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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, MARCH, 1844.

NO. 3.



THE CULTIVATOR.

"Agriculture is the great art which every government ought to protect, every proprietor of land to practice, and every legislator to regulate into nature's impove.—*Dr. Johnson.*"

TORONTO, MARCH, 1844.

Spring is now breaking in upon the farmer,—much attention must be paid to every description of stock, and the most delicate kinds must be housed and regularly fed with wholesome succulent food, to enable them to withstand the cold chilling blasts of wind, and sudden changes of the weather, which are prevalent in this month. With a little extra attention, the young lambs, with scarcely an exception, may be raised, which, if properly taken care of will add greatly to the farmer's profits. In passing through the agricultural districts, at this season of the year, we frequently notice, some half dozen or dozen dead lambs thrown upon the roof of some old shed, or fence, which, to us, is a most appalling sight. This is owing to bad management and shows extremely bad taste.

Cattle must be closely guarded from the meadows,—we have seen valuable meadows entirely destroyed; by allowing horned cattle and horses, to roam at pleasure over the fields. See that the fences are repaired, and this, above all other business, should be attended to this month.

The manure for your potato crop, might with

advantage be drawn into the field, and made into a large heap, where it would be ready for future use.

This is a good time to repair your farming implements, see that your ploughs, harrows, and roller are in good order: and if you are not in possession of the latter implement, the use of which is indispensable in good husbandry, lose no time in having one made.

Procure ashes, salt and soot; or salt and lime, or charcoal dust, to press your wheat crops; which, if applied in a proper manner, about the first week in May, will be found to act like a charm in pushing forward and maturing the plants. The farmer will find, in using soot, that its effects will be materially increased by adding to it an equal quantity of salt:—one barrel of each per acre, will be found a pretty liberal top dressing. Lime may be applied at the rate of fifteen, ashes, five; and charcoal dust, ten bushels per acre. The ground should be harrowed singly, with an extremely light pair of seed harrows, then sowed with any or all of the above stimulant manures, and then immediately rolled. The harrowing instead of injuring the young wheat plants will, in its effects, almost equal a hand hoeing, in pulverizing the hard crust which is formed on the surface, by the freezing and hawings, which take place at this season of the year; and the rolling will compress the fine soils about the roots of the plants in such a manner, that they will almost immediately take deep root and put on a fine healthy colour.

In all probability these suggestions will, in most cases, be considered matter of speculation. As the genius of our fellow farmers is such that they are prone to doubt the practicability of much that is recommended to them, by the writers on the various branches of their exalted

and honourable profession, we would venture to recommend them, at least, to make a few trials on a small scale, in the application of the substances mentioned, on their wheat crops.

Look steadily to your cows, ewes and mares, and other breeding animals; provide them warm dry places; give them your best turnips, potatoes, mangle wurzel, and hay; regard also their cleanliness.

Maple sugar should now be made. The great majority of the Canadian farmers have good groves of sugar maple, and those who are thus situated ought to depend as much upon manufacturing their own sugar, as they would in growing breadstuffs for their families. The State of Vermont, containing a much less population than Western Canada, made in the year 1842, six millions of pounds of maple sugar, besides molasses and vinegar. The above quantity of sugar, at 6J. per lb., would amount to the enormous sum of £150,000. We venture to say that a greater quantity than this could be produced in Western Canada. The present wholesale price of West India sugar, is 56s. per cwt; and from our experience, we would venture to say, it may be probably manufactured in this country, at a much less price than the foregoing. As our space forbids us giving detailed directions in performing the manufacturing of sugar, we would merely say, et cleanliness and close attention to the business, be your motto, and remember the old adage, that "what is worth doing, is worth well doing."

AGENTS FOR THE CULTIVATOR.

The public are respectfully informed, that owing to the frequent absence of the Editor from the city, the services of Mr. John Eastwood, Jr., Yonge Street; and Mr. Angus McIntosh, Merchant, Lot Street; have been procured as local agents of the *Cultivator*, who are authorized to receive subscriptions, and transact business for the paper.

CANADA AGRICULTURAL ASSOCIATIONS.

All who are acquainted with the actual state of agriculture in Canada, must be aware that the efforts that have been put forth hitherto to advance agricultural knowledge and skill, have been very inconsiderable, and, when compared with the importance and magnitude of the field of operation, may indeed be considered so very trifling, that the little that has been done over and above individual exertion, may be deemed scarcely worthy of being taken into the account.

The Government of this colony have nobly done their part, to further the great cause of agriculture, and if the people had only been wise, they would have availed themselves of the great boon which has been so bountifully granted them.

A number of the most wealthy districts in the province, have evinced such a degree of apathy in promoting the agriculture of the country, that they have not even availed themselves of the £200, per annum, which is granted by Government, as a stimulus for encouraging a combination of effort on the part of our hardy yeomen, in elevating the standing and improving the character of their noble calling.

We trust that the farmers in Canada, will see to this matter, and endeavour, if possible, to earn a character which will not suffer in comparison with that of their American neighbours. If they would only divest themselves of all their antiquated notions, and become united in the great cause of improving the agriculture of the country, they would thus, in the course of a half-a-dozen years, add to the value of every acre of land in the province, at least, one hundred per cent.; and would also entirely free the country from debt, and place its Commerce in such a healthy position, that the balance of trade would be considerably in its favour.

If these are not fit objects for the serious attention of all classes of our mixed population, and are not of that peculiar nature that the most virulent partizans in the country could join in one common bond of union, in exerting their talents and influence in accomplishing—then, to say the least of it, we are incapable of forming an opinion on the subject. We feel so morally certain, that the intelligent portion of the agricultural population are now prepared to act with union and decision in the matter under consideration, that we have much confidence in recommending a line of policy to be pursued, to achieve laurels, laid in store for our highly favoured colony.

The Township, District, and Provincial Societies must be organized as soon as practical, in order to accomplish the desired good, and, in our opinion, the relation that these three grades of associations should hold to each other, should be as follows:—As an inducement for the greatest possible number of farmers to become members of township associations—the annual subscription ought not to exceed

the trifling sum of one dollar, for which they should receive a copy of some well-conducted monthly agricultural magazine, which should be afforded to the society at a price not exceeding the sum of half-a-dollar, and be allowed to avail themselves of all the advantages that the township and district societies' exhibitions shall afford. The funds for the township exhibitions should consist of only the balance in the hands of the Treasurer of the Society, after the payment of the agricultural magazine had been made, and the funds of the district societies' exhibitions should consist of the £200, granted by Government, together with the annual subscriptions of the members of the district society.

There are in each township in the province, more or less patriotic and wealthy individuals, who would gladly contribute, at least £1, per annum, for the purpose of encouraging agricultural improvement, if they could be made satisfied that the money would be wisely expended. To give those spirited persons an opportunity to subscribe the above sum, it should, in our opinion, be divided among the three grades of associations, that are proposed to be organized. The township society might receive one dollar, for which the subscriber could avail himself of the advantages above-mentioned. The district society might receive two dollars, the whole of which would be awarded in prizes with the Government bounty, at the Grand Annual District Ploughing Matches, Shows, and Fairs, and the remaining dollar might be given to the Provincial Society. It should be a matter quite optional with the subscribers whether they become, either members of the Township, District, or Provincial Society.

At present, the usual demonstration made at agricultural exhibitions is confined to a few, and the Government bounty, which, by right, should be divided among the bulk of the agricultural population, goes to benefit only a class of individuals, who are already acknowledged to be the best practical farmers in the country.

If being members of agricultural societies, and being in possession of the mysteries that are unfolded, through the modern works that have been published on agriculture, are of any service to the wisest and most experienced farmers, certainly the poor un instructed cultivator might be benefited, by participating in those enjoyments. We again would endeavour to enforce the idea more powerfully upon all who take the trouble to read these remarks, that if a few receive any good, from becoming members of agricultural associations, and from reading the views of the learned and most experienced cultivators, on the various influences that act favourably or unfavourably in the different departments of their intricate and honourable profession, that certainly the entire adult male agricultural population might receive a proportionate amount of benefit, if they would only embrace the same advantages. Believing as we do, that the great thing necessary to make this a happy and prosperous country, is to build up and fortify the foundation of her agriculture on a sound and permanent basis, and also, believing that it is to the interest of all, that every individual should become wealthy and intelligent, our readers will, we trust, excuse the zeal which we are apt to practise, when dwelling upon the subject before us.

To enable our readers, to form some idea of the practical working of the agricultural associations, which we are desirous of seeing shortly established in Canada, we would beg

to draw the following picture—Suppose a district with a population of 20,000 inhabitants, the great bulk of whom are engaged in agricultural pursuits, and in this district there are, besides towns and villages, six townships, each containing a population of 2000 souls, and in each of those townships there is an agricultural society formed, averaging each 200 members; and out of those 200, 20 of them become members of the district society, paying each ten shillings, per annum, and 10 become members of the Provincial society, paying each five shillings, per annum; the result would be, that such a district would receive 1200 copies of an agricultural magazine, which, if read, would soon improve the condition of the agriculture of the district to an extent almost incredible. There would be in such a district, six township shows, annually, at which prizes to the amount of about \$100 would be awarded at each, open for competition only to such individuals as are resident members of the township societies respectively. And there would also be one Grand District Show, each year, the funds for which would consist of £200, Government bounty, and besides the ten shillings subscription from the 120 members of the district society, that we have supposed might be collected, if the people would only unite and study their best interests. The parties to whom the district societies' exhibitions would be open for competition, would be the members of the six townships' societies, and also the members of the district society, supposing that the members of the latter were without an exception also members of the township societies, there would be still 1200 persons in the district, who would be allowed to show at the district exhibition. The benefits that would accrue from such a grand display, may easily be anticipated, and the funds would unquestionably be wisely expended, as the Chairman of the township societies would be *ex-officio*, directors of the district society, who would feel an interest in seeing every shilling expended in a manner calculated to promote the object for which it was wisely granted and collected.

The discussions on Agricultural topics which would take place at the monthly meetings of the Members of the Townships' Societies, and the quarterly meetings of the Members of the District Society, would prove powerful engines in promoting the welfare of these Societies, and would be a means of eliciting a vast amount of information on every branch of farming, and would be an efficient agent for inculcating a friendly spirit among all who would participate in the movement.

Some may suppose that the foregoing scheme is not only visionary but impracticable, to such we would say, that much greater results than those we have pictured to our fancy might be realized, if only a few intelligent, spirited individuals in each Township would undertake the task in good earnest, by forming Township Societies on the plan proposed and meet monthly to discuss topics on Agriculture, and publish the substance of the same for the benefit of their fellow-farmers. A beginning in this good work, has been commenced within the past two months, in the Home District, and we venture to predict in the course of other two months there will be at least fifteen Township Societies within the limits of the District, averaging each one hundred Members.

The Provincial Society, about which there has been so much said for the past two years, could be organized on a most magnificent scale, if only the District Societies would adopt the plan of organizing Branch Societies in the Townships. The officers of both District and Township Societies would be the best possible agents that could be had for procuring sub-

members to the Provincial Society, and the Presidents of these Societies should, by virtue of their office, be Directors of the Provincial Society; and would be the most suitable persons to procure Members to that Institution. If in the organization of the proposed Provincial Agricultural Association, the above suggestion were acted upon; the officers of the Institution would find no difficulty in opening a correspondence with the several local Agricultural Societies in the Province, inasmuch as the Presidents of the local Societies would be *ex-officio* Directors of the Canada Association, and might also be ranked as the corresponding Members of the same.

There might be a doubt on the mind of some, of the practicability of the scheme, and with such the question would very naturally arise, in what manner can there be a sufficient amount of funds raised, to make the Provincial Societies' exhibitions and proceedings generally interesting and useful? In answering this question, we shall in as brief a manner as possible, endeavour to show from what sources those funds might be had.

As the Provincial Societies' proceedings will be of an high order, and of such a character as all true lovers of their country will approve, it is not unreasonable to expect that there will be at least one thousand persons in the Province who would become members thereof by paying the annual subscription of five shillings. From this source we may hope to raise £250. When the District Societies throughout the Province have adopted the plan of organizing Branch Societies, in the several Townships in the respective Districts, in accordance with the plan published in the December Number of the *Cultivator*—then it will not be too much to expect, that the funds for the annual District Exhibitions will be at least equal to the sum of £250; viz., £200 from Government, and £50 from the Members of the District Society. This £250 will be the sum, more or less, might, with much propriety, be appropriated at the Provincial Exhibition, in common with the funds of the Provincial Society, in such District as the Provincial Exhibition may be held, and by the adoption of such a system the only parties that would be entitled to show their stock, &c., would be the Members of the Provincial Society, and the Members of the District Society and its Branches, in which District the Provincial Exhibition would be held. So far as the supposed combination of funds of the Provincial and District Society is concerned, it would be altogether a matter of arrangement between the parties themselves,—but from our knowledge of the subject we would suppose that such an alliance would be mutually beneficial, and would add much to the character of the Exhibition. We would suppose then that from this source other £250 might be added to the fund for the Provincial Exhibition.

All who are acquainted with the working of the proposed Provincial Institution, must be aware that great good must result from the proceedings of the Institution, and if conducted in a manner commensurate with the wants of the field of operation, it is not too much to expect that by a judicious and respectful application to the Government, that a conditional grant of money would be appropriated to the Provincial Society, to aid them in furthering their laudable objects, and from this source, other £250 per annum might with a degree of certainty, be calculated upon. It will be seen from these three sources, that the sum of £750 per annum might be raised, providing that the business was conducted in a spirited manner. Independent of the above sources for raising funds, to enable the Directors of the Provincial Society, to adopt a course for improving Agriculture in Canada, in a man-

ner highly honourable and beneficial to every interest in the country, a still further sum might be raised by exacting a small toll from every individual who entered the Show Ground,—from this source alone the contingent expenses of the Society might be met, which would allow the whole of the subscriptions to be expended in premiums, &c. The foregoing desultory remarks have been thrown out, not with a view of dictating to others more capable of judging and acting in this matter than ourselves, but merely through a desire to keep the subject before the public mind, so that some action may very shortly be taken in the formation of the proposed Provincial Society.

We expect that in the April Number of the *Cultivator*, a conventional meeting will be announced to be held at an early period at either Hamilton or Cobourg, or some other central place agreed upon by the Gentlemen who were appointed by the Home District Society, to assist in carrying the above Institution into operation. The parties delegated to attend at that meeting, will, we trust, come prepared, to give their views, on what they consider the best plan for the organization of the proposed Canadian Agricultural Association.

THE HOME DISTRICT.

In the course of the future management of the *Cultivator*, we shall very frequently have to allude to various occurrences that take place in the Home District, which although local, will be generally interesting and useful, and our friends in other sections, will have no just ground of complaint in the seeming partial attention that is about being given to the District in question,—inasmuch as an example is being set the other Districts, which, when followed, will give a new and laudable impetus to agricultural, mechanical, and commercial operations. No one could possibly desire the country to flourish more than ourselves, and every grain of influence and talent that we possess shall be devoted to the great movement that is now in progress. We fancy that before another half dozen years pass over, that a vast amount of latent talent will be brought into vigorous and useful exercise, in propagating important information to the rural classes of this Colony. This information will be elicited mainly through the instrumentality of the Agricultural Societies that we hope to see established in every populous Township in the Province. As our readers have already a pretty good idea of the characteristic features of the proposed associations, we will not at this time allude to them, further than by saying that the individuals who come forward at this time to assist in the establishment of Agricultural improvement Associations, on a sound and patriotic basis, such as the scheme in the December Number of the *Cultivator* recommends, will, in after days, receive the plaudits of his fellow countrymen, and will be looked up to as a true patriot to his country. The work merely requires a commencement in a proper manner, and if only those in each Township who have talent and influence could be enlisted in the cause, it would progress with rapid strides.

The experiment has been made in the Home District, and in order that the friends of Agriculture in the other Districts may better understand the workings of these local Associations, we shall, as we before stated, have frequently to make their proceedings a text book, for numerous articles that will appear in future Numbers of the *Cultivator*. The District Society will appropriate £150 of its funds among all the Township Societies that may be formed previous to the first day of May next, and each will receive a dividend in proportion

to the amount that each deposit with the Treasurer of the District Society, on, or before the 15th day of May of next. Independent of this very liberal assistance from the District Society, the Members of the Township Societies by paying the small sum of five shillings, will each receive a complete copy of the *Cultivator*, and be allowed to show their stock, &c. at the Township Societies' Exhibitions, to which they are Members, and also the District Societies' Exhibitions, see simple. With such unexampled inducements for the organization of Township Branch Societies, as the foregoing, we very naturally expect most important results. We shall be disappointed if there are not established within the Home District at least fifteen Township Agricultural Associations before the above period allowed by the District Society expires. We lately made a tour through the Townships of Vaughan, King, Tecumseth, West Guillembury, East Guillembury, Whitchurch, and Markham, and were happy to notice that the best informed farmers in these Townships were awake to their true interests, and were most willing to assist in exciting their best endeavours to enlist their neighbours in the good service. We purpose to visit those Townships again, as well as some others in the District, before the close of the coming month, and hope to be able to make a satisfactory report of the progress which has been made during our absence.

In passing through the Townships, the idea was very forcibly impressed upon our minds, that although great achievements have been made by our industrious population, in felling and clearing the forests, still much greater might be effected, if only the farmers would be wise, and copy the practice of the most skillful husbandmen in Europe and America; or even that which is practiced by the few clever farmers that are interspersed through their own highly favoured Canada. An opportunity will now be presented to the Canadian farmers, for receiving information respecting their important calling, such as never has been placed within their reach before, and it is for them to accept or refuse as they think proper. If there are any who imagine that they can receive no information from the perusal of a Journal devoted exclusively to the elucidation of the various influences that act favourably or prejudicially to the numerous departments of their complicated profession; and that no good can result from the social conversational meetings for the better, carrying out all kinds of Agricultural improvements; that are to be held periodically in the Townships; and that periodical exhibitions of stock, farming implements, ploughing matches, &c., are of no earthly use, so far as they are individually concerned;—we would say without hesitation that such parties were most egregiously ignorant; and but ill-understood what is closely connected with their own welfare. That there are but few of this class in this highly privileged land, we would fain hope to believe, and we hope the few there are will shortly be convinced of the folly of their way, by the good advice and example that will be given them by those who are the best capable of forming correct views on the subject.

It has been elsewhere stated, in the *Cultivator*, that the rise of freehold property would keep pace with the increase of intelligence and skill; that is brought to bear in Agricultural pursuits. This fact alone should be a sufficient inducement to cause those who are blessed with ample ability and means to put shoulder to the wheel, and set the mighty car of Agricultural improvement into vigorous motion. The present rising sacrifice that each would have to make, to create an entire revolution in Agriculture, and place it in its legitimate position in relation to other pursuits, would be liberally repaid them by the immense acquisition of capital that would find its way in the country, by an increase of wealthy emigrants from Great Britain.

USE OF SCIENCE TO AGRICULTURE.

From the American Farmer.

We have read with equal pleasure and instruction, the address, delivered by Dr R Richardson, Professor of Chemistry, in Bathany College, delivered before the Agricultural Society of Brooke and Ohio counties, Virginia, at its annual exhibition, in October last. In reading this production we have been so much gratified by the very familiar manner in which the author treats what may be considered the scientific portion of his discourse, that we lay that part before our readers, under the conviction that they will find in it a rich, entertaining, and instructive treat. Without burthening his auditors with the technicalities of science, he has sought an easier plan of conveying to the mind of the unlearned, an estimate of the value of its acquisition to the practical farmer, who desires to carry on the operations of his farm with intelligence and enlightened economy. His views are comprehensive and true; the language in which he expresses them is simple, and therefore, both the one and the other are peculiarly adapted to the purposes he had in view, the enlightenment and profit of his hearers. Had he selected the phrases of the mere student and contented himself with exciting wonder without imparting instruction, he might perhaps have elicited more surprise that "one small head could hold all he knew," but he would have failed in commending himself to the great majority of agricultural readers. The plain common sense of Professor Richardson's remarks will strike deep root in the mind of every intellectual practical farmer, because he has brought science down to the understanding of all, and divested it of those mysteries, which too many of its teachers delight to invest it, by the use of technical terms, beyond the comprehension of any but those who are Chemists.

Mr. Richardson is maintaining that science is essential to successful agriculture, and enforces the truth of his proposition thus:

"Take any one of the arts of civilized life, and consider if it does not improve and become important just in proportion as its principles become known and settled? The practice of no art can be fixed, unless its principles are so, and it can never rise to elevation or perfection unless upon the firm foundation which such principles alone afford. This is what we mean by science. Science is knowledge arranged as principles, laws, or rules of action. Perfect art is the true application of these principles to a practical end. The arts can never be brought to perfection, until all their processes are laid open, and explained in conformity with the causes which govern them. This is the business of science, which, by thus tracing effects to causes, enables the artist to produce always the same results, by bringing into action the same causes, under the same circumstances.

It is a great, but a very common error of the uneducated to suppose, that science renders a subject obscure, or at least difficult to learn. This may be truly said of art, but the reverse is true of science. In a rude stage of society, men are forced to pursue, without science, the arts immediately necessary to life. They adopt the business of the chase, or the art of fishing, and, like the Indians, may plant, in a rough way, a few hills of corn. By and by, as civilization goes on, agriculture is more attended to, and other arts are introduced, which by successive observations are gradually improved. But these arts, founded upon experiments, and wrapped up in technicalities and mysterious processes, which can be carried on only by the artist himself, and the principles of which he himself does not understand, and consequently cannot explain, are wholly

beyond the reach of others. It is the natural tendency of mere art to bury itself in mystery, to veil its ignorance in unmeaning terms, and keep its operations secret for the purpose of private emolument. But the very reverse of this is the case with science. Its object is to make every thing plain; to lay itself open to inquiry; to unfold secrets, and to put every one in possession of the principles through which the art may be practised and perfected. Science is not satisfied until it has formed a broad and beaten track, and rendered the art accessible to all, by explaining its processes and establishing the whole upon rational principles—forming thus what may be termed scientific art.

Now this is precisely what has to be done for our agriculture before it can be in the slightest degree elevated or improved. It consists at present of a few simple processes, founded upon experience and observation, but the reasons of which are unknown to the greater part of those who employ them. Experience has taught them that it is necessary to loosen the soil with the plough to prepare it for the reception of the seed must be covered to a certain depth, &c., but they are unable to give the true reasons for these things, or to explain why it is that the seed should vegetate under these circumstances, or whether the young plant derives its nourishment from the earth, the air, or the water, or from the whole of them together. They cannot tell what or how much the soil contributes to it. They know not of what elements the soil consists, or how they may increase its fertility with economy and certainty. They have learned, indeed, by observation, that manure will render vegetation vigorous, but there are few who properly appreciate its value, and still fewer who can explain the manner in which it acts. They have heard that the application of lime will increase fertility, a fact which they owe to science, but they cannot, without the further aid of science, explain its action, or determine to what kind of soil it should be applied. In short, our agriculture is merely a confused medley of ancient customs, rash experiments, and vague conjectures, without system, without correct knowledge, without fixed principles, other than the simple rules adopted from common observation or tradition.

I would by no means be understood to undervalue experience and observation. These are the very materials out of which science is constructed. Without them there would be no science. Experience, observation, facts;—these are the stones, the bricks, the timbers of the building,—but they are the rude materials, which, when thrown confusedly in heaps, fitly represent art without science. Science is the finished building, in which these same materials are built together, and cemented each in its appropriate place, so that the uses of all can be seen and understood. What is wanted then is, that the agriculturists of our region should suffer their experience, facts and observations, increased and enlarged by those of others, to be framed into the noble edifice—**THE SCIENCE OF AGRICULTURE.**

In order that this important point may be properly impressed upon the farming community, it will be necessary to appeal to their own observation, and to facts with which they are familiar. For instance, it is perfectly well known to all, that as the workman is known by his work, so is the nature of the soil by what it produces. If a farmer wishes to purchase a piece of land, he endeavours to judge of the strength or fertility of the soil, by the size of the timber upon it, or the vigour and perfection of the plants which grow upon it. Observation, also, has taught him to gather some information from the colour of the soil, its mechanical properties of friability, porosity,

tenacity, &c., and he can even ascertain its composition, so far as this can be detected by the eye, as being clayey, sandy, gravelly, &c. But when he wishes to form a more accurate idea of the suitableness of the soil for particular crops, he looks not to the size of its products, but to their kind. If he be in the wheat growing region or latitude, he looks to the timber now to see if it be pine and cedar, or if it be white oak, beech, or hickory, or if it consist chiefly of maple, ash, black locust or walnut. He looks, also, to the herbage upon the cleared land, to see if it consists chiefly of sedge, or of white clover and blue grass; he observes if the iron weed, the ground ivy, and the alder are abundant. After he has made his observations, he judges with much accuracy, for the dear school of experience has taught the lesson, that the pine district will not do for wheat; but that he may raise it with certainty upon the land where he finds the white oak, the hickory, and the blue grass; while the sugar tree, the maple, the locust, the walnut, the alder, lead him to anticipate in imagination the rich and luxuriant fields of Indian-corn.

He learns these particular truths,—but he has learned much more. He has learned some of the great general truths of the science of agriculture:—*That soils differ greatly in the qualities or composition, and that each soil best produces that class of plants to which its peculiar composition is adapted.* For why one soil, in the same latitude and circumstances, should grow pines, and another white-oaks, he cannot explain, except upon the principle, that the one contains something which the other does not; that they differ in their composition, and that this certain something, which they contain, fits them respectively, not only for the growth of these different kinds of timber, which are found to overgrow and put out almost any other kind in these regions, but also for different kinds of grasses and of grains. From the general truth thus reduced, the important practical rule immediately occurs: *That each kind of grain, or other product of the soil, should be grown upon that particular soil best adapted to it.* For experience and observation have already taught that the nature of the plant cannot be changed,—that a plant cannot be made to flourish, and scarce even to grow, in a soil that does not suit. The farmer then, with those facts before him, finding that he cannot make the plant, say wheat, grow where he pleases, is obliged to content himself with raising it in those places where the soil is adapted to its growth. He clears up the white oak lands, therefore, and devotes himself, we will suppose, year after year, to the raising of wheat. Experience, after a while, makes him acquainted with another fact; that the soil, which at first produced a large crop, brings less and less every year, until at last he can scarcely raise any wheat at all upon it. He concludes now, very justly, that the composition of the soil must be changed from what it was at first, and that *that certain something* which originally fitted the land for wheat has become gradually exhausted by the successive crops. But what *that certain something* is, he cannot tell, and of course, he does not know how to supply it, with any degree of certainty or success. Is it lime that the soil needs? He cannot tell. Is it manure? probably; but what kind of manure? and in what state? or what substance or principle is it in the manure that gives it power to fertilize? Will land regain this certain something by rest? or can it be restored by a crop of a different kind? To such questions, the mere agriculturist can give no definite reply, and yet they are the very questions to which his interest require an immediate answer, and which, if left unanswered, leave him to the chances of uncertain

experiment. If he cannot obtain sufficient manure, the fertilizing power of which is familiar to all, if he cannot succeed with lime, for want of sufficient vegetable matter in the soil, if he cannot afford to suffer his fields to remain uncultivated until rest shall have had its chance renewed a portion of their former fertility, he has but the well known alternative, to which so many have been forced, to move to a new country, where he can again enjoy the privilege of subjecting fresh land to the same process of exhaustion. Meanwhile, his family, and his half-starved cattle have been increasing in number, as his land has diminished in fertility and value, and he sells his bare, washed and worn-out fields for less than half the original price of the farm, and hopes, even against hope, to repair his broken fortunes by repeating in a new location, the same experiment, under circumstances yet more unfavourable.

All this happens because he has not without science. He acts according to his knowledge, which is a knowledge of disconnected facts, and a simple routine of farm work, the effect of which he sees upon the land, but does not understand. But who is this that has bought his poor, worn-out farm? Is he not a simpleton to buy, even at so low a price, land which will no longer produce bread for his family? Ah! it was science that suggested to him the thought. She whispered in his ear: Your head here was acquainted with an important general truth—that as the nature of a plant cannot be changed, it must be suffered to grow in the kind of land that suits it; and finding that this land was adapted to wheat, he has raised wheat upon it, until, as you see, it has ceased to be adapted to it, and will produce no more. Now, let me tell you another truth, which your friend has overlooked—it is this, that, although you cannot change the nature of the wheat, so as to make it adapt itself to the soil, you can change the nature of the soil so as to make it suit the wheat. This you can easily accomplish here by restoring to the land those ingredients of which the successive crops of wheat have deprived it. You must know that each kind of plant takes out of the soil some element peculiarly necessary to its growth and leaves behind it, in the soil, a substance that it is believed to be injurious or poisonous to plants of the same kind, but which is harmless, and even nutritious, to plants of a different kind. Now, the frequent cropping of wheat has not only taken out of this soil the substances necessary to its growth, but has also impregnated the land with an exudation from the rootlets of the plant, which is injurious to after crops of the same kind. But as different crops take out different substances, or different quantities of the same substance from the soil, and also serve to remove from the soil the injurious matter left by a previous crop of a different kind, if you will now put these fields in clover, it will thrive on what the wheat has left; it will restore the very substance which wheat specially needs, and give time for further additions by the crumbling of the rocks, of which the soil was originally composed. Our friend takes the hint. He learns not only to suit the plant to the soil, but the soil to the plant. He gives the land a dressing of lime, which enters more largely into the composition of clover than of wheat. The luxuriant red clover springs forth; it sends down its tap-roots into the depths of the soil, and brings up from thence those inorganic matters which originally fitted the surface soil for wheat. It drinks in from the rains and from the air, by its leaves, those elements from which it forms organic compounds, and which, when it is ploughed under, or fed off by cattle, become food for crops of grain. These crops are raised in a regular system of rotation, so

that one prepares the soil for another, and our scientific farmer can now raise, from fields once exhausted and forsaken, a profitable crop every year, and, at the same time, have his lands constantly increasing in fertility. This is a fact which is not to be disputed, it is an occurrence which I have myself witnessed, and with which, I doubt not, many of those present are familiar. It is of constant experience wherever agriculture is practised scientifically.

The great point then, which is to be impressed upon the agricultural community, is this—that the nature of the soil must be made to suit the nature of the plant which is to be raised upon it; and that this is to be done by supplying, either by means of other crops or by animal and mineral manures, those substances which form the food of this particular plant.

Let no one think it strange that different plants require different substances as food. Different animals require different kinds of food, and why not different plants? It is true, that there are some things which almost all animals use in common. So it is with plants. There is no cultivated plant which does not contain both lime and silica (sand). Hence these must be present in every soil, and hence the general utility of lime in agriculture. There is scarcely a plant which does not contain an alkali—generally potash; sometimes soda. But some plants require a particular ingredient, and this often in a very small quantity; and they will not grow if they cannot obtain it. Hence we must know, not only the particular substance needed, but the quantity of it that is needed.

Now, it is a matter of familiar observation with every farmer, that different plants contain not only different substances but different proportions of the same substance. Every farmer's wife knows that the ashes of different kinds of wood will supply her with very different qualities of potash to form ley or soap, and she is not well pleased if her husband, that is to say, "her farmer,"—for the word husband originally meant "farmer," hence we yet use the "husbandry" for farming,—I say, if her husband persists in bringing her plenty of red oak and poplar. She must have white oak, sugar tree, hickory or beech, because their ashes contain, together with other matters, a large amount of potash, which can be readily dissolved out by water to form ley. But where did these trees get the potash? Of course, from the soil: and the soil that will grow them well, must, therefore, with other ingredients, contain a large amount of potash. On the other hand, the trees which contain but little potash will grow on a soil which has but little of this alkali. Here then, we see one reason why different soils grow naturally, as we say, certain kinds of timber; and how it comes that different kinds of timber show that the soil is suited to particular kinds of grain. Thus white oak, hickory, beech, maple, show that the land is rich in potash, and the scientific farmer knows that this is one of the reasons why such lands are good for wheat, because wheat also requires and contains a considerable quantity of potash, as any one may satisfy himself, by burning it and making ley of its ashes. The scientific farmer finds, also, in this fact, one reason why red clover may be made to follow a wheat crop with advantage, because it requires very little potash, and will maintain itself vigorously on what little may be left by the wheat, until the quantity by degrees accumulates, and the soil becomes fitted for wheat again.

It is in this way then, among others, such as draining, deep ploughing, &c., that the skilful farmer applies true knowledge to Agriculture. Chemistry enables him to know the

exact composition of his soil, as well as the principles necessary for the crops he wishes to raise. The soil is, as it were, his store-house, chemistry gives him an inventory of what it contains, and then notes down what each crop takes away. He knows then how to supply the deficiency, and, if he will, to augment the stores of fertility in the soil. It must be evident to every understanding, the agriculture can in this way only be improved certainly, systematically, and rationally. What would we think of a merchant who would make his purchases of goods at random, without knowing what articles he needed, or in what his stock was deficient? Precisely similar is the case of the farmer who, by cropping, exhausts his soil of something he knows not what, and supplies it again with something of whose nature he is just as ignorant. It is true, indeed, that the labours of scientific men have thrown so much light upon the subject, that the farming community begin to see more clearly the true method, and continue, to some extent, even without chemical knowledge, to act from the example of others, upon the general principles of the science. This is encouraging to an Agricultural Society. It should stimulate them to extend a knowledge of these important principles every where throughout the country, by promoting the circulation of agricultural journals, and those popular works in which the science of agriculture is made plain to the humblest capacity.

CULTIVATION OF CRANBERRIES.

Were we to engage in this business, we would use sharp spades or take up sods six or eight inches square, from meadows where the vines are already too thick. About 2,000 of these would be enough for an acre; they would then be half as thick as hills of corn, and would as soon spread so as to cover the ground. It will not hurt an old bed to thin them out. We are satisfied, that digging among the old vines will aid them, as digging among strawberry vines will improve the strawberry harvest.

Rakes are now made on purpose to gather the fruit, and though these rakes tear the vines in pieces annually, yet the product has been much increased by raking. A near neighbor of our own, began but a few years ago, to rake a little patch of one-fourth of an acre. He obtained 12 bushels only, the first season; the next year 16, then 25, and so on, till the last harvest on the fourth of an acre, was 63 bushels of handsome cranberries, we saw them on his barn floor. We have yet heard of no one who has injured his cranberry vines by raking.

In regard to flowing, we need more experiments; the water may generally be kept over the vines till the middle of May. It should be kept on as long as possible, to keep the blossom back and out of the way of frost; but if the water becomes warm, it will kill the vines; you see no cranberries in meadows that are kept flowed till June. It is better, however, to draw the water off as soon as the first of May, and after a day or two, flow again. In 1842, the cranberries were very generally destroyed by the uncommon frost of June, as late as the 10th. Frosts in September, sometimes destroy the berries, and it would be well to flow them, in cold nights, where water is plenty.—*Mass. Ploughman.*

WOUNDS IN DOMESTIC ANIMALS.—One of the best remedies is the yolk of an egg, beat up with spirits of turpentine. Very bad wounds have been healed by this application, in 48 hours.

**EIGHTH AGRICULTURAL MEETING AT
THE STATE HOUSE, FEB. 27.**

From the Boston Cultivator.

Mr. Quincy in the Chair. Subject *Fruit Trees.*

Mr. Breck of the New England Farmer opened the discussion. He said that a plentiful supply of good fruit was important for health, pleasure and profit. Delicious fruits, natural, may be freely indulged in with good effects. With a taste for the cultivation of fruits and for ornamental trees and plants, one has a source of pleasure at his command. As a source of profit, fruit is engaging the attention of many, and it will be long before the supply will equal the demand. The apple is among the most important of fruits. The climate of New England is peculiarly adapted to it. Formerly large quantities of apples were raised for cider, now more attention is paid to choice fruit. The Temperance Reformation has produced a great change. In setting an orchard the soil should be well pulverized. It should be stirred deep with the sub-soil plough. No fresh or half decomposed manure should be put into the hole where the trees are set, but old compost manure may be useful. Apple trees should be about two rods apart each way, and plum and peach trees may be planted between them, and these will have their turn and make way for growth of the apple trees. Trees should not be set deep, but nearly on the surface. There are different opinions as to grass growing around trees. He knew two orchards set at the same time in similar soil; one was well cultivated, the other not, though the trees were dug around. The latter now bears but little, though set 18 years ago, the other has borne considerably for seven years, and in good seasons now produces 1000 barrels of fruit.

Some trees require cultivation, manure and the destruction of weeds in order to the production of fair fruit. Such is the case with Williams's Favorite, an excellent variety, the Porter is much the same. The great enemies to the apple are the boror, cankerworm and caterpillars. Pears are next in importance. Like the apple they do best in a soil rather moist and rich. Our native fruits should be preferred, of which we have some very fine varieties. During the last season, some superior kinds were brought into notice, the Hull, Wilbur, M Laughlin, Lawrence and another nameless kind. Some kind of pears are improved on quince stocks, others do better on their own stocks. Of the quince there are two distinct kinds, the Orange and Portugal. The first is the handsomest, but some prefer the other. The plum is a most delicious fruit, but the curculio is a difficult enemy to contend with. Large premiums have been offered by the Massachusetts Horticultural Society, for a complete remedy; but none has been discovered. Cherries are easily raised and the fruit is fine. Peach trees are often killed off by our cold winters. The stones may be planted in spring the trees budded the next September, and they will bear in 2 or 3 years.

Mr. French, of Braintree, said that fruit would grow almost any where, even on the sands of Nahant, but much depended on cultivation. If trees are set on orchards, we must manure the more. He has an orchard of Porter, Greenings, &c in grass land, that does well. The ground is in good condition. He digs around the trees, but for the purpose of keeping away the borer. He has an orchard of seven acres of as choice fruit as there is in this or any other country. He broke up the land, harrowed and rolled it, and set out on the sod, and put loam around the roots, and lost but three trees. Does not stake his trees. Sub-

soiling would doubtless have been good, which he has practiced since. Trees do best by walls, the stones furnish potash, which the trees need. Peach trees bear late transplanting, even when in blossom. Keep them low, and let them fruit low. Trees require much attention, prune young, then you will not have to cut large limbs. As nurserymen make so many mistakes, it is best to get trees and set out, and graft from good fruit trees that are bearing. Plums do better on the sea shore than back on light soils. There seems to be no remedy for the curculio. The large caterpillar may be destroyed with Perkins's brush. It requires much attention to guard against insects. But by industry and perseverance we can get good fruit.

Mr. John C. Gray said that he had given attention to fruit growing for 20 years. He preferred transplanting in the spring. The greatest difficulty was the drought. In 1831 it was very dry, and he saved trees by laying moss around them. It is a question whether an orchard shall be broken up. He had one that did well not ploughed; the trees were first dug around 6 feet, afterwards 8 feet as the trees became larger. They were set near the surface. Cankerworms are great nuisance. He had tried many ways to destroy them. Tar put around trees on canvass, that it may not penetrate the bark, is ineffectual. The sun dries and hardens it. It cold, they will walk over it. Leaden troughs are expensive, and not a complete protection. The German method is probably the best. Make a box around the tree; let it set on the ground, and on the top put pieces projecting over the edge, outside, like the eaves of a building; then tar in the angle under the projection, and the tar will be protected from the sun and storms. Swine rooting under trees will destroy the young worm. He set trees 40 feet apart. Mr. Phinney had lately set that distance. No investment near Boston better than that of fruit trees. The pear is neglected. Baking pears sell well in the market, and the tree is long lived; he mentioned one 150 years old. All standard fruit, that is well adapted to the climate is better than that raised against walls. We are just on the line where the peach can be raised. Shall we prune freely or not? The great enemies to the plum are the curculio and warts, and no remedy is known. Caterpillars can be easily destroyed in their nests. The quince is a valuable fruit, and brings a high price.

Hon. Mr. Dodge, of Hamilton, said that there was no subject more interesting. It is said the rail-roads are using up our farmers, and we must enter into new branches, or apply more skill to old ones. This is an argument for attending to the Silk business. Fruit is a great subject, and our market is not yet glutted with it. Farmers are much indebted to the Horticultural Society for disseminating much valuable information on this subject. He had been attending to a Nursery. He sowed apple pomace in the fall, and used ashes to destroy the acid. When he got a good growth the first year he budded the second year. The same with pear trees, but peach trees should be budded the first year. Budding is more simple than grafting; he does not take out the wood, the bud lives as well with the wood, and in taking it out it is liable to destroy the eye. Budding is easily learned by seeing an another perform the operation. In transplanting, all the roots and fibres should be carefully preserved. He preferred the spring for this operation. Shallow planting is preferable. It is according to nature. It appears evident from the trees that are turned up by the winds. In preparing the land for an orchard the stones should not be removed, for some of the best orchards are on stony land. It is a question with some whether the stock affects the fruit, but it does not.

We find a difference in the same variety of fruit owing to different soils and other causes. The sap passing up the stock is all the same and the effect is produced by the scion as in the leaves. The sap is elaborated into the juices that form fruit, and this gives its peculiar character.

Mr. Cole, of the Cultivator, said that a general opinion prevailed that apple and pear seeds must be frozen or else they will not vegetate. This is the opinion of some nurserymen, but it is not correct. On sowing a lot of apple seeds in the fall, he saved some for experiment. Divided them into two parcels, wet one lot in winter, put them in sand and buried them in the cellar. They did not freeze. Next spring planted them and the other lot dry, in adjacent rows. Those that were kept moist grew, the others did not. Next season had 22 quarts of apple seed after the ground was frozen. In the winter wet them, put them in sand, and set one half out door to freeze, the others were put in the cellar and did not freeze, the next spring being wet and backward, the seeds all began to sprout about alike, and some of the sprouts were an inch long before the ground was dry enough to plant. Experiments show that the seed should be kept moist through the winter, and that freezing is not necessary. He buries peach stones in the fall or winter, before dry or after, in layers with the earth, about a foot deep, that they may not crack and sprout too early in spring. When the ground is dry enough for planting in spring, crack the stones and plant the meats as you would corn, and they are about as sure to come. As to budding most nurserymen reject the wood, as it is considered the better way. No eyes will be let in removing the wood if a sharp thin knife be used to cut off the eye of the bud. Transplanting may be done, in spring or fall, if it be well done. The objection to fall transplanting, arises mostly from the operation being performed late. The proper time is from the 20th of Sept. to the 10th of Oct. Then the earth gets settled around the roots and the trees will grow well the next season. He prefers the fall if it be done early. He had for some years contended that the stock affects the fruit. The scion governs mostly, but the stock produces a slight effect, and the higher the scion is set on the tree, the greater will be the effect of the stock. What makes the great difference in the same variety of fruit, the Baldwin for instance, when set in different fruit stocks? Some say the soil. Well then, if planting trees in different soils produces a difference in fruit, will not the planting scions on different stocks produce a difference? Is not the stock nearer the scion than the soil. He stated a case of an apple tree that bore fruit with water cores. Some of the apples were like a ball of water; a variety that was free from this defect was grafted high in the limbs, and the fruit was all water core. As Mr. Breck said, some soft breaking pears are improved on a quince stocks, which give them firmness, while other hard varieties are injured in this way; a plain proof that the stock affects the fruit in a small degree.

Hon. Mr. Gardner of Seekonk, said there were different opinions. Some would set trees in the spring, others in the fall. Some would plough an orchard, others would not. He had an orchard of 4 or 5 acres, set out in the fall and only three trees died. It flourished well without ploughing, but in consequence of what he heard in the Agricultural Meeting last winter in favor of ploughing, he had ploughed it, and he had done wrong, if the opinion of gentlemen be correct who consider that the trees will do well without this process. He had another orchard of four or five acres that had not been ploughed for 15 or 20 years, and he got a large amount of excellent fruit. His neighbors ploughed their orchards, and the same ran in them, but they did not succeed.

well. He let calves and sheep run in his orchard, and sometimes he mowed the grass. He took peach stones in the fall and covered them about two inches in the earth, and the next spring cracked and planted them and they did well.

M A R L.

In reading a very elaborate report from the pen of a celebrated Geologist, who has been employed in one of the Southern States for the past few years, we were astonished to notice that tracts of country equalling some hundreds of square miles, had been increased in value within the past eight years, to an extent of upwards of one hundred per cent, and this great advance in the rise of property, was attributed almost solely to the use of marl. From the moment we read this report, we embraced every opportunity, when in the country, of discovering the location of valuable beds of marl, and have in a number of cases tested the qualities of the specimens that have come under our observation. The only kind of marl that can be profitably brought into general use in this country, is that which is generally denominated *shelly marl*, which is evidently a deposit of shell fish, which have become, in process of time, converted into calcareous earth, containing both stimulating and fertilizing properties, which make it so highly prized in Britain, that it is classed among the animal manures in point of value. It exists at the bottom of most bogs and morasses, or other pieces of stagnant water, and is usually under layers of a deep black peaty earth. The specimens which we tested were taken from beds covered with about three feet of black vegetable mould, and the timber which grew upon the land was principally a dwarfish growth of black ash. They contained about 50 per cent. of pure lime, and in one instance even a much greater quantity. If a substance containing from 40 to 50 per cent. of lime can be had without any cost further than the mere drawing, such farmers as have this substance within their reach, would find it to their advantage to apply it to their cultivated land at the rate of about five tons per acre. We would recommend experiments with marl, on a small scale, and by this means its adaptation to the soil on which it is applied may be fairly proved, and the most untutored cultivator would soon be able to form a correct estimate of its value.—The principal ingredient in marl, that is found to be valuable to the farmers, is the carbonate of lime which it contains, and it is owing to the presence of this earth that marls effervesce on the addition of acids. The most common test is, to add a small portion of dried marl to a wine glass full of vinegar. A species of violent fermentation will take place if the marl be rich with lime which will quite astonish a person inexperienced in such matters. This test is so simple and efficient, that it is scarcely necessary for us to mention others. We might, however, mention another: Let the marl be put into a glass, partly filled with water, which will expel a portion of acid contained mechanically in the marl. When the marl is thoroughly penetrated by the water, add a little muriatic acid, or spirit of salt. If a discharge of air should ensue, the marly nature of the earth will be sufficiently established.

If a farmer, whose soil is deficient in lime or calcareous earth, can procure, at a convenient distance, a quality of marl, being rich with lime, he will find by such application, effects equally as beneficial, as though he had used pure lime from the kiln. When the marl is used, of course the quantity would be required to be greater, but only to an extent equal to the amount of silica and other

The action of marl on the soil will be more slow and lasting than fresh burnt lime, but the benefits in the end will be found to be equally as great.

In some sections of the country, an abundance of lime, for agricultural purposes, may be had for the mere expense of burning, drawing, and spreading on the land; where farmers are thus favorably circumstanced, they should, without fail, dress a portion of their land with lime, each and every year. If it were used at the rate of about 40 bushels per acre, on a small scale, any few square rods, its value as a stimulant and fertilizer would soon become well established, and we doubt not but that it would be brought into very general use. But in every instance where shell marl can be had, without drawing too great a distance, it should be used extensively, and will be found, on the score of economy, to exceed the use of lime. So well satisfied are we of its value upon strong clay land, that we shall spare no reasonable expense and trouble in having it brought into immediate use. The monthly Agricultural meetings, that we hope to attend in the several Townships of the Home District, will be among the best opportunities that we shall have, to bring this matter fairly under the notice of the agriculturists; and we assure those with whom we have not the pleasure of thus commingling, that every fresh item of information of importance on this or any other topic of Agriculture that is elicited on those occasions alluded to, shall be published for the mutual benefit of our fellow countrymen.

LIME AND ASHES.

ALBANY, Feb. 16, 1844.

These are doubtless about the cheapest, and most available fertilizers within the reach of most farmers in this state. Lime is most serviceable on all clay, loam and mucky soils which have been more or less exhausted by undue cropping, or on such as lacked lime in their primitive natural condition. Ashes whether leached or unleached, are perhaps more valuable to be applied to the same soils in addition to lime. I should prefer to apply a less quantity of each, and give my wheat the benefit of those indispensable elements in the wheat plant, silica, phosphorus, potash, soda and magnesia always contained in leached ashes, rather than depend entirely on fertilizing with lime alone. I will first explain the nature and operation of lime.

Allow me to state a fact as the basis of my theory: I am informed by Mr. P. B. Porter, Jr., that his father Judge A. Porter, of Niagara Falls, has applied to his farm in that vicinity, over 4000 bushels of unslacked lime, and has realized again in his wheat crop—having some years over one hundred acres—the first season after the lime was used, sufficient to defray the whole expense of this fertilizer, well spread, at the rate of 40 or 50 bushels per acre, on his fields. It is proper to state that the lime was purchased at 6 cents a bushel at the kiln, and hauled but half a mile. The increase of crop was estimated at from 4 to 7 bushels per acre—giving a less gain on some acres than others. This case is deemed the more worthy of note from the circumstance that, the lime was applied to a soil lying upon a limestone rock, abounding in its pebbles, and therefore might naturally enough be thought not to lack this element in its composition. The result in this case confirms what I have before stated to the readers of the Farmer in an article on the "preparation of the food of vegetables," viz: That the cultivation of the soil, not only robs it of its lime by removing it, as a component part of the crops taken from the fields; but that the lime is largely dissolved in water, after its carbonic acid has been taken from it by the vital action of the roots of the plants, and this pure lime thus dissolved, is washed out of the surface soil, partly into rivulets, and partly into the subsoil. The only remedy for this waste is to apply more lime; and if it costs the farmer a high price, he must use more economy

in its application—in other words—feed his plants little and often. The principle use of lime is to correct any acidity there may be in the soil, and especially to absorb carbonic acid and ammonia from the atmosphere—important elements of cultivated plants, which are brought to the earth in all due quantities by falling rains and snows. The roots of plants take these elements from lime agreeably to the laws of vegetable life. And until the lime is entirely washed out of the soil it will continue to absorb again and again both carbonic acid and ammonia, and feed them to the roots of plants, which are as greedy to receive their appropriate nourishment with open mouths as young robins. A word or two about ashes.

As all the ashes found in a maple tree were dissolved in water before they entered its roots, why do they not all dissolve in water when put up in a leach tub?

Because the soluble silicates of potash and soda that enter the roots of all plants are decomposed by the vital action of such plants, and a considerable portion of the alkaline bases—potash and soda—are returned to the earth to dissolve more silica or flint. Now flint is the bone of plants, just as lime is the earth of animal bone. Hence a silicious sandy soil that lacks potash—this alkali being very liable to be washed out of such a soil—is greatly benefited by the application of ashes. Mark the operation of nature in this matter. There will be sufficient potash even in leached ashes to enable the roots of plants to dissolve a small portion of them.* This silicate of potash or of soda thus dissolved, enters into the pores of roots, passes up into the stem and is there decomposed, and precipitates its insoluble silicate. In other words the vital functions of the plant transform soluble ashes, into insoluble ashes, the free alkalis prevail, like those obtained by leaching ashes, only in a much weaker solution, return to the soil and dissolve more sand to be again taken up to give strength to a stem of wheat or grass. Now, lime will not form a soluble silicate with sand or flint; and therefore lime alone on poor sandy soils, such as are to be found in Albany county and on Long Island, will not bring good wheat or grass. Ashes operate much better, for the reasons I have given.

As the subsoil lying under the tilled surface, which has been stirred up and cultivated for 10, 20, or 50 years, abounds in alkalies and alkaline earths, subsoil ploughing is of great value in bringing up such elements of fertility to the light, heat, frost, and atmospheric influences of summer and winter. As a general rule, however, it is not best to bring up too much of this stiff soil at once, for it takes time to manufacture it into good surface soil.—16.

*Flint is only soluble in an excess of potash or of soda.

ASHES.—In my opinion the land best suited to the use of ashes, is that dry kind which abounds in oxide of iron. You may know it by the rust color of the ledges and small rocks and stones in its vicinity, as well as by its rusty yellow color, on such land, and also on such dry land as abounds in sour qualities, say black moss, sorrel, or decayed rosineous weed, on those kind of lands, I know of no fertilizer that equals ashes, leached or unleached. They neutralize the metallic and sour qualities in the soil, and give a fertility that cannot be brought about with common manures alone. I find no manure so valuable according to its cost as leached ashes are for wheat, or that will make grass grow so well, or hold out so long. Perhaps it is proper to state that I have not made a practice of using leached ashes on lands which have not been manured at all.—17. *Notice Farmer.*

AGRICULTURE AND ITS PURSUITS.

From the Boston Cultivator.

Permit me, Mr. Editor, to introduce myself to you as the travelling partner of a Lowell house. As such, I am much abroad in my business, which, although seemingly far enough removed from agriculture and its pursuits, yet having been endowed, I verily believe, by the hand of nature with a readiness for that employment, nothing relating thereto escapes me. I often find myself measuring a field as well as calicoes, and valuing it, as domestics, by the yard—which is also an old-fashioned measure of land. My avocations afford me occasional relaxation also; and as I have always praisured as well as preached the fine sentiment of that best code of laws for our government and guidance,—“It is more blessed to give than to receive;”—on the principle, that it is money put out to interest at about 50 cent. per annum, if you will pardon an allusion, smelling strongly of the counting-house—I am led to present at the shrine of public good whatever I may meet with in my travels, which may be considered worthy of record, in the shape of observation and reflection; constituting, by your leave, the pages of the Boston Cultivator as the altar upon which to offer my best and willing sacrifice—relying upon the promise, that the bread which is thus “cast upon the waters shall return after many days,” an allusion, no doubt, to the sowing of rice in the East, where it is cast upon the receding waters of the Nile, and trodden in by cattle, from whence, on the draining of these overflowsings, it springs up with astonishing vigour, “flooding bread to the inhabitants” after many days.” This is beautiful, harmonious to our perceptions, and quite in keeping with the business I have in contemplation—namely, the offer of my best services in the cause of agriculture and its pursuits.

And first, to begin at the beginning, allow me to relate a very agreeable conversation that passed between me and an enlightened tiller of the soil, whom I casually visited at his farm near Saratoga, late in the autumn, and found him busily engaged in turning over an old sward, preparatory to planting corn the next spring. I observed to him I considered he was right in so doing, as no doubt he would escape the ravages of the grubs in the spring, as well as expedite his labors at that busy season of the year, thus “killing two birds with one stone,” to which he replied—

D. Why, you seem to know a thing or two. It is no often that persons of your persuasion condescend to think of us “clogs of the valley;” and seldom still, are you able to make an observation, which does not show at once, that the cart is put where the horse ought to be. I like to meet with one in your way who can understand me, and will therefore, with pleasure, point out the why and the wherefore of my practice, which is not, I admit, preferred by every one, for reasons more than one. But to our purpose. You perceive that I plough deep, and by so doing, I bring up about an inch of the sub-soil; in some places much more than others. And as you appear a man of observation, I will point out to you how it is that I turn up more of the sub-soil in one place than another. You must know, this is the first year that I have used a plough with a wheel, having to confess a strong prejudice in favor of the swing plough, after observing if the plough is right, a good ploughman needs not the assistance of a wheel; it is a libel on his profession. But I have overcome my bigotry, and now perceive the difference between the working of the wheel and the swing plough, in a doubling it is at least equal to the rent of the land, in favour of the former. Now, we are coming to a very hard spot of ground, and you will per-

ceive that I shall turn up a greater portion of the sub-soil; here the land has never before been removed to that depth, for the swing plough would always rise against it, and when I lifted up the handles so as to set the point deeper into the sub-soil, the very act raised the mould plate so high as to place it out of proper position for turning the furrow properly; it was therefore only grubbed at best, and remained the whole year after, as you now see it, hard and impenetrable. There, what do you think of that? two inches or more of clay gravel!

E. Why, I should think, although I am an advocate for deep ploughing, that you have now too much of a good thing. I fear your crop will suffer from so large a mixture of sterile sub-soil with the surface earth. I see, however, very clearly, that the addition of a wheel is not a libel on the ploughman, but a great assistance to the plough, for it no longer rises at obstacles, but is enabled to overcome them;—throwing the furrows even, and equal in elevation, because of equal depth, which is by no means the case when the swing plough is used in rough and unequal land.

D. Your suspicion, that I have turned too much of the sub-soil, is rational, and were it not that my after management will be peculiar, I should no doubt utter in the way you surmise. I would therefore say, so soon as the land is ploughed, I shall put a roller over it the way it has been turned, without fear that it will lie so flat as to prevent the winter rains from passing through it—for it has been turned with the centre draught-plough, whose peculiarity it is to break up the land after the manner of the spade, a system which is beginning at length to obtain the favor of all enlightened husbandmen, their motto being, “spade labor, the motto of good husbandry.”

E. But will not the rolling of the ploughed land place it in the condition of that which is turned with too wide and flat a furrow?

D. By no means; the thorough pulverization of the soil, and the furrow-slice, lying in part resting on the edge of that last turned, is just sufficient to prevent the roller from operating otherwise, than to close every inequality that might oppose in the laying of the furrows; and thus to expedite the decomposition of the vegetable matter that is turned down by the plough, will either die or live—just the difference between profit and loss, in favor with the plough that will completely bury all, without laying the land too flat. Then, in early spring, or perhaps during winter, I shall spread about 30 bushels of lime per acre on the surface; and so soon as the land will work, incorporate it well with the frost-shaken earth, by means of the cultivator, going about three inches deep, without fear of disturbing the sod, that being effectually turned to the bottom of the furrow, by this admirable plough. And I may perhaps go over it again before planting, but at the time of planting, I shall strike out the furrows pretty deep with the same plough, and place at proper intervals the dung of my compost heap, planting upon this the seed, and covering it by drawing over it full three inches thick of the limed and pulverized earth of the surface. Now what do you think of my plan for sweetening the upturned sub-soil, of which you express such fear, by means of such exposure and repeated workings?

E. I have no longer fear or hope—for such management will, assuredly, come out right. But when do you again bring up the turf, which you are now burying to the depth of eight or nine inches?

D. Possibly, not until the spring after, when it will be completely decomposed, and rendered a fit pabulum for the nourishment of any plants that may be placed in the earth; the acidity,

which is always generated by decomposition, being neutralized by the percolation of lime-water through the pulverized soil, the only state, by the bye, in which lime can be taken up by the plants. I shall, however, sow turnip-seed among my corn at its last working, say a pound of seed to the acre; and thus, for fifty cents, realize a profit twenty times its cost.

E. But do you not intend to cultivate your corn by ploughing the intervals?

D. On no consideration; it being my plan to do all with the cultivator, working three inches deep; and I am quite satisfied that this will do all that is sufficient.

E. But is not three inches a great depth to plant corn; and is there no fear that it will rot, instead of sprout?

D. None in the least, if the land is dry and well ploughed, and has not been turned over so flat as to have imbibed and retained the winter rains, but where the furrows have been thrown flat and in wide masses, as is customary—nay, fashionable in some places—I should not know how to proceed. To this error in judgment, is to be attributed the objection, some times made to autumnal ploughing; the complaint being, the land turns up wet and cold in the spring; and so indeed it then must; the old sod holding water like a sponge, and preventing it from passing away by the sub-soil. Nor should I know how to remedy the evil, seeing it would be necessary to turn it back—undecomposed, as it must be, water having a tendency to prevent decomposition; that process only taking place after termination—for the purpose of exposing it to the atmosphere and the teeth of the drag; and requiring the summer's working, to bring about a state of things that might far better have been accomplished at the bottom of the furrow, without the labor or intervention of men. But it is no use; I hear the horn, and so do the horses. Accompany me to the house, and enjoy with me the fruits of our labour. It will afford me pleasure to introduce you to my household establishment, who are as competent as myself to judge of characters at sight, and who, as well as myself, will be gratified with a renewal of your visit at some future time.

The above, Mr. Editor, is presented as My first offering, should it be acceptable, I may again be tempted to glean another harvest.

LOWELL.

BOSTON CULTIVATOR.

SIXTH AGRICULTURAL MEETING AT THE STATE HOUSE.

Hon. Josiah Quincy in the chair. Subject—Root-Crops. Mr. Buck, Editor of the *New England Farmer*, opened the discussion.

Carrots.—The long Orange, Altringham, and White Belgium Carrots, are used in field culture. The last is a new variety and yields the most, but is considered deficient in quality. The Altringham yields more than the Orange, but is inferior in richness. Horses fed on them require much less grain. About one peck should be given to each horse per day. They give the hair a smooth and glossy appearance. They have a good effect on a horse that is addicted to stumbling, remedying the evil. Carrots can be raised with less expense than potatoes, and they are worth considerably more for horses and other animals. He raised 300 bushels on one-third of an acre. He preferred sowing in drills 18 inches apart, and the first of May was the best time for sowing, so that the plants may get established before warm dry weather, which is liable to destroy them. The best soil for Carrots is a deep rich loam, free from gravel. The scruffer or Dutch hoe is a good implement for weeding, and may be worked very near the plants.

Parsnips are valuable for cattle, though not much cultivated. On rich lands, 30 tons to the acre have been raised. They contain more saccharine matter than carrots, and they may remain out all winter, and may be red fresh from the ground in April and May. As they are highly nutritious, it is astonishing that no more attention has been paid to their cultivation.

Hon. Mr. Allen said, that we can raise roots to a great extent, but the question is, how far we can do it with profit. Potatoes are of great importance. They will grow in almost any soil or situation, yet pay for the best cultivation. Nearly one-third more may be raised in drills, than in hills. Potatoes degenerate. The remedy is to select good seed, and plant different kinds apart. A neighbour had pursued this course, with a favourite kind for 12 years, and they continue productive and excellent. Fair sized potatoes should be selected and planted whole. He found plaster to add greatly to the value of his potatoe crop.

Mr. Cole, Editor of the *Cultivator*, said that in all branches of farming, economy was of great importance, particularly in raising root-crops to advantage. He had pursued a plan that saved more than half the labour. In the fall prepare the land, manure and plough it. There will be no waste of manure by evaporation in cold weather, and it will not infiltrate beyond the reach of tap rooted plants. If the land cannot be prepared as here named in the fall, then do so as early as possible in the spring. The weeds will soon start, then harrow, plough, or use the scarifier, to destroy the weeds, and bring up a fresh lot of seeds to vegetate in turn. Continue stirring the soil every 8 or 10 days till the 25th or last of May; then have the seed prepared in the following manner: turn on water as hot as the hand can bear, and let the seeds soak in a warm place two days; then drain off the water, and lay a wet cloth over the seeds, and keep them warm, till they begin to sprout; then having the land freshly prepared, plant or sow the seeds, and the plants will be up before the weeds, which will be nearly destroyed by the frequent working of the soil. This way hard seeds, such as beets, carrots, and parsnips, will have 8 or 10 days start of such as are not soaked, and will bear sowing later. He found that on land thus prepared, he could weed more than six times as much as if the land had been prepared in the usual way. Potatoes will not mix except in blossom, which affects the seed only.

Mr. Metcalf said, that a neighbour of his fed his cows one week on ruta baga, and then a week on carrots, equal quantities of each, and so alternately, and they gave one-third more milk when fed on the former. He made an experiment by using long barn-yard manure, and hog manure separately, on the same piece of land, for potatoes—and the hog manure produced a third more than the long.

Mr. Parker found, from experience, that hog manure was not good for the potatoe crops. Subject for discussion next week—*Farming Implements*.

MANUFACTURE OF CHARCOAL.—A new process commended in the *Journal des Forets*, for this purpose, is to fill all the interstices in the heap of wood to be charred with powdered charcoal. The product obtained is equal in every respect to cylinder charcoal; and independent of its quality, the quantity is much greater than that obtained by the ordinary method. The charcoal used to fill the interstices is that left on the earth after a previous burning. The effect is produced by preventing much of the access of air which occurs in the ordinary method. The volume of charcoal is increased a tenth, and the weight a fifth.

DESTRUCTION OF INSECTS BY ARTIFICIAL MEANS.

The following is an extract from an article in the *British Farmer's Magazine*, by C. W. Johnson.

Various have been the successful recipes suggested for the destruction of the insects which destroy the cultivator's crops: thus *ants*, it is said, may be easily destroyed by toasting the fleshy side of the outside skin of a piece of bacon till it is crisp, and laying it at the root or stem of any fruit tree that is infected by these insects—put something over the bacon to keep it dry; the ants will go under; after a time lift it up *quickly* and dip it into a pail of water. For the destruction of slugs, warm in an oven, or before the fire, a quantity of cabbage leaves until they are soft, then rub them with unsalted butter, or any kind of fresh dripping, and lay them in the places infected by slugs. In a few hours the leaves will be found covered with snails and slugs; this plan has been successfully tried by Mr. Loudon, at Bayswater. Earwigs and wood lice are destroyed in the same way. For field operations, perhaps the best means of destroying slugs and worms is, common salt, an agent too little known for this purpose, yet its powers are undoubted.

No person has employed common salt: for the purpose of destroying worms, to a greater extent than Jacob Bush, Esq., of Ponsbourn Park, in Hertfordshire. His valuable experiments extended over some hundreds of acres of wheat. To use his own words—“In every situation, and at every time, the effect appeared equally beneficial.” The quantity per acre—“about four or five bushels sown out of a common seed shuttle.” The period—“In the evening.” The effect—“In the morning each throw may be distinguished by the quantity of slime and number of dead slugs lying on the ground. In some fields it has certainly been the means of preventing the destruction of the whole crop.” Six bushels of salt per acre, were applied by hand, in April, 1828, to a field of oats attacked by the slugs and worms, on the farm of Mr. John Slatter of Draycote, near Oxford. The crop was completely saved by this application, although an adjoining field, *not salted*, was completely destroyed by this sort of vermin.

Salt, too, is a complete prevention of the ravages of the weevil in corn. It has been successfully employed in the proportion of a pint of salt to a barrel of wheat.

The *black and green fly* may be killed by dipping the point of the young shoots of plants infected with them into a thin cream, composed of stiff yellow clay mixed with water; the clay will, it is true, look dirty upon the trees for a few days, but the first shower of rain washes it off, and the shoots will look more healthy than before the application; “there is no fear,” says Mr. Loudon, “of the return of the insects that season.” The scale in pines may be destroyed by the same mixture. The bug (*Aphis lanigera*) upon fruit trees may be killed by the use of the same clay and water, made as thin as whitewash, and mixing with every 6 gallons of it 2 lbs of cream of tartar, 1 lb. of soft soap, and half a peck of quick lime. “When you think,” adds Mr. Loudon, “that the weather is likely to continue dry for some time, take a bucketful of this mixture, and, with a large brush, wash over the bark of the trees, wherever you think it has been infected with the bug. A man will dress a number of trees over in a few days with a whitewash brush with this liquid; it is only necessary to be careful to do it in dry weather so that the rain may not wash over the mixture for some time. *Roses and*

teasps. A mixture of pepper, sugar and water, will speedily attract and destroy them. (*Gard. Mag.*, No. 37; *Quart. Jour. Agr.* vol. iii. p. 1071.) Moss and insects. Mr. Thomas recommends that the trees infected should be sprinkled with a fine powder in March, and again in October, on a foggy day, when the trees are damp but not dripping, and I have no doubt of its efficacy. The powder may be composed as follows: slack five bushels of lime, hot from the kiln, with common salt and water (say 1 lb. of salt to each gallon of water) When the lime has fallen to a fine powder, add, by small quantities at a time, a bushel of soot stirring it until it is completely incorporated. Mr. Thomas has found that one man can dust over with the powder fifty trees in a day, and that the moss in the turf, under fruit trees thus treated, is also completely destroyed by the application. (*Trans. Soc. Arts.*) Worms in grass plots may be readily destroyed by copiously watering the turf with lime water (half a pound of the hottest quick lime well stirred in each gallon of water,) or by sprinkling salt (10 bushels per acre) over it, or by strewing it on gravel walks in rather larger proportions. Lime is recommended for the destruction of the worm which sometimes injures young larch plantations, by Mr. Menzies (*Com. Board of Agr.* vol. vi. p. 163); coal tar and tar water, to preserve hop poles and other wood from the ravages of insects. (*ib.* p. 166.) The caterpillars on cabbages may be readily destroyed by sprinkling them with fine powdered lime; and when, some years since, a black caterpillar attacked very generally and extensively the turnips in some instances they were successfully destroyed by turning into the fields considerable numbers of common ducks. Heavy rolling, especially during the night, is in many cases destructive of slugs. Salt, and also rape powder, are pernicious to the wire worm. On many soils, the wheat crop sown after a summer fallow is never attacked by these vermin. Mr. Hillyard thinks he has escaped their ravages of late years, by ploughing his clover lays for wheat after the first year. (*Prac. Farm.* p. 115.) And it is certain that by occasional material variations in the rotation of crops, the number of predatory insects may be very considerably reduced (by depriving the larva of their particular and essential food), in cultivated soils.

Mr. Knight recommended the use of carbonate of ammonia for the destruction of the insects upon the pine and other plants. (*Sel. Papers*, p. 245.) Mr. Baldwin, in effect, does the same, when he commends the use of the steam from rot fermenting horse dung. (*Prac. Direc.* p. 30.) Mr. Robertson found soot (which contains ammonia), when diffused in water, to be an excellent application. (*Gard. Mag.* vol. ii. p. 18.) When speaking of the use of fermenting horse-dung, in the destruction of insects, Mr. Knight remarked, “I conclude the destructive agent in this case is ammoniacal gas, which Sir Humphrey Davy informed he had found to be instantly fatal to every species of insect; and, if so, this might be obtained at a small expense by pouring a solution of crude muriate of ammonia upon quick-lime; the stable or cow house would afford an equally efficient, though less delicate fluid. The ammoniacal gas might, I conceive, be impelled by means of a pair of bellows amongst the leaves of the infected plants, in sufficient quantity to destroy animals without injuring vegetable life; and it is a very interesting question to the gardener, whether his hardy enemy, the red spider, will bear it with impunity.” Ammonia seems peculiarly distasteful to insects. Carbonate of ammonia is often successfully placed in great masses to prevent the attacks of flies.

GARDENS AND GARDENING FOR FARMERS.

The value of a productive and tasteful garden, as a means of affording support, health, and happiness to a family, is far from being duly appreciated in this country, especially by farmers—those who have the least excuse for indifference or negligence in this matter. It is true, almost every farmer has his *vegetable patch*, to which he grudgingly devotes a few hours of time and labor that cannot well be employed elsewhere; but how few, comparatively, have what deserves the name of Garden, or know anything, from experience, of the advantages and pleasure it can afford! Not one family in ten produce even a tolerable supply of the various culinary vegetables adapted for the table throughout the year—to say nothing of the numerous kinds of delicious fruit, so easily raised, and so wholesome and grateful to all; or the beautiful flowers, that charm the eye and tend to make *home* delightful to those who ought to have no occasion to seek delight elsewhere. It is pleasing to observe, however, that some farmers do understand this matter, and their number is every year increasing. We will forbear censure, therefore, and offer a little friendly instruction, now and then, for the benefit of new beginners. And first, on

The Preparation of the Ground for a Garden.

It is not often that there is much opportunity for selecting the location; but very much depends on the proper preparation of the ground. Many gardens are comparatively worthless from inattention to this preliminary—causing the crops to fail in dry or wet seasons, and lessening the usual product one-half or more. The first great requisite is to obtain *great depth of soil*. If not naturally deep, with an open subsoil, it should be trenched or ploughed if possible, 15 or 18 inches deep, and well enriched with manure or compost. Proper draining is another matter of great importance, if at all inclining to moisture. Under-drains must be made, of sufficient depth to be out of the reach of the plough or spade. If the soil is made deep and rich, and well drained at the outset, it will be but little work to keep it in good condition afterwards, and its greater productiveness will abundantly repay the labor bestowed.

Laying out the Garden.

Farmers who wish to use the plough in their gardens, should arrange the permanent paths and beds so as to have them extend only in one direction, lengthwise of the garden, leaving open compartments for vegetables, which can be ploughed the whole length without obstruction. Cross walks can be made where desirable, when the ground is leveled for planting. A border about 6 feet wide should extend around next to the fence; that part along the front fence, next to the house or the street, may be planted mainly with ornamental shrubs or flowers, that part most exposed to the sun and sheltered from wind, should be appropriated to early sowings of lettuce, cabbage plants, &c., and the other parts to asparagus, rhubarb, perennial herbs, strawberries, raspberries, gooseberries, currants, &c. Next inside of this border should be a path about 4 feet wide, extending around the garden. Through the middle should be a path 5 or 6 feet wide, (opposite the entrance, if it can well be so,) and on each side of this a border 3 or 4 feet wide, to be planted with ornamental shrubs and flowers, occasional fruit-trees, and grape-vines on a trellis or arbor. If suitable material can be readily procured, it is advisable to make this centre walk of gravel, 6 or 8 inches deep.

Planting Fruit-Trees.

All kinds of trees, shrubs, vines, and hardy plants, should be planted as early in the spring

as the ground can be got in suitable order, or before they start to grow. Care must be taken not to allow their roots to dry, nor expose them to the frost when out of the ground; and if they are to be carried far, or remain long out of the ground, the roots should always be *puddled*—i. e., dipped in mud formed of water and loamy earth. In planting trees, where the soil is not naturally deep and porous, be sure to dig a very large hole, and fill in with good earth, so as to allow plenty of space for the roots to extend as they grow.

Sowing Seeds of Garden Vegetables.

The seasons are so variable, that no exact time can be specified for sowing the different kinds of seeds; but a few general directions may be found of service. For an ordinary farmer's garden, where no hot-beds or extraordinary means are adopted to obtain early productions, it will be soon enough to prepare the ground and plant one-half of the garden, in this climate, during the last half of April, or when the ground has become dry enough to work freely, and danger from severe frosts is mostly over. Peas are the first to be sown, and may be put in the ground as soon as the snow is fairly off, if it is desired. Sow one of the early varieties first, and Marrowfat 2 or 3 weeks afterwards. Lettuce and spinach may also be sown as soon as the frost is out of the ground—this should be done on the sunny border before mentioned. Next sow parsnips, carrots, salsify, onions, and early beets—(winter beets ought not to be sown till about a month later.) About the last week in April, or the first of May, plant a few early potatoes, also a little early corn, and some China or six-week beans. If the weather should prove wet and cold, the two last may fail; but if favorable, they will succeed. If there is no hot-bed or other source to depend on for a supply of plants, sow at this time cabbage, cauliflower, tomato, and celery seeds, on the warm border, and cover during frosty nights.

Early in May, or as soon as the ground begins to get warm, and danger from frosts is over, plough the other half of the garden, and plant sweet corn for the main crop, dwarf and pole beans, marrowfat peas, and early cucumbers and squashes. Sow early radishes on the border, or between the hills of cucumbers.—About a week later, plant the main crop of cucumbers, melons, winter squashes, and Lima beans. (These will be apt to fail, and the seeds rot, if the weather should prove wet and cold for many days after planting.) Sow all kinds of small seeds, as herbs, &c., on the border or elsewhere, about the middle of May. Radishes and lettuce may be sown every two or three weeks, if desired. Early turneps may also be sown, if the ground is suitable, and free from insects—they will succeed better later.

About the first of June plant more sweet corn if desired for late use; also, cucumbers for pickling. Sow more peas if wanted; blood beets for winter use, re-sow any crops that have failed, and fill up all vacant ground except what is wanted for cabbages, tomatoes, &c. Plant these as soon as the plants are of a suitable size.

Sowing Flower Seeds.

This should be done about the first of May, if favorable weather, and the ground in good order. The soil should be light and rich, and finely pulverized. Cover the smaller kinds very slightly; and if delicate or choice kinds, shade the spot from the hot sun until the plants are up, and water in dry weather. Thin the plants where too thick, and transplant them, if needed. Perennial flower-seeds not flowering till the next year may be sown later, and transplanted any time during summer or fall.

Weeding and Stirring the Soil.

Should be frequently attended to during summer. It will greatly promote the growth of crops, especially in dry weather. It is a ruinous mistake to suppose that weeds are a protection to garden plants at such times, or that stirring the soil makes it more dry. The very reverse is the fact in both cases.—*Gen. Farmer.*

FRUIT.

(For the British American Cultivator.)

In the course of occasional excursions through the country, I have often been led to remark the little attention which seems to have been paid to the raising of fruit. Through many parts you may ride a great distance without seeing an orchard, and when at last you see one, the fruit is very often small, hard, and worthless. The want of fruit trees on most people's farms is not owing to any dislike of fruit, for they can generally eat a delicious plum, or pear, or apple, and smack their lips after it, as well as any body. But it never seems to have struck them, while depending on buying, and too often begging from their neighbours, that, with a very small amount of pains and expence, they could have it of their own. And then again, where people are disposed to raise fruit, it never seems to have occurred to them that it is just as easy to have good fruit as bad. A tree that will bear good fruit will cost no more to buy it or raise it,—it will cover no more ground,—and it will require no more care than a tree that bears bad fruit.

A few shillings spent in purchasing a few trees of good varieties, and a little pains spent in planting them and taking care of them, will in a very few years, bring a family into the enjoyment of abundance of excellent fruit, which will be a very great luxury cheaply and easily purchased,—and will be all the more largely enjoyed, because produced by themselves.

Now is the best time to look after these matters. I have no faith in fall planting. In this country it will only succeed on very dry sandy or gravelly soils, and even then only very partially. In consequence of the roots being disturbed and some of them bruised and broken in lifting, and then continuing in that condition, in a dormant state all the winter, soaking in the wet of the fall and spring, without any of the active functions of life going on to counteract the tendency to mortification, a tree runs a much greater risk of dying, even in the driest soil by being transplanted in the fall, than in the spring. And in stiff soils it will not succeed at all. The best time to transplant trees is in the spring,—any time before the bursting of the buds. In my experience I have found them grow most readily when transplanted after the buds were considerably swelled but not burst. This will be, according to the season, about the latter part of April, or beginning of May. There is then an immediate and vigorous growth, which will instantly counteract the injurious effects of any damage done to the roots;—and in a very short time, an abundance of new spongioles, or small fibrous roots, will be produced. Where they have to be carried to any distance, however, it is safer to lift them earlier, as there will be then less risk of the buds being rubbed off by carriage. But where people are under the necessity of transplanting in the fall, every precaution should be used to prevent injury to the roots, and to prevent water standing about the tree in the fall or the spring.

There are now several good nurseries in different parts of the province, where trees of mostly all the approved varieties can be obtained. In selecting trees, choose rather

young thrifty ones of a vigorous growth. These will be much more likely to live, and will grow more freely and rapidly; and so will produce fruit sooner than old crabbed stunted ones, which people are very ready to pitch upon in the vain hopes of having fruit soon.

Where trees are to be set out as an orchard, in a large field subjected to ordinary farm cultivation, they ought to be from ten to twelve yards apart. But round the edges of a garden, or in any other situation where ground is some consequence, and where there is only a single row, so that they can get air on both sides, half that distance may suffice.

The holes should not be less than five or six feet wide, and fifteen or eighteen inches deep. In digging the holes, the top soil should be put to one side by itself, to be again returned to the hole, and the bottom soil thrown out to the other side, to be afterwards scattered over the surface. The holes should then be filled with good rich mould. The very best material for this purpose is sod from a ploughed field, and all the better if it has been ploughed the former summer, and the sod rotten, and best of all, if it is broken up for the first time, and the sod chiefly the original black mould. When the hole has been about two thirds filled with this, set in the tree, (having previously cut off, with a sharp knife, the mangled parts of any roots that may have been broken), spread the roots in a natural direction all around, turn in the loose mould, shaking it among the roots, and raising up such as may require to lay higher than others, and when the hole is full, tread the earth round the tree till it is moderately firm, and then turn in a pail of water to wash the earth completely in among the roots, and leave no vacancy. A stake should be driven in, and the tree tied to it with a straw rope, to prevent its being shaken and bent over with the wind, till its roots have taken a fast hold of the ground. It is the best way to drive the stake before the tree is set in, so as to avoid the risk of injuring the roots with it. A young vigorous tree planted in this way, in the latter part of April, will not only be sure to live, but will make 15 or 18 inches of new wood the very first season,—will continue to grow vigorously,—will blossom the second or third year,—and will commence bearing fruit the following year; whereas a scrubby old tree with its large fangs of roots, (inevitably mangled and broken in lifting), crushed into a little hole in the hard till grubbed out with the corner of a hoe, will, if it live at all, continue in a half-dead and half-alive state, without making any sensible progress or bearing any fruit for years, and then, perhaps, die after all. The only danger to be apprehended in digging large holes is, that in a stiff, retentive clay, and especially if the ground is level, water may lodge in them at wet times, and might injure the roots. To obviate this difficulty, the ground between the holes ought to be tilled as deeply as possible, either with the plough or spade, so as to let the superabundant water escape in the direction of the descent of the ground. This will have the additional advantage, that as the roots will, in a year or two, spread over the whole breadth of the hole, they will then get leave to spread freely in all directions, instead of being arrested in their progress by an impenetrable wall of hard till.

Some may think all this entirely too much trouble; but it should be borne in mind, that a few good trees, well managed, will pay better, and give more satisfaction, than a large number of indifferent ones, badly treated at first, and entirely neglected afterwards. Ample justice may be done to a few, when it cannot possibly be done to a great number.

Instead of getting a great many varieties of only one or two kinds of fruit it is much better to get more kinds of fruit, though fewer

varieties of each. For instance, instead of having an almost endless variety of apples, and no other kind of fruit, I would confine my attention to a few of the best approved and well tried varieties, and then have also a like variety of pears, plums, and cherries. There is indeed an almost endless variety of all these kinds of fruit, but especially of apples, and there is no wonder that people who want a few trees, get perfectly bewildered when they look into a nursery catalogue, or hear a nurseryman recommending all his different varieties. For the assistance of such people, I may mention a few varieties of each kind of fruit that are acknowledged to be good:

APPLES.—The Early Juneating, and the Harvest Apple may serve for early use; the Siberian Crab and the Cherry Crab, for preserves; and then, for fall and winter use, the Rambo, the Robson Pippin, the Spitzburgh, the Twenty-ounce Pippin, the Newtown Pippin, the Famen-o or Snow Apple, the Ithole Island Greening, and the Bourasseau would be a sufficient variety. There are all good apples. But the Rambo is my particular favorite amongst them all. In the list I have given, there are more highly flavoured apples, such as the Robson Pippin—these are handsome and larger ones, but, joining all good qualities together, it will be difficult to find one in the longest Nursery Catalogue to outstrip the Rambo. The tree itself grows of a handsome shape, which is always something worth minding, especially round a garden or near a house; and it is a large and constant bearer. The fruit, which is of a medium size, flat shaped, green, lighter on one side, and inclining to a brownish red on the other, and slightly speckled with red, is delicious and richly flavoured. With ordinary care it will keep sound and good through winter till the following summer. It is equally good for cooking as for the dessert; and what is a good recommendation of it to economical housekeepers is, that it requires no sugar when cooked. My own choice would be Rambo for the principal part of the selection, and two or three of each of the others according as there might be room. I dare say some may disagree with me as to these being the best varieties, for every man has his own taste in these matters, and it is right he should enjoy it, but it will be acknowledged by all who are acquainted with fruit, that the varieties I have mentioned are, at all events, good ones; and it is the beginner at orcharding gets as many of these as he can find time to dig large holes for, and then watches their vigorous growth during summer, he will have got so far into the spirit of the thing as to get acquainted with other varieties, and by another spring he will be able to judge for himself, if he chooses to add to my list.

Beside the good varieties that are to be got at Nurseries, there are occasionally first-rate apples to be met with through the country, that are either seedlings and never had a name, or the names have been forgotten if they ever had any. These may often suit a person's taste better than any of the varieties he can get at a nursery; and it has been young stocks fit for grafting, or trees in his orchard good for nothing but to be stocks, let him get some scions, and next month (if I am spared) I shall tell him how to put them on. The scions should be cut before the sap is freely in circulation, say in the end of March, or the beginning of April. They should consist of shoots of last year's growth, with an inch of old wood cut off with them. This will make them keep better, and take more readily when they are grafted. It is necessary to cut them so soon in order that their growth may be retarded until there is a vigorous and abundant flow of sap in the stock, when it will at once enter the veins of the scions, which will then grow forthwith, and the two will be more speedily united. The scions of different kinds should either be numbered with notches on the butt end, to correspond with the numbers in a catalogue; or else each kind may be wrapped in paper, and the name or some distinguishing mark written on the outside. Many different receipts have been given for preserving scions until the time for grafting; but I have never had them keep better than when just wrapped in paper, and laid upon the damp flour of a cellar. They should be seen to occasionally, and if they are getting too dry, they must be put in a damper place. If they

are too damp, so as to cause any appearance of swelling in the buds, they must be put in a drier place.

ANDREW HAMILTON.

Fairy Knowe, March, 1844.

(To be continued next month.)

AGRICULTURAL READERS.

In the early part of our experience as publishers of an agricultural paper, we found that the readers of such journals could be divided into two classes, one of which read with profit, the other with very little if any. Of course we do not include in either of these classes, those farmers who already know every thing, despise all agricultural reading, and treat the idea of any improvement in husbandry with the most profound contempt. The number belonging to this class is much reduced, but specimens are occasionally met with.

Farmer A. belongs to the class of readers that receive and peruse agricultural papers with little profit. The reason is, he does not sufficiently exercise his own judgment in reference to the details of farming. He reads a statement that such a farmer was eminently successful in the cultivation of such a crop; the growing or fattening of such or such an animal, or the management in general of a farm on the principles of rotation, and he determines at once to do the same. He does not stop to inquire whether his soil is suited to the particular crop he wishes to grow, whether it is too wet or too dry, too light or too heavy, rich or poor, but pursuing the course pointed out by the successful farmer, he miserably fails in his crop, or his animals, and frequently throws on the publication, or its correspondent, the blame which fairly belongs to himself.

Farmer B. on the contrary, is one of a class of readers that find a decided profit in the perusal of agricultural papers. He takes the same papers as A, but wholly escapes the mistakes into which A is constantly falling. The reason is to be found in the fact that he exercises his judgment in managing his farm; and is fully aware that a course of husbandry that would be successful on one kind of soil, or one particular location, would be ruinous on another. Because a great crop, or fine animals, have been produced under certain circumstances, he does not go on to infer that they will be so in all, and it is in this discrimination and adaptation, that the cause of his success is found. He reads, compares, reflects, and decides whether a course is suitable for him, his soil, or circumstances, before he adopts it. His agricultural reading furnishes him the means of doing this correctly, and in that he finds a great advantage.

Agricultural publications are not intended to supersede the use of the judgment in matters of practice, among those who receive them, their great office is to enable the farmer to judge correctly as to the proper course for him to pursue; to bring to his notice all improvements in husbandry and agricultural implements, that he may choose wisely for himself; to show what has been done by others, and the way it has been done, that if in the same circumstances, and it is desirable, he may do so too, and to excite to improvement by showing it is practicable and profitable. The farmer must do as do men in other cases, obtain all the light and information possible by reading, and then reflect, reason, decide, and practice for himself.—*Albany Cultivator.*

The range of earthly good is narrow and soon trodden; after a short time there is no variety, and the enjoyment is without hope.

FIRES FROM ASHES.

The records of our Fire Insurance offices show that the most common cause of fires is the use, or rather the abuse of stoves, and the next in frequency is, the deposit of ashes in wooden vessels, or other unsafe places. Strange as it may seem, not one-half of the dwelling-houses in this country are provided with safe places of deposit for the ashes daily accumulating from our wood fires, and, in a majority of them, a barrel or box performs the office that devolve on an ash-house of brick or stone. This wooden depository is not unfrequently placed in the wood-house, or some other of the out-buildings, ready at any time to ignite, or it is disturbed by winds, to furnish the spark that will kindle a destructive conflagration. It is generally considered the extreme of prudence, if the ashes, when taken from the hearth and glowing with red embers or coals, are placed in holes dug in the centre of the surface of the cold ashes, and slightly covered with them, and not allowed to come in actual contact with the sides of the box or barrel. To us it seems most strange, that under such circumstances, fires from ashes do not more frequently occur, and the great danger of such a disposition of ashes would prevent its recurrence were the evil fully understood.

Almost every family that is unprovided with an ash-house of brick or stone, and that is in habit of using a wood substitute, must have met with cases in which, in spite of all their care in depositing ashes, serious danger from fire has arisen, the boxes have been burned, charred, or destroyed, greatly to the wonder of the parties interested. Houses are burned, and the misfortune is placed to the account of the incendiary, when it should be placed to the account of the ash-box. There are some facts connected with this subject that should be more generally known, as they might have the effect of placing house-keepers and house-builders more on their guard.

Not long since, a friend of ours on taking possession of a place which had been unoccupied for several weeks, when he came to take up the first ashes made from his fires, found that his predecessor had used an old hog-head, and on examination this was found about half full of ashes, covered so as to exclude the rain. A hole was made in the centre of these old ashes and the new ones deposited. The next day there was an alarm of fire, and the hog-head was found in flames. Fortunately, the fire occurred in the day time, or his buildings, valuable as they were, would most certainly have been destroyed. This occurrence is not an unusual one, and the frequency of losses from this source, induced Prof. H., of Vt., to enter upon a series of experiments to ascertain the cause. From instances that had fallen under his notice, he was induced to believe, that when embers or live coals are placed among dry ashes, no matter what may be their age, or how long they have been deprived of fire, a second ignition takes place, which sometimes does not cease until the whole mass has been burned over, although it is frequently arrested before it has reached this extent. Boxes filled with cold ashes, had a quantity of red hot embers and live coals from the hearth placed in their centre, and then carefully covered and closed. It was found that the heat gradually increased, the fire extended through the whole mass, the box became charred on the inside, and when air was admitted combustion ensued at once. The same result took place when the box was burned through to the outside. In order to determine whether the combustion of the ashes took place in consequence of the coals which are usually left in ashes, boxes filled with sifted ashes were tried in the same way, and

ignition took place as before; proving either that a sufficient quantity of fine particles of coal remained to support combustion, or that a sufficient amount of nitrous matter was obtained from the atmosphere to allow ignition to take place. In either supposition, the manner in which numerous fires annually take place seemed clearly established, and the danger of placing ashes in wood vessels of any kind clearly shown. Nothing but absolute necessity should allow the practice of having barrels or ashes about our dwellings or out-houses. A safe ash-house is as indispensable as a kitchen, and no house should be built where this receptacle is not provided.

To the farmer, ashes are of great value, and to waste them or sell them, as many do, is the worst kind of prodigality. Leached or unleached, they are one of the best promoters of fertilization, and should be saved with great care; but never at such frightful risks as the destruction of the farm buildings. Of this there is not the least necessity; the cause of the danger once understood it can be readily guarded against, and if insurance companies would look to this matter in their policies, the evil might be arrested without delay.—*Albany Cultivator.*

GARDENERS' DEPARTMENT.

From the New York Farmer and Mechanic.

CULTIVATION OF APPLE TREES.

The cultivation of Apple and Pear Trees, whether the fruit be used as marketable produce or converted into food for stock is a subject of much interest and importance to the farmer and the gardener. When the prices for the fruit are sufficiently high to remunerate the grower it will be always best for him to dispose of his produce in that shape, but on the contrary, should the prices be such as to preclude the grower from obtaining a fair profit, we think he would find it to his advantage, rather than submit to such a sacrifice, to convert his apples and pears into domestic preparations—and thus place them, perhaps in a more marketable, but certainly in a less destructive form. The cultivation of the apple and pear, for these latter purposes has long been, and continues to be, a source of great profit, to farmers in the southern counties of England, and reference to the system as pursued there, may not be unattended with benefit, we think, to our own cultivators.

It is not unusual in Herefordshire, Devonshire, and Somersetshire, which may be termed cider counties, to pass in the course of a day's ride, many orchards, twenty, and thirty acres in extent. The soils best suited to the growth of the apple, and pear is found to be a mixture of clay and loam, and of such admixture the counties enumerated are found mostly to consist. We believe invariably the best plantations of trees bearing a sufficient quantity of fruit, of the richest, and most productive quality, are found in these loamy clay soils. Such a soil then in a sheltered situation, protected especially from the easterly winds is the most to be sought for, and it may be added that a very moderate degree of moisture will be found sufficient, as such trees seem to delight in dry stations, and the fruit is much more saccharine and rich, though it may not be so abundant, nor so juicy. The stocks bearing the grafts being ready for transplanting and setting out. Furrows should be drawn in the field, intended to be planted at a distance of about twenty feet from each other. The trees may then be planted in this furrow, also at the distance of twenty feet from each other. Thus by this arrangement, they will be formed into a square plantation. The proper season for setting them out is thought to be the month of October.

The holes in which the trees are planted, should be in proportion to the size and shape of the roots, so as to give them room to shoot freely in a loose earth; in such a soil as we have specified, from eight to ten inches will be found sufficiently deep.

As the holes are made, the top and bottom earth, should be carefully separated; when the Trees are to be planted, the end of every root, so far as it has been wounded in taking up, should be cut off. The best or surface earth, should then be put in the bottom of the hole, the tree then placed exactly in the centre, and held there by an assistant, care being taken that each root is laid in its proper place, so that there may not be any interference, one with the other. Then, having previously prepared a sufficient quantity of compost, made of rich earth, lime, well fermented manure, &c. well mixed together; about four inches depth of this dressing should be put on the roots, and the hole then filled up with the remainder of the natural earth; this done, two stakes should be driven into the ground, one each side of the tree about ten inches from the tree, so that all three may be in a line; a straw rope should then be placed round one of the stakes and twisted towards the tree, taking in the tree in the twist, and then proceeded within in a similar manner to the other stake, where it should be made fast. This cross-bar of straw will effectually prevent the young trees being disturbed by the wind, and at the same time, do no injury to its bark; furze-bushes, or other substances being placed round the body of the tree, to protect it from injury by cattle the operation of planting, may be said to be completed.

Apple trees should be dressed every three or four years; nothing being more desirable than to keep the roots from having to encounter a hard surface, which they must do in searching for nourishment, unless led from the surface—where the Orchard is laid down with grass, we have known great advantage to arise from allowing sheep to feed it as they will contribute to its fertilization by this natural manner.

The most profitable plan to pursue, however, is to keep the Orchard under tillage; where this plan is pursued, the apple-trees are observed to thrive in an extraordinary degree. This practice we have pursued in the County of Kent, in England, and with great advantage to the farmer, but perhaps under such circumstances, thirty feet will be near enough to plant the trees to each other. In such an interval of ground, there is plenty of room to work the plough. But ground under such culture as we are now suggesting, requires as must be evident to all, a plentiful supply of good manure and lime.

As the trees advance to their maturity, it is always indicative of good management to see their heads kept in good order, so that one shoot or branch does not interfere with another; and also to cause them to spread as widely as possible, since they are in that state, much less exposed to the mischief of boisterous and tempestuous winds in destroying the young fruit, or which is nearly ripe, especially, when the tree is plentifully laden with apples. A full grown apple-tree should have its lowest branches spread at four feet and a half from the ground, and all the rest diffused in regular distance, and form from each other, as nearly horizontal as possible, so that the topmost shoots may not be above twenty feet high; such a form and regularity may be attained by an early and judicious use of the pruning knife.

Upright shoots from the middle are always prejudicial, and the more open the centre of the tree is kept when young, the better founded is the hope of its being highly productive in its maturity.

CULTURE OF FRUIT.

GRAFTING.

From the Albany Cultivator.

One of the most important operations in the culture of fruit trees, is the propagation of varieties by budding and grafting. By means of these we exchange the unpalatable fruit of the wilding for the most delicious productions which art and nature combined have been able to furnish. And there are few gardens or orchards which might not be greatly improved by the introduction of the best varieties, the cultivation and care of which cost no more than that of the most worthless.

Budding and grafting have their respective advantages and disadvantages. Budding, requires less skill and care, but needs the subsequent attention of removing the ligatures, and heading down the stocks. Grafting does not need this subsequent care, but more skill is requisite in the operation. The peach and nectarine can rarely if ever be propagated by grafting; and budding cannot be performed on large and unthrifty stocks, which may often be successfully grafted.

Books on gardening describe many different modes of grafting; but the multiplicity of these often more bewilder the learner than instruct him. By understanding the essential requisites the operation is at once simplified, and it may be varied at pleasure without danger of failure. The two chief points are, *that the sap flowing upward through the stock pass freely into the graft, and that it returns without interruption from the inner bark of the stock.* To secure these both the wood and bark in the stock and graft, must be so cut as to admit of being placed in close contact, and when so placed, the line of separation between the bark and wood should, on one side at least, exactly coincide in both.

The most common and useful modes are the *whip and cleft grafting.* Whip grafting is adopted where the stock and graft are of nearly equal size. To perform it, the stock and graft are cut off obliquely with an equal degree of slope, so as to leave two smooth straight surfaces which may be brought into close contact. A transverse cleft with the knife is to be made near the middle of each of these surfaces about one-third of an inch deep, so that when they are pressed together, the tongue and slit thus made in each, may mutually and firmly interlock. It is then usual to bind them to their place with bass or corn husk; but it is better to have the jaws of the cleft in each so firmly pressed together as to render this unnecessary. The whole is then to be closely wrapped in a grafting plaster.

Where the stock is more than half an inch in diameter, cleft grafting is preferable. The stock is first cut off horizontally, and a split made in it at the middle of the cut surface an inch or two in depth; in this the graft, cut wedge-like, is inserted. To do it properly, it is requisite that the graft be so cut, as to fit the split as nearly as possible, which is to be opened by a wedge on the side opposite from the place for the graft, and that the jaws of the stock be strong enough to press the sides firmly and closely. After this, the plaster is applied.

It is convenient, in grafting, to have two knives, one chiefly for cutting, and the other very sharp, for smoothing the surfaces for contact.

All the branches and buds on the stock, must be carefully removed, that the sap may all go to the nourishment of the graft. Failure is often caused by a want of this care.

In heading down old trees, it is a common practice to graft into the large branches; it would be much better to cut off those branches, and to graft or bud into the young shoots which spring up in their places.

The practice of using clay to cover the wounds, is now nearly superseded by the far neater and better mode of applying plasters of Grafting Wax. These are made the most readily and cheaply by spreading the warmed wax over a sheet of unsized paper with a knife, or with a brush when melted, and afterwards cutting up into plasters of the requisite size. The best and cheapest wax is made by melting together one part of beeswax, two parts of tallow and four of rosin.

As grafting early in spring is generally preferable, (more especially for the cherry,) it becomes necessary in cool weather to soften the wax by artificial heat. A kettle of coals, or a lamp, may be used for this purpose.

BUDDING.

Budding is always to be performed when the bark peels freely, which takes place when the stocks are in a rapidly growing state. Cherries and plums should always be budded by the middle of summer; apples and pears often continue growing rapidly a month later, and peaches may be done even as late as the commencement of autumn.

It is indispensable to successful budding, that the stock be thrifty, and the shoot in which the bud is inserted not more than a year or two old. No skill can succeed in old or stunted stocks. For the cambium or mucilaginous substance between the bark and wood, which hardens into the new wood, and which cements the bud to the stock, exists only in sufficient quantities for this purpose in fast growing branches.

Every bud is an embryo plant, and the object is to transfer this from one tree to another. To effect this, it is only necessary that the bud be cut smoothly from the shoot with a very small portion of wood with it, and inserted under the raised bark of the stock in close contact with the cambium. Provided the stock is thrifty and growing; the bud smoothly cut off, and closely and evenly applied to the stock; the cambium uninjured by removing the barks; and the bud be kept to its place a few days by a ligature of moderate pressure; it is of little consequence how the operation is performed, and there can be little danger of failure.

The common way of cutting the bark to remove it, is to make a transverse cut and longitudinal slit, just through it, like the letter T. The bud is then slid downwards under the bark, in the middle of the slit. The whole operation should be performed with as little delay as possible.

Whatever mode is adopted, the bark should always be lifted by placing the knife at the edge, and not by running it under, as this always injures the cambium.

After the bud is inserted, the whole should be covered, except the bud itself, with a ligature of moistened bass, corn-husk, tow, or other soft substance, bound round it with just sufficient force to press the bud closely on the stock.

In about two weeks, or as soon as the ligature begins to cut into the stock, it must be removed. Early the following spring, the stock is to be cut off a quarter of an inch above the bud, and in a direction sloping towards it, and all the branches and other buds carefully removed that the whole nourishment may go to its growth. Sometimes (as in the apricot,) it is best to leave two or three inches of the stock above the bud, to tie the young shoot to, that it be not broken down by the wind.

Disappointment very often arises in budding the peach and apricot from the buds, though well set, being winter killed. This may be generally avoided by observing on the trees whence the buds are taken, on what part of

the shoots the buds have withstood the preceding winter, and selecting accordingly. These will commonly be found to be the earliest formed buds on the thickest shoots.

Shoots cut for budding should always have the leaves removed as soon as they are taken from the tree, about a quarter of an inch above the bud. They may then, if needed, be preserved several days in damp moss or cloth.

J. J. T.

Macedon, Wayne Co., N. Y.

SELECTING SEEDS.

Great improvement may be made by a judicious selection of seeds. In most all crops, some plants will be found more early, or in some respects superior to others. From such, seeds should be carefully selected.

If a cultivator desires to have any production earlier than usual, after procuring an early kind, let the first seeds that ripen, on a well grown and productive plant, be secured, and so proceed year after year, and in this way a variety will be obtained that will excel in earliness.

Every variety of vegetable may be rendered more productive, by selecting, every year, the seeds of the most productive and well formed plants. And this method of improvement will be found the cheapest that can be pursued, as the difference in the cost of good and poor seed is a mere trifle.

Select peas for seed that grow in long, full pods, on vines that bear abundantly, and if you would have them earlier, take those which ripen first. Choose beans in the same way. Select seed corn from stocks that bear two or more good ears, and take the largest and best formed ears. Choose from stocks that are large at the bottom, and run off to a small top, not very high.

If you would have early onions and few scallions, select for seed a few that ripen first, and have a good form. Select the handsomest turnips for seed, having just the form you would choose, if you would have fine crops for the market; and by this selection for years, you will get a variety that may be relied on.

Follow the same rule in every thing. Like produces like, is a general law of nature; the same in the vegetable and animal kingdom: there are some exceptions, but not enough to affect materially the general crop of production, and by these exceptions we may profit; for when the exceptions are an improvement, we may follow them out, and in a short time establish a new race or variety; but when the exceptions are inferior, we can reject them.

These objections to general rules offer great advantages, and a wide field for improvement, while the disadvantage is a mere trifle. As a spark will kindle a great fire, so from a single seed of superior excellence, large crops of this superior production may be raised, and widely disseminated for the benefit of thousands.

There is no subject of improvement so much neglected as this, it is within the means of all, and yet few give attention to it. Too many are content to plod on in the old way, and while they spend much in manure and cultivation, they neglect a much cheaper way of improvement, or to avail themselves of those made by others in this way, when at less expense they could accomplish it, and perhaps more effectually.

We selected seed from the first pumpkin that ripened, in a variety which we cultivated for several years, and last year some were ripe in two months and five days from the time of planting. Numerous instances could be cited of the above remarks, but it is so clear to every common observer, that no evidence is necessary; but it is important that they be reminded of a subject so much neglected, and with so much loss.—*Southern Ag.*

MANURES.

The labours of those Chemists who have particularly devoted themselves to the Chemistry of Vegetation may be divided into classes, the theoretical and the practical. The former including inquiries into the higher and more abstruse departments of Organic Chemistry, whilst the latter consists entirely of investigations into those matters which are most immediately interesting to the farmer; the former seeking to discover the philosophical laws which govern the process of nature, the latter merely endeavouring to elucidate those laws, as far as may be necessary in order to explain practice, and lead to its improvement. Both these inquiries are of great value, though they have very different objects in view. The philosopher who busies himself in searching out those great laws of the universe, which at once exhibit the wisdom and goodness of the Creator, feels comparatively little interest in the minor details of practical experience; whilst the purely practical man, even if he have the inclination, has not time to follow the more abstruse inquiries of the former: he will naturally ask, what shall I be the better for such knowledge! and how will it benefit me?

Those who would wish to make farmers propose that which cannot be done, and which, if it could, would do more harm than good. To teach a farmer the theories of chemistry, would be to give him information which it would be totally impossible for him to apply, an on the other hand, to instruct him in what is commonly called practical chemistry would be equally useless, because if he tried to avail himself of such knowledge, he would be more likely to mislead himself, than to profit by his experiments. Farmers are taught how to analyse a soil in a simple and accurate manner, and yet all the information they could derive from such an analysis, would amount to no more than a good ploughman knows after walking across a field; nay, the result of such an analysis would probably be of far less practical value than the ploughman's opinion.

The chemistry which may benefit the farmer is neither philosophical chemistry nor the chemistry of the laboratory, but it is what may be called the chemistry of Nature. Those simple and elementary rules which affect the ordinary operations, either of Nature or art, constantly going on before us. Such knowledge is useful to every one, and, sooner or later, its value will become apparent.

Every farmer is in the habit of using manure of some kind or other; he spreads over his land something which causes the plants to grow more vigorously, and yield him larger crops than he could obtain without it. A variety of different substances are used in different parts of the country to produce this effect, what then is the substances which these different manures contain—and on what does their fertilizing power depend? Setting aside, for the present, the mechanical effects which many manures produce, and which are frequently very important, let us briefly inquire what is the composition of the ordinary kinds of manure. The great bulk of manure consists of decaying vegetable and animal matter, dead plants, and a variety of substances of vegetable origin, which, as they formed constituted living plants, must necessarily contain those matters which plants require. When these vegetable or animal substances decay, for they are very similar in composition, they are in part dissipated into certain gases; there is left after the escape of these gases a quantity of dark-coloured cherry-looking matter, which is comparatively unchangeable, and besides this there remains a small quantity of fixed earthy and saline substances, which are kinds of vegetable or animal matter contain. The chemical elements of ordinary manure are

certain compounds of carbon, oxygen, hydrogen, nitrogen, and sulphur, and fixed salts.

The rotting of vegetable substances in manure is just the reverse of what takes place when plants grow, as they are gradually separated again into those very substances from which the plants were originally formed. In consequence of the many kinds of sources of these gases which form part of the food plants, that exist all over the globe, it follows that the air always contains a small portion of them diffused throughout it, and hence plants can always obtain from it the gaseous substances which they require; nevertheless, as the quantity present in the air is always very small, the addition of manures, which yield more of these gases to growing plants than they could otherwise obtain, is always useful. With regard to the earthy and alkaline salts which plants contain, the case is very different; when we remove a crop, we take away a quantity of these salts, and the soil of course, then contains less of them than it did before. There are not the same means naturally provided to restore to the soil these salts as there are to restore to the air those gases which are essential to the growth of plants. It is true that following does, to a certain extent restore the soil to its original state, but without going into that subject, it is evident that it is even more important to supply saline, than gaseous matter to plants. Both are important elements of manure, but the former is the most important, because the natural means which exist for keeping up a regular supply of them to plants are less complete than those which regulate the formation and distribution of the gases.

The old chemists of by-gone times used to marvel greatly whence animals obtained the earthy substances which constitute their bones; it is now known that all animals which feed on plants obtain the phosphate of lime which constitutes the greater part of bone, from plants. All plants contain phosphates of lime and magnesia, hence these are important constituents of manure.

The manufacture of pearlsh and potash from plants has existed for a very long time. Plants are burnt merely for the sake of their ashes, which being rich in potash are valued as a source of that alkali. All plants contain alkali, either potash or soda; hence salts of these alkalies are constituents of many of the best manures; and the ashes of plants, rich in alkali, have always a beneficial effect when applied to land. The earthy phosphates and alkaline salts are the most important of the saline constituents of manure.

Looking at ordinary manures in a chemical point of view, we may divide them into those which supply the gaseous matters on which plants feed, those which supply alkaline salts and phosphates, and those which supply both at the same time. Farmyard dung is of the best kind, and therefore it is adapted for all soils; it contains all that plants can want. Soot acts principally from the gaseous matters which it supplies to plants; whilst bones, and more especially burnt bones, may be taken as an example of a manure which supplies earthy phosphates.

Bearing these facts in mind, it becomes of the first importance to inquire what are the cheapest sources of these substances, and how they can be furnished to plants in the most economical and uniform manner.—E. Selby.

FOR BURNS.—Burns or scalds may be relieved, and speedily cured, by an application of ink and raw cotton, to take out the fire, and a salve of lard and Jamestown weed, to heal the wound. The salve is made by stewing the leaves or seeds of the weed in lard, and straining through any thin cloth. This is an excellent article for sores of any kind. Fresh cuts are soon healed by its use, and if you have a horse with galls or sore back, this is a superior remedy. Every family would act wisely to always have the salve in readiness.

Another good remedy for burns, is a preparation, one of lard, one part of resin, and a half part of turpentine, simmered together till all are completely melted. The burns, with an application, should be washed daily and dressed with fresh ointment.

WHAT CAN FARMERS DO?

A great many things that they do not do now. They can raise greater crops, and make more money. They can improve their stock and save money, and they can be every way more independent and work no harder. But will they? I think so. One great thing in the way of many a farmer's improvement is that he never begins. Talk to him about improving his farm and he tells you it's all very well, but he is too poor to undertake it. And one great defect in Agricultural publications is the fact that they do not often point out the way whereby a poor man or a farmer in slender circumstances can be benefited. We read of what is done and doing in England, but there is but little of English agriculture that could be adopted with profit or advantage in this country. We now and then get glimpses of German and French farming, still there is but a small portion that can be of use to us in a new country where produce is low and labor high. Whatever is done abroad that is of any service to us we can do here, and that being so little it is easily known.

As a general rule, the land in this country does not produce one half so much of any crop except cereals, as it is capable of doing, and it will require not a third more labor, to get double the amount.

The great secret of large crops both at home and abroad, lies in the judicious application of manure. And the saving and applying manure is about the only thing that we can imitate to advantage, in foreign agriculture. There are but few farmers who cannot double, in one way or other, the manure now applied to their land—and that is the way for them to increase their crops. On wheat farms, for instance, always plow in a good quantity of clover. I have but little doubt that wheat land may be made to yield a good crop and be cultivated for fifty years to that crop alone, and constantly improve. I know this is against theory, but I also know that it is not contrary to practice. Sow clover every spring upon the wheat, and apply plaster, then sow upon the young wheat plant, in the fall or spring, from five to ten bushels of air slacked lime. This is contrary to all theory and practice, but then it is not contrary to common sense. I know that we are told to put on an acre 50 to 500 bushels, but soil that does not prove but what a less quantity would answer. Lime is applied either as a kind of manure which is to benefit directly the growing crop, or else it is applied upon a stiff clay soil to ameliorate its texture, and make it more mellow. In the latter case a large quantity may be usefully applied. But as we have few farmers whose land needs such a quantity, I shall confine myself to the smaller number of bushels, and an annual application. Lime is an important constituent of wheat, and it should therefore be abundant in the soil to mature a good crop. The utmost that could be taken up by a growing crop would exceed probably one hundred pounds to the acre, or less than two bushels. The balance would remain in the soil in some shape. The tendency of all mineral manures is to sink in the soil. A large application, will in time, be washed down so as to be beyond the reach of the growing plant. Now then would it not be better to make a small application and make it of use. Or to use the words of a friend with whom I was conversing the other day, "I shall apply lime to my land as I apply grease to my boots, little and often." But it may be said that so small a quantity can do no good. We see in the case of gypsum, that so small a quantity as one bushel in the acre has doubled the product of the crop. Why shall not lime, if the land or crop need it, have equally as good an effect if applied in as small a quantity as I have recommended?

The practice in France of liming once in about ten years, and applying but some 20 bushels to the acre, is decidedly more worthy of our adoption than that of the English.

I have no great faith in many of those new notions about manure, nor of those patent, and other wonderful manures. I believe generally there is a good deal more lumber than lumens in them. If the farmer will endeavor to put back upon his land as much and a little more than he takes off, his farm will constantly improve. If otherwise he will exhaust the fertility of the soil. Less will produce less, till he sells out and goes to a new country.

For a wealthy farmer it is easy to apply his 50

bushels of charcoal, his 100 bushels of lime, and his salt, and plaster, and all that to the acre, and get large crops, when the application is properly made. But for the small farmer who has no surplus capital, it is all moonshine to suppose that he can go into these improvements. Still the small farmer can make a great deal more manure than he does, without any extra expense if he will only husband his resources, and he will do so as soon as he finds it for his interest.

Make all the manure you can, and if possible apply it to a spring crop. Put your ashes on your corn, potatoes, and grass lands, and not into the ash pedler's cart.

Closely connected with the subject of manure is the management of our stock. There is no excuse in this country, for a man who has a farm, to be without good warm shelter for his stock, and no man can thrive who allows his stock to stand shivering through the cold days, and colder nights of our bleak winters, with no other protection than the broad canopy of heaven. It is a species of cruelty and inhumanity that gets its deserts here,—and I hope is not forgotten hereafter. There is no man, I don't care who he is, that has stock, but can provide them a comfortable shelter.—*Genesee Farmer.*

TAKE CARE!

[FROM THE CENTRAL NEW YORK FARMER.]

Should be the watchword of every farmer. There is no time to dispense with it, from the first day of January, to the last day of December. And yet, some would judge from appearances about the premises of some farmers, that they hardly knew that those two words belong to the English language. To take care of any thing, whether it be buildings, fences, crops or animals seems never to have entered their minds as a thing of any importance. And even among those who would probably like to be called pretty good farmers, there is too often a manifest disinclination to take care. But, although they are too small words, and quickly told, the good or ill success of every farmer depends in a great measure upon the observance or neglect of them. No great number of acres, nor any amount of hard labor will enable any man to dispense with them. If you would even raise a flock of chickens you must take care of them. But little time is required to raise a hundred, provided you have the necessary conveniences for taking care of them.

If you wish to raise a litter of fine, thrifty pigs, take care of them. While they run with their mother, she must have enough to eat, of something; when you take them off, they must be fed not once or twice a day only, but five times at least—not twice as much as they can eat at a time, but just as much as they can eat, and no more.

If it is your intention to raise two or three or half a dozen calves, you may as well have good ones as poor ones, only take care of them. In the first place, breed from the best stock you have, or can produce, and then feed regularly with a sufficient quantity of something, not so much matter what, they will readily learn to eat almost any thing—sour milk, or whey, with a trifle of meal, answers a good purpose, only let it be regular as to time and quantity, "This pampering and stuffing and overfeeding," as Mr. Bement says, is not the thing, it is not necessary. Good stock can be raised without it, even from our native breed. But a little care, especially the first summer and first winter they must have.

If you wish to have your fodder hold out well, and your cattle in high order in the spring, take care of them. Have every animal in the stable if possible, not only nights, but cold stormy and windy days—feed little at a time and often, not only night and morning, but through the day,

If you wish to increase your quantity of

manure, take care of it. Keep your cattle close in the yard, and put up eave-troughs to carry off the water, so that there may be as little wash as possible. If there is a drain at one side of your yard where all the moisture runs off, try and prevent it. A speaker in a late agricultural address says, "you may as well have a hole in your pocket, as a drain from your barn yard." If you would raise good drops, take care of them. They must be fed as well as your cattle, or they will not grow. Plough thoroughly, to cut and cover won't do, neither will you have a great crop of grain, and a very great crop of weeds at the same time. Have an eye to your fences—if a board gets loose, or a rail is ready to tumble off, try to find it out before your cattle do.—If you have a family of children growing up, to take your place in this busy scene of things, when your race is run—you would probably be glad to have them become wiser and better men and women, than their father and mother were before them—then take care of them. Feed and clothe their bodies decently, but don't forget to feed their minds. Give them all the opportunities of a good and substantial education within your power. And whether they be male or female, and whether you expect to leave them rich or poor, learn them to take care.

TORONTO HORTICULTURAL SOCIETY.

THE Toronto Horticultural Society will hold its first Prize Exhibition on *Wednesday, the 15th day of May next*, at the hour of 11 o'clock, at the CITY HALL, which, by the permission of his Worship the Mayor, has been placed at their disposal for that day. Admittance to Members and their families, Free.

The following prizes will be awarded, viz:

Articles to be exhibited for prizes.	Culti- vators.	Amateurs.
	1st 2d. 3d.	1st 2d. 3d.
Best Green-House Exotic,	20	10
Best 12 Green House Plants in flower, (named)	20	10
Best collection of Geraniums (named)	10	5
Best 24 Geraniums in flower, (named)	10	5
Best collection of China Roses, ..	10	5
Best 6 Tea Roses,	10	5
Best 6 Carnations,	10	5
Best Picoties,	10	5
Best Auriculars,	10	5
Best collection of Fancies,	10	5

	1st.	2d.
Best pint of Strawberries,	20	10
Best 12 Table Apples,	10	5
Best 12 Cooking Apples,	10	5
Best brace of Cucumbers,	10	5
Best 50 heads of Asparagus,	10	5
Best dish of Sea Kale,	10	5
Best 12 Stalks of Rhubarb,	10	5
Best 25 Radishes,	10	5
Best 12 heads of Lettuce,	10	5
Best peck of Spinach,	10	5
Best 3 heads of Cauliflower,	10	5
Best 3 heads of Cabbages,	10	5
Best half-peck of Kidney Beans,	10	5
Best quarter peck of New Potatoes,	20	5
Best dish of Mushrooms,	10	5

Members of the Society only can compete at this exhibition.
A subscription of 5s constitutes a member.
Toronto, March 17. 1844.

TORONTO TOWNSHIP AGRICULTURAL SOCIETY.

THE THIRD MEETING of the Toronto Township Auxiliary Society, in connection with the Home District Agricultural Society took place, pursuant to notice, on Friday, the 12th March, at Mr. Whiteside's Inn, on the 2nd line, east of the Centre Road.

Owing to the very bad state of the roads, and being a very rainy day, the attendance was not quite so large as had been anticipated. A considerable number of farmers, however, added their names to the list of subscribers to the Township Society.

And it was resolved by the Society, that "A PLOUGHING MATCH shall take place on the Second Wednesday in the month of April, when a number of Premiums will be awarded at the following rates:—For the best performance, £1 10s; for the second best, £1 5s; third, £1; fourth, 15s; fifth, 10s. There may be other premiums awarded, if the funds of the Society will admit."

Mr. DAVID SMITH, one of the Directors of the Society, has given an excellent sward field for the purpose, and intends to pay a certain amount per acre, for the work done, into the hands of the Treasurer of the Society; which money will go towards making up the prizes for the successful competitors. The field given by Mr. Smith, is part of lot No 6 4th con east of the Centre Road.

The Ploughing to commence at 10 o'clock, A.M. March 15. 1844.

LLOYD'S CANADIAN PATENT PLOUGH.—No. 4.

THE Subscriber begs to inform the Canadian Farmer in general, that he has constantly on hand an extensive stock of LLOYD'S CANADIAN IMPROVED PATENT PLOUGHS, which are manufactured under the immediate inspection of the inventor, Mr. Lloyd; and which have given general satisfaction in every portion of the Province, where they have been used. It is the opinion of a number of the best ploughmen in the Home District, that Lloyd's Improved Ploughs will ultimately supersede the Scotch Wooden Ploughs, on account of their cheapness and durability. In every section of the Province where the various patterns of the common Patent Plough are in use, the agriculturists in those localities, would find it tend greatly to their interests to purchase "Lloyd's No. 4. Patent Plough," as it is acknowledged on all hands to be an admirable implement for ploughing sward, or any other description of work. The mould board, wrought iron, and wood work, are very similar to the most approved Scotch Plough, and the shears are hardened in such a manner, that they will wear much longer than wrought-iron laid with steel.

The above Ploughs will be supplied to order, at either wholesale or retail, on very reasonable terms.

CHRISTOPHER ELLIOT.

PHENIX FOUNDRY, YONGE STREET, Toronto, March 15 1844.

HENRY E. NICOLLS,

NOTARY PUBLIC, CONVEYANCER AND LAND AGENT, &c.,

No. 4., Victoria Row, King Street, Toronto.

DEEDS, MEMORIALS, AND PETITIONS drawn with neatness and despatch. Titles to land searched and proved.

Mr. Nicolls having more good land than the Government, requests all Emigrants and others who intend buying either Wild Lands or improved Farms to give him a call. Lands purchased for persons at the Government Sales, located and money paid on the Deeds procured at a moderate charge.

Lands claimed and prosecuted under the Heir and Devisee Act, and Deeds taken out.

Militia Claims and U. E. Loyalists Rights procured and bought. Bank Stock and Government Debentures bought and sold. Petitions to the Governor and Council for pensions or lands prepared and prosecuted. Money advanced on letters of credit upon Great Britain, mortgage or personal security.

N. B.—On all Government Land business or mortgage, a fee of five shillings will be required before the business is taken in hand.

LAND Scrip, AND BANK STOCK FOR SALE.

All Letters must be Post paid.

Toronto, March, 1844.

GARDEN AND FLOWER SEEDS—A large assortment of the choicest varieties of Flower Seeds, and a small collection of the best Garden Seeds, on sale till the 30th of March, when the Store will close, at Messrs. BEDDOME'S, 7, City Buildings, King Street, Toronto.
March 1, 1844.

SMOKY CHIMNEYS.—No Cure, no Pay. The Subscriber begs leave to offer his services to all persons troubled with this dreadful calamity, upon the above terms; and, after thirty-five years' practice, feels confident of success.

Prices fixed before the work is begun.

All letters (post paid) addressed to

G. BROWN, BUILDER, &c.,

Yonge Street, near York Mills.

will be attended to.

N. B.—Persons about to build would do well to avail themselves of his superior method of constructing Chimneys.

March 1, 1844.

1,000 SUGAR KETTLES FOR SALE BY—

JOHN HARRINGTON.

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

GARDEN AND AGRICULTURAL SEEDS FOR 1844.

J. 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, Mitchell & 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, Merchants, 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 BIGELOW.

Tacumseth, Bond Head, P. O. }
February 15, 1844. }

YONGE STREET NURSERY AND FLOWER GARDEN.—**JAMES FLEMING, Seedman 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 sorts. 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 SHEEP, of the Leicester and South Down cross.

THOMAS MAIRS,

Township of Vespra.

February 15, 1844.

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 HUNTER'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.

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 Conversational 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 6 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.

IMPORTANT AGRICULTURAL WORKS FOR 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.

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

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 scruples in recommending them to the favourable notice of his brother farmers.

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

D. G. FORBES.

Township of Whithy, Jan. 16, 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 leave to acquaint his friends and the public in general, that in addition to his Foundry and French Burr Mill Stone Factory, he has engaged Archelaus Tupper, who is an experienced Mechanic, 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 Jinney. Also, Broad and Narrow Looms, Shearing Machines, and Gigs, Napping and Teazling; Stoves for heating Press Plates; Press Screws. Also, Grinding Shearing Machine Blades; Felling 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, Ploughs of different patterns; Mill Screws of all kinds; and Darnall Irons; Bolting 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 in, 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.

Published Monthly. **W. G. EDMUNDSON**, Editor and Proprietor, to whom all Orders and Communications must be addressed (post-paid). TERMS:—One Dollar, per annum, payable invariably in advance. TERMS TO AGENTS—15 copies for \$10, 40 copies for \$20.

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