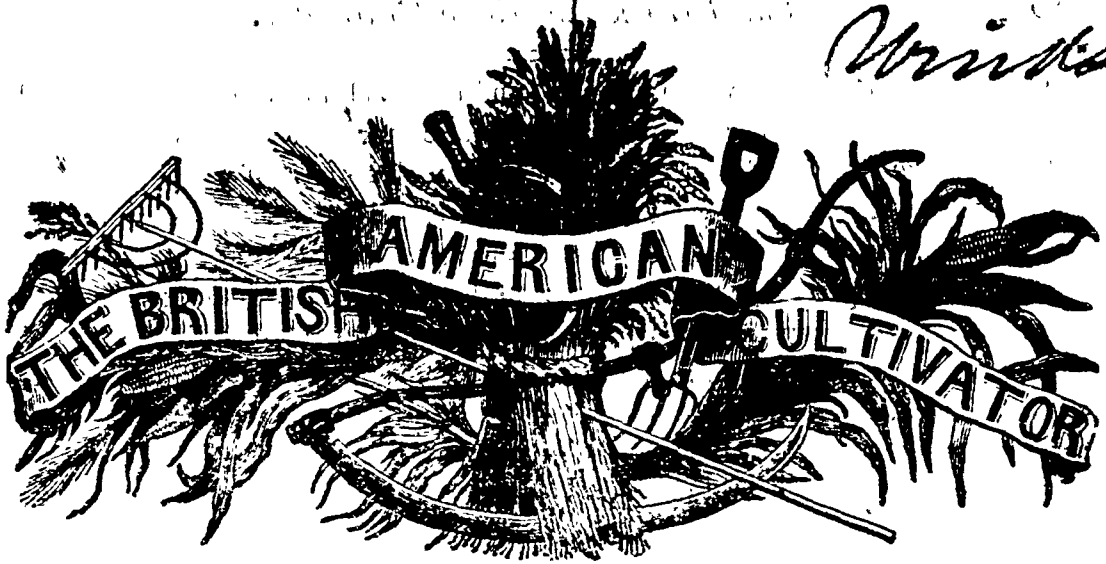


W Charles Hunt
Windsor



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

NEW SERIES.]

TORONTO, MAY, 1845.

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WORK FOR THE MONTH.

This is truly a joyous month for the farmer; his crops by the close of the month should all be in the ground, and the result of the coming harvest will materially depend upon the mode of tillage and general skill displayed in the operation; it therefore might prove acceptable to the practical cultivator, to advance a few hints, which may be practiced with advantage by the Canadian farmers.

Barley.—The different species of this grain cultivated in this country, are distinguished, as *two-rowed*, *four-rowed*, and *six-rowed* barley; though the six-rowed is the only variety that is grown to any extent. The proper period for sowing barley is, when the forests are putting forth their leaf, which in an average of seasons, takes place about the first of May. The ground for this crop requires to be fertile and in a high state of cultivation. When all things are considered, a loose vegetable mould is the best adapted for barley, and upon such soils, with one autumn and two spring ploughings, have the enormous quantity of fifty bush-

els per acre been frequently grown in the Home District; and in some rare instances, under this mode of management, have upwards of sixty bushels been harvested. From ten to twelve pecks per acre is the quantity of seed sown by the best cultivators; and the plan of ribbing or sowing the seed in rows, is found to increase the quantity of produce and materially improve the sample.

Maize, or Indian corn, ranks next to wheat in importance, in such sections of the province where it may be cultivated without injury from spring and autumn frosts. But comparatively little attention has of late years been paid to the cultivation of Indian corn, in consequence of its frequent failure; but the writer firmly believes that it might be made nearly as profitable a crop as wheat, if only due attention were paid to the selection of early varieties of seed and to its general culture. Some idea may be formed of the importance in which the maize crop is held in the United States, when it is stated, that in 1842, a little upwards of four hundred millions of bushels were raised in

that country. There are varieties of Indian corn to be had in the State of Maine, and we believe also in Eastern Canada, as well as the Eastern Provinces of British America, which ripens in three months from the period of planting. A variety so precocious as to ripen in twelve weeks would, if introduced in Western Canada, prove of immense importance to the agricultural interests.—The ground for maize should not only be well cultivated, but it may be made extremely rich with barn-yard manure, without any fear of injuring the crop, but on the contrary with great benefit, as a liberal quantity of manure, is found to have the effect of forcing the crop to early maturity. The usual time of planting is by the middle of May, and it should not in any case be deferred after the 20th of this month. Almost all kinds of artificial manures may be advantageously applied to corn, either in the hill, or broadcast. Ashes, lime, soot, and poudrette, are all valuable fertilizers, and when applied to Indian corn in the hill, act like a charm, in promoting fertility and vigorous growth. In corn culture, it is a great point to push forward the young plants with such rapidity as to place them as soon as possible beyond danger from depredations of the grub, cut-worm, and other insects. For this purpose the seeds may be soaked twenty-four hours in a solution of saltpetre, urine, and the drainings of the stables, and cattle-yards. To protect the seed from being eaten by insects, birds and vermin, it may be coated with liquid tar, and subsequently rolled in ashes, plaster, lime, saltpetre or sulphur, which two last are considered among the best of steeps. Judge Buel's treatment was as follows:—I soak my seed twelve hours in hot water, in which is dissolved a few ounces of saltpetre,

and thus add, to two gallons of seed, half a pint of tar, previously warmed and diluted with a quart of warm water. The mass is well stirred, the corn taken out, and as much plaster added as will adhere to the grain. This impregnates and partially coats the seed with the tar. The experience of years will warrant me in confidently recommending this as a protection for the seed." The usual depth of covering the seed is from three to four inches; and from four to five grains in a hill is found abundant, when the rows are three feet asunder, and the hills in the rows the same distance apart; though the better way, doubtless, is to plant the grains about ten inches asunder in four feet rows; by this means the land is completely occupied with the crop, with the exception of a small space in the rows, which is required to give a free circulation of air among the plants. The free use of the cultivator, and horse and hand hoe is the only treatment this crop requires, after planting, which will be more fully described as the season advances.

Potatoes should be planted by the twentieth of this month at the farthest. The disease which has so generally infected this crop during the past few years, has not been as yet satisfactorily accounted for, and the various remedies that have been prescribed have signally failed in preventing the epidemic, if it may be so called, from spreading. If it be the work of an insect, the most feasible plan that we are acquainted with is, to plant upon land newly cleared from the forest, on which there is a liberal supply of wood ashes. Where this plan can be practiced, it will doubtless secure a full paying crop, free from every species of disease. Where the crop has been at all affected with the disease, it would be advisable to change the seed. In all cases

where it is practicable, seed should be produced from new land, being the first crop after the land had been cleared from the forest. Some attribute the failure to the fact, that the varieties in use, "*are run out.*" If this be true, new varieties from the seed must be substituted; but in all probability the cause of the potatoe failure may be attributed to the depredations of some species of *animalcule* with which this country in former years were not acquainted; and if this view be the correct one, the plan of planting the potatoe crop upon newly burnt land, or land very recently cleared from the forest, is unquestionably the one which will be the most likely of any with which we have any knowledge to secure a crop of sound potatoes. As an article of food for both man and beast, potatoes may be ranked next in importance to wheat; and indeed if by any means the cultivation of this vegetable should have to be suspended, as was the case very recently with the wheat crop in the eastern section of this province, such a calamity would be more severely felt than was the loss of the wheat crop; it therefore behoves every philanthropist to give the subject under notice a careful investigation, by which means the evil may possibly be checked, in its first stages.

Culture.—The mode of cultivating potatoes, may be varied to suit the nature of the soil, and other circumstances which may have an influence upon this crop. The largest yield of potatoes, within the recollection of the writer, gave a return of 500 bushels per acre. The mode of culture was as follows. The ground, being winter wheat stubble, was heavily manured, and ploughed and harrowed in the autumn, and received two ploughings during the spring. The seed were planted in rows, in every third furrow, the

sets being placed twelve inches asunder in the rows, and the rows averaging about three feet from each other. The third ploughing, or seed furrow, averaged about three inches in depth, which placed the sets near the surface. A short period after the seed were planted, the ground was thoroughly harrowed with a pair of light seed harrows, and the process repeated every six days, until the potatoe tops averaged three inches in height; in a fortnight after the last harrowing, a double mould-board plough was used to mould up the rows, which was the only after treatment until they were harvested. By this mode of culture, no hand, or even horse-hoeing were required, as the repeated ploughings which the land and crop received, destroyed every species of weeds, and brought the land into the finest state of culture. Various other methods have been practiced with success, but space will not admit of a detail; but the main point at present appears to us to be, the adoption of some plan that will have the effect of allaying the evil spoken of, which may probably be done by following our suggestions; and where this cannot be done, the cuts should be steeped twenty-four hours in a strong solution of brine and blue vitriol, the strength of which must be regulated so that the germinating power of the seed shall not be at all impaired. The cultivation of this crop may with much profit be greatly extended in those sections of the province where this disease is unknown; and this may especially be done, with a certainty of profit, as a highly important machine has of late been invented and patented in New Brunswick, by the use of which the labor of *twenty able-bodied potatoe pickers* may be performed by one man, two horses, and the machine. Further particulars upon this subject will be given at an early period.

The Ruta Baga or Swedish Turnip should also be sown by the 20th of this month, later may answer, but if sown late, the turnip-fly is almost certain to destroy the plants in their early growth. In a country like this, where manual labor bears so disproportioned a price to the value of the produce, machinery instead of hand labor should be employed in the cultivation of the crop that requires much labor, especially in that of root culture. In view of this point, all roots crops should if possible, be drilled and cleaned with cultivators and the various other species of horse-hoes that are applicable for the different kinds of root crops. As the cultivation of this plant is practiced upon an extremely small scale, and as there is no probability that a material increase will take place so long as the price of butcher's meat is so very low, we shall confine our remarks upon this topic to a few points which may be of some use to the practical farmer. We advise every farmer in the province to plant at least a half an acre of Swedes. The ground should be well prepared, by frequent ploughings, harrowings, and a liberal manuring. The seed should be drilled in rows at the rate of one pound and a half per acre, which should be soaked in train oil a few hours, and subsequently dried or rolled in sulphur. The crop should be hand or horse-hoed, as often as may be required, to destroy every species of weeds. The rows should be twenty two inches, and the plants in the rows about twelve inches asunder. By early sowing and careful management, 300 bushels may be raised upon two roods; these stored, and regularly fed in the spring months to the cows, calves, and ewes, will produce proof positive of the correctness of those hurried hints. No crop cleans the ground better, or is more

suitable for a fallow crop than turnips. Spring wheat and clover are almost certain crops, when followed in close succession after a well cultivated crop of turnips. There is but little art of getting a good crop of turnips in Canada; the main points are to prepare the ground in a suitable manner, sow early, and force the crop into a vigorous growth by using stimulating manures and practicing a thorough system of clean culture; any farmer may do all this at least upon a small scale, and we doubt not but that the cultivation of this important root will be greatly increased when more experience is had by the Canadian farmers.

Carrots.—The soil which is the best adapted to carrots, is a loose sandy loam. No root crop for field culture pays better than the largest and best varieties of carrots; and it appears strange that so little attention should have been paid to the cultivation of this root as winter food for horses and cows. The ground should be prepared for carrots in a similar manner as has been recommended for turnips, with this difference, that it cannot be ploughed too deep. The most successful carrot growers in Europe, plough to the depth of twenty-two inches. The seed should be sown or dibbled in drills, at the rate of five pounds per acre, by the tenth of this month, and earlier if possible. The seed of the carrot is so extremely light, and clings so closely together, that it is with great difficulty that it is sown. To obviate this, they should be mixed with sand, and as they are remarkably slow to vegetate, it is advisable to pour a quantity of the drainings of the barnyard upon the sand and seed, which should be allowed to remain in a damp state for three or four days, and then the seed may be more equally distributed among the land and they would germi-

nate as quickly by the aid of this preparation as any other seed. As soon as the young plants can be distinctly seen in the rows, they should be thinned out to the distance of about six inches, and the land between the rows should be well cleaned with a horse-hoe or cultivator to clear it of weeds. It is needless to give a further description of the proper mode of treating this crop, as but few Canadian farmers are disposed to give that minute attention which is required in the management of field carrots; but it should be borne in mind, that by careful cultivation, no crop pays better, as nine hundred bushels per acre have been repeatedly grown upon land that would not have half that quantity of turnips; and indeed no crop, with the exception of parsnips, will yield so large a return from a given quantity of ground.

The Parsnip requires a good hazel loam, or a strong, deep, permeable soil, and the deeper and finer the land is made, the more certain the chance for a good crop. The objections raised against the cold winters of Canada being a natural impediment in the way of introducing a profitable business in turnip culture, are completely removed in the culture of parsnips; this crop, as was remarked in the *April Cultivator*, is improved by the action of a severe winter's frost. As the season is now far advanced, and it is high time that both parsnips and carrots should be in the ground, it would be advisable to sow or drill both of those root crops after potato-fallow, if not already occupied with spring wheat or barley; at all events, nothing short of well cultivated, deep and rich soil, will answer a good purpose for these crops. Every farmer should cultivate at least *one-fourth of an acre* of each, and as much more as circumstances will allow.

Mangel Wurtzel as yet has been very rarely brought into cultivation in this country; in fact not one farmer in ten would scarcely know this root if they were to see it. It is cultivated extensively in England and Germany, and takes the preference to Swedes in many localities. The advantages which this root possesses over Swedes are, they are very little liable to be injured by the fly or grub; they will produce more weight per given quantity of ground; they are off the land much earlier, and they are better spring food for cattle, especially cows. The best method of sowing the seed, is to put in with a dibble upon ridges thirty inches apart; each seed being deposited one and a half inches in depth, and twelve inches distant in line. These constitute the principle root crops which may be profitably cultivated in the fields; and if a farmer who cultivates 100 acres of arable land, would adopt the plan of growing two or more acres of potatoes, and one acre of each of the other crops mentioned, and by sowing the land yearly with spring wheat, to be followed in succession by clover, and winter wheat upon clover ley, there would be no need of making naked summer fallows.

Artificial Grasses, in this, like most other new countries, are cultivated to a very limited extent; and probably the ill luck of many a grain-growing farmer may be traced to the neglect of not seeding down his land in regular rotation with his white or corn crops. No description of improvement will at all compare with an extensive cultivation of the artificial grasses, when taken in connection with a thorough system of clean culture. It therefore would ill become the conductor of a journal like this, if due attention were not paid to this important branch of husbandry. The season is no

far advanced that there is no time to be lost in sowing such cultivated grasses and other crops for soiling as is adapted to the climate of Canada.

Clover will grow upon almost any quality of soil, but on marly land it appears to be most at home. It may be sown with spring wheat, barley, flax, and buckwheat, or even oats, or winter wheat, provided that the ground occupied with the other crops is not adapted for seeding down; barley, flax, and spring wheat, are the most suitable crops for sowing down with grass seeds. The usual quantity of seed sown upon an acre, is six pounds of clover mixed with four pounds of timothy, but in most cases it would pay to increase this amount.—In England, from twelve to sixteen pounds of clover is not found too much, but this of course would be too great a quantity for the new lands of this country. Some soils require double the amount of seed that is required by others, and the best method to ascertain the exact quantity that would secure the greatest return of hay, would be to make a few experiments, which will answer the same end, if tried upon a small, as upon a large scale. Clover seed should always follow the last harrowing, and be rolled in immediately; and it would greatly benefit the young plants to have sown upon the crops about one bushel of gypsum per acre.

Rye Grass may be mixed with clover, at the rate of one peck of the former with fourteen pounds of the latter; but if sown alone, one bushel per acre will be the requisite quantity to ensure a thick growth of hay.

Sainfoin and *Lucerne* may be cultivated upon light sandy soils. Repeated experiments have been made with these

grasses, and it is now quite certain that they may be profitably cultivated upon any warm description of soils. It would scarcely be necessary to extend any remarks upon the proper mode of managing those grasses, as but few, if any of our readers, will be prepared to try any experiments in their cultivation the present season. It would, however, be well for those who are able, and whose soil is adapted for these grasses, to make an experiment upon a small scale. If only a small seed bed be sown in the garden, their value as hay and soiling crops, as well as their adaptation to our climate, may be fully ascertained.

There are other grasses that deserve some little attention at the hands of Canadian cultivators, especially orchard grass and white clover. An experiment in sowing Indian corn broad east, for winter food for stock, might be made;—the ground for this crop should be clean, and rich with barn-yard manure.

Calves now require much attention.—After the first fortnight, skimmed milk, hay tea, and flax-seed jelly is found the most profitable food that can be given to calves. Various other compounds have been recommended, but none, with the exception of oatmeal mixed with pot liquor, are worthy of trial. In addition to the first mentioned compound, which should be regularly given to them morning, noon, and night, they should be provided with a little well cured hay, and with a good bed of clean straw. There are other operations that will require the attention of the farmer in the course of this month; but he who is wise enough to practice even one half of what has been here recommended, will be abundantly intelligent and discerning to practice such other improvements as will secure a profitable system of husbandry.

MAPLE SUGAR.

This subject was liberally discussed in the February and March numbers of the *Cultivator*, notwithstanding, we have not fully satisfied some of our readers upon the practical details of the best methods of manufacturing sugar from the maple. The enquiries of our Bowmanville correspondent will be answered in season for the next year's operations; in the mean time, we would advance a few hints which may encourage our yeomanry to engage largely in this profitable business. Some idea may be formed of the profits and extent of this business, when we state, that in the United States, 24,000,000 lbs. were manufactured in the spring of 1840; this is one-sixth of the whole amount of sugar manufactured in that country during the year alluded to.

As we have previously stated, the finest samples of loaf and common white sugar, may be manufactured from the sap of the maple; and to supply the entire Canadian market with all the sugars required for domestic use, and even a large surplus for exportation, would require a very little exertion on the part of the Canadian people. Without exaggeration, we may say, that there are millions of acres of land in Canada covered with a beautiful growth of sugar maple, which are now unproductive, and which might be converted into a source of wealth, equalling at least one million of dollars annually. The manufacture of sugar from the maple, as well as Indian corn stalks, presents many claims upon the attention of the people of this province, which we shall not fail in exhibiting to their view in due time. Country merchants are in the habit of purchasing small lots of sugar from their customers; and those who purchase any considerable quantity, would find it to their advantage to erect the necessary apparatus for purifying sugar, by which means they would enhance the value of the article fully 25 per cent, at a very trifling cost. The only kind of maple sugar sold in the stores is, the coarse brown loaf. This might be dissolved in hot water, and a gill of pure lime water added to every

pound of sugar; this will neutralize the acid peculiar to this kind of sugar, and will greatly facilitate its granulation.—The lime added to the syrup, forms a neutral salt, which is found easily soluble in alcohol. To remove any particles of extraneous matter that may be in the syrup, for 100 lbs. of sugar, mix the whites of six eggs with a quart of new milk well beaten, and a spoonful of saleratus—this compound must be mixed with the syrup before it is scalding hot. The fire employed for sugaring off must be moderate, until the scum has been removed; when this process is completed, the syrup should be taken off the fire and strained, which will thoroughly remove any small portions of scum that may not rise upon the surface of the boiler. By this process a pure yellow sugar may be made; and to change it into a beautiful white article, nearly equal in colour and appearance to the imported loaf sugar, Dr. Jackson of Boston recommends the following process: “Procure sheet iron cones, with an aperture at the small end or apex; let it be coated with white lead and boiled linseed oil, and thoroughly dried, so that no part can come off. Let the sugar be put into these cones, stopping the hole in the lower end until it is entirely cool. Then remove the stopper, and pour upon the base a small quantity of strong whiskey or fourth proof rum; allow this to filtrate through until the sugar is white; when the loaf is dried, it will be pure white sugar, with the exception of the alcohol. To get rid of this, dissolve the sugar in pure boiling hot water, and let it evaporate until it is dense enough to chrysalize. Then put it again into the cone moulds and let it harden. The dribblets which come away from the cones, while the whiskey is draining, may be used for making vinegar.” Merchants, as well as agricultural societies, would find it productive of lasting benefits to this province, to give proper encouragement to the production of superior qualities of domestic manufactured sugar, thereby creating a laudable stimulus among the cultivators in the production of one of the most extensively used imported luxuries.

We extract the following very able remarks, from an address delivered by Dr. Daniel Lee, the present editor of the *Genesee Farmer*, and one of the most prominent members of the New York State Legislature. The sentiments contained in those extracts are truly worthy of being well understood by every Canadian farmer. It is folly to suppose that the stand-still system of agriculture will enable the farmers of this country to compete with the rest of the agricultural world in the production of such articles as the country is adapted to produce to perfection. If others by superior management, and by the employment of improved farming implements, do afford to under-sell us in our markets, we of course must copy from their mode of management, and also employ labour-saving machines, in the performance of the cultivation of the soil. There can be no reason urged, why the Canadian farmers should be less active and enterprising than their American neighbors. In that country they pull their flax, and reap their wheat, and carry out various other operations by horse-power; and the same expeditious methods will have to be practiced here, where the land is adapted for the work, or else it will shortly be said without cause, that it is useless to try to compete with our enterprising neighbours in producing the staple articles of the country; all we want to make this a most prosperous agricultural country is a large increase of skill; this we hope to have as soon as the farmers of Canada will unite in their strength, in elevating the noblest of all pursuits,—that of agriculture,—by evincing an anxiety to obtain knowledge and a willingness to impart it to others; and a desire to make experiments that are not of a doubtful nature, which may be within their reach.

When men of long experience and deep research in agriculture make known any discoveries that are calculated to be useful, a universal willingness should prevail among farmers, in testing and reporting the results of those discoveries as carried out upon their several farms. Nothing short of such united efforts will place the farmers in our high latitude, in a position to defy any competition that may be brought into their market or the markets of the mother country.

If agriculture be a science, which none at this enlightened age will dare to question, then it must be governed by certain fixed laws, which may be understood and practiced by every man who cultivates the soil, if he will be at the trouble of informing his mind upon the subject. If it is of any advantage to one man, that he be in possession of that superior order of intelligence that he may, by examining his soil, form a pretty correct idea of its adaptation to the particular crop he wishes to cultivate, certainly it would be of infinitely more importance that the entire mass of cultivators were in possession of this description of knowledge.

From the learned Doctor's address, it will be seen that wheat requires a comparatively small proportion of vegetable soil; and where deep soils abound, that it is necessary to plough deep to ensure a perfect crop of wheat. This is no idle theory, and only requires to be practiced upon a small scale, to secure the approbation of every tiller of the soil. For fear that it may be considered presumptuous in endeavouring to impress upon the readers of this journal what have been so ably advanced by the learned speaker, we shall make no further comments, but merely advise those that may have a desire to obtain a more thorough knowledge of these matters, to make a few experi-

ments in the manner and with the substances described.

Address before the Monroe County Agricultural Society, at Rochester, N. Y., October, 1844, by Dr. Daniel Lee.

Mr. President, and Farmers of Monroe:— The fact cannot have escaped your notice, that competition in growing breadstuffs, provisions, wool, and other agricultural products, is fast becoming a matter of deep interest to those that must live, and hope to prosper, by cultivating the earth. This growing competition is quite unavoidable. The introduction of labor-saving machinery into every branch of the mechanic arts, throughout the whole civilized world, is driving millions from factories and workshops into rural pursuits, who, but for the invention of *iron men*, that eat no bread, nor meat, nor wear any clothing, had remained the good customers of the farmers, instead of becoming his active rivals, if not ruinous competitors. Agriculture is the great business of civilized man; but, like every other branch of human industry, it has its ups and downs, its sunshine and its storms. Its sunshine is most enjoyed by those that avail themselves of all substantial improvements in the art and the science of good husbandry. These advantages give to the fortunate few, who are wise enough to study and understand them, a double capacity to supply the markets of the world, by increasing to that extent the productive power of their hands and their fields.

Think not that I have a hobby to ride in this matter. I fear bitter experience will soon, too soon, demonstrate the truth of the remark, that it is *unsafe* for the farmers of Western New York to despise the improvements of the age, and the competition of the whole world beside.

At the Agricultural School near Dublin, the pupils have raised, this season, a large field of potatoes averaging 750 bushels per acre. With a population of ten millions living on a territory but little larger than this State, and exporting more bushels of grain than all the United States, the fact has already been established, that in spite of your protective duty of ten cents a bushel, Irishmen can, and do, export potatoes to Boston and New York, and sell them at a little over a half cent a pound!

Nothing is more probable than the supposition that some one of you has harvested and brought to this market 100 bushels of wheat from five acres of land. Let me assume that the wheat weighed 60 pounds to the bushel, or 6,000 pounds, and that the straw weighed twice as much as the grain—in all 18,000 pounds.

As a simple, practical question, tell me how much of these 18,000 pounds of matter came from the soil? Tell me how much came from the air?

Conceding that what your cultivated plants draw from the ever-moving atmosphere, need not be restored to the fields whence they were taken, can you say as much of the alkalies and other minerals removed with your crops, from the soil

where they grew? Long experience answers this question in the negative.

I regard it as one of the greatest discoveries of the age, that about 97 per cent. of the ingredients which make up the whole substance of wheat, rye, corn, barley, oats, peas, and beans, exist in the air in inexhaustible quantities. To transmit these aerial form bodies into the plants above-named, and into grass and roots, at the smallest expense, is the object of nearly all your hard work.

If I were to burn in your presence 100 pounds of wheat, including both straw and seed; you would know of a certainty that this bread-bearing plant might all be converted into air and vapor, except something less than three pounds of ash, which would remain. Now who among you that loves good bread, and would be glad to produce it as cheaply as any one, will refuse to learn how nature changes all the vegetable matter thrown into the air by combustion, fermentation, rotting, and the respiration of all animals, back again into grain, grass, and roots? Believe me, nature is quite as willing to give you 40 bushels of wheat to the acre, and from one bushel of seed, as she is 20, if you will only *study and obey her uniform laws*.

A wheat plant is a living being; and the number which may be grown and brought to full maturity on an acre depends on the *quality and quantity* of food which you feed to them. It may not be profitable to feed so high as to raise at the rate of 320 bushels per acre, as one gentleman in England professes to have done. But that you may grow 40 bushels on an acre, at a less price per bushel than with any less number, I have no doubt.

The raw materials to form 36,000 pounds of ripe wheat plants are not expensive in this section of the country. Nor is the knowledge expensive to combine and use these materials, so as to save a considerable portion of the ordinary cost of producing 40 bushels of this grain. But to render this information entirely satisfactory and generally available, an experimental farm is needed, to demonstrate practically how much of the ingredients contained in a field (i. e., what per-centage) comes from the air, and what from the soil.

A few years since, the mayor of Albany (Friend Humphrey, Esq.) planted three acres in corn, on the poor sand plain near the city. The quantity of vegetable mould, or organic matter, in the soil was small. As an experiment, he dropped in each hill on two acres, with the seed, a few grains (or perhaps drachms) of *horn shavings*. The other acre received nothing as a fertilizer. On the former he harvested 60 bushels per acre of shelled corn; on the latter about 15.

I learn from the *Southern Planter*, that farmers in that neighborhood, as an experiment, have paid so high as \$3 per 100 pounds for guano—the price of good pork, in many places—to feed to corn and other plants; and find the food not too expensive for profit. Thousands of tons of this fertilizer are annually consumed in Great Britain, at the cost of 20 or more dollars per ton.

The mere soaking of seeds in strong solutions of common sal-ammoniac and saltpetre of the shops, enables plants to increase largely their weight. Now, the question is—do they derive this additional nourishment, which, as in the case of the horn shavings, adds 45 bushels of grain to the acre, and stalks in proportion, from the soil or the atmosphere?

From the known sterility of the soil, I think at least 90 per cent. of the grain comes from the air. In a mellow, deep soil, where the roots can easily expand, and be accessible to atmospheric influence, no matter how destitute it may be of organic substances, plants gain the most by the aid of concentrated fertilizers.

M. Boussingault heated a fair clayey soil to a high temperature for some time till he had burned out all the organic matter. In this earth he planted a few peas, and watered them with pure distilled water. Some of them blossomed and bore perfect seeds, drawing all their carbon and nitrogen, as well as oxygen and hydrogen, from air and water. Had these peas had the benefit of common rain-water, there can be no doubt that the carbonic acid and ammonia which it contains would have been of essential service in promoting their growth.

An acre of land wholly destitute of vegetable matter, and containing all the minerals required for the plant, might produce a small crop of peas. The same is probably true of corn, clover, and artichokes. Mons. B. tried a similar experiment on wheat, but it would not grow to maturity without the aid of some organic matter. To prepare a field to produce a good crop of this grain, other plants, which draw nearly all their nourishment from the air, should be first cultivated and "ploughed in" to enrich the earth. There is good reason to believe, however, that nearly all lands in Western New York lack, not so much vegetable mould, or organic matter, as some of the mineral or purely earthy ingredients necessary to produce large crops of wheat. This opinion is not lightly formed. It will take up too much of your time, however, to go into details to explain the facts and reasons on which it is founded.—

Thorough draining, deep ploughing, and a perfect pulverization of the soil, I regard as of great importance, and calculated to improve our present system of farming. On the subject of draining we have much to learn, and more to practice.

Deep ploughing has the double advantage of letting off, to some extent, any surplus water, and of bringing to the surface those saline substances without which no plant can flourish. When any of these are wholly wanting, there is no remedy but to apply to them. Fortunately, only a very small per-centage of most plants is mineral matter.

One hundred pounds of wheat straw give only 3½ pounds of ash; and 81 per cent. of that is called *silica*—the basis of common sand. Before this sand can enter into the circulation of plants to form the base of their stems, to keep them upright, (and many a field of wheat has fallen down, and been lost from a lack of this vegetable base,) it

must combine with potash or soda, to render it soluble in water. Loose, sandy soils are usually barren, because all the alkalies are dissolved and leached out. Without these, pure sand cannot enter the roots of plants, and they die from the lack of their natural ailment. The application of wood ashes to such soils increases largely their fertility, although they contain very little organic matter.

In clayey soils, the potash, soda, and magnesia are not washed out. After they have been partially exhausted by injudicious cropping, the application of lime sets the balance free to unite with silica, and form silicate of potash or soda, or double salts, which are soluble in water, and thus enter the roots of plants. These salts are decomposed in the chemical laboratory of vegetables. Silica is deposited in their tissues, and becomes again insoluble. But a small part of wood ashes, when put up in a leach, will dissolve, although every particle of them was dissolved before it entered into the organic structure of trees or smaller plants. On the decomposition of the compounds of silica, potash and soda return to the earth, combine with and render soluble, more sand. This is carried, with its circulating fluids, into every part of the vegetable, and deposited where needed. It is doubtless in this way that a small quantity of alkali will serve to convey into the stems of corn, grass, and grain, the large per-centage of silica, flint, or sand, which they are known to contain.

Thus, if a soil had a moderate supply of organic matter, and only lacked one or two simple minerals, you can readily see how a farmer might pay, as do some in Virginia at the rate of \$60 a ton for ingredients to be transformed into plants, and sold, perhaps, at \$10 a ton. It is, however, bad economy to waste the raw materials of cultivated plants—the very constituents of our daily bread and meat—and then trust luck to purchase, at a dear rate, something nearly as good brought from Africa, or the Pacific Ocean.

A large portion of the elements found in guano, and the salts or minerals necessary to the growth of plants, escape from the bodies of animals, whether man or brute, by their kidneys. You need not be told that the liquid excretions of all animals are salt, and that this saline matter must come from their food. Small as this mineral substance really is, when compared with the gross amount of matter taken into the animal system, it is quite indispensable in the composition of the vegetables that furnish it.

There are two and a half millions of people in this State, and they may consume an average of five bushels of wheat each per annum. This would use up 12,500,000 bushels a year, or 100,000,000 bushels in eight years. Now, bear in mind the important fact, that it will take just as much and precisely similar ingredients to form the second 100,000,000 bushels that were consumed to make the first. Owing to the great abundance—say 80 per cent.—of these ingredients, according to my estimate, being provided by Infinite Benevolence every where at our hands, their loss to the wheat-grower is not important.

But there are elements in this grain which are not abundant, in a form ready to enter into the organization of wheat plants. When we have the seed, the land ploughed, harrowed and fenced, at no small expense, and *ninety-four or five per cent.* of every thing required to give 30 bushels to the acre, the other 6 per cent, of ingredients lacking are worth their treble weight in clean wheat, if they will add 15 bushels per acre to the crop.

What was the value per pound of the few horn shavings used by the Mayor of Albany, which added 90 bushels of corn to two acres of land, more than were harvested on an acre in all other respects treated like the two named? Some of you may have noticed, that one kernel of wheat will often send up ten stems, and that under favorable circumstances, each stem will bear an ear containing 100 or more plump seeds. I have frequently counted over 130 seeds in a head or ear. This is less than half the yield of stems which has been obtained, yet it shows a perfect willingness, and the capacity, in Nature to give a return of *one thousand fold* on the seed planted. A single peck of seed planted on an acre, in drills, and judiciously supplied with all the ingredients necessary to form perfect plants, and yielding at this rate, would give a crop of 250 bushels.

Experience has demonstrated the practicability of increasing largely the yield of grain without augmenting the growth of the straw in an equal ratio. You will bear witness to the truth of the remark, that it is not always the heaviest yield of straw in wheat, oats, corn, clover, or peas, that gives the most grain or seed, I assure you, that if you will feed to your hungry plants a good deal more of these ingredients taken from them, and most insensibly thrown away in urine, you will soon know, why guano is worth sixty dollars a ton.

By cultivating the soil with the plough and hoe, it loses not only the minerals carried off in the crops, but not a little of the same substances while dissolved in water, which, instead of being taken up into the circulation of cultivated plants, pass with the water into creeks, rivers, and the ocean. How much of the vegetable salts of lime, potash, soda, and magnesia, are lost from cultivated land, it is impossible to say. But there is scarcely a spring or well, especially in a good grain country, whose water is not "hard." By evaporating a few gallons of such water in a clean vessel a thin coat of white powder will cover its bottom and sides—being the minerals held in solution in the water, which it took from the earth.

Nature has done much for the farmers of Monroe county, in providing ready to your hands a soil remarkable for its fertility, and an atmosphere, for your lungs, not less remarkable for its salubrity. It is a joy to know that these great natural advantages are duly appreciated and well deserved, by a rural population alike distinguished for their intelligence and their industry. Think not, that while I contend, we all have something to learn, I would under-estimate the wonderful

improvements which have been made by the hardy tillers of the earth in Western New York. No man respects honest, productive industry more than I do. All I desire is, to see it better directed, that it may be better rewarded. I have often felt, and often expressed, my deep anxiety to see the time when every practical farmer in the State shall be able to produce all that he and his family shall need, or a fair equivalent, and then know quite as well how to keep and enjoy the rich fruits of his honest toil, as all the non-producers in the land shall know how to exchange their shadows for the working man's substance.

Believe me—those that create, by hard work, nearly all the good things consumed by civilized man, ought to learn how to keep, as well as how to earn property. Pauperism is on the increase, and it would be well if every man, woman, and child knew the reason why.

HOME DISTRICT AGRICULTURAL CATTLE SHOW.

It will no doubt be borne in mind by the friends of agriculture in the Home District, that on Wednesday the 14th inst., the Fair and Cattle Show will be held in front of the New Gaol, Toronto, and that on the following day prizes will be awarded for the best implements of husbandry, dairy produce, and domestic manufactures.

The members of township societies may be competitors for premiums, upon producing their certificate of membership, signed by the Secretary or President of their respective societies. Every encouragement is now held out for concentrating the choicest productions of this old and wealthy district, and we hope to see a general demonstration in favour of the industrial resources of this wealthy portion of Canada.

Steeping Seeds.—In March last, some Pink-seeds were steeped in a solution of sulphate of ammonia, another parcel in nitrate of soda, and a third in a mixture of lime, salt, and hen's-dung. A quantity of Pink-seed was sown at the same time, in the usual way. The seeds in sulphate of ammonia grew very quickly, and are now the largest plants of this year's sowing. Those in nitrate did no good, three only surviving; and those in the mixture failed altogether.—*Genl. Chron.*

NEWCASTLE DISTRICT HORTICULTURAL SOCIETY.

It gives us great pleasure to announce to the readers of this Journal, that a Horticultural Society has been lately established in the Newcastle District. The orchard and garden has hitherto been too much neglected in this country, and no other means could be so efficacious in bringing about a reform in these departments, as well organized and efficiently patronised Horticultural Societies. The choicest varieties of fruit, vegetables, and flowers, may be placed within the reach of every farmer and mechanic, through the agency of those useful institutions; and in our humble opinion, every man of cultivated mind should exert his influence in establishing such associations in every populous town in Canada. Horticultural Societies are to the garden and orchard what Agricultural Societies are to the farm; if the latter have been found useful in giving a stimulus for improvement in the various operations upon the farm, we feel confident that an equal ratio of improvement may be brought about in the garden and orchard through the influence of the former institutions. Gardening may truly be said to be pure poetry, when viewed in connection with agriculture; and the farmer who neglects his kitchen, fruit, and flower garden, shows at least an uncultivated taste, and that he can have no desire to make home agreeable to his family. We repeat that it gives us great delight to see such evident marks of improvement in our native country; and we assure those patriotic individuals that have been instrumental in establishing the Newcastle District Horticultural Society, that no effort shall be spared on our part in making the *Cultivator* interesting to the admirers of well cultivated gardens, as well as to the far-

mers. We copy the constitution of this society in the hope that similar associations may be organized in other portions of the province.

Rules and Regulations of the Newcastle District Horticultural Society, in connection with the County Northumberland Agricultural Society, adopted at the meeting of the said society held at Grafton on the 19th ultimo.

1. The Officers of the Society shall consist as follows, viz:—a President, not less than three Vice Presidents, a Treasurer, a Corresponding and Recording Secretary and a Committee of Management.

2. The duty of the President shall be to preside at all meetings of the society, to call for accounts, and reports of all Committees, and to call all extra meetings of the society when requested to do by any three members of the Committee of management.

3. In case of the absence of the President from any meetings of the society, it will be the duty of the senior Vice President then present, to take the chair, and if there be no Vice President, then the senior Member of the Committee of management shall take the chair to preside over the business of the meeting.

4. The Treasurer shall receive for the use of the society all the subscriptions payable thereto, and shall keep and disburse the same, as shall be prescribed from time to time, by the regulations and by-laws of the society, and no payment shall be made from its funds, unless sanctioned by at least five members of the Committee of management, and the accounts of the Treasurer shall be laid before the society at each quarterly meeting thereof.

5. The Corresponding Secretary shall prepare all letters in the name of the society, and shall present and lay before the Committee of management all such communications as he may have received, with respect to the society.

6. The Recording Secretary shall keep the minutes of the society, in a book to be provided for that purpose.

7. The Committee of management shall consist of thirteen members, viz:—President, Vice Presidents, Treasurer, and Secretaries, and six practical members of the society, and their duties shall be to conduct the general business of the society, and to superintend the arrangements of the different exhibitions; five members shall form a quorum for the transaction of business.

8. The election of office bearers of the society, shall take place annually, at the anniversary meeting of the society, and each candidate must be proposed by two subscribing members of the society.

9. The annual general meeting of the society shall be held on the third Wednesday of January, in each year.

10. The society shall meet for business on the first Wednesday of each month at three o'clock.

11. Three general exhibitions shall take place at the following times, in each year, namely, the fifteenth days of the months of May, July and September.

12. The annual subscription of five shillings shall enable a person to become a member of the society, and every member shall be entitled to a copy of the *British American Cultivator*, or such other publication as shall be patronised by the society, and a subscription of twenty five shillings shall constitute an honorary member for life.

13. When any vacancy shall occur in any of the offices of the society, it shall be filled up at the next meeting of the society.

14. No member can compete for a prize, unless he has been a member, and paid up his subscription one month before the day of exhibition.

15. The decision of the Judges to be final.

OFFICE BEARERS, APPOINTED FOR 1845.

President,—George S. Boulton, Esq.

Vice Presidents,—M. F. Whitehead, J. V. Boswell, John Thomas, Esqrs.

Recording Secretary,—David Brodie,

Corresponding Secretary,—R. M. Boucher,

Treasurer,—J. Montgomery Campbell,

Managing Committee,—Messrs. John Steele, J. M. Grover, Richard Miller, William Jeckell, John Godard, Morgan Jellett,

R. M. BOUCHER,

Corresponding Secretary.

Colborne, 3d March, 1845.

ARE AGRICULTURAL PAPERS INSTRUMENTAL IN INCREASING THE WEALTH OF A COUNTRY?

Every intelligent man would answer this question in the affirmative. But some attach a much higher value upon knowledge than others; for instance, we have heard some of the subscribers to the *Cultivator* state, that they valued each number worth to them one dollar; and others, that the work had been worth to them, £50 per annum since its commencement; and others have put it on a par with their political paper, which cost them six or eight times as much; now it is clear, that no aggregate can be formed by this mode of comparison, as no two individuals could be found who would form exactly similar estimates upon the value received from the perusal of works of this description. The following statistics of the states of Ohio and New York, together with the remarks by the editor of the *Ohio Cultivator*, may have the effect of throwing some light upon this important question:—

"The wheat crop of Ohio for the past three years is estimated as follows:

Crop of 1842, 25,387,439 bushels.

" 1843, 18,786,705 " (30 per ct. loss.)

" 1844, 15,969,000 " (15 per ct. more loss)

Showing a decrease of 45 per cent. or nearly ten millions of bushels in only two years!

And this too, while it is well known that the number of acres devoted to this crop has every year been greater than the one preceding! And another important fact is, there has not been a proportional increase of other products to make up for this immense loss. Is it any wonder then that our State is embarrassed, and that farmers find it difficult to meet their taxes? (The reports of the Board of Public Works show a decrease in the aggregate amount of wheat and flour shipped on all the canals in the State for the past four years.)

As evidence that this falling off is mainly attributable to *defective farming*, let us look at the example of New York, where knowledge has been diffused for a number of years past, by five or six widely circulated *agricultural papers*, several of them numbering from ten to twenty thousand subscribers, and where forty or fifty county Agricultural Societies, and one for the State, are sustained by the aid of \$8,000 per year from the Treasury. There the reports show a marked increase in the wheat crop during the same time that it has decreased in Ohio. The figures stand thus:

For 1842, 11,132,472 bushels.

" 1843, 12,479,499 "

" 1844, 14,975,000 "

Showing a gain of nearly four millions of bushels in two years; and most of the other products of the farm in that State, have increased in a proportionate ratio for the past four years.

From these figures it is easy to see, that in all probability the next annual report will rob Ohio of the honor of being the first wheat State in the union, and award the palm to the farmers of the *Empire State!*

And yet Ohio possesses at least double the number of acres adapted to this crop that New York does; and there can be no good reason why we should not retain this high honor; or if so unfortunate as to lose it for the coming season, it should be regained, and made more securely our own than ever before. It is true our Legislature, in the heat of party strife, have seemed to neglect the greatest interests of the State, but this only renders it more necessary for the *people themselves* to awake and exert themselves.

The first thing necessary to be done is to *circulate agricultural papers among the farmers*, and point out through them the necessity and means of improvement. Until this is done more effectually than now, it will be of comparatively little use to legislate upon the subject or form associations; for till then, not one in twenty of the farmers will co-operate in such measures. If the friends of the cause, who perceive the evil and the remedy, will go to work for this purpose, with

one tenth part of the enthusiasm that is manifested during an ordinary political campaign, then we should soon see results that would cheer the heart of every true patriot."

We do not profess to be inspired with the gift of prophecy, but at the same time we feel satisfied that the products of Canada might be quadrupled in the course of the ensuing two years, if the farmers would generally enrol their names upon the subscription list of their local agricultural societies, and through this agency receive some ably-conducted agricultural journal. Many of the best friends of Canada have lately espoused this great and patriotic cause with an enthusiasm scarcely equalled in any other country, and the results have already shown themselves to a degree that would do credit to much older countries than Canada.— This great movement, when the great bulk of our population is taken into account, has scarcely had a commencement; as a proof of which, we would state, that there are upwards of *two hundred post offices in the province* at which not a single copy of the *Cultivator* is received. This is certainly not very creditable to the farmers in those sections, especially as the wholesale annual subscription to our journal is only *two shillings sterling* per copy, containing *three hundred and eighty four pages* of highly instructive matter.

Mr. Wirt has the following remarks addressed to a young lady:

"If you have time for it, read authentic history, which will show you the world as it is. Do not read rapidly and superficially, with a view merely to feast on the novelty and variety of events; but deliberately and studiously, with the pen in your hand, and your note books by your side; extracting as you go along, not only every prominent event, but every elegant and judicious reflection of the author, so as to form a little book of practical wisdom for yourself."

We take great pleasure in laying before our readers the following bill for encouraging agricultural societies and agriculture in Western Canada.

The liberality of this measure is so clearly portrayed in every clause, that it will be strange indeed if the people do not exert themselves and draw upon the government for the full amount of £250 for each District. The view we take of this matter is simply this: where district, county, or riding societies are formed, steps should be taken by those societies to establish township, branch, or auxiliary societies upon such a basis, that those branches would form so many links to one general indissoluble chain. The way to accomplish this object, and the principles upon which the structure should be based, have been fully pointed out in the former numbers of this magazine, and if further information be desired by any party, it may at any time be had by making the necessary enquiry. The principle of supporting agricultural journals through the medium of societies, is by no means a new one, and whenever acted upon, has been productive of great benefit both to the institution and the cause of agricultural improvement. We therefore hope that every effort will be brought into exercise, which will conduce to the support of the science as well as the practice of agriculture. The farmers of Canada ought at least to support one Canadian agricultural publication in a liberal manner, so that its editor might afford to give his undivided attention in preparing suitable and well digested articles to his readers, instead of devoting evenings and rainy days to the task.— Nothing short of a liberal support will secure that object; and those who are interested in the matter should exert themselves in extending the circulation of this journal as widely as possible:—

BILL.

An Act for the encouragement of Agricultural Societies, and Agriculture in Upper Canada.

Most Gracious Sovereign:—

Whereas the science of agriculture demands encouragement from the revenues and people of Upper Canada; may it therefore please your Majesty that it be enacted. And be it enacted, &c.

That when any agricultural society for the purpose of importing valuable live stock, or whatever else might conduce to the improvement of agriculture shall be constituted in any district in Upper Canada, and shall make it appear, by certificate under the hand of the treasurer of such district society, that the sum not less than £25 has been actually subscribed and paid to the said treasurer by the several agricultural societies of such District, and paid into the hands of the said Treasurer, and the President of the said society shall make application, enclosing the said certificate to the Governor, Lieutenant Governor, or person administering the government of this province, for and in support of the said society, it shall and may be lawful for the Governor, Lieutenant Governor, or person administering the government in this province, to issue his warrant to the Receiver General in favour of the Treasurer of the said society for three times the amount that shall have been paid or subscribed in such district as aforesaid: Provided always, that the annual sum to be granted to each district shall not exceed the sum of £250 currency.

2. And be it enacted, that in the event of there being county riding, or township agricultural societies established, there shall not be more than one district or county society in each county or riding of any district within this province, and a proportion of the district bounty shall and may be granted to each county, riding, or township agricultural Society shall have subscribed; provided nevertheless, that the whole sum granted to the district and county Societies together shall not exceed the sum of £250 in each year.

3. And be it enacted, that in the event of more than £50 being subscribed by the several societies in any district the said grant of £250 shall be divided to each society in due proportion according to the amount of their subscriptions respectively.

4. And be it enacted, that each agricultural society shall and may elect such officers and make such by-laws for their guidance as to them shall seem best for promoting the interests of agriculture according to the true intent and meaning of this act.

5. And be it enacted, that the Treasurer's account of the receipts and expenditure of the preceding year shall, after the first year, always accompany the application for grants in aid of the said agricultural Societies.

6. And be it enacted, that when county, riding, or township societies shall have been es-

tablished in any district, the Treasurer of such county, riding, or township societies shall, on or before the first day of September in each year, pay over, in current money of this province, the amount subscribed by the said societies into the hands of the Treasurer of the district agricultural society, who shall then make an abstract of the sums subscribed in said district in the following form:—

Abstract of sums of money subscribed by the several Agricultural Societies in the York District, for the year 1842.

Agricultural Societies.	Amount subscribed by each.
Total - - -	£

These are to certify that the sum of _____ has been paid into my hands, in current money of this Province, by the several Agricultural Societies in the _____ District, as above stated.

Given under my hand at _____ the day of _____ 18 .
Certified,

_____, Treasurer.
_____, President.

7. And be it enacted, that the monies hereby granted and paid under this act shall be accounted for to her Majesty through the Lords Commissioners of her Majesty's Treasury, in such manner and form as her Majesty, her heirs and successors shall be graciously pleased to direct.

8. And be it enacted, that if the Treasurer of any township society shall on or before the first day of July in each and every year, pay any sum of money into the hands of the treasurer of the district or county societies, he shall be entitled to receive the same again so soon as the legislative grant shall have been received, with a proportion of the legislative grant equal to the amount so paid, or in proportion to what shall fall to their share upon an equal division being made in proportion to the sums paid in by the several societies in the district or county.

9. And be it enacted, That the Secretary of each such society shall annually transmit to the three branches of the Legislature, within fifteen days after the opening of such session of the provincial parliament, a report of its proceedings, showing the amount of the subscriptions received in the course of the year, and the amount received out of the public chest, the expenses of the society, the names of the persons to whom it shall have granted premiums, the objects for which such premiums were obtained, and all such other observations and information as he shall deem likely to tend to the improvement of agriculture.

THE JOHNSTOWN DISTRICT MERCANTILE AND GENERAL AGRICULTURAL IMPROVEMENT SOCIETY.

This institution lately published their *Circular* in a late number of the *Brockville Recorder*, which, to our mind, appears the most sensible document that ever emanated from an agricultural association in Canada. It is replete with sound advice to the rural population; and clearly explains the objects of the association, and the benefits that would be conferred upon all classes, were a united effort made in sustaining the officers of the society in carrying out their laudable intentions. The following paragraphs will tend to give our readers some idea of the high estimation that this institution places upon *agricultural reading*. A more powerful auxiliary than the *press* could not have been employed; and we are confident that if this society be successful in accomplishing the good they at present anticipate, the success will be mainly attributable to the agency of the agricultural magazines which they contemplate scattering throughout the district, free of costs, to the farmer. If by any means the farmers of the district could generally be induced to read an ably conducted practical agricultural journal, the improvements brought about by this means, would be almost incalculable. This problem, however, will be very shortly solved, as every proper exertion is being employed by the leading merchants and farmers of the Johnstown District, in arousing their fellow countrymen of all classes, to improve the character of their productions, both of the farm and the work shop.

Agricultural Reading.—Even within the limits of the District of Johnstown, to look back ten years ago we will at once see that we have not been standing still altogether, but that some considerable improvement has been made in farming. But, if we read of what has been done in England, we are surprised at the wonders that science has accomplished in causing the soil to yield, in many articles of produce nearly double what it formerly did; and we are led to enquire what can yet be the increase which the ground will be made to give forth if improvements continue to go on at the same rate? In the United States, we may also learn from their papers, that daily improvements are being made in the science of

Agriculture. Although we have learned a little, yet we are, it may be said, still in the dark ages on the subject, and have much to learn. Where and how, it may be asked, is the information which explains such profitable improvements to be had? Much useful and valuable information on the subject is to be found in the various agricultural works published in England, Canada, and in the United States. Those works issued in England can only be had, here, at some considerable expense; but a few of the most prominent of them will be taken by the Society, and reading showing important improvements, and embracing knowledge applicable to our farming interests be copied, by permission of the editors, into the local newspapers. There are one or two agricultural papers published in Canada of which the society have already ordered a certain number for distribution; these papers deserve the encouragement of every branch agricultural society in the district and indeed in the province, and as far as practicable the information they contain be acted upon. The American agricultural papers can be procured at a low price, and are generally replete with information: of these the society has also ordered a quantity for distribution. The greater the circulation of such works in the district, the greater will be the amount of useful knowledge within every farmers reach. It is contemplated by the society to scatter throughout the district *gratis* a number of agricultural papers. Now, here, we would ask, what will be the use of going to the expense of procuring and circulating them unless they are read, and reflected upon, and, as far as is practicable the information they contain be acted upon? You should endeavour to form a taste for reading these papers regularly as they reach you, and when you see them lying by, unopened, just think that perhaps some hint is wrapped up in them, which, *if you knew, would benefit you*. It is true that many of these papers contain much knowledge inapplicable to our soil and our climate, but supposing that only *one fresh idea in the year* is gleaned from their reading which would enable you to increase the yield of your farm, (the yearly productions of which you estimated at £100.) *even* 10 per cent., here would be a clear gain to you of £10, and would not this amply compensate for the pleasure (not trouble) of reading. By this reading you are not only increasing the value of your farm, but you are improving and adding stores to your mind.

It is stated, as an undoubted fact, by one of the most intelligent farmers of the district, that he has noticed from observation, that those farmers who have been in the habit of taking and reading agricultural papers, raise generally the best crops; and that he never opens one of his papers without finding it to contain some information more than equal in value to him, the cost of the subscription of the paper.

General encouragement of Farming Interests.—It is an old proverb that "*Providence helps those who help themselves,*" and one which the committee of this society wish to be borne in

mind, by every farmer and farmer's son who reads this circular, and who may be led to expect great results from its exertions. The amount of good which can be accomplished will depend upon circumstances, viz. the keeping alive a proper degree of excitement with those who are not directly, but indirectly interested in agriculture; the hearty co-operation of the farmers in seconding the exertions of the society, and the amount of means which can be raised and added to its funds from time to time. The committee feel confident that the members of the society see the importance of continuing to feel a lively interest in its success, and in extending its usefulness. The liberal manner in which the inhabitants of Brockville, and the merchants of the country, subscribed at its formation, induce the members of the committee to hope, that should the funds be judiciously applied, upon a future occasion, the like success will attend a similar application. The information upon agricultural subjects, which the committee can lay the slightest claim to, is altogether of a theoretical nature, therefore, they must mainly depend on the knowledge and experience extended to them by practical men to ensure a proper direction being given to their efforts: this it is hoped will not be withheld.

It is contemplated by the society to open a depository for samples of produce, seeds, &c., and at which, may also be left, any information on the subject of agriculture which those who feel an interest in it may desire to communicate. It is also in prospect to offer premiums, according to the extent of their means, for the best productions for exportation, and specimens of stock; for essays on agricultural pursuits written by sons of resident practical farmers. They further intend to gather together into a condensed form, and circulate in tracts, information on the subject of producing the greatest quantity at the least expense of the different articles of produce raised in the district; but more particularly, those kinds most suitable for exportation. The committee wish to impress upon the minds of the farmers, the necessity that exists of not centering their exertions so much upon the one article for exportation—wheat. For when that has failed, heretofore, business has been brought to a stand-still. Far better that the same attention be divided among a number, as wheat, butter, cheese, &c.; then if one failed, the trade of the country would only be checked, not stopped. At a future day the society, after having made more extended inquiries on the subject will be better able to advance recommendation as to those articles most worthy of attention. In conclusion, the society would urge, most respectfully, upon the farmers generally, the great good that would be derived to each other, by a few meeting together about once each week, in some convenient place, at night, and talking and discussing agricultural subjects. In this way you would benefit yourselves, those who are not directly, but indirectly interested in agricultural prosperity, and the country generally.

Brockville, March 8, 1845.

We have been favoured with Prince's descriptive catalogue of fruits, and ornamental trees, &c., for the years 1844 and 1845. The list appears full, embracing every species of fruits and ornamental trees that are adapted for open culture in the several sections of the United States. We wish it to be understood that we approve of encouraging domestic enterprises in preference to foreign, and therefore would advise our friends to purchase their fruit trees of Canadian nurserymen, rather than of the proprietor of any establishment out of the province. Those, however, who are in the nursery business, would do well to select the choicest varieties of fruits, shrubs, &c., from the most respectable establishments in the United States, by which means they would obviate the necessity of sending much money out of the country for trees, and every thing in this line, which would be much better, if grown at home. This system has been practiced by our friend Dr. Chancey Beadle of St. Catherines, who is proprietor of the most extensive, and best selected, and we may add, best managed nursery in Canada West. There are many other nursery establishments in the United States, with which we have some acquaintance, that are deserving of patronage; but none have the same claims upon the attention of a generous public as that of Prince's & Co. Flushing, N. Y. It is the oldest, the most extensive, and by all odds the most liberal nursery establishment on this continent; and besides, they affect no mystery in the management of their horticultural operations, which are conducted upon the most scientific principles, as their annual treatises upon horticultural, floracultural, and botanical subjects, contain the most modern approved directions in every department pertaining to these branches. The following brief directions for the culture and management of fruit trees, &c., which we clip from the catalogue, will give our readers some idea of the very liberal manner in which this establishment is conducted:—

BRIEF DIRECTIONS FOR THE CULTURE AND MANAGEMENT OF FRUIT TREES, &c.

Transplanting.—Spring is the season when we enjoy the most pleasure in rural pursuits, and it therefore has been adopted as the most general for transplantation. The fall, is nevertheless much to be preferred, as it allows the ground to become settled during winter, and the roots start afresh at the first opening of spring. In regard however to those Fruits obtained from warmer latitudes it is necessary for us to consult climate, and we have therefore come to the following conclusion. In localities south of New York, the fall is preferable for *all trees*—north of New York, the fall is preferable only for the Apple, Pear, Plum, Cherry, and other trees of northern latitudes, and the spring is to be preferred for the Peach, Apricot, and Nectarine.

In planting, make the holes large, say 2½ feet square, and the same in depth; place the surface mould aside by itself, and cast away the poisonous bottom mould as useless; mix with the surface mould a portion of other rich mould, and about four shovels full of well rotted manure to each tree; then spread a few inches of this compost at the bottom—place the tree—fill in till the roots are covered, and tread it well; then fill up the rest without treading, as it must be left loose to receive the rains; after thus planted, water each tree well, and occasionally afterwards if the weather proves dry.

In regard to distance Apples should be planted in orchards at a distance of 30 feet; Pears and Cherries 20 to 25; Peaches, Nectarines, Apricots, and Plums, 10 to 12 feet.

Culture.—As a general rule, orchards should be kept in a cultivated state, and receive occasional manurings, and their produce will always be in proportion to such attention. That manure which is decomposed and has lost its heat is to be preferred, and this should be most plentifully distributed in the immediate vicinity of each tree.

The pruning of trees in open culture is necessary to a certain extent, but far less so than often practiced. Nature, as a general rule, produces no greater development than she is capable of sustaining. All that is really called for, therefore, is the occasional thinning out of those branches which are so close as to prevent the sun from penetrating, or that might by friction injure each other.

SOIL, &c.

The Apple. This fruit is one to the culture and improvement of which, the soil and climate of our country seem particularly congenial. A very large number of native varieties have been produced rivalling those of the Eastern Hemisphere, and the Nurseries and Gardens of Europe send annually to this country for great numbers of trees of our esteemed varieties, which are there classed in the first rank. For this fruit, rich strong loamy lands are the most appropriate, and as the roots are more horizontal than perpendicular, it does not require so deep a soil as the Pear. In fact the Apple will succeed in any soil

except a quick-sand or a cold clay, if the ground is kept under cultivation and manured. Those soils that possess a very considerable degree of humidity, but are not absolutely wet, suit the Apple very well, whereas they would be destructive to the Pear.

The Pear flourishes most on deep rich soil that is comparatively light and porous, so as to allow a free filtration, and through which its perpendicular roots can easily penetrate. Cold, compact clay, and wet soils, do not suit, and in such the growth is feeble and the trees short lived. In this vicinity the Pear trees are almost universally trained as high standards. At Boston and other New England localities, they generally adopt the culture on trellices, or dwarf trees, en quenouille, &c., which seems better suited to the old varieties, but the new Flemish, English, and American varieties, being exceedingly robust, flourish in all exposures as standards. The cultivation of this fruit is rapidly extending, as it is becoming an important article of exportation packed in ice. Pear trees ingrafted on the Quince are thereby rendered of dwarf stature, and produce crops of fruit at an earlier period, but they are less hardy and shorter lived than those propagated on the pear stock.

The Peach succeeds best in a rich light sandy loam, but will conform itself to almost any soil that is friable and kept in a cultivated state. The crops of fruit will be always in ratio to the attention given to culture and to the appropriate manurings, which should on no account be neglected. In this vicinity, and in most other localities, the trees do best that are not trimmed, but allowed to grow in their natural way, branching a short distance from the ground, and we recommend this course for general adoption wherever there are not circumstances that render high training necessary.

The Nectarine, and Apricot require a precisely similar soil and culture as prescribed for the Peach. The Nectarine is equally hardy and the latter nearly as much so. In this latitude the Apricot is most productive when planted in a location somewhat sheltered from the North and West, but many of the robust varieties exact no such precaution.

The Plum adapts itself readily to almost any soil and situation, and will flourish any where except in a clay, marshy, or very sandy location. A rich friable soil is however to be preferred, and where not so, it should be made so by culture. The Plum, Nectarine, and Apricot, being smooth skinned fruit, are subject to the attacks of the curculio. But if the trees are paved round as far as the branches extend, or are planted in ground that is much trodden, and thus rendered hard and impervious to the insect, or if the ground around the trees are strewed with gravel, the insect will not be able to find shelter there, and consequently the trees will be free from its depredations. The different varieties of Plums used in Germany, France, and Italy for prunes are very productive, and there would be no difficulty, if a proper locality were selected, in establishing extensive and

profitable orchards for this object. The plum being exceedingly hardy would command a preference over many other fruits, which will not flourish in an equally northern climate.

The Cherries which comprise the cultivated varieties claim a two-fold parentage, and there is a difference in habit connected therewith. Those of the Heart and Bigarreau classes have perpendicular roots and require a deep soil, whereas the Duke and Morello classes have horizontal roots and require a soil of but moderate depth. With this distinction both divisions readily accommodate themselves to a variety of soils, and will succeed any where but in a clay, a very arid, or very wet location. That which is preferable, however, above all others is a light, rich, sandy loam.

The Quince flourishes most in a moist soil that is rich and friable, but readily accommodates itself to any upland soil that is not dry and sandy, they require however to be constantly cultivated to insure a thrifty growth, and large fruit orchards of this fruit, located near the sea shore, or in any location where they have a humid atmosphere, are found to produce very large fruit and abundant crops.

The Grape requires a deep friable soil, and an exposure in accordance to the class to which it belongs, the foreign varieties alone requiring a particularly warm location. No fruit will admit of such plentiful manurings as this, provided it be properly applied, and the produce of fruit will be thereby immensely increased, and those who say the development produced is in wood without fruit evince great ignorance. Decomposed vegetable or animal manures, and above all the blood of cattle from the butcher's stall, plentifully and frequently mingled with the earth at a short distance from the main stalk of the vine, will cause a degree of vigor and productiveness that will astonish all who have not witnessed their effects. In regard to pruning, the American varieties, require such thinning out during the winter, as is necessary to prevent the branches injuring each other by contact, and the removal of such weak spurs as are immature and imperfect; but no fear should be indulged that the vine, if in a good soil, is not capable of maturing its fruit on any extent of branches it may naturally produce, as among the most productive vines found in Carolina, there are many instances where a single vine covers an acre. Summer pruning is only called for in locations where the vines are confined in too narrow limits, and then but very partially, as any considerable pruning will cause the fruit to turn black and fall off, and even cutting off the leaves will prevent the maturity of the fruit, as they are the conductors of the essential nutriment from the atmosphere to the fruit and to the whole plant. The foreign varieties being natives of a much milder climate require considerable pruning, and but a moderate proportion of the vigorous shoots should be allowed to remain, it being necessary in this case to substitute skill and artificial culture in order

to remedy the inappropriateness of climate. The most delicate foreign varieties do not succeed in this latitude except under glass, but in that way they ripen well and are exceedingly productive.

Raspberries.—These require the shelter afforded by a hedge or fence to protect them from the too powerful rays of the sun. The soil should be a light sandy loam, perfectly friable and well manured. They should be planted in double rows twelve inches asunder, and running east and west, as in that case each row will serve in a measure to shelter the next one from the sun. The double rows should not be more than three feet apart, and the plants when first set out eighteen inches from each other, and after which they may be allowed to run together, and they will be found most productive, and the fruit larger, when they are thus allowed to partially shade each other. The rows should be supported by a slight railing at each side, or by cord attached to stakes or poles at suitable distances. The Red and White Antwerp, and Barnet varieties require in this latitude to be protected in winter by bending the shoots down near the ground, and then covering them with a few inches of earth, litter, or leaves. The latter is preferable but will require a slight covering of earth over them to retain them in their position. The Franconia is similar to the Red Antwerp in size and quality, but requires no protection. The Victoria, Fastolf, Magnum Bonum white, Cox's Honey, Springgrove, and Bromley Hill, are equal or superior in quality to the Antwerp varieties, and more hardy and productive. No. 1, 2, and 3 are the well known native varieties and very productive. These are not propagated by suckers as the European varieties are, but throw down the ends of their summer shoots to the earth, which become rooted and form new plants. In order to have good autumnal crops from the twice bearing kinds, they should be cut off near the ground in the winter or at the opening of spring, as it is the new shoots which produce the second or late crop. The extremities of the young shoots should be pinched off in June, which will advance the development of the flowers and fruit. All the varieties should have the weak and useless shoots trimmed out in the spring, and the earth well dug and manured.

The Gooseberry and Currant, require a rich, friable soil, which should be well cultivated and manured. The Gooseberry will grow vigorously and produce very fine fruit if planted at the north side of a paling or open fence and about two feet distance from it, or if planted beneath the partial shelter of a peach or plum orchard, as the full rays of the sun burn the fruit and arrests its growth. Both Gooseberries and Currants should be pruned in autumn and the weak shoots cut away, and this is the proper period for digging around them, and for enriching them where the soil requires it.

To prevent the Smut in Wheat.—Steep the grain in lime water, or a weak ley of wood ashes or pearl-ash.

ON THE PROPAGATION OF FRUIT TREES FROM SEED.

It has been noticed as a fact, in almost all treatises on the cultivation of fruit, that our old and favourite varieties of fruit trees, that have been propagated by grafting, are becoming more and more short lived, and hastening to decay.

This is owing chiefly to two causes.

1. The premature decay of many grafted trees is owing to careless grafting, or grafting on a very large stock, in which case a wound is made, or perhaps a split, which does not heal over for many years. In the meantime rot in the wood ensues, and, although ultimately covered over with fresh wood, produces a diseased state in the tree, and premature decay may be expected as a matter of course. Besides, however neatly and skilfully grafting or budding may be performed, the stock and the scion, in their future growth, rarely if ever swell out exactly together. The one almost always overgrows the other, and premature decay is the consequence. This is well known to be the case in Britain, where advantage is practically taken of it to produce early bearing, by working free growing kinds on slow growing stocks. Early bearing is one effect of this, but it is as well known that early decay certainly follows as another.

2. The premature decay of trees grafted with any certain variety may be owing to the *natural* progress towards decay of the whole variety, in consequence of the extreme old age of the whole. This case cannot be better stated than in the words of Dr Neill, the Secretary of the Caledonian Horticultural Society, in the article "Horticulture" in the Encyclopædia Britannica. "It is well known that some of the favorite cider apples of the seventeenth century have become extinct, and others are just verging into decrepitude; and hence the conclusion has been drawn, that all our present fruits, as they are artificial in their constitution, are also limited in their duration. Each variety springing from an individual at first, however extended by grafting or budding, partakes of the qualities of the individual; and where the original is old, there is inherent in the derivatives the tendency to decay incident to old age. It is assumed that all the individual trees of any given variety, such as the Golden Pippin, or the Grey Leadington, are in a lax sense equivalent to one individual. By careful management, the health and life of this composite individual may be pro-

longed, and grafts inserted into vigorous stocks, and nursed in favourable situations, may long survive their parent tree; still there is a sure progress towards extinction." Some, I know, are disposed to laugh at this. But I think a little reflection will serve to show that it is really the case. However long lived a tree may be, there is a progressive change going on in its constitution, from its youth to maturity and fruit-bearing, and from maturity to decay. At whatever period in the life of a tree a scion is cut from it, the scion carries with it the degree of change to which the tree itself has reached. This is evident from the fact that a scion cut from an old tree in full bearing, although put upon a young stock, comes very soon into bearing, which a scion from a young seedling when put on a young stock will not do. And so in like manner when a tree is rapidly verging towards decay and losing its vital energies, its fibres, sap vessels, &c., will be imperfectly formed and weak, (hence the littleness of the twigs of very old trees compared with those of young ones,) and consequently a scion cut from it, and containing these structural weaknesses and imperfections, will necessarily hasten rapidly to decay, on whatsoever kind of a stock it may be put.

The considerations show the necessity and importance of raising new varieties from seed, to take the place of those which are decaying,—and also, where great durability is desired, of stocking our orchards with seedling trees. When a young man has settled for life upon a farm or an estate to his liking, and has planted out an expensive orchard, the fruit of which he expects to enjoy in his old age, it is not a little mortifying for him to find that his trees, when he thought them reaching maturity, are already decaying and dying, and that he has to be at the whole expence and trouble of stocking his orchard anew, besides being deprived of fruit in the meantime.

In some of our back townships where it has been difficult to obtain grafted trees, there are many orchards of seedling trees bearing excellent fruit, and especially where due attention has been paid to the selection of the seed from good apples. The seeds of fruit trees do not produce exact copies of the original fruits, yet, as the seedlings inherit at least some of the structural and constitutional peculiarities of the parent tree, it may be laid down as a general rule, that the better the fruit from which the seed is taken, the better will be the produce. In illustration of this, I may

mention the following. I am acquainted with two families in one of our back townships who have orchards of seedling trees, with the history of which I am also a little acquainted. The one family raised their trees from the seeds of any kind of apples that came in their way, and it is not very likely that twenty or twenty-five years ago, many good apples were to be met with forty miles back in the bush. The consequence is, that in their orchard there is scarcely an apple much larger than a walnut, and few of them much softer. The other family, on their way to this country, passed through the State of New York, and, with a provident foresight that but comparatively few of our new settlers display, made it their business to collect the seeds of the very choicest apples they could find in the course of their journey. From these seeds their trees have been raised, and in their orchard there is not a bad apple, and many of them first rate ones.

The seeds should be taken not only from the very choicest varieties of fruit, but if possible, from the very largest and most perfect specimens of each variety grown under the most favourable circumstances, as for instance on young trees, (which always bear larger fruit than very old ones of the same variety,) and in a vigorous and healthy condition, and on which only a small number have been allowed to ripen, and growing in an orchard where the whole, or at least the greater part of the trees bear the choicest fruit; and, in the case of apples and pears, only the largest, roundest, and plumpest seeds of even the most perfect specimens.

With proper care, orchards of seedling fruit, as good as heart could desire, might soon be raised. Seedlings raised from the choicest fruit to be obtained in the country or brought from the United States, might be set out in a small piece of ground at a distance of six feet apart, (and at this distance a quarter of an acre would hold upwards of 300,) until they came into bearing, which, in this country, is not very many years, when those that were approved of could be removed to the orchard. But, as it would be an immense labour to transplant as many as would be required of apple trees, when they were of considerable size, besides the risk of injuring the roots, and as it may be safely reckoned on that, if proper care have been taken in the selection of the seed, comparatively few of the trees will ultimately have to be rejected, it would perhaps be the better way to plant them out in the orchard at once when of

sufficient size,—reserving a parcel to come into bearing in the nursery, from which good ones could be selected to put in the place of any that might be rejected in the orchard. In either case, means might be employed, without at all injuring the trees, for bringing them into bearing and ascertaining the quality of the fruit as soon as possible, such for instance as ringing a branch, or training it downwards, or both. And it may be mentioned, as a means of saving the life of many a good tree which might otherwise be sacrificed, that the fruit of a seedling tree continues to improve for several years after it commences bearing.

Of Pears there are fewer good ones raised from seed, than in the case of apples.—but still the experiment is interesting, and, if only the seed of the very choicest pears is employed, some good ones will be obtained, which will amply repay all the pains spent in obtaining them.

Among Plum and Cherry seedlings, especially Plums, a very considerable proportion of good ones will be found;—and, as comparatively few of these are wanted, a number of them might be set out, in the way I have already suggested for apples, at six feet apart, un'til they came into bearing, when a few of the very choicest might be selected and removed to the orchard or garden.

The seeds should be sown, if convenient, as soon as they are taken from the fruit. If not, they should be put in a box amongst moist sand or earth, to prevent their getting dried. When this is not done, many of them, especially those of the stone fruits, will never grow at all, and those that do will perhaps not come up until the second spring after they have been sown. It is better to sow them in the fall than in the spring, as the frost seems to be of service in splitting the shells or husks; and the seeds of apples and pears which have been obtained during the winter, may be soaked in water and exposed to one or two nights' frost previous to putting them in the ground in early spring.

The seedlings should be raised in rich ground, and every thing should be done to encourage rapid and luxuriant growth while they are young; and where this is done they will be more healthy trees and more vigorous bearers afterwards.—When they are set out in the orchard, the holes for them should be from four to six feet wide, and at least a foot deep, and filled to within six inches of the top with rotted sod. The tree should then be set in, the roots carefully spread out all round.

the hole filled up with good mould, and a pail of water turned in to wash the mould well in amongst the roots.

The suggestions I have already made, will perhaps be sufficient for practical purposes with most people; but the propagation of fruit trees from seeds presents still a wide field for exercising the useful ingenuity of those who are curious in vegetable physiology.

It has been already mentioned, that the seeds of fruit trees do not produce exact copies of the original fruit trees. The reproduction of the species is certain, but not the variety. Thus, for instance, the seed of an apple will produce an apple, and the seed of a plum will produce a plum; but the seed of the sweet green gage plum may produce a sour red one, and so on. This is owing chiefly, if not wholly, to the circumstance that so many varieties of the same kind of fruit are in blossom at the same time, and the pollen of some is consequently carried to the pistils of others by the winds, and on the legs of bees and other insects in their wanderings from blossom to blossom. Cross-breeding is thus, by means of these agencies going on to an inconceivable extent. Some have thought that the many varieties we have, are owing not so much to cross-breeding as to a natural and inherent tendency to "sport," as gardeners call the production of a new variety of plant, without any known cause, and their opinion is founded on the circumstance, that those who have tried the experiment say, that seeds taken from the same apple will produce different varieties. This is no doubt true, and it is equally that "a sport will occasionally occur; but still, it should be remembered, that the blossoms of the apple and pear have five pistils, corresponding with the five cells which contain the seeds; and it is within the range of possibility, that at least in some blossoms, each of these pistils may be impregnated with the pollen of a different variety, by the visits of as many different bees with the pollen of other varieties adhering to them. The experiment is, therefore, not fairly tried, while the blossom is left open and exposed to these risks. In order to a fair trial of it, and to make sure of self impregnation, that is by the pollen of the anthers in the same blossom, the blossom bud, previously to its opening, should be enclosed in a bag of fine gauze of sufficient size, which should not be removed, till

the fruit has fairly set. If the experiment were fairly tried, it would be ascertained, when the seedlings raised from the seed obtained in this way came into bearing, whether or not a fruit tree of any variety could produce its like.

Few persons, unless they have turned their attention particularly to the subject, have any idea of the immense quantity of pollen which is carried along by the wind at certain seasons in spring and summer, or of the distance to which it is carried both by the wind and by insects. The following circumstances may be mentioned in illustration of this. Most persons in this country must have noticed that, in the latter part of spring or beginning of summer, after a heavy thunder shower, the little pools of water that are left standing are covered with large quantities of a fine yellow powder, which is foolishly supposed by some ignorant people to be sulphur discharged from the thunder cloud. It is neither more nor less than the pollen from the male flowers of the Pine and Hemlock trees which are then in blossom. I have seen it sometimes carried off in clouds from these trees by a gust of wind, much in the same fashion that fine snow is drifted from them on the day after a snow storm; and the fact, that it is drenched and brought down by a thunder shower in situations where there is not a Pine or Hemlock tree within a distance of some miles, and in this way arrested in its flight, which, but for the shower might have been continued for miles further, may give some idea both of the quantity of pollen afforded by the blossoms of some trees, and the distance to which it may be carried by the wind. In the old country, where every pains is taken by seed growers to raise pure seed of the different varieties of some kinds of garden vegetables, such as cabbages and turnips which are particularly attractive to bees, when in blossom, experiments have been made to ascertain to what distance bees will travel, by dusting them with whiting from a pepper box, and thus marked they have been recognized at the distance of seven miles from home. Of course, one variety of cabbages, or one variety of apples may be impregnated by the pollen of another variety carried that distance on the legs of bees.

In order to do any thing like certainty in the results of cross breeding by hand, the stamina of the flower which is intended to bear the seed must be clipped out with a pair of sharp-pointed scissors when the flower is just opening or before

it has opened naturally,—and then, when it has fully expanded itself, the pistils must be dusted with the pollen of the other variety. Of course the blossom will have to be enclosed in a fine gauze bag, as already suggested for another experiment.

Cross breeding, between different varieties of any certain kind of fruit, might be made the means of producing very superior new varieties, if done by hand, under the light of the experience already gained, added by observation and reflection. Numerous experiments have already been made on this subject, particularly by that most eminent gardener the late Mr. Knight, and the result of his experiments led him to the conclusion that, in the young trees raised from seed obtained in this way, the constitution and habits of the female parent for the most part prevailed. The circumstance, which I have already noticed, that the seed of a large apple will generally produce large apples again, seems to indicate that the female parent also influences the size of the fruit of the seedling tree. I have already, also, adverted to another result of the promiscuous cross breeding which is continually going on by means of the wind and the bees, namely, that the seed of a sweet Green Gage Plum may produce a sour red one, and the seed of a sour red apple may produce a sweet green one, and this seems to point to the conclusion, that the color, the taste, and the flavor of the fruit of a seedling tree are influenced by the male parent. In the numerous varieties of fruit we already possess, we have all the elements of superior excellence; and all that we want is, to know how to combine these elements in order to produce the very choicest fruit.

The above results of experiment and observation, in some measure, supply this knowledge. We may have, for instance, a tree of hardy and vigorous constitution, of regular bearing habits, and yielding fruit of a large size but in every other respects worthless. We may have another tree of a tender and delicate constitution and irregular habits, but bearing fruit of a beautiful color and the most exquisite flavour. To combine the good qualities of these, we must take the blossoms of the good flavoured fruit tree and dust them on the pistils of the hardy tree. The seed thus obtained may be expected to produce hardy and regular bearing trees with fruit of a large size and of the desired color and flavor. This shows the reason for one of the general rules formerly given for the selection of seed, namely, to take it from

fruit grown in an orchard where the whole, or at least the greater part, of the fruit is choico.

If further experiments in cross breeding were fairly and carefully made, and the results published, so that those who are trying experiments might mutually benefit by each others experience, I feel confident that the production of any desired quality in fruit might be brought very much under our own command, and our fruit might be brought up to a pitch of excellence never yet obtained.

A. B.—T. T.

To kill Vermin on Cattle.—I have noticed an article in several of the agricultural papers recommending the use of oil or grease to kill lice on cattle.

It was said forty-one years since that oil or grease was a good medicine, and I made the experiment on working oxen and cows. I had the care of at that time. It would be difficult to contrive a more nasty, unwholesome and infamous medicine than oil or grease. It will immediately collect the dust of the barn or field, and you cannot get it off. If you attempt to clear it you can do nothing with it. In a warm sunny day it will draw the sun, and keep your oxen ready warmed; I would as soon oil a good beaver hat to ride over a dusty road, as to put oil or grease on my oxen or cows.

Since I made the above experiment I have made use of Scotch Snuff; card up the hair and sift the snuff into it, and lice will soon be absent. Or you may raise a few tobacco plants and nail a few laths over your stalls and place the plants on them to cure and remain there, and you will have no lice on your cattle.

Respectfully, yours, &c.

DANIEL LELAND.

—*Mass. Ploughman.*

Transmutation of Grain—A gentleman who lately travelled in Germany was there assured that if oats were sown early, and not allowed to produce grain the first season, but compelled by artificial means to defer their earing to the second they will change to other sorts of grain. On this suggestion, says the *Gardener's Chronicle*, the Rev. Arthur Hervey, in the year 1843, sowed some oats, and treated them in the way recommended, by continually cropping the flowering stems; and the produce, in 1844, is, for the most part, ears of very slender barley, having the appearance of rye, with a little wheat and oats. There may possibly have been some mistake about the seed, or some other part of the process; but the trial is easily made, and is certainly curious enough. Besides, if resulting as alleged, it will help settle a question, about which there has been, first and last, a very great expense of wind and ink.—*Prairie Far.*

TAKE CARE,

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 anything, 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 two 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. Eat 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 out, 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 bad 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 waxy, with a trifle of meal, answers a good purpose, only let it be regular as to time and quantity. “This tampering 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 soil. But a little *care*, especially the first summer and first winter, they must have.

If you wish to have your fodder hold out well, *take care* of it. 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 crops, *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*.—*New York Central Farmer*.

POTATOE ONIONS.

From some remarks upon this species of onion, in the October number of the *Cultivator*, it seems that farmers generally are not much acquainted with it. A brief description of its qualities and the mode of cultivating it, may therefore be acceptable to some of your readers.

Its mode of propagation is peculiar. A large onion, set in the ground early in spring, breaks into several (5 to 15) separate onions, which grow in a cluster of three or four good sized bulbs at the bottom, and a number of small ones lying on the top. These last vary in size from that of a nutmeg to that of small hen's egg. The small ones are the seed for the next year's crop. The smallest will grow into very large, single bulbs; while the larger ones for table use—and to set out a sufficient number of large onions for the purpose of producing the small ones for seed. The first should have a moderately rich soil, the last a soil rather barren.

The onions should be put into the ground as early in spring as the season will admit. After the ground is made mellow, set the onions in rows far enough apart to allow a hoe to pass between them. They may stand 3 to 4 inches apart in the rows. Just cover them with earth. They may be stuck into the ground with the thumb and finger. They need no further care, but to be kept free from weeds.

To preserve them, they are gathered with a potatoe hook, as soon as the tops are dried, and then spread for a few days on the barn floor, or some other dry place. I formerly kept them over winter on a scaffolding in my barn; but having lost about 70 bushels by the severe winter of 1834—5,* (thermometer 23 below zero,) I have since put them into my cellar, which happens to be a very dry one, where they keep perfectly well, on a crib with a bottom of laths far enough apart (3-4 of an inch) to permit a circulation of air through them. Thus managed they keep longer than any other species of onion. I have them suitable for cooking the year round.

In their eating qualities, I do not discover any difference between them and other onions. But for cheapness of cultivation, certainty of crop and amount of produce upon a given space of ground, they surpass all others.

There is a sort of Eschalot, that has been cultivated and sold for the potatoe onion. Wherever this fraud has been practiced it has given the onion a bad name. The genuine article, properly cultivated, has, I believe, been universally approved and highly valued. **NOYES DARLING.**

New Haven, Ct., Nov. 19th, 1844.
—*Alb. Cult.*

NEW METHOD OF GROWING THE MUSHROOM (*Agaricus campestris*.)

Passing over the various modes of forming or making the beds, which I consider to be of minor importance, I proceed to direct attention to the failures which afterward take place, and which so frequently disappoint previous expectations. The principal cause of these failures I attribute to the very imperfect methods of supplying water to the beds which are in action.

The principal requisites for the successful culture of the Mushroom are heat, light, air, and a damp atmosphere. In the first place, with me, the dung is collected fresh from the stables, particularly from horses that are fed upon dry food, such as corn and hay. It is thrown into a shed to dry, a little before it is made into beds; my boxes are trellised at the bottom, which allows the heated air to penetrate through the mass of dung easily; a little hay or rough litter is spread over the bottom of the box, in order to prevent the dung from passing through the trellis work, and every two or three inches of dung that is added is beaten hard with a wooden mallet, until the layers reach within 1½ inches of the top of the box. As soon as the heat of the dung fails to a proper temperature, I insert large pieces of spawn into the bed at the distance of about eight inches square. I rarely make use of spawn less than 12 months old, and the less that it is broken, I find that it produces the better crops.

In about a week or 10 days afterwards, I finish off the beds with green turf 1½ inches in thickness, making the beds in my boxes in all about 9 inches in depth. I beat down the turf very firmly with the back of a spade in finishing; afterwards I have no farther trouble, except in paying attention to the fire, and in admitting fresh air as it may be required. The house is heated by open tanks, which run through the centre of it, and which return again into the boiler, giving out a sufficient quantity of moisture for the necessary development and growth of the Mushroom. During night the grassy turf becomes copiously loaded with moisture; and should the following day prove fine, I never omit giving abundance of fresh air by the door-way. The temperature of the house ranges from 60 to 65 during the day, and at night it is frequently allowed to fall as low as temperate.

The great advantage of growing the Mushroom upon fresh grassy turf is obvious to any one accustomed to its cultivation. I have been in the habit of growing it, and with great success, upon coal refuse for the last two years, and at present I have two boxes at work, one covered with coal

dust, the other with turf; the produce of these shows the relative advantages of the two methods, for although those from the coal-dust are large and of good flavour, and decidedly inferior in both respects to those produced by the grass-covered beds; indeed, such is the superiority of the latter, that if the Mushrooms from both beds were gathered and mixed indiscriminately, any one could, without difficulty, select those grown upon the turf from those raised on the beds covered with small coal.—*John Hankin, Gardener to Capt. Mitford.—Gard. Chron.*

SELECTION OF SEED.

"The perusal of Mr. Williams' prize essay, on the cultivation of Indian corn, afforded me much pleasure, and I hope some profit. He is wrong in one place: he throws away the best part of the seed. He says, "the grains must then be taken from each end of the ear, and those of the middle used for seed." The heaviest and best matured grains of corn on an ear, (and of course the best seed,) are those immediately at the large end, nearest the stalk. The correct plan, then, is to plant about half the grains on an ear of corn, beginning at the large end. The grains on the large end are sometimes disfigured by the pressure of the shuck while growing, which has probably led to the common practice of rejecting that part for seed; but the grains on the large end are the best seed, come up better and bolder when planted, and grow off faster, than from any other part of the ear. I have, (some years ago,) tried grains from every part of the ear, by planting them and watching the result. And the seed, from the large end of an ear of corn, will make roosting ears at least a week sooner than the grains from the small end.

The seed of the watermelon nearest the stem will produce ripe melons sooner than the seed taken from the blossom end. That I have tried. I have also observed, that the lowest grains of wheat, those nearest the stalk, on a head, are the fullest and best matured. An improvement might probably be made in seed wheat, by selecting those grains and sowing them. The suggestion is made for those who like to try such experiments. The same selection of seed might be tried on any other article. No doubt other persons may have observed the same facts here stated: I mention them for the benefit of young farmers, who may begin in time to watch the most minute operations of nature; for they often lead to important practical and profitable results. For "there are more things in earth, Horatio, than are dreamt of in your philosophy."—*Soxth Cult.*

Chemical research and practice both teach that oats lay on good, hard-working flesh, while corn makes fat, or soft flesh at the best, not fit to work on. If you wish to fat a hog or beef, give him corn; but if you want work, supply your animals with plenty of oats, barley, beans, and peas.—*Int. Agr.*

AGRICULTURAL PAPERS PATRONISED BY MEMBERS OF THE LEGISLATURE.

We observe that the *Albany Cultivator*, which boasts of having the largest circulation of any agricultural paper in America, is being pretty liberally patronised by the members of several of the State Legislatures. Two gentlemen of North Carolina, who have "Honourable" prefixed to their names, have each subscribed for one hundred copies for gratuitous distribution among their constituents, and in other states similar support has been given to the same spirited journal. Now, we beg leave to inform our friends that this is the sort of support that will invigorate an editor to write spirited articles. The members of the Canadian legislative assembly have, during the past session of parliament, flooded the country with political papers containing political speeches, most of which were of little importance. These papers were purchased from the publishers in Montreal at a much higher rate than the same number of impressions of the *Cultivator* would have cost; and mark the difference between the benefits that would have been conferred upon the productive interests of the country had the latter description of information been disseminated instead of the former.

Our readers probably are the best judges of the relative value of the two descriptions of information contained in the papers alluded to; and we beg of them as a favor, to sum up the exact difference, and whether the preference be for or against us, acquaint their parliamentary representatives with the fact, that there is such a journal as this published in Canada, and that it has hitherto barely maintained its existence, without receiving any such patronage as has been bestowed upon our cotemporary in the

United States. The example of the American legislators is certainly a noble one, and deserves the applause of every friend of agriculture.

LIBERAL PROPOSALS TO AGRICULTURAL SOCIETIES.

It is with great pleasure that we are enabled to announce to our friends and supporters, that the present circulation of the *Cultivator* will cover the actual costs of the work for the current year, and that there is a steady increase of subscribers, which will unquestionably swell its list to double that of any previous year. This liberal patronage on the part of our friends, will beget a corresponding degree of liberality on our part, which will extend in ratio with the increased support that we may receive at the hands of those who appreciate our exertions to improve the agriculture of British America. The working of the agricultural societies' bill is such, that it is desirable for each agricultural society to retain the whole of their funds to deposit with the Treasurer of the District Society until the Government Bounty may have been received; and to satisfy the officers of those societies that may think proper to patronize the *Cultivator* that our object is not self-aggrandizement, we make the following proposals, which we trust will meet their entire approbation.

1st. We propose to credit any properly-organised *agricultural society, horticultural society, or farmers' club*, to any number of copies of our magazine until the **FIRST DAY OF OCTOBER**, and shall hold the Officers personally responsible for the money.

2nd. In all cases where it is practicable, we shall expect that the papers will be sent to the address of one, two, or more Officers of the Societies respectively, and not to the names of individual members.

3rd. It will be a fixed and invariable rule, as much so as the "laws of the Medes and Persians," to give credit to no society that neglects to remit us the whole amount due for papers and advertisements, free of postage, by the *first day of October* in each and every year.

4th. We wish it to be understood, that the *British American Cultivator* is afforded to Associations for the small sum of **TWO SHILLINGS AND SIX PENCE** per annum, when the number ordered equals twenty copies, and that subsequent orders may be made at the reduced price without any regard to the smallness of the order.

MERCURIAL OINTMENT.

I saw in your paper of the 25th ult., a recommendation to one of your agricultural correspondents, relating to the use of strong mercurial ointment for the eradication of lice from cattle. I do not deny that in the hands of a skilful and intelligent operator the mercurial ointment is a valuable remedial agent for the above purpose, but if placed in the hands of an ignorant and careless cowherd, or farm servant, it is a very dangerous one; for, in the course of my practice I have seen very dangerous symptoms of salivation brought on by its careless and immoderate use. Of late I have been called upon professionally to attend upon many very bad cases of vermin on the skin of cattle, and I have invariably found the following ointment or liniment effectual in their destruction, without the dangerous results that are sometimes seen from the use of mercurial ointment. Take of the prepared fat of geese, 4 oz.; train oil, 4 oz.; sulphur vivum, 2 oz.; mix well. The affected animal must be taken into the house, if out, be well cleaned with a strong brush, and a little of the ointment applied, and well rubbed in wherever the lice can be found on the skin; cleanliness must be rigorously attended to, along with good keep and pure water. I have occasionally used the following decoction of Tobacco:—Take of fine-cut Tobacco, 8 ounces; boiling

water, 8 quarts. Let the decoction stand until cold; then strain for use. I will relate a case in point, to show my mode of using it. About two months ago I was professionally called upon to attend a young heifer, the property of one of the most extensive dairy-farming firms in the vicinity of Manchester. She was of the improved short-horn breed, about two years old, in calf, and very fat. She always had been in a good and well-sheltered pasture, and I could not discover by what means she had caught the infection. Upon examination of the beast, I found her to be literally swarming with lice, which I believe to be the *Pediculus capitis*, but, not being a professed naturalist, I cannot say if I am right.

I ordered the beast to be brought out the field, and placed in a comfortable and clean loose box. She was then well brushed all over with a whalebone brush, after which she was sponged lightly over with the before-mentioned tobacco water—plenty of clean straw was then thrown under her, she was supplied with food and left for the night. The next day there were myriads of dead lice lying on the hide of the beast—indeed, the hair was completely covered with them. I ordered the brush to be applied again, and to be lightly sponged over as before, and in about two days after she was completely cleared of them, and is now as clean as ever. In using the decoction of tobacco great care is requisite; for, like the mercurial ointment, I have seen often evil consequences to be the result of its immoderate use, and it ought never to be used, unless under the immediate superintendence of the veterinary surgeon or owner. Proper care is requisite in keeping the beast well sheltered and clean, after using it, and being supplied with good food, pure water, &c. But, as an innocent remedial agent for the destruction of these parasitical animalcules, an agent that is safe in the hands of the commonest and most ignorant farm-servant or labourer, and one that I never knew to fail if properly applied, I would recommend the use of the first named remedy.—*James H. Shenton, V. S., Pen-
dleton.*

Potatoes—A letter has been addressed to the editor of the *Hereford Times*, by Mr. W. Godsall, strongly recommending all persons interested in the potatoe crop to pull off the flowers as soon as they appear. Experience shows that flowers of the potatoe are produced at the expense of that organizable matter which gives its value to the tuber, and which is diminished in quantity in proportion to the number of flowers that have been fed. For flowers must exist and feed on something, and that something is what would, if not removed by the flowers, descend beneath the ground and collect itself in the tubers. The mere production of flowers is a loss, but the mischief is infinitely increased if the flowers are succeeded by the berries. The actual amount of loss produced by each truss of flowers is not ascertained; but it is probable that if the flowers abstract one ounce of organizable matter, the berries consume at least twice as much. A bunch of potatoe berries weighs half a pound. Suppose that each potatoe plant bears half a dozen bunches, that makes three pounds of worthless produce. An acre of potatoe ground carries about twenty thousand plants, on the average, this gives sixty thousand pounds waste. But of this fifty-four thousand four hundred and twenty-four pounds will be water, according to Mr. E. Soly's experiments, and only five thousand three hundred and twenty-two pounds organic matter. The latter, however, or two tons seven hundred weight and forty-eight pounds, would, according to his calculation, be the amount of the loss sustained per acre, by allowing the potatoe to flower and fruit.—*West. Gard.*

Culture of the Pie-Plant—The *Pie-Plant* requires a rich, deep, leamy soil, to flourish luxuriantly; on a poor, gravelly soil, the stalks are short and tough; any location will suit as to aspect; but, like all other vegetables, it comes to perfection earlier in a Southern aspect, which is a great item, as it is intended for an early produce. The *Pie-Plant* is increased either by seed or dividing the crowns of the roots. The seed may be sown in drills, on a rich piece of ground, in the same manner as directed for Asparagus. The crowns may be divided with an eye or two each, and planted into a final bed. The bed may be prepared early in the spring, in the same manner as directed for the Asparagus; lay it out into rows four feet apart, and transverse rows crosswise three feet apart in each angle; take out three or four shovelful of earth, place into each one or two good shovelful of well rotted manure, then place on it one plant, cover the crown with a good shovelful of rotten manure, level the earth from about the holes, and the work is done. The ground between the rows may be planted with lettuce, cabbage, or any other vegetable, the first year; but when the roots are established, it is best not to crop between the rows.—*West. Gard.*

Bleaching Rhubarb.—By many people the *Pie-Plant* is preferred in a bleached state, which re-

quires a different method from the common treatment. The *bleaching* may be done early in the spring, by placing around the crown a flour-barrel, covering the crown all over, and placing around the outside the barrel long litter or manure to keep it warm and cause vegetation to commence, which will be in a few days, and in two or three weeks the stalks will be fit for use. Rhubarb may also be forced in frames, as directed in the framing department, which will appear soon.—*West. Gard.*

Ewes and Lambs.—A difficulty is sometimes experienced in making ewes own their lambs, and oftener, perhaps, when cases of twin lambs occur than at other times. Those who desire to rear and their lambs may find a benefit in sprinkling a little fine salt over the disowned ones. This will usually attract the mother, and when once the operation of licking has been performed, there is seldom any danger of desertion. A friend assures us that he has practiced this method with decided success, and no injury to the lambs may be apprehended from the application. Sheep, when about to lamb, should be moved and disturbed as little as possible, as all such disturbances, especially with young or wild ewes, greatly increase the probability of their forsaking their young.—*Ayrshire Agriculturist.*

Capital in Farming.—Count De Gourcy thus speaks, while examining the farming establishment of a young agriculturist in Scotland:

"The manner in which capital is employed in farming, is well illustrated in the case of Mr. Hoggart, near Coldstream. Mr. H. is a young man, and took his farm on a lease of only fifteen years; yet he expended at once \$20,000 in draining, embanking, ditching, liming, &c., and employed a farther capital of \$25,000 in carrying on the farm, stock, &c. The first 5 years he makes nothing; the second 5 years he receives a return of his expenditures, and will nett \$25,000 on the third 5 years. It is nothing uncommon, where the lease is for 20 years only, to expend from \$5,000 to \$15,000 in draining.

Cleanliness.—A strict attention to cleanliness and sweetness in our persons, houses, door-yards, clothes, and furniture, not only produce a pleasing sensation to ourselves and all around us, but is also a means of preserving our health. Lethal and even noxious vapors are often generated around dwellings, causing sickness, and perhaps death, for want of a strict attention to cleanliness. All slops and washes should be carefully conveyed into the garden, or thrown upon the manure heap, and never suffered to be merely thrown out at the door, to the annoyance of the family and their visiting friends, and not unlikely to the lasting injury of their health. Pure water is sought by all as conducive to health; but air, on which our vitals are constantly feeding, is really too much neglected.—*Selected.*

Importance of Co-operation between the Farmer and Chemist.—We believe that by far the greatest obstacle to the advancement of scientific Agriculture hitherto, has been the want of co-operation between the farmer and the chemist. Each has tried to move forward alone, and thus each has been led astray. We may not inaptly apply to them the well-known story of the lame and the blind, neither of whom alone could proceed with safety, but when united arm-in-arm, the defects of each were fully compensated for by the superior advantages of the other. Thus the farmer, from his knowledge of practice, is enabled to progress in any given direction, but, from his want of acquaintance with the fundamental principles of his art, may be justly considered blind; whereas the chemist, however clearly he may see the end to be attained, makes but a very lame progression, owing to his ignorance of practice. Let the two but consent to become mutually dependent, and, proceeding arm-in-arm, the assured steps of the well-practiced farmer will be guided in the right way by the clear-sighted knowledge of the enlightened chemist.—*Dr. Madden, on the Advantages of Extended Chemical Analysis to Agriculture.*

Shelter for Stock.—Liebeg asserts that "our clothing is merely an equivalent for a certain amount of food." In other words, if we keep ourselves comfortable and warm, we cannot eat so much, because the amount of heat to be supplied by the food is diminished. These observations are as applicable to domestic animals as to ourselves, and they teach the farmer the necessity of providing comfortable shelter for his stock. It has been proved by repeated experiments, that animals during the winter season entirely exposed to the weather, do not thrive as well, nor keep in as good condition, as those comfortably housed, although they consume from 25 to 100 per cent. the most food: thus showing the owners of stock that if they have not sufficient mercy upon the dumb beasts, to provide them shelter for winter, their interests should prompt them to do so.—*Am. Ag.*

For Mothers.—Draw your children to you by real kindness: let them see that you study their best interest and happiness, rather than your own comfort or convenience. Take especial pains to make home the most pleasant place on earth to them. It may, perhaps, sometimes be a tax upon your ingenuity to do so, but you will reap a blessing from it which will more than repay you.—This will effectually keep them from bad company. The memory of home, sweet home, happy early associations, and a mother's love, watchfulness and prayers, have been the til'sman which has enabled many a soul to bear up and buffet in after years against the winds of adversity and the tide of temptation which have assailed them through a long life; and who shall limit the extent of a mother's influence?

Health and Comfort.—To prevent cold feet, wash them frequently, and rub them thoroughly with a coarse cloth, this removes obstructions from the pores, and produces a healthy state which is conducive to warmth. When the feet appear clean, the pores may be obstructed and the perspiration impeded so as to produce discomfort, and in some measure injure the health.

To prevent cold feet at night, in addition to the above cleansing process, take off the stockings a short time before retiring, and with them rub the feet hard until they are not only warm but begin to feel hot. This will greatly add to pleasure and health, which, in many cases, greatly depend on things which may to some appear trifling.

To keep the feet dry, use good stout boots or shoes, and stuff the leather, upper and lower, full of some water-proof composition. Tar is a good ingredient, as it will bend and not break. Two parts of tar, two of beef's tallow, and one of bee's wax, make a good composition for boots and shoes. Apply it quite warm, and warm the leather that it may penetrate. As farmers are frequently exposed to wet, they should be careful to keep their feet dry and warm, for on this their health and comfort in a great measure depend.

One great secret of domestic enjoyment is too much overlooked. It lies in bringing our wants down to our circumstances, instead of toiling to bring our circumstances up to our wants. Wants will always be ahead of means, and there will be no end to the race, if you set the latter to chasing the former. Put the yoke of self-denial on desire, apply the spur of industry to energy, and if the latter does not overtake the former, it will at least keep in sight of it.

Saving Seeds.—"Like produces like," is a general law of nature; the same both in the vegetable and animal kingdom. If a cultivator, then, desires to have any production earlier than usual, let him procure the first seeds that ripen on a well-grown and productive plant, and so proceed year after year, and he will obtain this desideratum.

Every variety of vegetable may be rendered more productive, by selecting every year the seed of the most productive and well formed plants. For instance, peas 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 the same way; select the finest heads of grain for seed before reaping; select seed corn from stalks that bear two or more good ears, and take the largest and best formed ears. Choose from stalks that are large at the bottom and run off to a small top, not very high. For early onions select seeds that ripen first, and have good form; turnips the same, and so on, following the same rule throughout. There is no work, attended with so little care, which is so much neglected by the farmers as this. Look to this, many seeds are now ripe.—*Piough Boy.*

Mustard in Convulsions.—We find that Chas. S. Tripler, M. D., Surgeon U. S. Army, recommends the use of mustard in the convulsions of children. He remarks, that, "From my experience of the remedy, I do not hesitate to recommend its employment in these troublesome cases, in preference to any other internal remedy with which I am acquainted."

Buttons.—The Haydens, two, brothers, commenced the business of making buttons, by hand, at Haydensville, near Northampton, Ms., employing only two or three hands besides themselves. After a few years they enlarged their establishment, and their business is said to have increased as follows:

Year	No. hands.	Capital.
1835	25	\$20,000
1836	50	30,000
1837	100	50,000
1838	200	100,000

In 1839, they added to the business of manufacturing Steel Pens to that of making Buttons, and their operations were as follows.

1839	225	\$125,000
1840	235	130,000
1841	235	130,000
1842	235	130,000
1843	250	145,900
1844	275	175,000

In 1844 the number of Buttons manufactured per day, was 1600 gross; and the number of Pens manufactured per day was 100 gross.—*Lowell Journal*

To Grow Mushrooms.—Collect the droppings of horses daily, and place them in a dry place under cover; let them be turned frequently to prevent them sweating. When enough is collected for one bed, have it put into the growing house. The beds to be made as follows: The horse manure to be laid about 8 inches thick, and beat down very solid with a brick or mallet; on it lay half an inch of black fire earth, and beat this down also; have a few wooden pegs to stick into the beds about six inches, and after a few days pick them out when it becomes beated. When the stick feels warm, the spawn must be put into the bed about five inches deep, and about six inches apart. The house to be kept at about 55 degrees of Fahrenheit.

The above instructions in making mushroom beds, and planting the (brick) spawn, were given to me by a gentleman in England, who has been most successful in cultivating the mushroom, and has the largest beds I have seen any where in Europe. I send it for the information of those interested.

Very respectfully yours,

W. H. MAXWELL.

St. Neige, Esq., Sec'y of the F. Club.

Manuring Strawberries.—There appears an undue fear of manuring strawberries. I have read somewhere that all plants that throw out suckers or runners rapidly deteriorate the soil, and that a power of escape to new grounds is given by the runners. If this is correct, it is a reason for the good results I have always seen of manure. How rarely, except where strawberries are grown for profit, do we see room enough given. Beds of strawberries are objectionable for this reason, and it is this cause rather than manure that leaves are more abundant than fruit. I have tried and proved this. Where strawberries are grown for profit, (that is, grown at all in the true sense,) they should be planted in rows—the large sorts not less than 30 inches in the row, and 15 inches from plant to plant, and no runners suffered to remain. By these means, with deep trenching and early planting, any sort worth cultivating may be grown large and abundantly.—*Am. Ag.*

FROM THE PRACTICAL RECEIPT BOOK

Lead Colour.—Whiting, 1 cwt.; road dust, 1 cwt.; blue black, 9 pounds; ground white lead, 35 pounds: lime-water, 10 gallons; Factitious linseed oil to grind in

Whooping Cough.—A tea-spoonful of castor oil to a table-spoonful of molasses: a tea-spoonful of the mixture to be given whenever the cough is troublesome. It will afford relief at once, and in a few days it effects a cure. The same remedy relieves the croup, however violent the attack.

To prevent Murrain in Cattle.—Take equal parts of salt and slaked lime; mix, and give two table-spoonful twice a week during the prevalence of the disease.

Preserving Eggs.—One bushel of quick-lime, 32 ounces of salt, 8 ounces of cream of tartar. Mix the whole together with as much water as will reduce the composition to such a consistency that an egg, when put into it, will swim.

Nankin Dye.—1. Annatto, potash, equal parts: water sufficient. Boil until dissolved. 2. Spanish annato, 12 parts; alum and potash, each, 1 part; water, sufficient quantity. Unite by boiling.

To raise Nap on Cloth.—Soak the cloth in water for half an hour, then lay it on a table and raise the nap with a teazle, or hatter's card, filled with flock; let it dry, then use a hard brush.

A Cement for stopping the Fissures of Iron Vessels.—Take two ounces of muriate of ammonia, one ounce of flowers of sulphur, and sixteen ounces of cast-iron filings or turnings; mix them well in a mortar, and keep the powder dry. When the cement is wanted, take one part of this and twenty parts of clean iron filings or borings, grind them together in a mortar, mix them with water to a proper consistence, and apply them between the joints.

This answers for flanges of pipes, &c. about steam engines.

New Acid for Dyeing.—Take of the root of the aloe, and by the action of the nitric acid a beautiful red colour is produced, which will be found very useful to dyers.

To prevent the Night-mare.—Avoid heavy suppers, and take either of the following doses on going to bed :

1. Bicarbonate of soda, 1 drachm ; tincture of cadamus (comp.) 3 drachms. Mix.

1. Sal volatile, 10 drops ; tincture of ginger, 2 drachms. Mix.

3. Magnesia, 20 grains, rhubarb, 15 grains, carbonate of soda, 10 grains. Mix.

Anti-Attrition.—Lard, 80 pounds ; black lead, 25 pound, spirit of turpentine, 5 pounds ; soap, 4 pounds. Mix. For machinery.

2. Lard, 4 parts ; plumbago, 1 part. Mix.

Anti-ferment for Cider, Beer, Wine, &c.—Sulphate of lime, 1 part ; powdered mustard-seed, 2 parts. Mix. This is infallible if properly used.

Family Basilicum Ointment.—Take 1 ounce of beeswax, 1 ounce of resin, and 1½ ounce hog's lard. Melt all together. Healing and exciting. Used for dressing sores,

Raspberry Syrup.—To every quart of fruit add a pound of sugar, and let it stand over night. In the morning boil and skim it for half an hour ; then strain it through a flannel bag and pour it into bottles, which must be carefully corked and sealed.

To Boil a Ham.—Put your ham into the pot at noon the day before you want it for the table, and keep the water hot until that time, then let it boil 15 minutes.

Raspberry Jam.—Take 1 pound loaf-sugar to every pound of fruit ; bruise them together in your preserving-pan with a silver spoon, and let them simmer gently for an hour. When cold, put them into glass jars.

Premium Cheese.—For a cheese of 20 pounds, a piece of rennet about two inches square is soaked about twelve hours in one pint of water. As Rennets differ much in quality, enough should be used to coagulate the milk sufficiently in about forty minutes. No salt is put into the cheese, nor any outside during the first six or eight hours it is being prepared ; but a thin coat of fine Liverpool salt is kept on the outside during the remainder of the time it remains in press. The cheeses are pressed forty-eight hours under a weight of seven or eight cwt. Nothing more is required but to turn the cheeses once a day on the shelves.

Premium Cheese.—The milk strained in large tubs over night : the cream stirred in milk, and in morning strained in same tub ; milk heated to natural heat ; add color and rennet ; curd broke fine and whey off, and broke fine in hoop with fast bottom, and put in strainer ; pressed twelve hours ; then taken from hoop, and salt rubbed on the surface, then put in hoop, without strainer, and pressed forty-eight hours, and then put on tables, and salt rubbed on surface, and remain in salt six days for cheese weighing 30 pounds. The hoops to have holes in the bottom : the curds are saved, and set and churned, to grease the cheese. The above method is for making one cheese per day.

Itch Ointment.

1. Take lard, 1 pound, suet, 1 pound, sugar of lead, 8 ounces ; vermilion, 2 ounces. Mix. Scent with a little bergamot.

2. Take bichloride of mercury, 1 ounce ; lard, 1 pound ; suet, 1 pound ; hydrochloric acid 1½ ounce. Melt and mix well, and when perfectly cold, stir in essence of lemon, 4 drachms, essence of bergamot, 1 drachm.

3. Take powdered chloride of lime, 1 ounce, lard, 1 pound. Mix well, then add essence of lemon, 2 drachms.

4. Take bichloride of mercury, 1 part ; lard, 15 parts. Mix well together.

5. Take white precipitate, 1 part ; lard, 12 parts. Mix.

A portion of either of these ointments must be well rubbed on the parts affected, night and morning.

TOWNSHIP OF YORK
AGRICULTURAL SOCIETY.

THE Committee of the Township of YORK AGRICULTURAL SOCIETY give notice that the following list of Premiums will be awarded at the SPRING SHOW, to be held on the 13th of May, next.

Best Bull of any age	-	-	£1 0
Second best do do	-	-	0 10
Second best do 2 years old	-	-	0 10
Second best do yearling	-	-	0 5
Best Milch Cow	-	-	1 0
Second best do	-	-	0 10
Heifer, 2 years old	-	-	0 10
Yearling	-	-	0 5
Best Stallion (saddle)	-	-	1 0
Second best do	-	-	0 10
Best Stallion, draught	-	-	1 0
Second best do	-	-	0 10
Best Saddle Mare, in Foal or Foal by her side	-	-	1 0
Second best do	-	-	0 10
Best Draught Mare in Foal or Foal	-	-	1 0
Best Boar	-	-	9 10
Best Sow	-	-	6 10

Members compete free. Persons not members, entering Stock previous to the 6th May, pay 5s., after that date 10s each, and allowed the privilege of Members during the year.

By order.

JOHN DEW,

Secretary.

April, 1845.

J. CLELAND,
BOOK AND JOB PRINTER,
KING STREET, TORONTO,

Adjoining Mr. Brewer's Book Store, leading to the Post Office.

Every description of Plain and Ornamental Printing neatly executed on moderate terms.

Toronto, October, 1844.

FARMERS BEWARE!!!

BLACK SEA WHEAT.

AT a Meeting of the Board of Directors of the County of Northumberland Agricultural Society, held at Grafton on the 5th day of March 1845, the following Resolution was moved, seconded, and unanimously carried:—

“That the following Advertisement be printed in the *Chbourg Star* and *Toronto Cultivator*, and in 200 Handbills or Posters, to be distributed throughout the Country.”

Notice is hereby given that some of the Seed Wheat imported by Mr. L. Card, said by him to be

“BLACK SEA OR ODESSA WHEAT,” has been examined by us and ascertained to be infected by the *Hessian Fly* or *Weavel*. We therefore do hereby caution every Farmer from purchasing such Wheat for seed, as the introduction of the disease above-mentioned would cause the ultimate ruin of the wheat trade in this Province, in the same manner that it has ruined the wheat trade in Lower Canada and many Districts in the United States.

(Signed by) Messrs. R. Hare, J. G. Rogers, A. Moore, J. Beattie, R. Wade, C. Vernon, A. A. Burnham, J. Montgomery Campbell, W. King, T. Page, J. Steele, J. Phillips, W. C. Irish.

Extracted from the Minutes of the Meeting by
D. McTAVISH,

Secretary.

Grafton, March 5, 1845.

FRESH SEEDS.

100 bushels FLAX SEED,
160 do. CLOVER and TIMOTHY, warranted fresh, with all the Shakers' GARDEN SEEDS, for Sale by

ROBERT LOVE,
Druggist, 137, King Street.

Toronto, Feb. 1845.

The British American Cultivator,

(New Series.)

Is published on the First Day of every Month, at Toronto, by EASTWOOD & Co., to whom all orders must be addressed.

W. G. EDMUNDSON, } Proprietors.
EASTWOOD & Co.

W. G. EDMUNDSON, Editor.

Each number of the *Cultivator* contains 32 pages; and is subject to one halfpenny postage, when directed to any Post Office in British America.

Advertisements will be inserted for One Dollar if not exceeding Twelve lines, and in the same proportion, if exceeding that number.

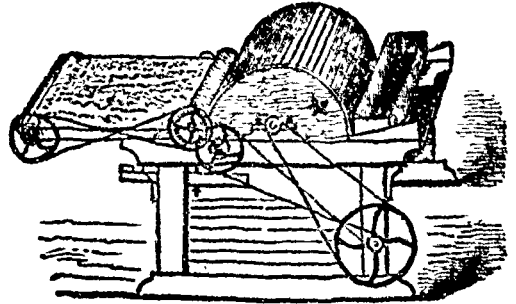
Terms—One Dollar per year; Four copies for Three; Eight for Five; Twelve for Seven; and Twenty for Ten Dollars.

All payments to be made invariably in advance, and free of postage.

Editors of Provincial newspapers will oblige the Proprietors, by giving this advertisement a few insertions.

Toronto, Jan. 1845.

PATENT WOOL PICKER.



TO WOOLLEN MANUFACTURERS.

THE Subscriber begs leave to inform the public that he has been engaged with Mr. Christopher Elliot at the *Phoenix Foundry, Toronto*, for the last two years past, in building *Woollen Machinery*, but in consequence of having suffered a serious loss by the late fire, he has been obliged to give up the business with Mr. Elliot, and therefore does not hold himself accountable for the working of any of the machinery built at the *Phoenix Foundry* after the first January last.

The Subscriber has now made arrangements with Mr. J. R. Armstrong, Proprietor of the new *City Foundry*, to make and furnish all kinds of

WOOLLEN MACHINERY

that may be required in manufacturing Woollen Cloths in this Province, such as follows, viz:—

Pickers, Carding Machines, Condensers, Spinning Jacks, Broad and Narrow Power Looms, Fulling Mill Cranks, Napping and Teazling Machines, Gigs, Shearing Machines, Jinnys, Stoves for Heating Press Plates, Cast Iron Dye Kettles, together with every other kind of Machinery required to manufacture Cloth.

The machinery will be made under his personal superintendence on the most approved plans, and the material and workmanship will be of the best description.

All orders addressed to *Archelaus Tupper, City Foundry, Yonge Street, Toronto*, will be promptly and neatly executed on moderate terms.

ARCHELAUS TUPPER.

Toronto, March, 1845.

EASTWOOD & Co.

Paper Manufacturers, Stationers, School Book Publishers, &c.

HAVE constantly on hand an assortment of SCHOOL BOOKS, such as are in general use throughout the Province.

—ALSO,—

Writing, Wrapping, and Printing Paper, Blank Books, Stationery, &c.

N. B. Publication Office of “*The British American Cultivator*.”

Yonge Street, }
Toronto 1845. }