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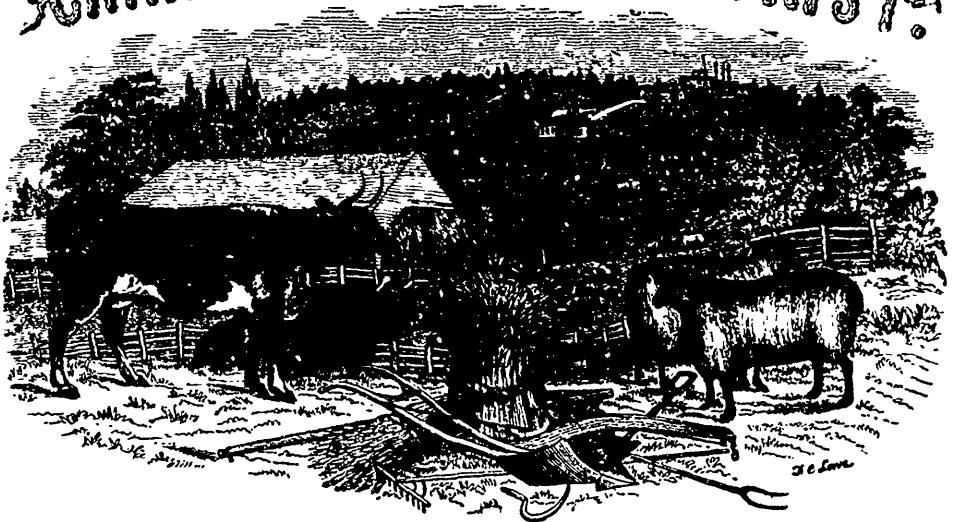
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CANADIAN AGRICULTURIST.



"The profit of the earth is for all; the King himself is served by the field."—ECCLES. v. 9.

GEORGE BUCKLAND,
WILLIAM McDOUGALL, }

{ EDITOR,
{ ASSISTANT EDITOR.

VOL. II.

TORONTO, NOVEMBER 1850.

No. 11.

The Canadian Agriculturist.

Published Monthly, at Toronto, C. W.

TERMS:

ONE DOLLAR A-YEAR IN ADVANCE.

Twelve copies, for one year 3s. 9d. each.
To Clubs and Societies.

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and 1849.

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All remittances should be forwarded to WILLIAM McDOUGALL,
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THE PROVINCIAL AGRICULTURAL ASSOCIATION.

We observe that in one section of the Province, some misapprehension prevails as to the resources and general utility of this Society.—At a recent meeting of the Agricultural Society held at Guelph, some discussion took place on the question of making the Provincial a pecuniary grant, as is the yearly practice with most County, and several Township Societies in other parts of the country. While some contended

for making a grant, others opposed it upon what we conceive to be very insufficient grounds. It was alleged that the Provincial Association had received this year a grant from Parliament of 1000*l*, with an understanding that the Society ought to be otherwise self-supporting. This is certainly a mistake, and we consider it our duty at once to correct it. The Parliamentary grant for 1850 was 600*l*; and the Association received no aid from that source till last year, when 225*l* were voted towards the exhibition held at Kingston, and 20*l* towards enabling the Society to discharge the heavy liabilities incurred at Hamilton, in 1847. Full particulars will be laid before the next meeting of Parliament; but in the mean time, it will be satisfactory to our readers, and the public to be assured, that the Provincial Association is now out of debt, and we are informed, will have something in hand.

It was likewise urged against affording pecuniary support, that as it was improbable that the Association would hold an Exhibition at Guelph, the District could derive no benefit from its operations. We look upon this as a narrow and fallacious objection. The rapid settlement

of our fertile Western country, with a grand trunk railway that will ere long intersect it, with branches that may be subsequently formed, it is impossible to say where the Association may not, in a few years, hold its exhibitions. Railway or no railway, London, at least, must shortly have the Show. And the facilities for reaching Guelph may, in a very few years, be such as to carry the Exhibition there; and we know that the enterprising farmers of the Wellington District, would sustain it in a creditable and efficient manner.

But we would say to our good friends of Waterloo—and indeed to all others similarly situated, that if it were a matter of certainty, that the Society's Exhibition would never take place within your County, it by no means follows that you are cut off from all share in its benefit. Your own breeders won several of the principal prizes this year, at Niagara. Is it not an advantage to have an opportunity of competing upon a large scale, and of showing what excellent breeds of animals you raise, to assembled thousands, gathered from the various points of this great continent? If we cannot carry the exhibition far into the interior—and as a *general* rule it must follow either water or railway communication—visitors, stock and articles from the interior may come to it, and thereby, we maintain, receive some portion, at least, of benefit.

We have been gratified to hear several individuals from the back townships, so speak of the Niagara Exhibition, as to justify the hope that a spirit of improvement and emulation will thereby be kindled in their respective localities. A meeting of the Midland District Agricultural Society was held the other day at Kingston, when it was resolved to devote a considerable sum of money to the purchasing of superior bred animals, that they might eventually overtake their more advanced brethren of the west, in this most important department of the farmer's art. Would these hopeful signs of the times have existed without a Provincial Association, which gathers once a year into one place, visitors and things for exhibition, from all parts of the country? The answer is obvious.

For our own part, we could like to see the Provincial Association, placed in a position as not to need the mere *pecuniary* support of the Agricultural Societies; since we know that none of these Societies have too much for their own legitimate purposes. We trust that the Board of Agriculture, when formed, will receive a sufficient government grant, to enable it to sustain in a state of increasing efficiency, the Provincial Association; and to hold frequent

communication with, and publish the proceedings of all the Societies in the upper section of the united Province. Nothing is more urgently required among us as the cultivators of a rich and extensive soil than a common bond of unity—a centralization of effort; and this such an organization is admirably calculated to supply.—A Board of Agriculture conscientiously and energetically pursuing its patriotic duty, that of helping forward the great industrial interests of *all sections* of the Province, and of holding communication with similar agencies in various parts of the world, could not fail to attract to this country that capital and intelligence which fail to find, under existing circumstances, profitable employment in the Parent State, and which we here so greatly need. In the adoption and prosecution of all plans for advancing a country's welfare, people should study to take a just, if not a generous view. For no improvement can be introduced in any department of human industry in a particular locality, but what must become ultimately a common good to the whole community. With these views, and in this spirit, we advocate the claims of the Provincial Association.

In drawing these few remarks to a close, we earnestly request the attention of our readers, particularly such as have had experience in the management of Societies, to the subject of an amended agricultural Statute. The complaints against the working of the present law are many and loud. Several County Societies are almost defunct. This is an evil which requires a prompt and vigorous remedy. We shall be happy to be made acquainted with the views and wishes of a larger portion of our readers than have hitherto communicated with us, in relation to the amended Bill, which was to have been brought before the last session of Parliament. It is most desirable, if possible, to have *united* action upon this matter. No individual prejudice or supposed sectional interests should be allowed to interfere in the prosecution of an undertaking, which involves a common good. We require a *long pull, and a strong pull, and a pull altogether.*

NEW STEEP FOR SEEDS.—“La Presse,” of Paris, speaks of some marvellous wheat obtained by the Messrs. Dussseau, by steeping the seed in some new preparation, which wheat is destined for the purpose. The magnificence of this grain, both in straw and ear, is represented as having excited universal admiration; and it is expected “to do the greatest honor to French agriculture.”—*Gardener's Chronicle.*

QUANTITY OF BONE-DUST APPLIED PER ACRE.—Lord Duice, of England, it is stated, applies from sixteen to twenty bushels of rough bonedust per acre.—*Agricultural Gazette.*

ON DRAINING, WITH REFERENCE TO FIELD WORK AND ALSO FOR PLANK ROADS.

To the Editor of the *Agriculturist*.

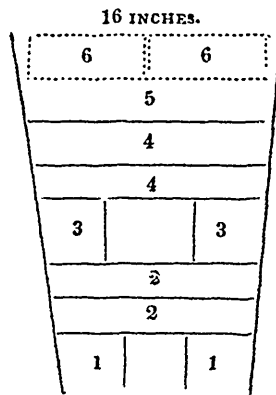
Mr. Editor :—

As the season as now arrived in which Draining operations should be called into requisition, a few practical observations may be useful to many, and not inappropriate at this season for the pages of the *Canadian Agriculturist*.—Herewith I send you a sketch of a section of a drain constructed with split oak timber peculiarly suited for Canada, and especially applicable for our plank roads. Some years ago I sent a copy to the Board of Works, and if it had been adopted, it would have saved 50 per cent in the cost of maintaining the said roads; besides the additional prices that would have been obtained at the late sales; and it must yet be adopted before any effective road can be made. The drain described forms the base of the centre string piece or sleeper; the advantages are many, but chiefly in the increased durability of the road, from its dry and firm state, and preventing the sinking or springing of the sleepers or string pieces; and will also prevent the wasting out of breaches or holes by the accumulated force of torrents in heavy rains, but the greatest advantage and comfort to the public will be in leveling all the present dangerous open ditches, cut at short intervals at right angles with the road, foolishly intended to take off the water, but entirely ineffectual for that object, and which has caused numerous accidents, especially in the night. For field work the drain proposed is preferable to either tile or pipe draining, and somewhat cheaper; the chief advantage is, that the water soon filters through into the drain, consequently will dry a larger area, and thus diminish the outlay. Every owner of a strong loam or stiff clay soil will find, after a few years, however well such land had been drained with pipe or tile, that the discharge is very slow;—this will be the certain consequence of tillage on arable land, especially when ploughed in a wet season. When in England in March last, I inspected work done under my direction 15 years ago, and now in good operation. As a grand result of draining you have doubtless read of the wonderful crops said to have been grown by the Rev. Mr. Huxtable in Dorsetshire, whose farming as been so much discussed at the Tamworth Dinners, and elsewhere; I was in the neighbourhood of the Rev. gentleman's farm at the period alluded to and dined with a large party of respectable farmers at Dorchester.—From what was then stated, there seems to be

much exaggeration in the accounts which have reached us respecting this celebrated agriculturist, but it is understood that the Rev. gentleman has married a rich wife and is now entering eagerly into agricultural experiments; having made the transition from the humble Dissenting Minister to the Episcopal Clerical Magistrate, an incongruity of frequent occurrence amongst the more aspiring divines of that church in England but happily unknown on this side the Atlantic. It may be recollected that the character of such men is well described by Cowper as being anomalous in his time.

I am, Sir,
Your obedient servant,
HENRY MOYLE.

Section of a Drain constructed with Split Oak Timber.



The depth of the side 22 inches: width of bottom 12 inches.

REFERENCE,

- 1 1 Base Shoulders, 4½ inches square, 6 feet long.
- 2 } { Cross Covers, 2 inches thick, five or six inches wide, care being taken to cover the joints.
- 2 } {
- 3 3 Upper shoulders, having their beamings in the centre of 1 1.
- 4 } { Cross covers same as 2 2.
- 4 } {
- 5 Rye straw with a thin covering of effete Tan Bark to serve as a filter.
- 6 6 The centre string pieces, each 12 feet long 2½ inches thick, having the joints opposite corresponding centres, these are sawn timbers.

Observations.—For field work the layer of straw or tan bark will not be necessary, but for a Road Drain it will be needed as a filter, and to prevent the drain being filled with sand by the shaking of the road. The upper shoulder will not be necessary where there is sufficient fall

to discharge the water freely, but in long levels or nearly so, the water is chiefly taken off by absorbing drains similar to that adopted by Mr. Elkington some years ago, for the introduction of which, it will be recollected the British Parliament voted him one thousand guineas.

If the worn out plank is not much decayed, the construction of the road drain may be expedited by cutting up the old plank for this purpose, it will last many years and prove its utility, this would be best effected by a circular saw of two horse power. The expense of constructing this kind of drain with new materials has been estimated at about £80 per mile.—H. M.

[As our correspondent has recently returned from a visit to England, where he formerly had a long and extensive experience as a practical agriculturist, we should feel obliged if he would favor us with his impressions as to the improvements made in farming in the old country since he left; embracing modes of cropping and culture, manures, implements, &c., with the actual state and prospects of the British farmer, compared with those of the Canadian Farmer.—Ed.]

CLOVER SEED.

To the Editors of the Agriculturist.

GENTLEMEN:

I believe the quantity of clover seed sown in Upper Canada is yearly increasing, and that it is very desirable that information should be more generally possessed as to the kinds best suited for this climate. English seed cannot always be had; in that case, what kinds rank next?

Some attempts have been made in this neighborhood this season to raise seed; but not having access to machinery it could not be properly cleaned. Can you or any of your correspondents give any information on the subject? Is a first or second crop best? how should it be managed? And is it possible to clean the seed without machinery? and by what means?

I am, Gentlemen,

Your obedient servant,
AN ENQUIRER.

[Our correspondent's enquiries relate to subjects of increasing interest in this country, and we hope some of our readers that have had experience in the matter will communicate the desired information.—Ed.]

AGRICULTURAL SHOW OF THE COUNTY OF YORK.

The Fall Exhibition of this Society was held in Toronto, on October 9. The show of horses was scanty, as is usual at this season of the year; but of cattle, sheep, and pigs, the number was considerable, and the quality good. We noticed several agricultural implements of excellent workmanship, with a few that were imported from England, among them, Croskill's celebrated Clod-crusher the first we have seen on this side the Atlantic; it is a very powerful and useful machine, but too expensive for general use in this country. The show of butter and cheese was very good, and the grain and roots far exceeded our expectations. They were so crowded together in a small room in the Court House, as to appear under every disadvantage. We trust the Society will procure against another exhibition more suitable accommodations. In the evening a considerable number of the members sat down to dinner at Elgie's Hotel, and a very agreeable evening was spent, under the efficient superintendence of Edward W. Thompson Esq., the President of the Society.

HARVESTING AND STORING ROOT CROPS.

Carrots, sugar beets, and mangel wurtzel should be well secured before the occurrence of heavy frosts. They should be perfectly matured, before they are pulled, which may be known by the yellowish color of some of their leaves. If allowed to remain unharvested beyond that time, a new elaboration of juices takes place, and much of the saccharine principle, which is the fattening one, is destroyed.

Turnips and parsnips may be left in the ground until there is danger of freezing, and the latter, if not wanted for winter use, are all the better for remaining unpulled until spring. In this case, all the water must be carefully led away from the beds, otherwise they might rot.

Potatoes, for winter keeping, should never be dug before they are ripe, which may generally be known by the decaying of the vines.

All kinds of culinary roots, after digging, should be protected from the sun, by throwing over them some leaves or straw, and as soon as the dirt attached to them becomes dry, let them be carried, at once, to the cellar or pit where they are to be stored. They should be kept

from the air by putting them in barrels or bins, loosely covered with straw; and it would be still better for them to sift in between the interstices some fine, dry sand, or powdered air-slacked lime. Such as are to be stored in the fields may be put in pits, where the ground is sandy and dry; or they may be piled up in conical or long heaps above the surface, at any height required. A coating of straw should be first laid over them, in the manner of thatching the roofs of buildings, in order to shed off the rain. In parts of the country subject to heavy frosts or snow, the heaps should be covered with a layer of earth, sufficiently thick to prevent the roots from freezing; but care must be observed not to expose them, if possible to a temperature above 38° or 40° F., as they would be liable to heat, grow corky, and probably rot. The earthy covering for winter need not generally be completed until quite late in the season; as, by leaving the straw partially bare, the escape of moisture and heat from the roots will thereby be facilitated, which is all-important, immediately after they are stored. When finally covered over for the winter, a hole should be left at the top of the heap, or several, if the pile be long, in each of which a whisp of straw should be placed, for the escape of moisture and gas. If the ground be stiff and clayey, the heap should be surrounded by a ditch, at least a foot deep, so as to carry off all water that might accumulate from rain or melting snow; otherwise the lowermost portions of the heaps would become wet and spoil.—*American Agriculturist*.

SOLON ROBINSON'S VISIT,

We take the following extract from a letter of the "Agricultural Traveller" in the October number of the *American Agriculturist*. His visit to Canada was so brief that he did not see the best evidences of our agricultural capabilities. With regard to the plough, if Mr. Robinson will show us a yankee plough that will do better work in our soil than those "in common use here," it would convince us better than any "argument," which we admit is now "thrown away."

The agricultural capabilities of the district around Hamilton, and on westward towards London and upon Grand River, are probably equal to any tract of the same extent upon this continent; and I believe there are some very good farmers; but there is, upon the whole, a very great lack of that enterprising spirit which

alone can bring a rich soil into a high state of culture and productiveness.

On Thursday afternoon, August 15th, I left Hamilton, and reached Toronto in four hours, run close along the north shore of the lake, where a good many flourishing farms are to be seen, if we may judge by what I have always considered a good sign, that is, good substantial barns.

Toronto is also situated upon a bay, though not back from the shore like Hamilton. One of the most prominent objects in approaching the city is the Lunatic Asylum, and next the extensive commons lying waste in front of it, though not quite so worthless to the world as the barracks and their occupants, also seen in the same view. What a number of persons might support themselves by cultivating this tract of rich alluvial land now lying idle, or only serving to show off the trappings of the few swords not yet made into pruning hooks and plough shares. I was disappointed in finding Toronto so much more of a lively, thriving, business place than I expected. The population is about 27,000, which I presume, includes somewhat extensive suburbs. One of the best farming regions of the province lies contiguous, and gives trade and wealth to this city.

By the politeness of Mr. McDougall [assistant] editor and proprietor of the *Canadian Agriculturist*, I had an opportunity of viewing the farms some ten miles out "Yonge Street." This name is given the continuation of the principal street leading north, in the direction of Lake Simcoe, which is about 37 miles distant. It has been graded and Macadamised upon a straight line, without regard to any obstacle, as creeks or ravines that might intervene, and like a great many similar foolish efforts to make a road straight, going through and over hills, instead of going round them, it has caused a great outlay of money in places where a slight bend would have saved the largest portion. It is a government work, and is kept in repair by tolls. The farms are laid out one fourth of a mile wide and one and a fourth deep; then comes another road, and so on. The strips are called "concessions," and are numbered according to situation. Cross roads, also, run a mile and a fourth apart; so the whole country is divided into squares of a mile and a quarter. This is an old French fashion, adopted, at first, along the streams for the purpose of giving a greater number of frontings upon the water. In the interior, it certainly is not so perfect a system as the United States have, of mile-square sections and square subdivisions, all numbered by a systematic rule.

Leaving Toronto, we ascend very gradually from the lake, a couple of miles, and then up a low ridge corresponding with the curve of the shore, composed of sand, gravel, and clay, like the present beach. All the soil below the ridge is more spongy than above, though much more sandy. The upper level is a rich clay loam, without hills, though broken by ravines. Portions of it were covered with white pine, and other parts, with hard wood. This was made up of maple, beech, elm, ash, hickory, basswood, butternut, and some other sorts; oaks not being plenty. Farms of 200 acres, with a good comfortable brick house and out buildings, and good barn, and well fenced, and under fair cultivation, averaging 25 bushels of wheat, and 35 or 40 bushels of oats, and 200 of potatoes, will sell for about \$50 an acre, along this road, within ten or twenty miles of the city. Corn is only grown for home consumption, and does not probably average much more to the acre, than wheat. The soil here is excellent for grass, but the winters occupy half the year, and are sometimes very severe. I did not see so many cattle as I expected, though I did see a few herds of good-looking cows, and some small flocks of fine sheep. As for horses, I venture the assertion that I can count a greater proportion of good substantial, real serviceable farm horses upon this road than upon any other that I have ever travelled.

I observed here the same scarcity of good orchards, that I have elsewhere. There are a few rather tasty and somewhat ornamental places, but the great portion of them show the owners to be very plain, and probably, comfortable-living farmers, that have not yet heard of "agricultural chemistry," nor "scientific agriculture." Almost all we see, reminds us of Auld-Lang-Syne in farming, such as we were wont to look upon forty years ago, when the old Cary plow used to kick our shins, in Connecticut. The plow in most common use here, is the "Canada Scotch Plough;" and any argument endeavouring to convince these people that there is a better kind, at all, equal to this, is argument thrown away. There are a good many other improvements in agricultural implements and machinery, that are as a sealed book to the Canadian farmers generally, and I fear will continue to be so, during the age of the present non-reading generation.

A gentleman by the name of Hurlburt, of Toronto, has spent a good deal of labor upon a machine to go by steam, to supersede the plough in some cases, and thinks he has now got it so that it will work advantageously. The principle is more like spading than plowing. I hope with all

my heart, he may be quite successful. There are more things I might have seen in this part of Canada, and much more that I did see, that I might write about; but as I am only out for a "flight," I must plume my wings and away."

REPORT OF THE EXPERTS ON THE CROPS
IN THE COUNTIES OF PRESCOTT AND
RUSSELL, 1850.

ADDRESS TO CHAS. P. TREADWELL ESQUIRE.

SIR,—We feel unwonted pleasure in sending you an account of the state of the crops in this county, which we have examined this year. We have found a most luxuriant vegetation every where; and it is on hyperbole to say, respecting the beneficence of the Giver of all good, that "His paths have dropped fatness." Scarcely indeed has the labour of the husbandman been so richly rewarded. Whilst acknowledging Him from whom all our mercies are derived, we believe that a more careful system of tillage, and a more general interest in agricultural operations, have contributed to so desirable a result. With some portion of the latter we willingly credit yourself, for your active exertions on behalf of the farming interest, but we would venture to suggest, that the extensive circulation of some practical periodical, devoted to agriculture, would give more effect to your laudable efforts.

We have found grain in general, as to its probable yield per acre, at least 50 per cent, in advance of former average years; while an enormous growth of straw is a generally attendant circumstance. Perhaps an exception may be made as respects late wheat, which is rather too rank to turn out well. We saw some excellent samples of fall wheat, and should decidedly recommend farmers to try a small quantity annually. The ravages of the weevil are of limited extent, though most early wheat has suffered a little. Oats are of surpassing excellency, indeed we know not that any country could produce a better growth. The only draw back to this crop is the smut, which we observed in every field on our travels. Peas are, as a whole, the best we ever saw; and have escaped the mildew better than we could have anticipated for the season. We should decidedly recommend farmers to sow the small early pea in preference to other varieties, as being far more prolific and having less haum. We saw excellent samples of barley and rye; but comparatively little attention is paid to these grains. We think, as a general observation, that farmers might employ a little more seed with beneficial results.

Hay has been seldom equalled, certainly never surpassed, and the quality is good.

We regret that we have not yet examined officially the fall crops; but from the cursory survey we made of them in the summer, we believe that Indian corn will be an average crop, potatoes somewhat above the average, while a unusually small quantity of other roots have been sown. This we regret, as we think this section of country might advantageously multiply the superficial area under this kind of culture.

Allow us to say; in conclusion, that, deeply as this section, and indeed the whole Province, has suffered by Free-Trade measures, we feel convinced that all the substrata of a material prosperity lie within our reach; that improved culture will secure increased returns,

and that it is our own fault is we are not a happy, prosperous, and contented people.

C. M. EVERETT,
JOHN CROSS,
GEORGE WILLICE, } *Experts.*

LETTER OF MR. SHERIFF TREADWELL.

L'ORIGINAL, 10th Sept., 1850.

SIR,—It is with feelings of pleasure and satisfaction that I have perused the Report of Dr. C. M. Everett, and Messrs. George Willice and John Cross, as experts on the state of crops in this County, and only regret that the meeting of the Agricultural Association should be held at so early a period as to debar us of the opportunity of sending those gentlemen a full account of its proceedings, and of our interesting Cattle-Show and Fair.

Although Mr. Higginson's admirable letter on the establishment of Model Farms in every county has not attracted attention, as well as my own humble suggestions of obtaining from Government, for each County, a grant of £50 for the purchase of Model implements of husbandry, and also a like sum for the purchase of an Agricultural Library. Yet I feel confident that the Agricultural Report of this county, for the last year, has not been without its beneficial results. A spirit of emulation is silently spreading among our farmers, who are now striving to ascertain the greatest quantity of grain and crops a few well managed and cultivated acres are capable of producing.

Last year was a season of uncommon drought, which enabled many persons to clear up pieces of low land, and put them in fine condition to receive the seed, and the extensive fires that overran our forest last year have been calculated to induce a large number of individuals to clear up the burnt tracts, and make them fit for the plough, considerable portions of which were put under crop last spring. Under these and other favorable circumstances, there can be no doubt that the agricultural returns of this year will be about double the average of several former. In reference to the manufactories mentioned in my last report, their progress has been steadily onwards, and do doubt others will follow in their train.

I am proud to notice the liberal provision made by our Legislature of placing the products and resources of Canada before the civilized world, at the grand exhibition to be held in London, in May next, under the auspices of its projector. His laudable scheme has caused a spirit of emulation in every quarter of the globe, and will certainly tend to produce the most beneficial results, not only to the British possessions, but to the world at large.

How far the death of two great men, the late Premier of England and the President of the United States of America, which has taken place within the present year, will change the policy of two of the leading nations of the earth, is a matter that none can foresee.—The policy of the late President was, no doubt, for imposing an *ad valorem* rate of duty for Revenue purposes only, irrespective of protection; but it is thought by many, that the course of policy of President Fillmore, and of his cabinet, will be to levy a specific rate of duty, not only for revenue purposes, but also for the protection and encouragement of the manufactures of the United States.

I feel sensible of the correctness of the statement of the Experts, as to the want of circulation, throughout the country, of agricultural journals, but am, at the

same time, happy to find here and there copies of the "Cultivators," the "Canadian Agriculturist," and the "Journal of Agriculture," which the farmers seem fond of reading. Works on agriculture are beginning to be sought after, such as Liebig and Johnson's Agricultural Chemistry, Roger's Scientific Agriculturist, the Farmer's Treasure, and the Farmer's Every Day Book. These and other such works and journals will do much to raise the standing of agricultural education in the County.

During the early part of the season, I drew up a list of queries on agricultural subjects, which I submitted to many of our farmers, and I assure you that they drew forth much interesting and valuable information. I must particularly allude to those signed "A Farmer," which you have not seen; and, as to their author, you will, I think, discover Peter Stirling, Esq., of Caledonia. The answers of Joan Thompson, Esq., of Nepean; William Edwards, Esquire, of Clarence; Mr. James Scott, of East Hawkesbury; and Messrs. Alfred and James Cass, of Longueuil, were also useful and interesting. I thing that a degree of modesty kept many from answering those queries; but, if they have not told us with the pen what they have done, they have with the plough. Now, that the lumbering square timber business is less carried on in this County than formerly, the attention of our youth is directed to Agriculture, and in a short time this County will, I hope, compete with those in a more favorite climate. Mr. Stirling has suggested the establishment, in each County, of one or more grain stores, for the purchase and sale of the choicest and best sorts of seed grain, garden seeds, hay seeds, &c. &c., and that the public should encourage such establishments by purchasing of them their implements of husbandry, &c. Whilst on this subject I would recommend the republication of Mr. Samuel Steven's excellent letter on the subject of garden seeds, and the cultivation of roots for cattle. I have noticed the progress of agricultural science for some years past, and am happy to find that it is beginning to command that respect to which it is so justly entitled, and I hope that our young men will soon see that wheat can be grown here as cheap and as well as in Wisconsin, and that it will procure gold in return, and thus render it unnecessary to seek for it in California.

I congratulate the people of this County on their obtaining £3,600, (balance of the Government appropriation of 1843,) for aid in constructing the public road from L'Original to Bytown. This will cause a land communication between the capitals, and very likely the conveyance of our mail will be on this side of the Ottawa, as in the spring and fall a land conveyance on the other side is perilous and tedious. Among other cheering prospects is the construction of a railroad from Lachine to Prescott, *via* the valleys of the Ottawa and Nation Rivers. A liberal Charter was obtained during the last sitting of the Legislature. It is true, that the Company have their choice of routes, but every man who has studied the matter will see that the one through St. Eustach, crossing at Hawkesbury, and following by L'Original and Caledonia Springs, to the Nation, and thence to Prescott, will not only be the most preferable in opening up the waste lands in that region, but likewise by far the most easily constructed; and what to the *Capitalist* is more, yielding the most returns. Our friends in Bytown are not indifferent as to the great benefit to be reaped by them in the construction of a Railroad from there to Prescott, and will soon go to work in earnest, having also obtained the necessary Charter. A junction of the two roads this side of Prescott is, I think, worthy of attention. I hope soon

to see books opened, and stock taken in both. These and similar indications of enterprise, energy, and activity cannot fail to make this, what Providence designed, it, a great and flourishing Country.

CHAS. P. TREADWELL,
President Agricultural Society
of Prescott & Russell.

GEORGE BUCKLAND, Esquire,
Secretary Agricultural Association
of Upper Canada. }

AGRICULTURAL QUERIES AND THEIR ANSWERS.

[The following list of Queries was addressed to the farmers of the United Counties of Prescott & Russell by Mr. Sheriff Treadwell, who takes, as our readers must be aware, a very laudable interest in the promotion of agriculture. We insert three of the replies, which although they have appeared in a local paper, we think deserving a wider circulation, that our farmers in other districts, may be induced to follow so beneficial an example. How much interesting and valuable matter might in this way be collected !]

—Ed. Agriculturist.

1. What is the first crop you put on newly cleared hard wood land, and how much seed per acre ?
2. What do you sow for the second crop ?
3. How soon do you seed down new land, and whether in the fall or spring.
4. When you break up meadow or pasture land, say sandy soil, what rotation of crops do you follow, and when is your course completed ?
5. If a loamy soil, what course do you pursue, and with what success ?
6. If a clay soil, state your method of reclaiming it from its natural state, and what rotation of crops you follow ?
7. What quantity of potatoes do you plant per acre ?
8. Do you sow beets, turnips, and carrots ? What quantity of seed do you sow to an acre of each ? What are the kinds you most approve of ? and what is the experience you have derived in their cultivation ?
9. Please state the time of your sowing and planting the different kind of crops ?
10. Do you sow buckwheat either for grain or manure ?
11. Do you use gypsum or guano as a manure, and how do you apply it ? Do you use lime, in what quantity ? Do you make heaps of compost, and do you use muck as a manure either by itself or made into a compost ?
12. Have you ever applied leached or unleached ashes as a manure, in what quantity and on what kinds of soil and with what success ?
13. What is your method of keeping and applying barn yard manure ?
14. What improvement in agriculture do you think can be introduced that has not been tried in our District ?
15. Have you ever cleared heavy clay land with deep vegetable deposits upon it, and what method do you think preferable in reclaiming such lands ?
16. What is your method of getting rid of surplus water ?
17. Have you made any covered drains in this country, and do you make all your ditches with the spade ?
18. Have you used the plough in ditching ?
19. What kind of plough do you prefer ?
20. What kind of cattle do you keep ?
21. Do you use horses or oxen in your farming operations ?
22. What kind of horses do you think best fitted for agricultural purposes in this country ?
23. What kind of sheep do you keep, and what is the greatest quantity of wool produced per head ?
24. What kind of hogs you prefer, and what is your mode of fattening them ?
25. Is there anything peculiar in managing your horses, cattle, sheep, and hogs, and what is that peculiarity ?
26. What kind of fence do you prefer, having stones, cedar, ash, &c., in abundance ?
27. Have you ever tried thorn or any other hedge plant, and with what result ?
28. Do you sow mangle-wurtzle ? What is your experience, have you been successful ?
29. At what time do you plant corn, and on what kind of ground and how prepared ? State the quantity of seed used ; your manner of cultivating ; time of harvesting and amount of produce ?
30. What kind of harrow do you use ?
31. Do you use the drill plough and harrow for potatoes, corn, &c., or what do you use ?
32. Do you grow flax or hemp, either for seed or for manufacturing into cloth or ropes ?
33. What is the method of growing timothy and clover seed for market ?
34. Do you grow a large quantity of white beans, or any other beans, and what is your manner of planting them ; do you feed your sheep with white beans ?
35. Do you grow pumpkins or squashes ?
36. What crops do you consider most neglected that might be grown in this County with advantage to the farmer ?
37. Have you an orchard ? What kinds of trees does it produce ; do you cultivate the ground occupied by the trees, or do you allow it to remain in grass ?
38. Do you keep bees, and have they been profitable ? What do you sow to provide them with food ?
39. Do you keep a dairy for butter or cheese, and do you grow roots for your cows : what amount of butter and cheese have you made for each cow ? State particulars in reference to both.
40. What do you grow with most advantage on your farm ?
41. What depth do you plough your land : do you not prefer deep ploughing ?
42. Do you sow fall wheat or rye, and at what time : what quantity of seed do you sow per acre ;
43. Do you ever plough in your grain sown on light soil instead of harrowing it ?

ANSWERS TO QUERIES BY JOHN THOMPSON ESQ., OF NEPEAN, PRESIDENT OF DALHOUSIE AGRICULTURAL SOCIETY.

1. Fall wheat, one and one-third bushels per acre.
2. Seed down with timothy and clover.
3. 1st crop, in spring.
4. 1st oats; 2nd, potatoes or turnips; 3rd, barley and seed down; course completed 3rd year.
5. Same as No. 4.
6. Summer-fallow; sow with fall wheat and seed down.
7. 20 bush. in drills, and 12 bush. in hills.
8. I appreciate of Swedish, and have grown 500 bushels per acre.
9. I sow as soon as the land is in a fit state.
10. No.
11. I have sowed gypsum on Hay and oats; lime, 100 bushels per acre, muck or compost.
12. No.
13. Draw it out of the yard and pile in the fields.
14. Subsoil ploughing.
15. Yes. I drain well, subsoil plough it, and sow it with fall wheat.
16. Draining.
17. Yes. I make them all with the spade.
18. No.
19. Wilkie's or Fleck's Iron plough.
20. A cross between Ayrshire and Durham.
21. Both, but principally horses.
22. Clydesdale horses.
23. Leicester; 7 or 8 lbs per head.
24. Berkshire; steamed potatoes mixed with crushed grain, and a month with corn or pease before killing.
25. I have no particular method of keeping my cattle.
26. Cedar log.
27. No.
28. I have sowed it, but have not been successful.
29. 15th to 20th May; on light gravelly soil, well manured, and drilled in rows 3 feet apart; 5 quart per acre; ploughed between and hoed 3 times; latter end September; about 50 bushels per acre.
30. Berrickshire.
31. Yes; I use both.
32. No.
33. I have never grown any for market.
34. I grow white beans, planted in hills, 2 feet apart; I do not feed them to sheep.
35. I grow them amongst my Indian corn.
36. I think flax might be grown with advantage to the farmer.
37. Yes; Apple; cultivate for 5 or 6 years; then seed down.
38. No.
40. Wheat, potatoes, and swedish turnips.
41. About 6 inches, but I prefer deep ploughing.
42. I sow fall wheat about 20th August; 2 bushels per acre; yield about 35 or 40 bushels.
43. Yes.

MR. ALFRED CASS' ANSWERS.

- No. 1. Wheat and turnips; and the quantity put on new land not to exceed a bushel and a quarter per acre.
2. Either oats or wheat.
3. The third year I generally seed down in the spring on the snow.
4. I generally plough up meadow or pasture land in July, if a summer-fallow I put wheat, and if fall I put potatoes and manure. I generally follow the first

crop with oats; wheat, if summer-fallow, then potatoes, wheat.

5. Similar courses to the above.
6. I have no such land.
7. From 16 to 20 bushels, if in drills.
8. Yes. I sow 2lbs of each kind per acre. Yellow swedish turnip and sugar beet. I find them generally useful for horned cattle.
9. I put the seed in the ground as soon as it is properly prepared to receive it, with the exception of Black sea wheat, which I sow about the 25th of May. The general time of planting corn is about the 10th May. The bald wheat I would sow as early as you can in the spring.
10. I would only sow it for manure.
11. I have had no experience in this.
12. I have never applied leached ashes.
13. Having it as little exposed to the weather as possible.
14. They are almost too numerous to mention but especially would I recommend the introduction of the subsoil plough.
15. I have not.
16. I consider that surplus water requires an open ditch. Covered drains are good where the land is springy.
17. I have no covered drains. I make all my ditches with a plough and spade.
18. I have.
19. I prefer the Scotch plough.
20. An amalgamation of almost every kind which has been introduced into the country.
21. Horses.
22. Canadian horses.
23. I have a mixture of different kinds of sheep; they average about 3lbs per head.
24. Berkshire; commence about 1st August, Indian corn and pease ground I consider the best.
25. I use the general mode of managing my cattle.
26. I generally prefer cedar or ash. I consider a stone fence good when the land will admit of it. Answer to 27 and 28—I have not.
29. Answered in the 9th. Generally on sandy or gravelly soil, well manured. Corn about a quarter of a bushel per acre. Rows straight, three feet apart; I use the cultivator, instead of the hoe; generally very late in the fall, after all the other harvesting is done; average yield of corn is from 40 to 50 bushels per acre; 100 bushels have been raised.
30. Scotch Harrow.
31. I do.
32. I grow neither.
33. Having it as free as possible from other grass, and reaping it with a sickle.
34. A quarter of an acre, about a foot apart and I find them the best thing for sheep I can feed.
35. I do.
36. The Cultivation of Orchards.
37. I have. The Common seedlings, but we are grafting some of superior quality. I do.
38. No.
39. I do. 150 lbs. of cheese per cow.
40. Indian corn has been the most profitable grain raised for some years past.
41. I plough, in general, to the depth of 8 inches.
42. I sow fall rye 1st September, a bushel and a quarter or a bushel and a half per acre.
43. I do upon light soil, and consider it preferable. September 1st, 1850.

MR. JAMES CASS' ANSWERS.

- To 1, 2, and 3 no answers returned.
4. I sow oats first, then plant it with corn or potatoes, next sow wheat, then seed down with oats which makes the fourth year.
5. I have no loamy soil.
6. I sow pease first, then pass the fire over it, and sow wheat, and lastly seed down with oats,
7. Twenty-five bushels.
8. I sow turnips and beets; 2lbs per acre of each. Yellow swedish turnips and sugar beets. The beet I consider superior to any other roots we now raise.
9. If early, I sow Black Sea wheat about the 15th of April; and, if late, about the 20th May; potatoes I plant the first of May; corn, 10th May; oats about the 20th April; pease and barley the same time.
10. I do not.
11. I do not. Lime I use about 20 bushels per acre. I use manure by itself in the spring, well fermented. I use muck in the fall, applied by itself, and also for compost.
- 12.—I have use unleached ashes by themselves at the rate of 20 bushels per acre on slaty soil; every bushel applied on corn I value at the rate of 5s; I apply it after the first hoeing.
13. I keep it under cover, free from rains.
14. I would especially recommend farmers to raise more of the root kind in general, and to make more compost manure for the top-coating of meadows.
15. I have. First, let it be well drained, then pass the fire over it, plough it, and in the spring put crops on it; next pass the fire over it for three succeeding years.
16. By covered drains.
17. I make all drains and ditches with the spade.
18. I have.
19. Iron Plough.
20. The common cattle of the country.
21. Horses.
22. Canadian horses.
23. Mixed; 6 lb. per head.
24. Berkshire, and grass fed; mixed potatoes and provender, boiled together, with a little salt and charcoal.
25. To keep each sort by itself; no more than four hogs by themselves; I would not keep more than 25 sheep in a flock; males and females; I do not permit the ram to co-habit with the flock until the 20th November.
26. Stone for out-fences, and cedar for cross-fences.
27. I have not.
28. No answer.
29. Answered in the 9th. I put a quarter of a bushel per acre of Corn; rows straight; 3 feet apart.
30. Square double harrow.
31. Use both.
32. and 33. No answers.
34. A small quantity for sheep, of white beans.
35. I do.
36. Answered in the 14th query.
37. I have; apples, cherries, and plumbs; I till it.
38. No answer.
39. I make both cheese and butter; 150 lbs of cheese per cow.
40. Wheat.
41. 13 inches for my soil.
42. I do not sow either.
43. I always plough in wheat and wheat and pease, harrowing the ground afterwards.
- September 1st, 1850.

THE CULTIVATION AND USES OF CHICORY.

[Some arguing has been made of late respecting the introduction of this plant, for field culture in Canada. We could like much to see the experiment fairly made, and subjoin the following article from *Morton's Cyclopaedia of Agriculture*.]

CHICORY, or SOCCORY, is a perennial plant which is found wild in many parts of England, and various countries of Europe possessing a similar temperature. It has a similar root in shape to the parsnip, or white carrot, but smaller, growing from one or two feet in the ground, and in some instances sending its fibres downwards for four or five feet. The plant grows in form of a lettuce; bearing, after the first year, blue flowers upon a rough leafy stem, which shoots up from one to six feet high. Chicory has long been extensively cultivated on the Continent as an herbage and pasturage plant, and is much used as a salad; while in Flanders and Germany, the roots are in great request, as a substitute for coffee is prepared from them. After being introduced into the field culture in this kingdom, by Arthur Young, A. D. 1780, it was grown principally for sheep-feed, and found to be very profitable, as it will flourish upon almost any kind of land, and probably keep more sheep per acre, during the early summer months, than any other kind of herbage plant.—Lucerne requires a rich soil, or its cultivation will not be accompanied with much advantage; but chicory has been found to be abundantly profitable upon poor sandy lands, and soils which were weak and wanted rest, as well as on richer and more productive soils. It also thrives on fen and pea soils; and will last for seven or eight years, yielding several cuttings during each year, though the full crop is not obtained until the second year.

When it is intended to grow chicory for grazing purposes, the seed is usually sown broadcast in April, upon land that has been dug or deeply ploughed, from seven to twelve lbs. per acre; and growing in this manner, it forms a considerable proportion of many of the best meadows in the south of France, and in Lombardy. The best mode of culture, however, for a fodder or herbage crop, is as follows:—Prepare the soil, by thorough cleansing and pulverization, as early in the spring as the season will admit; apply a good coat of partially decayed fold-yard dung, and drill in the seed during March, four lbs. per acre, at about nine-inch intervals between the rows. When the plants are about five inches in height, carefully hoe them, and single out, leaving them about six inches apart, after the usual method in turnip culture—that is, by boys following the hoers. Some recommend that the seeds be sown in a bed, and when the plants are fit for transplanting—which will be when about five inches high—they are to be set out in rows nine inches apart, and at six-inch intervals from plant to plant in the rows. In either case, the land must be kept clean, and well hoed, particularly in the first season; ordinary attention will afterwards suffice, and the crop will continue luxuriant and profitable for five years at least, and frequently from eight to ten. When the plants begin to exhibit symptoms of failure, the ground should be cleared of the roots, another course of cropping pursued for a few years, and it may then be again sown or planted with chicory.

Like all other crops of a similar character, chicory will never attain to perfection, or even a full and profitable growth, if the plants are allowed to stand too closely together. The stem is branched, and clothed

on all sides with leaves, up to its very top, so that to be confined for room, would be in every way prejudicial to the healthy development of the plant; the roots would grow thin and tapering, and produce weak in-nutritious stems; whereas, if allowed full scope on good soils, they will rise to six or eight feet in height, having proportionate bulk and foliage, and yielding a very rich and nutritive milky juice.

Chicory is of far more value to mow and consume in hovel or byre, than to graze. It has been much used as a pasturage for sheep, and found to be very useful in this respect, for a small extent of chicory ground will fatten a large number of sheep; but then it is only the radical leaves shooting up close to the ground which are continually cropped by the sheep, the stalks not affording them proper nourishment. The best way is, to let the plant reach its full growth, the full succulence being retained until the flower-buds appear, in which state (not being permitted to flower) it has attained its greatest perfection; it may then be cut off near the ground, and will be eaten by all kinds of stock with the greatest relish and benefit.

As it is a plant of such speedy growth, and in all seasons, wet or dry, it cannot be too strongly recommended for general use, and more particularly for the smaller occupiers. Cow-keepers would do well to cultivate it, and cottagers ought by all means to employ it in a double manner.

Chicory is now grown in many parts of England, chiefly for the sake of preparing a "substitute for coffee" from the root—a practice which has existed on the Continent for nearly seventy years; "and of all plants," says Von Thaer, "which have been proposed as substitutes for coffee, and which, when roasted and steeped in boiling water, yielded an infusion resembling coffee, chicory is the only one which has maintained its ground."

This plant has been considered to like a dry sandy soil the best, but has been proved to grow the best (as regards its roots) upon a loamy soil, with a clayey sub-soil, dry, deep, and rich; in fact, chicory very much resembles the carrot, and the mode of cultivating one is much like that of the other.

In preparing the land for a root crop, deep-ploughing is recommended; but, unless the soil is very deep, it is probable that subsoil-ploughing will answer better. The surface must be well worked; indeed, it cannot be reduced to too fine a mould. As the plants are a long time in coming up, generally five or six weeks from the time of sowing the seed, it is necessary that the land should be very clean, or the weeds (particularly chickenweed) are liable to overtop and smother the young plants. The time of sowing varies in different districts; in the midland and eastern counties, the second or third week in May is considered best, for if sown earlier (when cultivating for the root), many of the plants will run to seed; in which case they are called "runners," or "trumpeters," and must be carefully dug out and destroyed, when the time for taking up has arrived; because, if allowed to become mixed with the bulk, they will spoil the sample. The best crops have been obtained when the seed has been sown broadcast; but the preference is usually given to drilling, the crop being more easily hoed and cleansed.—The rows are generally from nine to twelve inches apart; and about three or four lbs. of seed per acre is the quantity used. Most of the cultivators of chicory single out the plants so as to leave spaces between them in the rows, each about six or eight inches long; but there are many who do not do this, fancying that four or five small plants produce more weight of root than one large plant; the expediency of this, however,

is very questionable, as it does not allow of the land being nearly so well cleaned as when the practice of singling is adopted.

In October or November, the work of taking up may be commenced, and continued during the winter (if the crop cannot be previously secured), until it is finished. Although the roots penetrate a long way downwards, they become too thin below fourteen or fifteen inches to be useful, and the utmost care is also required in order to get up that portion of the root which will prove profitable. In some cases, chicory has been ploughed up, about twelve inches deep, with a strong cast-iron plough drawn by six horses; having men to fork each furrow to pieces, with common potato forks, before a second furrow is ploughed upon it, and women and children, following to pick up the roots and cut off the tops. But the best method is found to be that of digging up the roots with double-pronged, strongly made, iron forks, the blades being about fourteen inches in length, and each fork, with shaft and handle complete, weighing about eight lbs. The plan of ploughing is liable to bring too much of the sub-soil to the surface, and costs quite as much, if not more, than digging.—The advantage which is looked for in ploughing is, to insure getting the roots up from a greater depth than can be done by digging, as a great number break off about eight or nine inches long, unless a boy is employed to assist the diggers, and is very carefully to pull the top at the precise time that the man presses the root upward with his fork.

When dug, the tops should be neatly cut off, and the roots conveyed to the washing-house to be washed clean. Sometimes they are covered down in pits or graves, as a matter of convenience, but, generally speaking, they are taken to the washing-house immediately after been taken up. They are then cut into small pieces by a turnip cutter, or by hand, the object being to have the pieces of as uniform a size as possible. The slices are then dried in a kiln; this process wasting the chicory from 75 to 80 per cent. It is then marketable, and is usually sold to the drysalters and grocers, who roast and grind it as they do coffee. The amount of profit attending the cultivation of chicory for its roots, is very uncertain—the crop varying from eight to sixteen tons per acre. The only record we have seen, stated £19 15s. 6d. as the cost, and £22 10s. as the return per acre, in the instance recorded. One to one and a quarter tons of roots (when dried) is an average crop. The price at market during the past year has been £20 to £22 per ton. The cost of manufacturing may be estimated £4 10s. to £5 per acre.

The leaves are an excellent fodder for cattle of all kinds, which usually devour them with avidity; but (as in the case of the tops of turnips, which are dragged up and carted from the land) when chicory is grown for the sake of its roots, more of the tops gets ploughed in for manure than consumed. Some growers have lately been using the leaves as a substitute for wool, or rather as an adulterator of it; but how far they will answer the purpose, it is premature to say. The leaves are also said to be used for adulterating tobacco.

The root, when roasted and ground (after being dried in a kiln, as mentioned above), is considered to be an admirable substitute for coffee; and as an addition—say one-third of chicory to two-thirds of coffee—to be an improvement to all sorts. It is more especially employed, however, to mix with colonial coffee; which fact was satisfactorily proved to the commissioners of excise, a few years ago, when it was shewn, that if the consumption of chicory were prohibited, less colonial coffee would be consumed. It is also said to be used

for the adulteration of tobacco and of porter. Medical men allow it to be healthful, and in some case prescribe it for a morning beverage.

Chicory, both on weak and strong soils, requires to be thoroughly well supplied with manure, or it will materially impoverish the soil; but the principal disadvantage attending its cultivation is, that when once in the land, it is as difficult to eradicate as horseradish. Although the leaves are rather tender, and do not require by any means a severe frost to cut them off level with the ground, being, therefore, unsuitable for a cold climate, the roots—which are very full of a milky juice, that oozes out freely wherever they are broken or cut, are exceedingly bitter tasted in their raw state—are very hardy; and every small particle left in the soil will grow afresh, and cause much trouble and annoyance with the after crops.

VALUE OF A LITTLE CHEMICAL KNOWLEDGE.

The last number of the *American Farmer* contains an interesting statement of the results of an experiment on the farm of the Hon. Reverdy Johnson, near Baltimore. The farm recently purchased by Mr. Johnson, was completely exhausted, and the great question of the proprietor, was this, what shall be applied to it in order to bring it to a state of fertility. In order to answer this question, common sense would dictate the Yankee rule of asking another question first, viz:—What is lacking in the soil, which causes its present barren condition? In order to ascertain this, chemistry must be called in. An analysis must be made.—In order to illustrate the practical operation of this, we will extract from the communication, the following statements. The land, originally good, had been impoverished by a long course of husbandry. The soil contains a very large proportion of iron. So complete was its exhaustion, that when I first saw it, all the vegetable matters growing upon the two hundred acres of cleared land, (including the briars, sassafras, and other bushes,) carefully collected would have been insufficient for the manufacture of one four horse load of barn-yard manure. The field selected for experiment contains ten acres, embracing the slopes of two hills, and a small valley intersecting it diagonally. It was at that time in corn, and did not produce *one peck* of corn to the acre, although it had been cultivated in the usual manner, and with ordinary care, and the season had not been below the average of seven year.

An analysis of the soil was made by Dr. Stewart.—He found it to contain the following ingredients:

Sand and bases insoluble.....	71.20
Lime.....	0.30
Magnesia.....	0.40
Manganese.....	0.10
Potash.....	0.23
Water and organic matter.....	10.07
Phosphoric acid, none.....	0.00
Iron and alumine.....	17.70

100.00

The doctor remarks that from this analysis the soil contains as much lime and magnesia as could be furnished by a dressing of one hundred and fifty bushels per acre. An uncommon quantity of iron. As there was a lack of phosphates, he recommended a preparation composed of biphosphate of lime. This is obtained by dissolving bones in sulphuric acid—bone dust is similar in its effects—a part of the lime being combined with carbonic instead of sulphuric acid.

The corn was accordingly cut off and removed, the field ploughed and harrowed, and laid off into sixteen and one-half feet lands. The preparation was then scattered regularly over it, costing, all told, \$10 per acre. One and a quarter bushels of Mediterranean wheat was then sown upon each acre, and harrowed in. No barn-yard or other manure was used. The yield was more than *twenty-nine bushels per acre!*

Isn't this a triumph of science, as applied practically to the renovation of exhausted land?—*Maine Farmer.*

ADVANTAGES OF DRILLING WHEAT.—The advantages claimed for drill culture, in the Transactions of the New-York State Agricultural Society, are as follows:—

1. *A Saving of Seed.*—Five pecks of wheat drilled in is equal to two bushels sowed broadcast; every kernel is neatly covered at a uniform depth.

2. *A Saving of Labor.*—Any person that can manage a team can complete, in the neatest manner, from ten to fifteen acres per day.

3. *An Increase of Crop.*—Small ridges of earth are left between the rows of wheat, which, by the action of the frost, slides down and covers the roots, thereby preventing "winter killing." Light and heat are admitted between the rows and prevent injury by rust. A vigorous growth is given to the young plant, and its position in a constantly moist place, prevents injury from drouth.

The *Essex Herald* has a paragraph enough to bring tears into the eyes. "Mr. Circuit, a farmer of East Ham, near London, has at the present time upwards of six hundred people—men, boys, and women—employed in pulling, cutting, and peeling onions for pickling; and they will thus be engaged for two months. He pays wages to the amount of £200 weekly, and the cost of each acre of onions averages £100. This includes preparing the ground, seed, weeding, gathering, and peeling. Last year he sowed nearly a ton of onion seed. The onions are pulled by women, the root, and skinned by the gallon. At this season he makes about 1,500 different payments daily, as the people employed receive their money three or fourtimes a day."

ROGUERY IN GUANO—QUANTITY IMPORTED INTO GREAT BRITAIN IN 1849.—The amount of Peruvian guano imported into England during the year 1849, according to parliamentary return was 73,567 tons. But, large as this amount is, the consumption was more than three times that quantity of *quasi guano*. The uninitiated and simple-minded may inquire "How is this? notwithstanding there were no accumulated stocks on hand. The *Gardener's Chronicle* solves this necromancy, by stating that they have the names of ten firms in London, alone, each of which, is extensively engaged in the *manufacture of guano*. One of these takes 30 tons of *loom per week* which comes into their laboratory, simple earth, but goes out genuine guano. Such is the gullibility of the Old World. Is there any of the same kind in the New?

Horticulture

DIRECTIONS FOR TRANSPLANTING AND MANAGING APPLE TREES, TILL THEY ARRIVE AT A BEARING STATE.

(From the *Lanark Observer*.)

In giving a few brief directions, the result of my own observation and experience, on the transplanting and subsequent management of Apple Trees, I will commence, in the first place, with the distance they ought to be kept apart. I consider about twenty feet distance, each way, quite sufficient for a Kitchen, or close bearing Orchard. The holes for the reception of the trees, I make from five to six feet in diameter, and two spades deep—say, eighteen or twenty inches—nine or ten inches of the surface soil, if good, to be put in a heap by itself, and the subsoil in a heap also, not to be put in again, but scattered on the surface after the tree is planted. Put in a larger quantity than of the subsoil, of well-fermented manure, or rich mould from a field of summer fallow, or newly cleared land; then put in the surface soil first taken out of the hole, and then plant your tree. Shallow planting is of course recommended—say, one inch deeper than in the Nursery bed. The roots should be pared on the under side with a slope, to take away all ragged wood, and all cross roots. When the roots are so trimmed, a rush of new roots will grow from the surface of the slope, and the growth of the tree will be promoted by that means. When there are a great deal of small roots together, under the surface roots, I prefer cutting them short, rather than planting them in a warped state; the extremity of the roots should be kept up, corresponding to the natural slope from the trunk or base of the tree. In transplanting, two persons can perform it to better advantage than one; any young person with do to hold the tree in a perpendicular position, which will very much facilitate the work. If the ground root be long, cut it off with a slope, then hold up the ends of the roots with one hand, spread, and cover the under roots with the other, going round the tree, laying one layer of roots after another, and packing them well with fine mould, tho' not pressing too hard, for fear of straining the roots.—When the surface roots are bedded, put a few spadefuls of good earth round the extremity of the roots, then cover up. Now is the time to give your tree the set you want, and as the prevailing winds in this latitude, during the summer, are from the west, I would decline it a little in that direction, holding tree steady with one hand, and pressing the earth with the foot, commencing at the ex-

trinity of the roots, and proceeding towards the tree. Press gently at first, rather repeating the operation two or three times, so as to sink all equally. When the tree is planted, it should be two or three inches above the level of the surrounding surface, to allow the whole mass to sink, as it will do, after the first winter's snows and rains.

Trees newly set out would be much benefited the first summer, by the application of two inches deep of well rotted dung, for about 18 inches around their roots. They should also be frequently well watered, during the warm weather about sun-set, or after the heat of the day, and always making a point of beginning at the top or head of the tree; I use a watering pail for that purpose, which answers very well. As the top of the tree is of course deprived of its usual quantity of sap, by the trimming and shortening of the roots, I would therefore recommend what is generally termed "pruning in," that is, taking a few inches off the ends of the branches. Branches should never be lopped close off, till the tree is in a vigorous state of growth, and the wounds heal quickly, when covered with a piece of grafting wax. The following is the composition I use for that purpose, viz.—Four parts of rosin, two parts of bees' wax, and one part of tallow, melted together; when cold enough not to run through spread with a brush on the cheapest kind of Cotton cloth, and cut in squares, according to the size of the wounds.

As to the proper time of pruning, there is a great diversity of opinion; I consider the best time to be from the 20th of June till the 10th of July. As that is the time of the fall growth commences, the sap naturally flows to the outside of the tree, and the limbs being pared off close to the trunk with a sharp knife, they soon heal over, and by this method the growth and health of the tree are insured. Young trees should be washed, every spring at least, with soap suds, or unleached ashes and water mixed together, and applied to the main stem of the tree, with a brush, or a piece of woollen cloth fastened on to a stick, so as to insure the safety of the hands. They ley loosens the moss, and kills any larvæ of insects that may be deposited behind the rough bark.

Frequent top dressings, particularly in spring, are of much benefit to a young orchard, as they keep the ground cool and moist in the summer season, and so promote the growth of the trees; less watering is thus required. Rough manure from the hog pen, the straw being well saturated with urine, is as good a top-dressing for Apple trees as anything I know of. Unleached ashes, say, one peck round each tree, will kill all insects

and larvæ under it. Unfermented manure and ashes should be kept a few inches from the stock of the tree, otherwise they will have a tendency to injure the bark, and may ultimately kill it.

Before the winter sets in, all rubbish, such as decayed leaves, stubbles, &c., should be removed from about the trees, to prevent mice from nesting: but to make sure, the first few inches of snow, that is likely to lie, should be well trampled for at least a foot round each plant, as the mice travel the whole winter under the snow in search of food, and are apt to prey on the bark of young trees. One winter I neglected to trample a row next to a grass plot, and almost the whole, about twenty, were destroyed in this way, the bark being peeled completely round the stem, and the upward passage of the sap consequently cut off.

With regard to the soils most suitable for the Apple, I take the following from the *British American Cultivator*:—"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.

Hoping these few remarks may be of benefit to the community, I will conclude by remarking, that if the bark seems to be very much discolored by attacks of the Borer, and laying of their eggs, at any time, open the bark a little with the point of your knife; if they have been at work and cannot be found, pare away the dead bark: if any holes are made, plug them up with a piece of soap, and they will not trouble that place any more. If grafting wax is not at hand any time it is required, newly dropped cow-dung is a good substitute.

GEORGE BLAIR.

Dalhousie, October, 1850.

CUT WORMS.—These pests are most effectually destroyed at the north, by deeply plowing the fields, just as the winter is setting in. They have by this time settled into their snug winter quarters, far below the surface, and by throwing them upon or near the surface, where the pelting storms and severe frosts will catch them, when too much chilled to seek anew for a hiding place, large quantities of them will be destroyed.

Colonel Fluker, of Louisiana, says, for the cotton crop of that state, they are most effectually exterminated by plowing deep about the 1st of April, just before planting the cotton. In this way, millions have been destroyed, and his own fields have been saved from their ravages, while others around him have been greatly impaired by them.—*American Agriculturist*.

THE GOOSEBERRY.

From the Montreal Witness.

In a late number you have a short article on the Gooseberry, which has reminded me of some remarks on that fruit which I have long intended to send you.

The great drawbacks to the cultivation of this delicious and very wholesome and useful fruit, are the mildew, and the heat of the Summer; which latter in some soils affect the bushes very much, as the English gooseberry is not suited to hot, dry Summers.

Some varieties stand the climate better, and are less liable to mildew than others. Mulching may also to a certain extent prove a benefit of both the evils. But more, in my opinion, depends on soil and aspect as regards the mildew, than on variety.

Having cultivated and paid considerable attention to gooseberries for eighteen years, I will give some of the results of my experience. At Windsor, where I first cultivated them, the fruit in one garden was perfectly free from mildew, while in another garden, at the opposite end of the house, it was usually more or less mildewed. For the first four years after I removed here, my gooseberries were not fit to eat, from excessive mildew; they were planted in a garden surrounded by a high, close board fence on three sides, and the house on the fourth. Having seen in an Ohio paper, that a gentleman there always had fine fruit by planting on the top of a knoll, or rising ground where they had a free circulation of air, I concluded that mine mildew ed from the want of a circulation of air, but having no rising ground near, I took up and planted my bushes outside my garden, on a piece of ground slightly elevated, but where there was nothing to obstruct the wind. The result has justified expectations, as, since then I have never had a mildewed gooseberry.

I raised about five hundred seedling gooseberries three years ago, the greater part of which came into bearing this season, these I planted out pretty closely on the opposite side of a garden walk from my old plantation, but the young shoots as well as berries, were in general badly mildewed. The soil is exactly the same where they are planted as where the others are, but the bed was bounded on one side by an asparagus bed and on another by a row of close planted currant bushes, which had grown to a large size, and were partly shaded by some large peach, plum and apple trees.—I have no doubt, therefore, the mildew on them was caused by the want of a sufficient circulation of air, and where it once begins, it spreads rapidly to all the bushes contiguous, though in this case it did not cross the walk, a distance of only eight feet. The shade of trees does not cause the mildew provided the limbs are high enough from the ground so as not to prevent a due circulation of air. As no rule can be given in what kind of soil or situation to plant, I would advise planting a few bushes in every different aspect of the garden, selecting as much as possible the most open and airy places; probably it will be found, if the garden is large, that in some place they would be free from mildew. In small low lying gardens, enclosed with high fences, and where many trees and tall growing vegetables are planted there would not be much probability of obtaining good fruit, unless the soil or climate is peculiarly adapted for it.

I am, however, in hopes that improved varieties of the wild gooseberry, indigenous to the country, or hybrids between these and the English, will take the place of the latter, and that eventually we may have as fine gooseberries as the English and perfectly adapted to the climate. In this part of the country there are

several varieties and subvarieties of the native gooseberry. One is a very tall strong growing kind, the branches bearing strong prickles. The fruit ripens late, of medium size, dull red, insipid and covered with such strong prickles, that it is almost impossible to eat it. Another is a strong growing bush also, though the branches are long and pendant, not being able to support their own weight when in fruit. The branches are free from prickles, and the fruit is a very small, smooth red berry, perfectly worthless as it falls off as soon as ripe. There is a subvariety of this last, the fruit of which is larger and has now and then a small prickle on it, as also a few on the bush, the fruit does not fall off when ripe, but the flavor is poor. The Houghton gooseberry (though it has not yet fruited with me) is evidently, by the leaf, either an improved variety of these last two, or a hybrid between them and the English. There is, however, a difficulty in procuring hybrids between the English and the wild gooseberry, owing to the former flowering a little earlier than the latter. Still it is evident that it does take place sometimes, as one of my 500 seedlings that bore this year is decidedly a hybrid from the first or prickly variety described, there being quite a number of bushes of the latter growing wild in different parts of my lawn not far distant from the garden.

The growth of the seedling is very closely allied to its wild parent, being covered with similar prickles, and growing very tall and straight, its young shoots being about four times the length of any of the other seedlings. The leaf is quite different from either of its parents, and the fruit is about the same size as the wild, of a lively red color, and covered with strong hairs instead of prickles. The flavor, as far as I can judge, there being only six berries on the bush, is very fair, and it ripens at the same time as the English, or a fortnight before the wild.

Having apparently two hybrids now, the Houghton and my seedling, it appears to me the way is open for a rapid improvement, and the obtaining varieties probably equal to if not better than the English, of strong healthy constitutions perfectly free from mildew and adapted to the climate. I intend planting these kinds, beside some of the finest flavored English, such as the Warrington red, and saving the seed, of both kinds in hopes of raising new ones of increased excellence. The bees will take the labor of hybridising on themselves, as there are few other flowers in bloom at the time the gooseberry is in flower.

JAMES DOUGALL.

Rosebank, 10 August, 1850.

IS THE EARTH FULL OF SEEDS?

This question introduced a paragraph in yesterday's Journal. In 1845 while waiting at the foot of the White Face Peak of the Adirondac, for the clouds to remove from the summit, a fire broke out in the woods on the eastern slope of the mountain, and soon this gigantic mountain was wrapped in a sheet of flame. The trees and every combustible substance on the surface was consumed, and the thin covering of loose earth (about a foot in thickness) on the rocks was calcined by the heat. About three years afterward, I again visited the mountain, and found the burnt district a vast field of blueberry bushes. During the fruit season, more than two thousand bushels

of blueberries were gathered in this field for the Montreal market.

About forty years ago, the extensive barrens, lying between the Cumberland and Green River, in Kentucky, were covered with high grass, strawberries, and wild flowers. Among the latter, the morning glory. Every autumn, when the grass had become dry, it was fired either by hunters or from the camp fires of flitters. I have seen a fire many miles in length traversing these barrens with the speed of a race horse. No trees could grow here, but the grass resprouted and appeared to gather new life from the fire. Since the barrens have become settled, the autumn fires have been prevented, and it is now a thickly wooded district. Chestnut, oak, and hickory have sprung up, and when I saw the first early growth, it looked like one vast nursery, bounded on all side by the horizon.

In my examination of the extensive plains lying between Lake Ontario and the river Ottawa, I found that districts of pine timber, which had been swept by the flames, were supplied with a new growth of hardwood in place of the pine. Near the borders of Lake Champlain, on the western side, farmers cultivate blueberry bushes; they pile brush on the ground laid out for the berry field, set fire to the brush and burn it, and the next year the blueberry bushes spring up in abundance.

These facts bear witness to the harmonies of nature, and give evidence of the fertility of our beautiful earth.

The most ancient account of our earth, makes mention of the "grass, the herb yielding seed, and the fruit-tree yielding fruit after his kind, whose seed is in itself upon the earth."

The "fireweed" is well known among farmers. This weed is planted by the fire. The place where a coal pit has been burnt, may be easily distinguished by the luxuriance of its products.

When Kotzebue was in the far Northern seas, he landed upon an Island covered with grass. His men in making an excavation found that this Island was a mass of ice, and that the loose earth in which the grass was growing, was not six inches in thickness.

In one of the Northern Lakes, I found the "Lungwort," as large as a teasaucer, growing on the bare granite rock, with a stem not larger than a common knitting needle, and only a quarter of an inch in length.

I carefully examined a vine which I was cultivating, and when its tendrils were moving in search of an object to cling to, I placed a little stick near it, but at the opposite point from that toward which the vegetable hand was reaching. In an hour after, when I reexamined it, the tendril had turned about, and was winding around the stick.

There is life in everything. The earth is full of life, and it is full of seeds, and they were planted by the hand of Him who made the world.—E. M., in *Journal of Commerce*.

APPLES.

Picking Winter Apples. The usual time of picking winter apples is the last of September, or the fore part of October; many leave them until the middle of October, which improves the flavor, though they do not keep so well. In order to pick them, some take a small basket in the tree, fill it, and then let it down by means of a rope, which will upset the basket. As a better mode, some recommend placing bags or piles of hay under the tree to throw the apples on; the hay to be so formed that the apples will roll off as soon as it strikes; the machine called a "fruit gatherer," is an article by which a man is enabled to pick the fruit while standing on the ground, and also much faster than in any other way. The apple should be pulled so as to retain the small stem only, and to do this it is necessary that the apple should be pulled in a right line with the stem. If the apple is twisted a little it will come off easy without the leaf.

Preserving Winter Apples. After picking in the fall, the apples should be kept in some cool shed until the weather becomes so cold as to render their removal to the cellar necessary, in order to keep them from freezing; for it is heat and moisture that hastens their decay. Apples that are to be kept long must be kept cool and dry. A cellar which has ice in one part of it is desirable. We have always found them to keep best by having hanging shelves for their reception.

Another Mode—To Keep Apples for Spring Use.—The following judging from experience we believe to be a very efficient mode of keeping apples;—They are to be kept in chaff.—First put a layer of chaff sprinkled with quicklime over the bottom; then layer of apples, followed by another stratum of chaff and lime, and so on until the cask is filled. In regard to this method the editor of the *Genesee Farmer* says:

"It is well known to all those who have been in the practice of burying apples in heaps, that the fruit comes out in the spring much fresher, and finer flavored than it does when kept in open bins in the cellar—a part of the flavor in the latter case, doubtless evaporating. This method has all the advantage of burying, with another which we will explain. When one apple among many in a bin rots, the adjoining ones are contaminated; and not unfrequently a mass of rotteness occurs, surrounded by much sound fruit. Now the use of the lime is to absorb the gases generated by the putrefaction, and prevent such *leaven* from spreading."

It does not require much lime; less than a quart for a barrel is sufficient.

Apples for Stock. As there are always at

this time of the year apples lying under the trees rotting, perhaps a few remarks in regard to feeding them to stock, will not come amiss to some of our readers.

They may be turned to profit by feeding them to hogs, cows, horses and sheep, as they are admirably adapted to promote the thrift of stock generally. Some have imbibed a very strong prejudice against feeding them to cows; but the idea that cows fed on them will shrink their milk, is altogether absurd; that is, when fed in a judicious manner, with ripe well matured apples. We have no doubt that if fed too freely, when the food taken is of a succulent and fermentable nature, it will be likely to produce fever; but overfeeding with potatoes, &c., will be just as likely to prove injurious. As to the quantity which should be given a common sized cow, we would not recommend more than a peck to half a bushel, according to the appetite of the animal. This amount will answer the purpose of a liberal feeding with hay and grain.

TO PRESERVE PUMPKINS.—Preservation of pumpkins, observes a farmer, through the greater part of the winter, if sound and well ripened, is easily attained, by stowing them in a mow of dry hay or straw, or placing on a barn floor and covering with any light forage. A dry cellar will frequently keep them sound; but these are usually too moist for this purpose. They ought occasionally to be looked after, and any showing evidence of incipient decay, should be immediately used. All the partially ripe, small, and imperfect should be fed soon after taking from the field.

(We have kept them to the middle of July by putting them in a dry cellar upon a scaffold, where the temperature was at no time below the freezing point.)

NEW AND ECONOMICAL MODE OF FORCING VEGETABLES.—It has been suggested by a foreign paper, that the waste steam of manufactories may be advantageously applied to the roots of plants; and without any expense for artificial heat, large quantities of tropical fruits and vegetables may be raised at all times, besides such of our own, as we can otherwise have in perfection, only during the summer months. A series of common draining tile, laid within suitable distances underneath properly-prepared beds, containing the plants, which should admit or shut off the exhausted steam by cocks, would be all that is necessary for the underground arrangements. Moisture would be thus communicated as well as heat, and a slight covering of wood, or brick and glass, to protect the plants from frosts or cold air, would be all that is essential to securing the most prolific growth.—*American Agriculturist.*

FALL MANAGEMENT OF BEES.—The months of October and November are the season when the state of the apiary will require particular attention. The hives should be examined, and those not containing honey enough for its occupants to

sustain them during the Winter, must be fed. An ordinary swarm or family of bees will consume from 15 to 20 pounds of honey, from October to May. If the Winter be very mild, more than this quantity will be required; but not in an ordinary season. The apiarian should be able from practice, to know at once on raising his hives, whether the above quantity exists in them or not. Hives that have been occupied several years will be as heavy without any honey as others that have been used but one season, with from five to ten pounds; therefore, an allowance must be made for the weight of old combs and bee-bread.—*Miner*.

General Science and Miscellany.

PREMIUM FOR THE BEST BREAD.—In the schedule of the Norfolk County Agricultural Society, for its next annual exhibition, we are happy to observe premiums offered for the best bread, accompanied with a receipt for its manufacture. We rejoice in this, because it may serve to direct the attention of the daughters and mothers of Norfolk towards one of the most important branches of female industry, and because it may also render them the occasion of provoking good works. The day may yet come when at these annual county fairs, each town will have its table provided with all kinds of food and dainties, prepared by its females, not only for exhibition and premiums, but for the purchase and refreshment of visitors.—*Puritan Recorder*.

COPPERING IRON.—A method has been discovered, and is coming into use, of covering iron with copper, something as we see it covered with tin. It is obvious that the uses to which such a preparation of iron can be put are very many, and it will, therefore, become a very convenient article in the arts. It can be used for roofing, for covering the bottoms of ships, and for a great many other purposes where iron alone would be likely to rust out too soon.

KICKING HORSES.—A writer in the *American Farmer*, gives the following as his mode of breaking horses of the vile and dangerous habit of kicking. He says,

“I attach one end of a strong line to the hind pastern of the horse, and take it forward through the loop, fastened to the trace, at the side of the horse, and attach the other end of the line to the bridle; a line attached thus at each side of the horse, if left sufficiently long to just enable him to make a step, will at every kick he may make, operate so severely upon his mouth as to cause him very soon to give it up as a bad job.”

CURE FOR GLANDERS.—In answer to one of your subscribers, inquiring what will cure “Nasal Gleet,” or discharge from the nose of horses, I would say, that I have cured many with the following simple compound, and two cases that were called glanders confirmed, viz: Take one teaspoonful of common rosin, one tablespoonful of

copperas, two tablespoonfuls of salt, and four spoonfuls of dry ashes; pulverize the rosin and copperas, and mix the whole and give it in bran, or shorts, or oats dry, and in four weeks time, by giving the same quantity twice a week, I cured the two cases of glanders. I have used the same in cases of cold or catarrh, and three or four doses have performed a cure. I have also used it for horse distemper with success.

THE NEW WATER GAS.

After so much has been said about gas, cheap gas, water gas, and Paine's light, we are gratified to find there has been something at the bottom of the subject, and we are both surprised and gratified to find that water gas, after being subjected to various tests, has been found to realize the most sanguine expectations concerning it. We are informed that the proprietors of the Astor House, in this city, have had that whole establishment lighted with water gas, over two months; after which they have contracted with the proprietors of the patent to have the Astor House lighted thereby, by the year. Their expense for lighting the same is less than half the cost of coal gas, while the light is double, in other words, the same is supplied by the Union Gas Light Company, (who have purchased the patent for the United States) light for light, at about one-fourth the price of coal gas. The light is powerful, yet soft and pleasant to the eye; and being made from water, which is afterwards carbonized, is perfectly pure, requiring no purifying, and giving a gas, the consumption of which, in a room, produces none of the sulphurets and many other impurities which are always developed by the use of coal gas, &c. We learn, also, that the *Clipper* newspaper establishment at Baltimore, has been making this gas for their own use for more than six months, at a cost, to themselves, of less than one-fifth the price of coal gas; as has also been the case at several other establishments. But in all cases the same has been done quietly, the patentee being desirous first thoroughly to show its application and economy previous to giving publicity thereto. The spirited proprietors of the Astor House have conferred great obligation on New York and the Union in permitting the trial, and developing to us the merits and benefits of this invention, and are now realizing the profits of its economy, and we understand that many works are now being negotiated.

Now that this gas can be made, of superior quality, at one-fourth the price of coal gas, we breathe a little freer, and thank the gods that a brighter prospect is before us, and hope now that our streets, lanes, and alleys will be passable at night to those needing them. We hope our city fathers will no longer sleep in present darkness, (unless they love darkness better than light) but examine into this subject, with a view to facilitate the supply to our brother citizens. We hope interested gas monopolies may not be assisted to

intrude obstacles to its introduction, but that light, good light, cheap light, at one quarter of its present price, may be immediately enjoyed by all, and we advise our readers, when they pass that noble pile, the "Astor House," at night, just to take a peep at the new water gas, and make their own comparison. The splendid drawing-room for ladies, when lighted, looks almost supernatural and fairy like, and when we enter the reading room, we find the light soft and pleasant to the eye—very different to the killing coal gas and spirit lamps.—*New York Herald.*

WATER BEDS FOR INVALIDS.

The most of us are contented with a good feather bed to rest upon when we are weary, but there are instances when even the softest becomes hard to the invalid. Water has been substituted for feathers, with good advantage. Its fluidity is such that it will accommodate itself to the inequalities of the form, and thus produces equal pressure upon every part of the body. This was an invention of Dr. Arnot.

Prof. Brown thus speaks of it in the last number of the Practical Christian:—"It consists of a trough of a convenient length and breadth, and a foot deep, half filled with water, over which a sheet of caoutchouc cloth large enough to reach the bottom is thrown. The edges of the cloth are varnished and securely fastened to the top of the trough. Over this a thin soft mattress is laid with pillows and bed clothes in the usual way.

The great advantage of this bed for a surgical patient consists in lessening and equalizing the pressure of the body whilst lying. Those parts of the body which touch an ordinary bed, from compression, receive a smaller supply of blood than the rest; and as in sickness the patient is often too weak to turn frequently without assistance, the consequence is that the pressed part mortifies and sloughs off. This disastrous result, (the cause of many deaths,) may be entirely prevented by using the hydrostatic bed. With it wounds may be dressed, and other necessary operations performed, by depressing the mattress at any particular part, which the water underneath readily allows, so that in extreme cases the patient may not require to be moved at all.

It is indeed surprising that this admirable invention has not come into general use.—Dr. Arnot, with his accustomed liberality, declined taking out a patent for it. It can, therefore, be made at a cheaper rate than most any other bed, whilst in every respect it is by far the best bed for patients who may be confined to the horizontal posture for a very considerable time.

The inhabitants of a village might subscribe for a hydrostatic bed, and use it in common, as it might be needed. Great comfort and advantage to the sick would accrue from such an arrangement. Let some of our more spirited villages set the example.

ABSORBENT POWER OF THE EARTH USED AS PREVENTIVE OF DISEASE.

The earth is a powerful absorbent, and will prevent the spread of disease. If we have a dead animal, or anything which becomes troublesome to the olfactories by reason of unpleasant odors produced by decomposition, we bury it in the earth, and immediately everything of the kind is neutralized. It is remarkable how small and thin a coating of earth will oftentimes effect this. In some of the southern cities, where the cholera has been prevalent, an observing gentleman has taken advantage of this fact and applied it practically to the neutralization of the *malaria* which is supposed to produce it. This he does by noting the place where the pestilence first broke out, and covering all the filthy and neglected puddles and sewers, or other fountains of foul air, with *clear, fresh sand*, and on this a sprinkling of fresh lime or plaster of Paris. By following up this course he has been uncommonly successful in checking the prevalence of this terrible disease.

THE TELESCOPE AND MICROSCOPE.

It was the telescope that, by piercing the obscurity which lies between us and distant worlds put infidelity in possession of the argument against which we are now contending. But about the time of its invention another instrument was formed which laid open a scene no less wonderful, and rewarded the inquisitive spirit of man with a discovery which serves to neutralize the whole of this argument. This was the microscope. The one led me to see a system in every star; the other leads me to see a world in every atom. The one taught me that this mighty globe, with the whole burden of its people and of its countries, is but a grain of sand on the high field of immensity; the other teaches me that every grain of sand may harbor within it the tribes and the families of a busy population. The one told me of the insignificance of the world I tread upon; the other redeems it from all its insignificance, for it tells me that in the leaves of every forest, and in the flowers of every garden, and in the waters of every rivulet, there are worlds teeming with life, and numberless as are the glories of the firmament. The one has suggested to me, that beyond and above all that is visible to man, there may lie fields of creation which sweep immeasurably along, and carry the impress of the Almighty's hand to the remotest scenes of the Universe; the other suggests to me, that within and beneath all the minuteness which the aided eye of man has been able to explore, there may lay a region of invisibles; and that, could we draw aside the mysterious curtain which shrouds it from our senses we might there see a theatre of as many wonders as astronomy has unfolded, a universe within the compass of a point so small as to elude all the powers of the microscope, but where the wonder working God finds room for the exercise of all his attri-

butes, where he can raise another mechanism of works, and fill and animate them all with the evidences of his glory.—*Dr. Chalmers.*

DISCOVERIES IN THE ANCIENT COPPER DIGGINGS.

We were shown last week, by Charles Whittelsey, Esq., of the Ontonagon Mine, a copper arrow-head and a piece of human skull and other bones, which have lately been found in the Ancient Indian Diggings on the Ontonagon River. The native copper arrow-head is now about two inches in length and seems to have had originally a socket, though but part of it remains. Several chisels, or instruments resembling chisels, having sockets like the common carpenters chisel, and small gads or wedges have also been found at the Minnesota Mine. But the greatest curiosity we have seen in the way of these articles, is the stick of oak timber lately taken out of one of the ancient "pits" or shafts at the Minnesota Mine, twenty-seven feet below the surface. It is a small tree, about ten feet in length, and 8 or 10 inches in diameter, having short limbs 2 feet apart and at nearly right angles with one another, and on this account and from its standing nearly upright, it is supposed to have been used as a ladder by the ancient miners. In this shaft and around and over this stick were rocks and earth; and large trees were growing over it, and many centuries must have elapsed since that ancient ladder was placed there.

We learn from Capt. J. W. Hunter, who brought down last week a piece of this stick about four feet in length, and to whom we are indebted for a small piece of the same, that when taken out of the mine it could easily be pulled in pieces by the hands, but by carefully drying it in the sun it became strong and hard and very much "season cracked" by the exposure to the air and sun. How long would oak timber probably remain in this state of preservation under such circumstances? and would the presence of copper around it have any effect in the preservation of it? These are questions to which we should be glad to have more satisfactory answers than we are able to give them.—*Lake Superior Journal.*

COPPERDOM.—The Lake Superior Journal, says the following estimate will not vary far from the amount of copper in the rough, which will be sent down from Lake Superior during the present month:—

Boston & Pittsburg Co., about lbs.	1,800,000
North West	400,000
North American	120,000
Minnesota	200,000
Siskawit	60,000
All others, not cover	100,000

Being a total of 2,680,000

There will be employed this winter in operations connected with mining about 1,000 operatives.—*Detroit Advertiser.*

MONTREAL INDUSTRIAL EXHIBITION.

From the Montreal Transcript.

The distribution of the prizes took place at the Bonsecours Market, last night,—too late, however to enable us to obtain a list for publication. Under these circumstances, we can only refer to some few prominent articles, which have taken prizes, and which have attracted much attention from their great beauty and excellence. First in this class is to be placed some imitation marble work, executed by Mr. McArthur, of Ramsay & McArthurs, of this city, and consisting of chimney pieces, centre tables, &c., &c. So admirably is this work executed, that in the case of common pine tables, done to represent mahogany and oak, it is only on the closest examination that the deception is discovered. It is the same with several chimney pieces and sections of columns. Thousands have refused to believe that they are not what they appear to be. But the gem of this *groupe* is an imitation mosaic table, painted on the common lime-stone of the country, and representing some hundred different species of marbles, many of them copied from the original marbles, and all executed with a skill and fidelity which it would be difficult to rival. This piece of workmanship has attracted more attention than anything else in the exhibition and it deserved to do so. On the same day, are some iron centre tables painted by Kveighoff, and which are also worthy of notice; and near them is a very pretty wardrobe, in white and gold, painted by Mr. McArthur, and constructed in first rate style, by Mr. Tweedie, Upholsterer, of Notre Dame Street.

The furniture which has taken the largest prize, is a set of black walnut chairs, sofa, &c., made by Meaken & Read, of Great St. James Street, and which is the same, we understand, intended to be presented to the Queen. The style is quaint, and the workmanship seems to be very good. Mr. Meaken's son has also taken the apprenticeship's prize offered by the Mechanics' Institute for a piece of very nice carving in wood.

Some magnificent furniture from the warehouse of Messrs. Hilton & Baird has also taken first prizes. It would be difficult to conceive anything more gorgeous and beautiful than this furniture, which attracted great attention.

Of the prizes for carriages, we see that Quebec and Montreal have nearly divided the list. A summer carriage by Saurin, of Quebec, has been much admired, and the same may be said of a family carriage by O'Meara, of the Haymarket. Wright & McLean have taken a prize for a very dasy little single sleigh, which would astonish the world in Hyde Park; and the same may be said of a double sleigh by O'Meara, which has taken the first prize.

There have been some capital specimens of manufactured and domestic articles exhibited,

particularly blankets, which would vie with any imported. We see that Mr. Dickson, of Toronto, and the Messrs. Barber, of Esquemes, have taken prizes in this list.

In the hardware, S. Shaw, of Toronto, has taken the first prize for axes, and a lot from Dundas the second prize.

Of the wheat, the two largest premiums have gone to Upper Canada—the Canada Company's sample taking the first prize; John Allan, of Longue Point, has the 3rd prize. The other articles in this department are too numerous to attempt going over them. We see, however, that Messrs. Willock, and Fitts have taken prizes for cabin and satabiscuit. The various samples of grain, lard, honey, &c., in this class have been much spoken of and are highly creditable to the industry of the country.

An article which has attracted a good deal of attention at the exhibition is a sample of porpoise leather, made below Quebec. It is the skin of a fish, after the oil had been extracted and promises to be a most valuable invention. It is as soft in its texture as French kid, and so tough that it is almost impossible to break a piece of it. We are told by a person who used it, that it does not crack, and that its durability almost exceeds belief. The sample brought in here was immediately bought up, and we make little doubt the article will have a rapid demand.

Apropos of leather, Mr. Dangerfield has exhibited some very beautiful specimens of ladies and gentlemen's shoes and boots, made in a way that few besides Dangerfield can come up to.

A stand which excited a great deal of attention, was the one containing specimens of soap and candles from the factory of Mr. Mathewson. It is evident that Canada has nothing to learn in that way from other countries, and that (whatever we may want in other respects) we are able to "lighten our own ways."

In speaking of hardware, too, we ought to have mentioned the numerous samples of stoves sent in by Mr. Ladd, who took the first prize for a cooking stove. Mr. L. also exhibited a portable grist mill, which attracted a great deal of attention, and some very capital specimens of castings.

A beautiful old country plough, made by Mr. Fleck, took the first prize. There were also some good ploughs from the Upper Province, one of which took the second prize.

Amongst other articles which attracted a good deal of attention, we ought not to omit some very beautiful specimens of needle work. Two pieces in worsted by Mrs. Bennett, of Beauharnois, to which the first prize was awarded, were truly wonderful for the effect produced, and the same may be said of a bird in worsted, worked by one of the sœurs de la congrégation. There was also a worked chair at the upper end of the room, and which we understand came from Gabriel Street, Julien's establishment, which was very beautiful.

In the way of the fine arts, two specimens are particularly deserving of notice—viz., a child's

head, and the head of the Catholic Bishop of Montreal, both done in marble by Boulet, of this city. They are exceedingly beautiful, and indicate a perfection in this branch we were not prepared for.

We understand that the Judges have recommended a number of articles to be sent home and it is also generally suggested that a similar Exhibition shall be held every year in Montreal—a proposal which cannot fail—after the great success of the first attempt—to meet with general approval.

CANADIAN ENTERPRISE.

The products of the soil, we are happy to learn, are now nearly secured, and will be found to exceed those of many previous years. And while on this subject, we should consider ourselves almost guilty of a dereliction of our duty, if we failed to notice the mammoth field of wheat, two miles distant from the Springs, (Ottawa District) which our friend, Mr. Sheriff Treadwell, has just secured. This field, which is more than one mile in length, and embracing perhaps not less than two hundred acres of land, was sown last spring with Black Sea wheat, and received many a well merited encomium from the passing traveller on his way to the Spring, to whom it presented one of the richest and most fascinating scenes which he is apt to find in any rural district. While on our peregrinations yesterday, we observed that Mr. Treadwell was obliged, during the past summer, to erect three new barns, of extraordinary size, in addition to those he had already built, in order to find store-room for his extensive harvest, and we are told the field above alluded to, notwithstanding the wetness of the season, in the absence of proper draining, will be above the common average. Nor are Mr. Treadwell's other spring crops on a scale less extensive, while he is about preparing, with the subsoil plough, 200 acres more for spring wheat the ensuing season. This is just as it should be, and we hope many other farmers of our fertile county will copy after him, and remember "*Labor omnia vincet.*"—*Life at the Springs.*

A TREATISE on campanology published in Norwich (England) states according to an accurate calculation, that the number of combinations of definite sounds that can be produced on twenty-four bells, is so great that at the rate of two in a second it would require 117,000,000,000 years to strike them.

FALL PLOWING.—All stiff, clayey lands, intended for spring crops, may be plowed this month, when the earth is neither too wet nor too dry. If plowed at the right time, and subjected to the winter frosts, the texture of the soil will be greatly improved.

A good farmer is generally a true friend, an affectionate husband, an excellent parent, and an honest man; and it is an established axiom that a well-tilled field denotes not only care and industry, but the supervision of an enlightened mind.

SAFEGUARDS FOR STEAMBOATS.

An exchange says that the many disasters which occur in steamboat navigation have awakened much attention to the subject or providing proper safeguards for life on such occurrences. A writer in the *National Intelligencer* suggests that each vessel be provided with pieces of dry scantling, six inches square and six feet long, having a four-inch hole bored through the middle, and carefully stopped at each end. This piece of timber will weigh about forty pounds, and displace two cubic feet, or one hundred and twenty-four pounds of water; making a difference of eighty pounds, which will be the load required to sink it. If the human head averages ten pounds in weight, this float will support eight adults with their heads out of water. For convenience of holding on, there should be a small cord fastened at the ends, along two sides of the float, and on riders, promiscuously thrown over board, several of them where the stream would carry them away. It should be attached by cords, and a line to connect with a boat, or an anchor, or to the steamer; twenty of these floats would fill but forty cubic feet, and admit of compact stowage. They might also be used for seats, &c., for the deck passengers, with no small improvement of their comfort. These might save, if each was fully loaded, one hundred and sixty lives. But, making allowances for every thing, twenty floats might be estimated to save one hundred persons from drowning.—*Detroit Advertiser*.

BRIDGE BETWEEN ENGLAND AND FRANCE.—The British Academy of Sciences has at present under consideration a plan of a most extraordinary character, being neither more nor less than a suspension bridge between France and England. M. Ferdinand Lemaire proposes to establish an aërostatic bridge between Calais and Dover. For this purpose he would construct strong abutments, to which the platform would be attached. At a distance of 100 yards across the channel, he would sink four barges heavily laden, to which would be fixed a double iron chain of peculiar construction. A formidable apparatus of balloons of an elliptical form, and firmly secured, would support in the air the extremities of these chains, which would be strongly fastened to the abutments on the shore by other chains. Each section of 100 yards would cost about 300,000 francs, which would make 84 millions for the whole distance across. These chains, supported in the air at stated distances, would become the point of support of this fairy bridge, on which the inventor proposes to establish an atmospheric railway. The project has been developed at great length by the inventor.

POWER OF A BUSHEL OF COALS.—It is well known to engineers that there is a virtue in a bushel of coals, properly consumed, to raise seventy millions of pounds weight a foot high. This is actually the average effect of an engine at this moment working at Huel Town, in Cornwall. Let us pause a moment, and consider what this is equivalent to in matters of practice.

The ascent of Mount Blanc, from the valley of Chamonix, is considered, and with justice, as the most toilsome feat that a strong man can execute in two days. The combustion of two pounds of coal would place him on the summit.

The Menai bridge, one of the most stupendous works of art that has been raised by man in modern ages, consists of a mass of iron, not less than four millions of pounds in weight, suspended at a medium height of 170 feet above the sea. The combustion of seven

bushels of coal would suffice to raise it to the place where it hangs. The pyramid of Egypt is composed of granite. It is seven hundred feet in the side of the base, and 500 in perpendicular height, and stands on 11 acres of ground. Its weight is therefore 12,760 millions of pounds, at a medium height of 126 feet; consequently it would be raised by the effort of about 360 chaldrons of coal—a quantity consumed in some foundries in a week. The annual consumption of coal in London is estimated at 1,500,000 chaldrons.

The effort of this quantity would suffice to raise a cubical block of marble, 2200 feet in the side through a space equal to its own height, or to pile one such mountain upon another. The Monte Nuovo, near Puzzoli, which was erupted in a single night by a volcanic fire, might have been raised by such an effort, from a depth of 50,000 feet or about 8 miles.—[Working Men's Friend.]

SUBMARINE TELEGRAPH BETWEEN ENGLAND AND IRELAND.

Negotiations are being entered into with the Lords of the Admiralty and government authorities for the establishment, across St. George's Channel, of a subaqueous telegraph, upon a similar though much more extensive scale to that now being undertaken between England and France, the promoters of which have, it is understood, after considerable interviews and treaty, come to terms this week with the French government for the exclusive possession of the proposed electric line from the French coast to Calais.—Preliminary surveys have been made for this proposed oceanic communication across the Irish Channel, and the coasts on either side, combined with the submarine site ascertained by soundings for the sinking of the wires, are found, owing to the foundation being comparatively free from rocks and shoals as compared with the Straits of Dover, and with treble the extent of channel, to be favorable. Notices of the intention of the promoters to apply to Parliament next session for an authorization to lay down the line will be given. The precise points at which telegraphic stations on the English and Irish coasts can be established will depend on the results of the government commission now pursuing its inquiry into the best place for the establishment, on the west of Ireland, of a great transatlantic packet station. At present, two telegraphic routes are proposed; the one of sixty-four miles across the Channel, from Holyhead to Kingstown and Dublin, and thence by the Great Southern and Western Railway on to Cork and Galway—the other from St. David's Head, on the Welsh coast, and on to Wexford, Waterford, and the extreme western points of Ireland to Berehaven and Crookhaven, the latter being the last points touched at by vessels outward-bound for the Atlantic. From this point, on the extreme western coast of Ireland to Halifax, the nearest telegraphic station on the American side, the distance is 2,155 miles, and as this might be accomplished by the steamers in five or six days, England, by means of the network of telegraphic communication in existence on the Atlantic seaboard on the one side, and the lake frontiers on the other, may be put in possession of all political and commercial intelligence from the American and European continents in six days, instead of, as now, in twelve or fourteen. The project, though it is asserted it might be done with safety, does not contemplate anything like the immense enterprise of a wire under the Atlantic.

THE INTERIOR OF AFRICA.—Becroft, a daring and intelligent English voyager, has years ago dissipated the delusion, that the interior of Africa is a desert

waste. He has shown that it is accessible to navigation and trade; and the climate is as healthy as that of the tropics generally; that there are regions of beautiful and fertile country, affording opportunities for legitimate commerce of indefinite extension. This adventurous traveller explored the river Niger within forty miles of Timbucto. He has thrown light on thousands of miles of richly fertile and wooded country, watered by the great stream; and upon the ivory, vegetable tallow, peppers, indigo, cotton, wool, palm oil, dye woods, timber woods, skins and a great variety of produce, which invite the trade. To carry on this trade in the vessels which navigate the river, it is necessary to have black crews. The *London Spectator* remarks:—"Of course the free blacks, educated in the West India trade, will become useful workmen in penetrating the naive land of their race. We must depend, at least for generations to come, on the black race to supply the bulk of the crews." For our own part, we do not see why our own country should not compete with Britain for the rich trade of Africa. Nor do we know any more efficient method of competition than the proposed line of steamers.—*American Paper*.

CORNS ON THE TOES.—These annoying excrescences are produced by long continued pressure and friction on the parts upon which they occur. The skin is rubbed and irritated by the boot or shoe on one side, and is in immediate contact with the hard bone on the other side, and has no means of escape; and the consequence is that the epidermis acquires an increased thickness and hardness. Sometimes corns are formed between the toes. Here a particular point of the skin presses against the head of an opposite bone, gets inflamed and becomes the seat of a corn, which is usually small and soft and occasionally secretes a minute quantity of fluid. Now and then an ulcer is produced and the bone itself is diseased, and the case becomes a serious one. We will not however, detain the reader with further description of a trouble with which he may be quite familiar, but will rather suggest the best means for its amelioration or removal. A very loose shoe or a very snug one is bad. Wear a boot or shoe moderately tight.—Daily ablution with soft water and a liberal quantity of soap should be practiced, and the parts affected should be kept covered with a piece of nice cotton wool. The above is the safest, neatest and best way of treating the difficulty in question in all ordinary cases. This I know by experience.

WHY WOMEN ARE UNHEALTHY.—Many of the physical evils—the want of vigor, the inaction of the system, the languor and hysterical affections—which are so prevalent among the delicate young women of the present day, may be traced to a want of well trained mental power and well-exercised self-control, and to an absence of fixed habits of employment. Real cultivation of the intellect—earnest exercise of the moral powers—the enlargement of the mind by the acquirement of knowledge, and the strengthening of its capabilities for effort, for firmness, for endurance of inevitable evils, and for energy in combating

such as they may overcome, are the ends which education has to attain; else weakness but becomes infirmity. The power of the mind over the body is immense. Let that power be called forth; let it be trained and exercised, and vigor both of mind and of body will be the result. There is a homely, unpolished saying, that it is better to wear out than to rust out; rust consumes faster than use. Better, a million times better, to work hard even to the shortning of existence, than to sleep and eat away this precious gift of life, giving no other cognizance of its possession. By work or industry, of whatever kind it may be, we give a practical knowledge of the value of life, of its high intentions, of its manifold duties.—Earnest, active industry is a living hymn of praise, a never failing source of happiness; it is obedience, for it is God's great law for moral existence.—*The Physical Training of Girls at School, by Mudam de Wah*.

MEDICINE FOR HORSES.—Many seem to imagine that the constitution, physiology, and diseases of the horses are different from those of man and other animals. This is a mistake. The common diseases of the horse are similar to those of man; and the same medicines, in those diseases, are as useful to one as the other. Some writers states that the doses should be from eight to twelve times larger when the horse is the patient.—The anatomical structure of the stomach issued as to forbid his vomiting, so that an emetic should never be given.

IMPROVEMENT IN SUGAR REFINING.—The London Morning Herald states that an important improvement has taken place in the manufacture of sugar. It says, "By means of the now well-known patent for drying by centrifugal force, and the aid of a few simple adjuncts, sugar, which took from three to five weeks to refine, is now done in as many minutes. Incredible as this may seem, the whole process, with the result here stated, has been witnessed by our informant at the sugar-houses of Messrs. Finzel & Son, at Bristol. Moreover, sugars altogether unsaleable in our markets were converted in a few minutes into an article worth about \$8,48."—*Am*.

HOME-MADE CANDLES.—If you manufacture your own candles, immerse the wicks in lime water in which a little, (saltpetre,) has been dissolved, and dry them before dipping. The light from such is much clearer, and the tallow will not "run."—*Ibid*.

TO PURIFY MOLASSES.—Boil and skim your molasses before using it.—When applied for culinary purposes, this is a prodigious improvement. Boiling tends to divest it of its unpleasant, strong flavor, and renders it almost equal to honey. When large quantities are made use of, it is convenient to prepare several gallons at a time.—*Ib*.

MR. GOUGH.—This extraordinary man was born in Kent England, in 1817, his mother was a schoolmistress of Sandgate, and his father a soldier in the 52nd. He emigrated to New York in 1829. He was an errand boy in a Methodist book concern in New York, then a play actor in Boston till 1837; then a drunkard, then a temperance lecturer. He is not one of those vulgar itinerants whom we often see strolling about the province, relating, with a strong nasal twang and in the most disgusting manner, their experience as reformed drunkards: he is not one of those pig headed fellows who, because they have been raised from their native gutter by the Temperance Society, think they have a right to run about the country, holding forth and disgusting every respectable person: no, he is not one of those, but a real child of genius—an eagle stretched for a moment by a self-inflicted wound upon the plain, but again soaring heavenward in his strength and beauty.—*Cobourg Star*.

THE ELOQUENCE OF EXPERIENCE.—At a young men's debating society in Indiana, United States, the question for discussion, a few weeks since, was—"Which is the greatest evil—a scolding wife or a smokey chimney? After the appointed disputants had concluded the debate, a spectator rose, and begged the privilege of "making a few remarks on the occasion." Permission being granted, he spoke as follows:—"Mr. President, I've been almost mad a-listening to these 'ere youngsters. They don't know nothing at all about the subject. Wait till they have had one for twenty years, and been hammered, and jammed, and slammed all the while:—and wait till they've been scolded because the baby cried, because the fire wouldn't burn, because the oven was too hot, because the cow kicked over the milk, because it rained, because the sun shined, because the hens didn't lay, because the butter wouldn't come, because the old cat had kittens, because they come too soon for dinner, because they were one minute too late, because they sung, because they tore their trousers, because they invited a neighbour woman to call again, because they got sick, or because they did anything else, no matter whether they could not help it or not, before they talk about the evils of a scolding wife. Why, Mr. President, I'd rather hear the clatter of hammers and stones, and twenty tin pans, and nine brass kettles, than the din, din, din, of the tongue of a scolding wife. Yes sir-ee, I would. To my mind, Mr. President, a smoky chimney is no more to be compared with a scolding wife, than a little negro is to a dark night."

VEGETABLE INSTINCT.—If a pan of water be placed within six inches on either side of the stem of a young pumpkin or vegetable marrow, it will, in the course of the night, approach it, and will be found in the morning with one of its leaves floating on the water. This experiment may be continued nightly until the plant begins to fruit. If a prop be placed within six inches of a young convolvulus, or scarlet runner, it will find it, although the prop be shifted daily. If, after it had twined some distance up the prop, it be unwound and twined in the opposite direction, it will return to its original position or die in the attempt; yet, notwith-

standing, if two of these plants grow near each other and have no stake around which they can entwine, one of them will after the direction of its spiral, and they will twine around each other. Duhamel placed some kidney beans in a cylinder of moist earth. After a short time they began to germinate, of course sending the plume upwards to the light, and the root down in to soil. After a few days, the cylinder was turned one-fourth round, and again and again this was repeated until an entire revolution of the cylinder had been completed. The beans were then taken out of the earth, and it was found that both the plume and radicle had bent to accommodate themselves to every revolution, and the one in its efforts to ascend perpendicularly, and the other to descend, had formed a perfect spiral. But although the natural tendency of the root is downwards, if the soil beneath be dry, and any damp substance be above the roots will ascend to reach it.

A NEW WAY OF GAINING A LIVING.—On the boulevards of Paris there is to be seen a woman, who makes money by experimenting on the sensibilities of the fair. The veneration which French ladies hold for the swallow, that precious messenger of good omens, is well known. The woman spoken of moves their hearts and loosens the strings of their purses by means of these sweet little birds. About the promenading hour of the afternoon, on the Italian boulevard, she goes with a cage in which are contained five or six swallows; these she exhibits to passers by, particularly to the ladies, when compassion is immediately excited on seeing the efforts of the fluttering little prisoners to be free. "Would you like to let one go," says the woman, "it will only cost you two pennies." As may be supposed many avail themselves of the pleasure, pay their two pennies to the woman, receive in their hands the bird, and then enjoy the satisfaction of seeing it fly away at liberty. In this way, one by one, the cage is emptied, and the woman goes home, where she finds her swallows already arrived before her. The birds having been trained, take advantage of their liberty only to return directly to the habitation of their mistress. The next day she commences the same comedy anew.

THE HUDSON'S BAY COMPANY are advertising for emigrants to Vancouver's Island. One plan adopted by the Company is that of sending out a small body of experienced agriculturists, who are to be engaged at about £55 a year with maintenance, under a contract for five years, the object being, that, with a certain number of laborers under them they shall create farms which may be sold ultimately to persons possessed of moderate capital, and who are likely to become the most useful class of inhabitants. It is regarded as probable that many families would be tempted to seek the country with a view to settlement under such circumstances, who would hesitate to enter upon the wild life of a wholly unprepared region.—*Times*.

A NEW machine, capable of making 26,000 perfect bricks per hour, at the cost of about one guinea, has recently been exhibited by the Messrs. Harts, engineers of London, and was highly approved of.

Editor's Notices, &c.

SCOBIE'S CANADIAN ALMANAC FOR 1851.

This is a publication of which our rising Province may justly feel proud. In addition to the Astronomical, Meteorological, and such like information, annually found in the better class of Almanacs, it contains a mass of instruction relative to the resources and present condition of the country; commercial, Statistical, Educational and Ecclesiastical, carefully condensed, and thrown into a convenient form for reference. It is in truth a year book of useful facts, with which every body ought to become conversant. When we say that there are no less than 76 closely printed pages of valuable and important matter, with a well executed map, and all for the trifling sum of $\frac{1}{2}$ d., the publication must be regarded as almost a miracle of cheapness; and for the sake of the public, as well as of the enterprising publisher, we heartily wish that it may become the inmate of every family in the Province. The "getting up" of this Almanac, as well as the facts which it contains, indicate a state of progress, of which Canada need not be ashamed.

MORTON'S CYCLOPEDIA OF AGRICULTURE.

We have already expressed our high sense of the merits of this *original* work. The most eminent men to be found in the walks of science and practical agriculture in Great Britain and elsewhere, are among its principal contributors. The 2d & 3d parts are before us and all that we have space for at present is a bare enumeration of the chief articles, which they contain. Analysis, Apples, Arboriculture, Artificial manures (a most elaborate article,) Ashes of plants, Atmosphere, Ayrshire Cattle, Barley, Barn Implements, Bran's Calendar of Farm Operations; with a number of steel engravings of Farm buildings and implements, beside wood cuts; executed in the best style of the art. Interspersed with the above mentioned systematic articles, there are others occupying a brief space on plants, insects &c., that it is the interest of the farmer to know something about. We will occasionally give our readers a treat from this valuable mine; strongly recommending each of them as desire as perfect and comprehensive a knowledge of the theory of Agriculture, as the present age can afford, to purchase the work; which may be had of Mr. Maclear of this City, or of any of his travelling agents. It is issued in monthly parts, by those well known publishers, Messrs. Blackie & Son, Glasgow.

STEPHEN'S FARMER'S GUIDE.

The 8th and 9th numbers of this useful publications have been received. With the 8th number commences Professor Norton's additions in the shape

of an appendix. This department very much increases the already high character which this original work has gained in Europe, especially to farmers on this side of the Atlantic. Mr. Norton's notes form a sort of running commentary on the text, pointing out what American farmers should imitate or avoid, and supplying considerable additional information, adapted to the climate and wants of this Western continent. The work is for sale by Mr. Rowsell and Mr. Maclear of this City.

CHAIR OF AGRICULTURE IN THE UNIVERSITY OF TORONTO.

We are informed upon good authority, that Professor Nicol has given notice to the Senate of a Statute for filling up the Chair of Agriculture. The Statute we understand, provides some fifty acres of the University grounds, free of any charge, for the purposes of an experimental or illustrative farm, to be subjected to the control of the Board of Agriculture, that is about being formed, under an Act passed during the last session of Parliament. There is now some hope, that our Provincial University, will soon become directly useful to the great mass of our community—the tillers of the soil.

We again must request those indebted to us for this volume of the *Agriculturist*, to settle up with us without delay, as our printing expenses and paper bills are very large. The next number closes the volume, and will contain an Index.

TO CORRESPONDENTS.

J. H., Guelph. — Your enquiries respecting the Flax dressing machine, shall be attended to, and you will hear from us shortly.

TORONTO MARKET.

Nov. 7, 1850.

Our Market to day is but sparsely supplied with most kinds of produce.

Wheat comes in but slowly, rules at a very low figure; good samples fetch up 3s. 7d. per bushel of 60 lbs., the demand being only for milling purposes.

Oats.—There were one or two good parcels on hand, which were readily disposed of at 1s. 1d. & 1s. 3d. per bushel. Barley, for malting, very scarce.

Flour.—Miller's Superfine in bags by retail \$1, per 100 lbs; Farmers fine, 17s. 6d a 18s. 9d.

NEW YORK MARKETS.

New York, Nov. 6th.

Ashes in fair request; tans pots at 6.12, and pearls, \$5.75.

Flour steady, \$1.44 a \$1.95 for pure Genesee

Rye flour steady at \$1 18 a 3.25.

Corn-meal dull.

Grain—Wheat steady and in good request. Rye 75c. Barley 50 a 91c. Oats 20 a 41c. Corn 71c.

BUFFALO MARKETS.

BUFFALO, November 6th,

Flour—Weather unfavorable for our flour operations, but there was a good enquiry for flour at low rates.

Grain—There was a better feeling exhibited in the wheat market; white Michigan 77 a 80c.