and discolored, but not decayed. The manure is generally in this state when it is purchased, or taken from the stables for the purpose of making a hot-bed. The necessary quantity of manure is procured, at the rate of one cart load, or from twelve to fifteen large wheel barrows full, to every light, (as the gardeners call the sashes of the frames,) each light being about three feet wide; and this manure is laid in a heap to ferment. In about a week the manure should be turned over with a dung fork, and well shaken together; this operation being repeated two or three, or more times, at intervals of two or three days, till the whole mass is become of one color, and the straws are sufficiently decomposed to be torn in pieces with the fork.—The size of the hot-bed must depend principally upon the size of the frame which is to cover it, observing that the bed must be from six inches to a foot wider than the frame every way.—The manure must be spread in layers, each layer being beaten down with the fork, till the bed is about three feet and a half high. The surface of the ground on which the hot-bed is built, is generally raised about six inches above the general surface of the garden; and it is advisable to lay some earth round the surface of the bed, nearly a foot wide, that it may receive the juices of the manure that will drain from the bed. As soon as the bed is made, the frame is put on and the sashes kept quite close, till a steam appears upon the glass, when the bed is considered in a fit state to be covered with mould; observing, if the bed has settled unequally, to level the surface of the manure before covering it with earth. The seeds to be raised may either be sown in this earth or in pots to be plunged in it. The proper average heat for a hot-bed, intended to raise flower seeds or grow cucumbers, is 60°: but melons require a heat of 65° to grow in, and 75° to ripen their fruit. This heat should be taken in a morning, and does not include that of the sun in the middle of the day. When the heat of the bed becomes so great as to be in danger of injuring the plants, the obvious remedy is to give air by raising the glasses, and if this be not sufficient, the general heat of the bed must be lowered by making excavations in the dung from the sides, so as to reach nearly to the middle of the bed, and filling up these excavations with cold dung which has already undergone fermentation, or with leaves, turf, or any other similar material which will receive heat, but not increase it. When the heat of the bed falls down to 48° or lower, it should be raised, by applying on the outside fresh coatings of dung, grass, or leaves, which are called leavings. When hot beds are made of spent tanners bark or decayed leaves, a kind of box or pit must be formed of bricks or boards, or even of turf, or clay, and the tan or leaves

filled in so as to make a bed. When neatness is an object, this kind of a bed is preferable to any other; but a common hot bed of stable manure may be made to look neat by thatching the outside with straw, or covering it with bast mats, pegged down to keep them close to the bed.—Mrs. Loudon.

MAD ITCH.

This is a formidable and fatal disease of cattle, mostly confined to the western states, its cause hitherto considered unknown, and medical treatment almost useless. In the Oct. no. of the *Tenn. Agriculturist*, we find the following, which is deserving of consideration from the fact that the disease appears, so far as we have learned, only where cattle have been fed on stalks, or where that is their only food, as in the west. Cattle fed on cornstalks cut in a straw cutter, do not suffer in this way.

“GENTLEMEN.—I know of but one remedy for the mad itch, and that is surgical. Open the second stomach and extract the cornstalks. This fatal disease among cattle is produced by cornstalks. The fibres being indigestible, hang in the *manifold* or *duodenum*, and irritate and inflame until the poor animal is driven to madness. Farmers feed their hogs upon green corn; the cattle follow and pick up the stalk chewed fine by the hogs, which by superior sagacity he spits out, and this ready made article does all the mischief, and so it would serve the hogs or horses if they were to swallow it. Separate your cattle from your hogs in cornstalk chewing time, and you will separate your cattle from the mad itch. An ounce of prevention is worth a pound of cure. Farmers, this is the remedy.

“A BELIEVER IN PROPER REMEDIES.”

CURE FOR FOUNDER.—A friend in Zanesville, Ohio, has sent us the following recipe: “Bleed freely in the neck, say from one to two gallons, and drench with strong decoction of sassafras tea—one or two quarts. If the horse is not relieved, repeat the drench in six hours. Let his drink be weak sassafras tea. The above will act like a charm; in nine cases out of ten, a perfect cure will be effected in twelve hours at farthest.”—*Albany Cultivator*.

INDIVIDUAL EXAMPLE.—It is astonishing what effect one individual will have upon a neighborhood. I have sometimes seen a clever improving farmer settle down in a province of Boethian darkness: at first he is looked upon with distrust, and even derision, if he is known to get an agricultural newspaper from the post office: but in a little while, the result of superior management becomes apparent, and one of two consequences ensues: his neighbors either begin to imitate him, or they remove their quarters.

It is utterly impossible that any man can continue to make one barrel, alongside of his neighbor who makes twelve to the acre; he must either yield or fly, and in this way one good example often reforms a neighborhood.—*Southern Planter*.

CEMENT FOR STOPPING CRACKS IN CAST IRON BOILERS.—Common salt by measure four parts, smithy slack one part, flour of sulphur three parts, flour one part, water enough to make the ingredients into a paste.

ANOTHER.—Beat up the whites of eggs, and add powdered unslacked lime to make a paste, and fill with it the cracks in iron vessels. Though it does not re-unite the iron, it will prevent the vessel leaking.

CEMENT FOR CISTERNS.—Ashes two parts, three parts clay, one part sand, mixed with oil, will make a cement as hard as marble, and impenetrable by water forever.

LOTION FOR A BRUISE OR SPRAIN.

In a letter from Mrs. Susette Andrieu, a woman who, by instinct, experience and talent, is, as I am persuaded, the best nurse in these United States, I find the following recipe for sprains and bruises. My system has always been to spread such things far and wide, for the benefit of humanity and the brute creation. In every family there should be a commonplace book, in which such things should be entered or pasted, for although we often hear of cures for burns, scalds, sprains, colics, &c., when these occur, we have either forgotten the materials or the proportions, or we have them not at hand. How many farmers are there who have such a thing as a set of phlebotomy to bleed a horse, or a bottle with the neck of it wrapped with twine, ready to administer a drench? But to the prescription for a bruise or sprain: 1 pint soft soap, 1 pint strong vinegar, 1 handful of table-salt, a table-spoonful of saltpetre.—*American Agriculturist*.

I. S. S.

BRITANNIA WARE should be first rubbed gently with a woollen cloth and sweet oil, then washed in warm suds and rubbed with soft lather and whiting. Thus treated it will retain its beauty to the last.

GARDEN AND AGRICULTURAL SEEDS FOR 1844.

J. F. WESTLAND begs to call the attention of his friends and the public, to his STOCK OF SEEDS, imported this season from England, and warranted genuine. It comprises an excellent assortment of Turnip Seeds, Mangel Wurzel, Clover, Timothy, Rye Grass, Orchard Grass, Lawn Grass, &c. &c. All of which will be sold on the lowest possible terms.

168, King Street, Toronto,
20th February, 1844.

FRESH SEEDS.

THE Subscriber has for sale a very choice assortment of GARDEN, FLOWER, and FIELD SEEDS, which he will sell on moderate terms, at No. 14, Yonge Street, immediately opposite Ross, Muellet & Co.

GEORGE LESLIE.

N. B.—Country Storekeepers supplied with Seeds, neatly put up in boxes. Cash paid, at all times, for CLOVER, TIMOTHY, and FLAX SEEDS.

G. L.

Toronto, Feb. 12, 1844.

REVOLVING DRYING KILN.

THE Subscriber begs to inform the Millers, Merchant, and the Public generally, that he has, at considerable labor and expense, invented and completed a Machine for DRYING Wheat, Oats, Barley, Indian Corn, or any other Grain necessary to be dried before being manufactured: and he assures them, that it is the cheapest and most expeditious mode of Kiln Drying Grain now in use. This Machine will dry from thirty to sixty bushels of grain per hour in a most perfect manner. It is so constructed, that the grain passes through the machine, from thence to the rolling screen, where it is cooled, in a fit state for manufacturing. This machine requires very little power to keep it in motion, and may be driven by a small strap from any wheel in the mill. A quarter of a cord of hardwood will produce heat sufficient for drying a thousand bushels of grain.

The Subscriber begs to inform the public, that he has obtained a Patent for his Machine, which extends through the United Province of Canada, and that he is prepared to manufacture the above Machines to order, or dispose of the right to persons desirous of manufacturing or using the same.

Any further information on the subject may be had, by addressing the Subscriber. All communications (post-paid) will be immediately replied to.

HIRAM B. GELOW.

Te. umeth, Bond Head, P. O. }
February 15, 1844. }

MORTAR FOR THE TOPS OF CHIMNEYS TO WITHSTAND THE WEATHER.

To three pecks of sand put three quarts of the iron scales which fall from the Blacksmith's Anvil; mix them thoroughly—spread the sand and lay upon it a peck of fresh burnt lime—slack it with boiling water, and mix it into mortar immediately.

If sand cannot be procured which is free from fine earth, it should be washed by putting it into a tub of water, stirring it and pouring off the water as often as it is necessary to separate the soft earth. The lime should if possible be used the same day it is taken from the kiln. If it is of the best kind it will be completely slacked as soon as the mortar is made, and should in that case be applied immediately—but the greater part of the lime in this Province is not of the best kind, it is often necessary to leave the mortar to rest for a few days, that every grain of lime stone may be slacked.

There is really but one kind of pure lime, but limestones always have together with the lime a greater or lesser proportion of other earths—clay, flint, or magnesia. The best limestone is that which contains the smallest proportion of these earths. When lime is used for manure it should be drawn as soon after it is burnt as possible, for a ton of fresh burnt lime exposed to the air will gain, at first, a hundred pounds in twenty-four hours, and will finally before it begins to slack in the air, weigh above 2,600 lb, although apparently perfectly dry. The increase of weight is chiefly water which it attracts from the air and renders solid.

TORONTO MARKETS.

February 15, 1844.

Flour	per bbl. 196 lb.	20	0	23	9
Wheat	per bush. 48 lb.	4	0	4	3
Barley	per bush. 48 lb.	2	0	2	6
Rye	per bush. 56 lb.	2	3	3	6
Oats	per bush. 34 lb.	1	0	1	2
Oatmeal	per bbl. 196 lb.	15	0	18	9
Peas	per bush 60 lb.	2	0	2	3
Timothy	per bush. 60 lb.	3	0	3	9
Potatoes	per bushel	1	3	1	6
Hay	per ton	40	0	42	0
Straw	per ton	20	0	25	0
Hides	per 100 lb.	20	0	0	0
Salt	per barrel	12	6	15	0
Beef	per 100 lbs.	15	0	16	3
Deaf	per lb.	0	2	0	4
Mutton	per lb.	0	2	0	4
Veal	per lb.	0	2	0	4
Pork	per 100 lbs.	15	0	22	6
Pork	per lb.	0	2	0	4
Turkeys	each	2	0	2	6
Geese	each	1	3	2	0
Ducks	per couple	1	3	2	0
Fowls	per couple	1	0	1	3
Chickens	per couple	0	10	1	3
Butter	per lb.	0	6	0	8
Eggs	per dozen	7	9	0	10

1,000 SUGAR KETTLES FOR SALE BY—

JOHN HARRINGTON.

King-street, Toronto, 10th Feb. 1844.

YONGE STREET NURSERY AND FLOWER GARDEN.—JAMES FLEMING, Seedsman and Florist, offers for sale his usual and well-assorted Stock of GARDEN, FIELD, and FLOWER SEEDS; all of which he can recommend as fresh and genuine in their sort.

Country dealers and Gardeners supplied on the most reasonable terms. Also—a large Stock of Green-House Plants, Double Dahlias, Flower Roots, Fruit and Ornamental Trees, &c. &c. Cabbage, Cauliflower, and Celery Plants in their season, carefully packed and sent to any part of the Country, according to order.

Cash for Timothy, Grass, and Clover Seeds. Toronto; 11th Feb. 1844.

IMPROVED DURHAM CATTLE FOR SALE.—The Subscriber begs to acquaint his friends and the public generally, that he has for sale two thorough-bred Durham Bulls, one year old; three thorough-bred Durham Cows, in calf, one of which was imported direct from England; and several grade Heifers of the above breed,—all choice animals, and very superior of their kind. He has also a number of well-bred Suckers, of the Leicester and South Down cross.

THOMAS MAIRS,
Township of Vepra.

February 15, 1844.

TORONTO HORTICULTURAL SOCIETY
Public Notice is hereby given, that a Meeting of the Members of this Society, and others friendly to its interests, will take place at the COURT HOUSE, in the City of Toronto, on Saturday, the Twenty fourth inst, at Two o'clock, P. M., for the purpose of discussing the propriety of having Monthly Exhibitions, and for the general business of the Society.

By Order,
W. G. EDMUNDSON,
Toronto, Feb. 15th, 1844. Cor. Sec.

TOWNSHIP OF MARKHAM AGRICULTURAL SOCIETY.—PUBLIC NOTICE is hereby given, that a Meeting of the members of the Township of Markham Agricultural Society, and others in the Township and neighbourhood friendly to Agricultural improvement, will take place at HESTER'S Tavern, in the 6th Concession, on the first Thursday of each Month, at the hour of Two o'clock, P. M., for the purpose of discussing Agricultural topics, and for adopting measures for effecting improvements in Agriculture.

DAVID REESER,
Secretary.

February, 1844.

PROTESTANT HILL STORE, PORT HOPE.
The Subscriber has now on hand, at the Protestant Hill Store, as well as at Cavanville and Williamstown, a general assortment of Dry Goods, Groceries, Hardware, Crockery, &c., which he offers on reasonable terms.

CASH paid for good clean Wheat.
JOHN KNOWLSON.
January 1, 1844.

IMPORTANT AGRICULTURAL WORKS ON SALE, by P. L. SIMMONDS, Agricultural Agency and Commission Office, 18 Cornhill, London.

1. Johnson on Fertilizers, published at 12s., reduced to 8s. (One of the most important and popular works on Manures extant.)
2. The Implements of Agriculture, illustrated by numerous highly finished Cuts, by Mr. J. A. Ransome. Price 9s.
3. The Farmers' Almanac, 200 pages, for 1842-1843, 1844. Price 1s. each. (Full of sound practical information, and useful for Farmers at all times and in all places.)
4. Agricultural Chemistry for Young Farmers, by C. W. Johnson, F. R. S. Price 1s.
5. A Calendar for Young Farmers, by C. W. Johnson, Esq. Price 1s.
6. The Farmers' Magazine, Monthly. Price 1s. 6d

600 BUSHELS OF SANDY OATS FOR SALE.—The Subscriber begs to acquaint the Canadian Agriculturists, that he has raised, the past season, a large quantity of SANDY OATS, which he will dispose of for 2s. 6d. per bushel. The original Seed was imported direct from Scotland, in the spring of 1839, by the subscriber, and has subsequently been cultivated on his farm with such remarkable success, being large yielders, and weigh upwards of forty-two lbs. per bushel, that he has no scruple in recommending them to the favourable notice of his brother farmers.

The above Oats may be had at the Store of EDWARD SKAZ, Esq., Oshawa; and at Mr. J. F. WESTLAND'S Seed Store, Toronto.

D. G. FORBES.
Township of Whitby, Jan. 16, 1844.

SEED WHEAT.—J. M. STRANGE offers, at private sale, Ten Barrels Russia Seed Wheat, a very superior article.
Toronto, 20th January, 1844.

TOWNSHIP OF YORK AGRICULTURAL SOCIETY.—The members of the Township of York Agricultural Society, and others in the township favourable to Agricultural improvement, are hereby informed that a Monthly Conventional Meeting, on Agricultural topics, will take place at W. Ross's Hotel, York Mills, on the First Friday in each Month, at the hour of Six o'clock, P. M.

The Officers and Directors of the Society respectively request a general attendance, as a number of subjects, of great importance to Agriculturists generally, will be brought before the Meeting.

JOHN BULL,
Secretary.
January, 1844.

EDWARD LITTLE, BRUSH MANUFACTURER, Newgate Street, (three doors East of Yonge Street) pays Cash for HORSE HAIR and HOG'S BRISTLES.
Toronto, January, 1844.

CARDING MACHINES.

THE SUBSCRIBER begs to acquaint his friends and the public in general, that in addition to his Foundry and French Bar Mill Stone Factory, he has engaged Archelaus Tupper, who is an experienced Mechanist, to make all kinds of CARDING MACHINES, of the latest and most approved construction; he has been engaged for twenty years in the United States, and also in Canada, and has a thorough knowledge of all kinds of Machinery, namely:—Double and Single Carding Machines, Pickers, Condensers, Jacks, Billeys and Jimmy. Also, Broad and Narrow Looms, Shearing Machines, and Gigs, Napping and Teazling; Stoves for heating Fires Places; Press Screws. Also, Grinding Searing Machine Blades; Fulling Mill Cranks, &c., and all kinds of Grist and Saw Mill Castings made to order; Wrought and Cast Iron Cooking and Plate Stoves; Fancy Stoves of all kinds: Also, Plugs of different patterns; Mill Screws of all kinds; and Damsel Irons; Boiling Cloths, of the best Dutch Anker Brand, warranted of the best quality; Mill Stones of all sizes, always on hand and to order. Also, all the other herein-mentioned articles always on hand and for sale by the Subscriber, at his Foundry, on Yonge Street, as cheap as they can be obtained at any other place.

CHRISTOPHER ELLIOT.
Toronto, August 7, 1843.

NURSERY AND SEED STORE.

THE SUBSCRIBER feels grateful for the patronage extended to him since he commenced business, and would respectfully inform his friends and the public, that he has removed from King Street to Yonge Street, immediately opposite the Stores of ROSS MITCHELL & Co., where he will carry on the business of NURSERY and SEEDSMAN. Having twenty Acres in the liberties of the city, in course of breaking up, as a Nursery and Seed Garden, he can now supply the public with Fruit and Ornamental Trees, Shrubs, Roses, Herbaceous Flowering Plants, &c. at a cheaper rate than they can be got from New-York or Rochester.

Trees and Seeds packed carefully to order, and sent to any part of the country.

GEO. LESSLIE.
Toronto, September, 1843.

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