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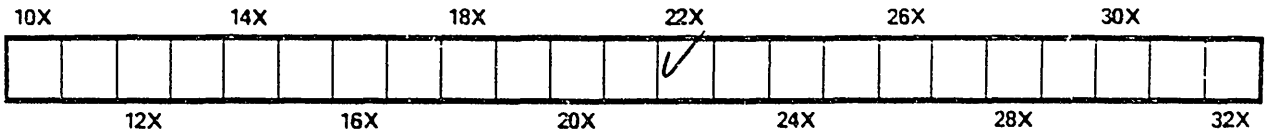

THE

CANADIAN AGRICULTURIST,

A MONTHLY JOURNAL

DEVOTED TO

AGRICULTURE, HORTICULTURE, SCIENCE,

AND

DOMESTIC AND RURAL ECONOMY.

Illustrated with Engravings.

EDITED BY

GEORGE BUCKLAND AND WILLIAM McDOUGALL.

VOL. III.—1851.

TORONTO, CANADA WEST,

WILLIAM McDOUGALL, PROPRIETOR.

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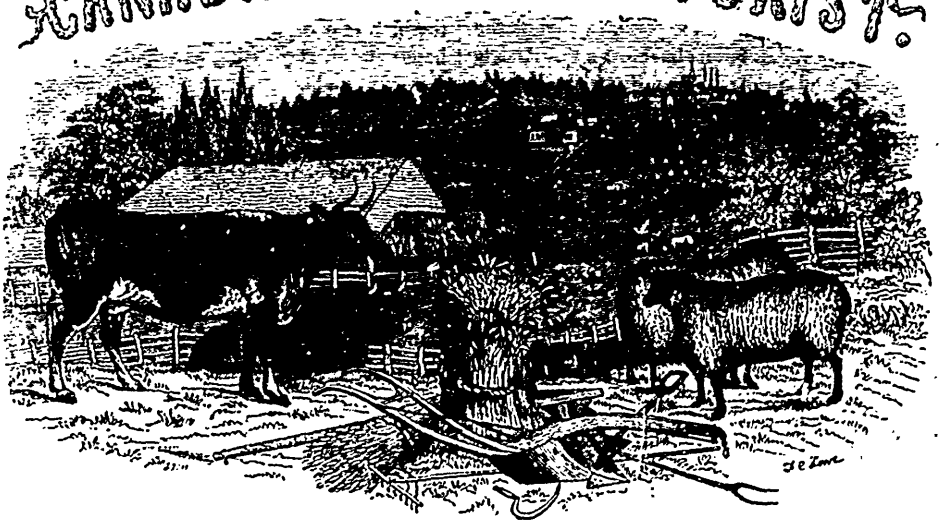
Knowlson's Complete Farrier.

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. III. TORONTO, JANUARY 1851. No. 1.

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A FEW WORDS TO OUR READERS—THE OLD YEAR AND THE NEW.

The present offers a fitting opportunity for making a few remarks of a seasonable nature referable both to our readers and ourselves, and the great interests which it is the leading object of our journal to protect and promote. Another year, completing the first half of the nineteenth century, has glided away from us, and is gone to tell its tale of good or ill, of whatever mortals have done within its circuit. At such an epoch as the present, every well-disciplined mind must feel the peculiar force of that great salutary lesson which speaks of a moral responsibility, which none can possibly evade; and of those solemn and important duties which men owe to one another, to their country and their God. At the end of a year, all prudent men of business balance their accounts, that they may ascertain exactly how they stand, and the actual progress, if any, which they have made. It would be a happy thing, if men evinced the same reasonable solicitude, in regard to their intellectual and moral condition, since it is more especially upon the latter that all true enjoyment and the permanent prosperity of nations depend.

The first feeling which a retrospect of the old year is fitted to awaken, both in individuals and communities, is that of devout gratitude to the Giver of all, for mercies received, while the opening of the new year inspires the industrious citizen and humble Christian, with the cheering hope of a continuance of the same, blended with an increased desire to be found more worthy of

them. There may be few individuals or families, it is true, that the past year has left without a void; the removal of some dear friend or other, most have had occasion to mourn; and of the mixed cup of life, all of us have been destined to drink. But let the balance of Providential dealings be honestly made, and we will venture to assert, that there are few cases indeed, in which the good does not greatly preponderate over the evil, provided any reasonable degree of care has been exercised to secure it.

Let us now turn for a moment to ourselves, as a country and a people. Let us look to the great sources of our wealth and physical enjoyments—our agriculture, manufactures and commerce—and in each and all, we find abundant reason to be satisfied and thankful for the progress made, and the results obtained, during that period of time which is now past forever. The labours of our hard-working and honest tillers of the soil, have been eminently blessed; in many parts of the Province, the yield of grain, particularly wheat, has been unusually great; and health and plenty have every where smiled. The extent of land cropped with wheat in Upper Canada, in 1849, would probably reach near 700,000 acres, and from the best information we have been able to obtain from reliable sources, we are inclined to put down the general average at twenty bushels per acre; thus giving a total aggregate of about *fourteen millions of bushels!* This, after amply providing for our domestic consumption, will leave some ten millions of bushels to be used in exchange for articles of British and foreign manufactures.

With regard to other agricultural productions—the different grains, such as oats, peas, barley, rye, &c., of live stock, as horses, cattle, and sheep, and the various kinds of roots which are annually gaining an increased field culture in Canada, no one that attended the different agricultural societies of last year, and which are now happily established in every county, and in very many of the townships of Upper Canada, but must feel convinced that these important matters are in a state of healthful progress. The Provincial Show at Niagara, would have done no discredit to many sections that we could name, of the old country; and the Exhibition of the whole Province subsequently held at Montreal, although it laboured under many disadvantages from being hastily got up, was nevertheless such a display of the agricultural and mechanical skill and capabilities of this, not yet half explored and much less than half understood country, as to inspire the breasts of all true patriots with the brightest hopes and most pleasing anticipations of the future of Canada.

Another hopeful sign must have struck an observer at several of the agricultural shows of 1850—that of an increasing number of young stock of the improved breeds. In some sections attention to this important matter is steadily on the increase; and what is also a necessary adjunct, the cultivation of the Swedish turnip, field carrots, mangel wurzel &c., is every year spreading. Our farmers are beginning to understand the intimate and profitable connexion which subsists between the improved breeding and proper keeping of stock, and the results are already apparent in the improved appearance of our butchers' shambles. The Christmas show of meat in the Toronto market the other week, we take upon us to say, both as to quality and quantity, was not exceeded by any of the Provincial towns of the same size in the old country.

We are evidently, then, progressing in those important interests, which it is the peculiar province of this journal to register and promote. It was confessed by several of the American visitors at the late Provincial Exhibition at Niagara, that the grain, sheep, and swine were superior to any thing they had observed in the State of New York; which we accept as the highest possible compliment that can be paid to the farmers of Canada, who may well feel proud of having such an eulogium pronounced by the distinguished citizens of the great and wealthy "Empire State."

We would not, however, have our readers infer from what has been said as to the improved condition of our agriculture, that we have done under the circumstances all that could have been accomplished; much less that little yet remains to be achieved. On the contrary, we believe that the progress, not only of agricultural but of general improvement, has only in right earnestness but just commenced; and that the concluding portion of the nineteenth century, on which we have now entered, will witness results, of the magnitude and benefits of which, we, at present, can form but the faintest conception. In regard to our agriculture, we are just entering upon a more hopeful era. The board that is about being

ganised; the professorship and experimental farm which the University has expressed its intention to establish; and the agricultural information which the Normal School is disseminating through the medium of the teachers which it trains—all these important instrumentalities will combine in modifying and improving the condition of the people, refining their taste, elevating their character, and multiplying the sources of their enjoyments, through all coming time.

The principal defect hitherto in regard to agriculture, has not been so much indifference on the part of the government for a liberal annual grant of money, has been made for several years; but the want of *an effective system of organization among the societies themselves*—a want which the Board of Agriculture will at once supply.

When the real condition and capabilities of Canada become better known in the mother country by the publication of authentic and authorized reports, and the correspondence of the Board with influential parties and societies at home, we shall look for an increasing immigration of a higher class than has hitherto generally obtained. Our fellow-countrymen across the Atlantic may depend it that we have here ample room for all that may come; and they will find in the settled portions of the country, similar provisions for education and the physical and religious wants of man, as they left in their native land. The Provincial University, in particular, will offer very great advantages to youth possessing moderate means, who intend pursuing agriculture, mercantile business, or the learned professions, in this rising and extensive department of the British empire.

We must not, however, close remarks on the progress and prospects of agriculture, without distinctly adverting to other interests, which although subordinate, are yet intimately connected with it, and afford their respective contributions to the common stock of our colonial wealth and prosperity. That the mechanical arts, and more useful kinds of manufacture are making considerable progress in this country, the before mentioned Exhibition afforded very pleasing and convincing proof. We may instance the various articles manufactured in iron, as stoves, machinery, tools and implements of agriculture, woollen articles, as blankets and broadcloths, cabinet work and the various kinds of paper, beside a number of other manufactures, which have only just commenced. We grow and manufacture our own wool; and the blankets made by Mr. Patterson of Dundas, and Mr. Gamble of Etobicoke, are in point of quality, quite equal to any produced in England. Our friends in the old country will have an opportunity of testing, in a small degree, the correctness of our observations at the approaching world's Exhibition. It is pleasing to watch the steady increase of cities, towns, and villages, thereby augmenting a consuming population, within the country itself; an object of primary importance to the agriculturist.

Another pleasant feature of the present, is the perfectly tranquil and prosperous condition of the country, in all its principal relations. Our merchants, during the past year, have done a large and profitable business; our credit abroad is in an improved and satisfactory condition; Canadian securities being sought after and confided in by capitalists; and our revenue—(the most hopeful sign which any country can possess)—is progressively going ahead of the expenditure. As conductors of an Agricultural Journal, we can allude to politics only in a general and incidental manner—never as partisans. But we cannot forbear congratulating our numerous readers, who consist of all parties, on the *healthier tone* of public feeling which now obtains, and which we believe will continue to strengthen, so long as we cherish a love of country, of truth and justice; and observe a spirit of mutual respect—and, when necessary, forbearance—a line of conduct alike inculcated by the dictates of a common humanity, and the teachings of experience, moderation and common sense.

As to the future, it would be unpardonable in us to omit what will in all probability give to the year 1851 its distinctive characteristic in Canada—the actual commencement of that great modern improver and civilizer of nations, the RAILWAY. The public mind is now thoroughly wakened up to the claims and importance of this powerful instrumentality of progress; companies have been formed, contracts taken, and operations in some places have already commenced; so that the time is not very distant, when a grand trunk railway will intersect the whole of British America, from the Atlantic to the far distant west; with branches extending northerly from some of the

cities and towns situated on the main line. That from Toronto to Lake Huron, we learn, is already under contract, and active preparations will be commenced on the first opening of spring. It is impossible to foresee the innumerable benefits which a judicious system of railways, adapted to the wants of British America, will produce; population must rapidly increase, by affording additional facilities to immigration, the country will become opened up and settled, and the value of all kinds of property materially augmented. From this source alone, then, we may indulge high hopes of the future.

And now it will not be deemed presumptuous, if in conclusion, we ask the public to aid our humble efforts, in the cause of our country's advancement, by lending a helping hand in circulating the *Canadian Agriculturist*. The efficiency of our monthly sheet, must, in great measure, depend upon the degree of support given to it, both as to the amount of subscribers, and the communication of original matter from practical farmers and others. We require *both kinds* of aid. To our patrons of the past year, we tender our grateful acknowledgments; and hope for such an increased support for the present, as will enable us to make the *Agriculturist* a more efficient workman in the wide and important field which it seeks to cultivate. *Farmers, will you not both subscribe and write for your own paper?*

REPORT OF THE SPECIAL COMMITTEE ON THE STATE OF AGRICULTURE IN LOWER CANADA.

(Printed by order of the Legislative Assembly.)

We have received from the Hon. H. Sherwood, M.P., a copy of the above Report; which has been prepared in accordance with a resolution of the Legislative Assembly, passed last session, for the purpose of inquiry into the state of agriculture in Lower Canada, and into the best means of improving it.

This document consists of about 25 pages of the Committee's report, strictly so called, with an Appendix of upwards of one hundred pages, containing communications touching the various points of the inquiry, from several of the most intelligent and experienced farmers and others, in the Lower Province. These letters contain a good deal of interesting information and useful suggestions, and they are evidently written by men practically conversant with the matters which they have taken in hand. We shall probably have something to say hereafter, on some points contained in these communications; but at present must confine ourselves to some of the principal recommendations in the committee's report. There is a very interesting paper at the end of the Appendix, on the climate of Upper and Lower Canada, by Dr. Winder, which we hope to present to our readers entire, in a future number.

We have long had an impression that the agricultural as well as manufacturing capabilities both of Lower Canada and the other eastern Provinces of British America, have been very inadequately appreciated by the public in general; and the perusal of the above report, with those of Professor Johnston on New Brunswick and the Board of Agriculture of Nova Scotia, our previous impressions have been deepened and confirmed. These extensive regions, it is true, are not so generally available for agricultural purposes, as the rich table lands of Upper Canada, (for the peninsula bordered by the three great lakes—Ontario, Erie, and Huron—is undoubtedly one of the finest agricultural districts in the world,) and the winters are both longer and severer than in the Upper Province. But from what we have seen and know of the soil and general geological character of Lower Canada, we form a very favourable estimate of its agricultural capabilities. Even the length and severity of the winters are by no means such awful drawbacks as most old countrymen, and not a few of us Upper Canadians, are apt to think. The climate is peculiarly healthy, and both it and the soil are admirably suited to the growth of the best varieties of the grasses, most of the cereals, and the root crops generally.

We were much pleased with the report which the indefatigable Secretary of the Lower Canada Agricultural Society gave of his visit to our late exhibition at Niagara, and with the candid manner in which he states his impression of the condition of our agriculture in the Upper Province. We are glad to observe that he returned from the observation of our progress and improvements, with a stronger hope and belief, that a similar advancement, may and will be achieved in Lower Canada. This is truly encouraging to one who wishes to take an enlarged view of the progress and capabilities and ultimate

high destiny of these immense regions, under the benignant sway of the British sceptre,—where thousands after thousands of our indigent countrymen, may, for untold ages, continue to come, and partake largely of the necessary comforts and chief blessings of life. In a pursuit of such primordial importance as that of agriculture, forming the very basis of a nation's existence and independence, and daily prosecuted under circumstances the most favourable to health of body and purity of mind; how inspiring and humanising the thought; what a cheering light does it shed on the frequently dark and rugged pathways of life, that our bountiful mother earth, yields up her exhaustless treasures to honest and intelligent industry, equally regardless of race or creed.

The report, after dwelling at some length on the capabilities of Lower Canada, and candidly pointing out the defects both in existing practices of agriculture and the management of societies, proceeds to suggest the means for their improvement. Several of these, it will be seen, are precisely those which we have frequently urged in this journal; some of which are about being carried into practical effect, in Upper Canada, by the formation of a board of agriculture, and the establishment of an agricultural professorship and experimental farm by the Provincial University. The following extracts from the report, will afford the reader a general idea of the principal remedial measures recommended;—

"Your Committee now come to agricultural schools and model farms. It is impossible, without enormous expense, to establish special agricultural schools accompanied by model farms on a large scale. From calculations, the correctness of which is not in the least doubted by your Committee, it appears that each of these model farms would cost not less than £3,500, and they would perhaps be attended only by a few pupils belonging to a class, which, by its position, is the least in want of instruction; it is therefore in the institutions now frequented by our youth that the means must be found of establishing such schools. Your Committee have great pleasure in citing, among other authorities, in support of their opinion, the weighty one of Mr. Johnston, expressed by him in his report of the exploration made by him in New Brunswick.

Happily such institutions exist in Lower Canada, and can compare with more favoured countries; happily we have a class of men in these institutions who can perform great things with little means, who having bid an eternal farewell to all worldly enjoyments except that of doing good, are neither under the necessity nor in a position to require salaries, but devote their whole life to the education of youth, asking in return only food and raiment.

Your Committee therefore suggest, that a special and annual grant be allowed to each of the Colleges of St. Hyacinthe, L'Assomption, Nicolet and St. Anne, on condition that a Chair of Agriculture be established for the instruction of their scholars, and that a portion of land, in the immediate vicinity of each institution, be cultivated as a model farm. Your Committee have not consulted the directors of these different institutions, but do not entertain the slightest doubt as to their inclination, and do not fear to guarantee their good will on this subject. A similar grant might be made for the same purpose in the townships, at one of the Academies where a portion of the youth who speak the English tongue receive their education. Thus with less expense than the establishment of one single separate institution would entail, and with a hundred fold the chances of success, the country would be in possession of five institutions in which the whole of its youth could obtain a knowledge of the noble art of agriculture—a knowledge which hundreds of young men would every year bring into practice on their own account, or impart to their compatriots throughout the country. Your Committee are so fully convinced of the importance of this arrangement, that they fearlessly express their conviction, that this plan alone is destined to advance the progress of agriculture in Lower Canada more fully than it is physically possible to do by any other means. Your Committee, in recommending a certain number of Colleges and one Academy only, have no intention of depreciating the others, but in doing so have only been influenced by the small amount of means which they have to rely upon. The next means of spreading education, a means which your Committee cannot too much recommend, is the publication of an elementary treatise on practical agriculture, to be printed in pamphlet form and distributed gratuitously to all the schools and in the family of every agriculturist.

* * * * * * * *

Your Committee further suggest that the annual grant allowed to the Lower Canada Agricultural Society be increased and continued to them, on condition that they shall still publish the Agricultural Journal in French and English, and endeavour to increase their library, and keep, as they now do, a seed depot.

Your Committee are of opinion that the appointment of two Superintendents of Agriculture, one for the Districts of Montreal, St. Francis, and the Ottawa; and the other for the Districts of Quebec, Gaspe and Kamouraska, is absolutely necessary. The Superintendent will form the managing part of the system, and together with the Professors of Agriculture in the Colleges, will constitute the teaching body. His duties, as your Committee conceive, would be to make annual tours of inspection in the Districts within his jurisdiction; to publish an annual report, containing as complete a description as possible of the different sorts of soil, their means of improvement; pointing out the defects in their cultivation, and showing the means of remedying these defects; in a word, this report would be the

channel through which the Superintendent would convey to the public the result of his researches and studies.

The Superintendent should place himself in communication with the Provincial Geologist and the Chemist under him, in order to derive every advantage from the information which can be obtained on agricultural industry, from geology and chemistry. He would moreover be one of the directors of all exhibition societies and of the Lower Canada Agricultural Society, and visitor of the agricultural schools in the seminaries and academies.

Such are the means which your Committee think it their duty to recommend to your honorable House, and the whole expense of which do not exceed the amount now appropriated, as your Committee will presently show. If your honorable House should deem meet to increase the sum which is now granted for the encouragement of agriculture, a sum which is certainly small when we take into consideration the immense importance of this branch of public economy, and when we compare it with the sums expended and promised for other branches of industry which are doubtless worthy of attention, but of far less importance than agriculture. If, therefore, your honorable House were disposed to increase the grant by a few hundred pounds, your Committee would then recommend the following: Increase the number of agricultural schools attached to the colleges and academies, and grant, in different parts of Lower Canada, an annual sum of £200 to some good farmer, possessing a good farm and a sufficient number of cattle together with the advantages of an elementary education, on condition of his cultivating his own farm as a model one, under the immediate direction of the Superintendent of his District, and obliging him to show and explain to every visitor the details of his mode of cultivation. This sum of £200 added to the means already in his possession, would enable him to improve his system of cultivation and his breed of animals, and to procure instruments of a superior make, at the same time, that it would allow him to dispose of a portion of his time in explaining the details of his art to his visitors. This is the only means which your Committee can see, to establish at certain distances model farms calculated to meet the views and come within the reach of the generality of farmers who would more likely be discouraged than instructed by farms kept up on an extensive footing and at a heavy expense.

Your Committee thus recapitulate:—the soil and climate of Lower Banada are favorable to agriculture—the people are laborious and intelligent; but they do not, however, derive from the soil more than one-fourth of what it can produce. The cause of this is, that the system of cultivation is bad. The principal defects of this system are: first, the want of an appropriate rotation of crops; secondly, the want or bad application of manures; thirdly, the little care bestowed upon the breeding and keeping of cattle; fourthly, the want of draining in certain places; fifthly, the want of attention given to the meadows, and the production of vegetables for feeding cattle; sixthly, the scarcity of improved agricultural implements.

The means recommended are:—first, County Societies; secondly, the choice of prizes to be granted at the different exhibitions; thirdly, the establishment of agricultural schools and model farms in our colleges and academies; fourthly, the publication of elementary treatises on agriculture; fifthly, the publication of a journal, together with the establishment of a library and a public seed depot; sixthly, the appointment of Superintendents of Agriculture.

Your Committee will now proceed to show how the expenses of this arrangement can be covered by the sum now appropriated, and which amounts to £7,500, distributed as follows:—

For 36 Counties, at £150 each . . .	£5,400
Three Districts, entitled to an annual grant of £500 each	1,500
Annuity to the Lower Canada Agricultural Society, ...	600
	£7,500

Now, your Committee suggest that this sum of £7,500 be distributed in the following manner, in order to meet the expenses necessitated by the various means above suggested for the encouragement and advancement of agriculture:—

For prizes to be granted by the public Exhibition Societies, a sum of . . being about £100 for every 20,000 souls.	£4,000
For five Schools of Agriculture, with Model Farms attached to Colleges and Academies, to be distributed in equal portions	1,500
Premium to the author of the best elementary treatise, and for publishing the treatise in both languages (see Messrs. Lovell & Gibson's letter.) .	600
Annuity to the Lower Canada Agricultural Society, for continuing the publication of a journal, &c.	700
Salary of two Superintendents, including their travelling expenses. . .	700
	£7,500

After the first year, the above mentioned sum of £600 for the printing of an elementary treatise, would for the following years, be applied towards the publication of the annual returns of the Superintendents.

THE UPAS TREE.—Lieut. Blanchard, of the sloop of war *St. Mary*, has brought home with him from Java a living Upas tree.—By his assidious care, it was preserved alive during the long voyage from Batavia; and a few days before the vessel arrived at Norfolk, leaves sprouted out. It has been presented by Lieut. M. to the National Institute and it can be seen in the new conservatory of that institution at Washington.—*Chronicle & News.*

Barriefield, near Kingston, Dec. 1850.

To the President, Vice President, and Directors of the Agricultural Society in the County of

GENTLEMEN,—

In the last Session of the Provincial Parliament the Legislature passed an Act Cap. 73, for the establishment of a Board of Agriculture in this Province, said Board to consist of ten members, three of whom are appointed as by Law set forth in the 2nd and 3rd Sections of said Act. The 4th Section provides the manner of electing the other seven members, viz., the Directors of each County Agricultural Society in Upper Canada, shall at their first regular meeting, next after the annual meeting of the Society, elect seven persons residing in the vicinity of, or at convenient distances from the City of Toronto, &c.,—a return of such Election to be made within one week thereafter to the Provincial Secretary, who shall in the month of June next, after he shall have received six County Lists, cause to be made a full List to be called the "Board List," &c. From these quotations it is evident that the intention and spirit of the Law clearly means, that the election is to be made by the new County Directors that shall be chosen at the annual meeting for 1851. Therefore after the routine business of the past year shall have been gone through at the annual meeting, and the new Directors for the ensuing year chosen, it may then be considered a regular meeting of the new Board; and to save time it is suggested to be perfectly in order amongst other business before the meeting adjourn, that the Directors of the County Society, may then and there, go into the election of members of the Agricultural Board, and to make returns thereof accordingly.

With regard to the names of persons to be elected, "residing in the vicinity of, or at convenient distances from the City of Toronto," it may so happen that Directors of County Agricultural Societies at a distance, have not an opportunity of knowing a sufficient number of fit persons residing in the locality mentioned to fill up the Board.—To remedy this difficulty, the Secretary has been instructed to forward you the names of several gentlemen for your consideration, from whom the number required by Law might be chosen;—of course every County Society have it in their power to select such other persons, residing in that vicinity, as in their judgment may be deemed most advantageous to the Country. This point being settled and a Board of Agriculture once formed, with a Professorship attached thereto; the Institution may hereafter be so moulded and shaped into a system of working, that will prove exceedingly beneficial to the growing community of this fine Province.

The members of the Board of Agriculture will also compose the Council of the Agricultural Association, with power to act in all matters concerning its affairs during the recess of the regular meetings; and the Presidents of the several County Agricultural Societies will hereafter be the Directors of the Agricultural Association of Upper Canada. This augurs well, and opens to the friends of agriculture a broad field of usefulness in carrying forward the prosperity of our Agricultural Association, which has increased in magnitude since its commencement far beyond the most sanguine expectations of its numerous supporters.

The last year's Exhibition at Niagara went off highly satisfactory with all demands liquidated, leaving the Association in a flourishing condition; when the several Societies have paid in the sums promised for 1850 there will be a respectable balance in hand. With this balance, until a permanent grant be made by the Government to the Association, it must depend for its main support on the liberality of the members of the County and Township Societies; and I have full confidence that the annual subscriptions from that source will fully justify the expectations of the Canadian Public; and to prevent any disappointment or difficulty in arranging the Scale of Premiums at the annual meeting, it is recommended that your Society vote their subscriptions to the Association, at the same time when the election of the members of the Agricultural Board is made.

The annual meeting of the Agricultural Association, will be holden in the City of Toronto, on the second Tuesday in June next; and now that we shall have a regular, organised Board of Directors in the Presidents of all the County Societies from every section of the country, we confidentially trust as that season of the year w be very convenient for travelling, that a full t tendance will be present to give their assistanc e in preparing a higher scale of suitable premiums and transacting other public business connected with holding the next exhibition at Brockville, where it has been voted to take place on the 17th, 18th, and 19th September, 1851.

These national Exhibitions offer a powerful impetus to the progress of agricultural and mechanical improvements; the Provincial Society from its extended means offers higher premiums than County Societies can afford, thereby bringing together the best animals and articles of

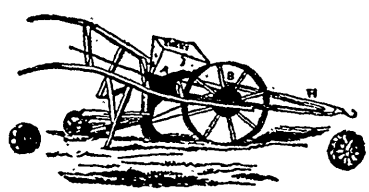
every description; and when the County Societies require to purchase superior animals, they can have there the advantage of selecting from the best the Province can produce. Wherever the annual meetings have hitherto been held, some of the most valuable breeds of Stock, the best and cleanest seeds, together with every kind of newly invented implements of husbandry, have either been purchased at said show, or left as models in the neighborhood.—Therefore, from the situation of Brockville, we may reckon upon our next exhibition being a splendid one, outstripping, even, in magnitude, our last great exhibition at Niagara.

The situation of Brockville, placed on the majestic river St. Lawrence, is most favorable for holding the Exhibition; it can be conveniently approached by land, by more than half dozen of the old Eastern Districts. It is distant from Kingston by water sixty miles, and twelve miles from Prescott and Ogdensburg. Passengers from Quebec and Montreal, (that do not go up the River in Steam Boats) the Eastern Townships and other parts of Lower Canada, can easily proceed hither *via* Lake Champlain and the Ogdensburgh Railroad. This Railroad will also bring Visitors from Boston and the Eastern States of America, as well as from the City of New York, and pleasure parties from distant parts of that State. Hourly steam-boats will convey passengers from Ogdensburgh to Brockville; when in addition to our Industrial Exhibition, an opportunity may be had for examining the romantic scenery of the Thousand Islands, which terminate at Brockville. The many daily steam-boats from Kingston, the Bay of Quinte, and other places, will bring numbers from that direction; while the splendid Lake Steamers of Canada and the United States, that ply upon the great Lakes, will bring full cargoes of passengers from all the Cities, Towns, and Villages on both sides of the Lakes, from Amherstburgh, and Buffalo downward, to the foot of the Thousand Islands. Accommodation ample for visitors can be had at Brockville, Maitland, Presscott and Ogdensburgh, all within one hour's reach of the show ground; so that if we be fortunate in having fine weather, all will go well.

When the business of the Annual Meeting at Toronto, in the month of June next, shall have been accomplished; a meeting will immediately afterwards be convened at Brockvllle, for the purpose of making arrangements for holding the Annual Exhibition.

In conclusion, it should be mentioned that the Ladies' Department at our annual exhibitions, has been, and will always continue to be witnessed with much delight and satisfaction. I therefore take the liberty of requesting that the Directors of your Society, in their several localities, will please solicit the ladies of families in their respective neighbourhoods, to devote at their pleasant fire sides, some part of their winter evenings, in preparing both articles of taste and usefulness. The most trifling and small articles, either ornamental or useful, from the younger branches of families, will be thankfully received and admitted for prizes; and a little of all sorts, will be very acceptable in assisting the Ladies of Brockville, in fitting up the Floral Hall, which will be constructed on a large and capacious scale for the occasion.

I have the honor to be,
Gentlemen,
Your faithful Servant,
J. MARKS,
President of the Agricultural Association of Upper Canada.



SEED SOWERS OR DRILLS.

Among the labor-saving implements says the *Cultivator* which have been introduced into agricultural operations, few are more valuable than seed-sowers. Those which are properly constructed, deposit the seed more perfectly than it is usually done by hand, while at the same time the work is performed five times, and in some instances ten times more rapidly than it can be by the former mode.

The accompanying cut represents "Emery's seed-drill and corn-planter," which is one of the best machines for this purpose that we have seen. It is calculated for sowing all kinds of seeds, from onion and turnip seed to Indian corn. By changing the apparatus for dropping the seed, it can be deposited at distanees varying frem three inches to six feet. It may be used by hand, or by being made of larg. r size and greater strength, may be drawn by a ho.se. For gardening purposes it is commonly operated by hand, and for field operations by horse-power. It is in great requisition for planting broomcorn and beans, and is used to a great extent in planting Indian corn. Some of the heaviest crops of the latter

which have been raised in this State for the last two or three years, have been planted by this machine. A man and boy, with a horse, can plant from twelve to fifteen acres in a day. The amount which can be planted in a given time, depends on the width of the rows. The statement in regard to the amount of corn planted in a day, is on the supposition that the rows are three and a half feet apart.

The depth of planting can be regulated at will, by raising or lowering the plough which makes the furrow. For small seeds, a depth of an inch is sufficient. For corn and beans, two inches is the usual depth. Crops planted with this machine, from the regularity of the rows, are cultivated with much ease and at little expense. Price in Rochester, $14.

VILLAGE LECTURES.—No. 2.

The Soil and the Air continued.—A plant is made up of roots, and a stem which carries leaves. It does not live in the soil only—the greater part of it lives in the air. Almost the whole of the plant above ground is covered with pores, little holes in its skin through which it absorbs, sucks in food. Only the *extremities* of the roots have these pores by which they can absorb nourishment. No doubt the roots do take in water from the soil, and along with it they will take in whatever the water has dissolved in it. But then if you examine this water, you will find very little of the matter of wood, or of cheese, or of corn, or of meat, dissolved in it. The water which comes from our drains, and which is such as the roots of plants suck up, is is indeed apparently clear and quite pure, very good water to drink, but none of us would get fat upon it if that were all we had to live upon. Neither, you may depend upon it, will not a tree nor a plant get stouter and greater if that be all that it has to live upon. The soil contains quite as much vegetable matter at the end of a rotation of crops as it does at the beginning; it contains a great deal more vegetable matter after a forest of trees has been grown out of it than it did when the acorns were planted; therefore, all this matter could not have been got out of the land—the water could not have dissolved all this matter out of the earth and furnished it to the roots of the plants, so that they might suck it up and flourish upon it. No. The great bulk of every plant that grows enters it—not by the roots from the earth, but by the leaves from the air. It is the air and the sunshine and the rain water, not the mineral matter of the soil, that make our trees shoot, our turnips swell, and our wheat and grain crops ripen their seed.

But before entering upon the argument by which I have to prove this, I may as well just refer to the idea which some people have that a plant changes the matter of the soil on which it feeds into its own substance. It cannot do this; it cannot make one thing into another. It must have the right things given to it, or it cannot grow; too much of one thing will not make up for the absence of another. Unless a mason be provided with the wood and the bricks, and the mortar, he cannot build the house; and neithee can a plant build its own structure up unless it be provided with the right things in the right quantity. The mason might have abundance of bricks; but if he had that alone he could not proceed: he could not make everything he wanted out of an abundance of only one of them. They have no power to make one thing into another; they can only make wood of the matter of wood; leaves out of the matter of leaves; seed out of the matter of seed.

It is quite consistent with what is known to say that when the world was created, only sixty or seventy different kinds of particles or atoms, and certain number of each sort were called into being; and though they were together in so many different forms, and though as time passes some of these substances thus formed are continually being taken to pieces, as it were, and decomposed, and others are being built up of the pieces, yet the world is made of just the same number of each kind of particles or atoms; the same number of pieces of each kind now, as it was 6,000 years ago. It is consistent, I say, with what is known, to suppose that not one particle has been created since—not one since been converted into another. Each is as it was when originally called into being, and though not in the same place now, nor united with the same companions now as it was then, yet it is the same particle possessed of the same shape, size, and weight, and endowed with the same properties.

Now, these particles are perfectly distinguishable and perfectly recognisable, but I cannot go through the process just now by which the individuality and proper distinct character and existence of each is proved, therefore you must be content to believe me when I say that the soil contains comparatively few of those particles which go to make the bulk of a tree, or the substance of butter, of cheese, of wheat, or of meat—that it positively contains more of them every year under good farming, notwithstanding that bueter and cheese, and wheat and meat, are every year being sent off it to market, and that, as neither a plant, nor anything else can change one tning into another, the matter of wood, or of

one different agricultural product not being in the soil in sufficient quantity, it cannot come out of the soil in sufficient quantity to form the building material of the trees and plants that grow upon the land. The great bulk of each came not from the soil but the air.

You will see, by-and-by, notwithstanding that it is quite consistent with this statement, that the farmer should cultivate and manure the land to make his plants grow; for, though the soil does not provide the plant with much of its substance, yet provides something which is necessary to it and without which the plant could not live. If the plowing and harrowing and manuring were of no use to the crop, of course, no one would go to any expense in cultivation. If the air provided all the food that plants need, people would not labor at their gardens; they would just sow their seed, and then pray for the wind to blow and the rain to fall, and the sun to shine, till the crop was ripe; then, indeed they might have to wake up for harvest time. But it has been so arranged that plants require our labor both at seedtime and harvest, and all the season through, in order that they may yield their utmost; and thus employment, as well as food, is provided for man.

Now let us return to the case of one tree. We have proved that its substance did not come from the soil; for the matter of wood is not in the soil in the quantity enough, and the plant cannot change one thing into another—and as air is the only other thing that the plant has access to, the inference is, that it must get its substance thence. Well, but you will say, "If the wood is not in the soil it certainly is not in the air. There is nothing solid or substantial in air like the matter of wood must be." I think I can prove to you that there is something like the matter of wood in the air nevertheless. Suppose that you cut down a tree, which you say could not have come out of the air, and set fire to it end leave it for a little while—on your return you find that it has gone—that is, it has burned up. Where has it gone to? If it never was in the air before, it is in the air now, for certain; and the clear air into which it has been converted will go to furnish the matter of wood to other trees which are still growing. The tree did not all disappear, however. It left some ashes behind it. Well, the ashes of the tree are what it got from the soil, and they are thus returned to it; and whatever of the tree will burn or rot away back into the air, just goes to the place from whence it originally came.

Plants make their growth by food from the mineral kingdom, which includes the air; and animals by food from the vegetable kingdom; but there is constantly this contemplating process going on, that every plant and every animal that lives, eventually dies, and each gives back to the sources from whence it was obtained, the matter of which it is made. I suppose that all the plants on the surface of the globe now, if weighed, would not be heavier nor lighter than the vegetable covering in which the earth was clothed 5,000 years ago; and I dare say that the quantity of animal matter now in life is not greater nor less than the quantity which lived in any other year since the world was fully peopled. The plants take food from the earth and the air, and grow and feed animals, and these die and return to the dust, furnishing the earthy part back to the soil from whence it came, and the combustible part back to the fair from whence it came. You can imagine a farm which should be a little world by itself—large enough to maintain a family—it should provide the materials for their cottage and food for themselves; and wheat enough should grow upon it, and sheep and cattle, and flax and grass should flourish there; so that woolen cloth and linen and beef and mutton and bread might all be made from it; and thus this family need never leave this bit of land, and it would, as I said, be a little world by itself.

Now the soil furnishes its portion; that is, their ashes, to the grass on which the cows feed—and to the stems of the flax and to the wool of the sheep and to the food of the people; but there is no fear of its being ultimately impoverished by this—for it gets it all back again very soon, for the cattle are killed and the men die—and the plants wither and the ashes of all are returned to the land whence they came—and the fuel is burned, the dung-hill rots away in the ground, and thus all the part which was obtained from the air is returned also to it. There is no difficulty now in conceiving of such a farm as this yielding so many tons of cheese or so many bushels of wheat every year without suffering. We know that this did not all come out of the soil, so as for us to be obliged to believe that there are hundreds of tons of cheese or of wood or of wheat all in the soil now to furnish future crops; and we know that it did not all come from there, so as for us to be obliged to believe that there is the matter of all the crops that shall be harvested, and all the crops that shall be cut to the end of time, now existing in the air ready to be used year by year as time passes. What we know now is this—that every year the soil contributes what may be called the mineral part of our crops—their ashes, in fact, if they were burned—and

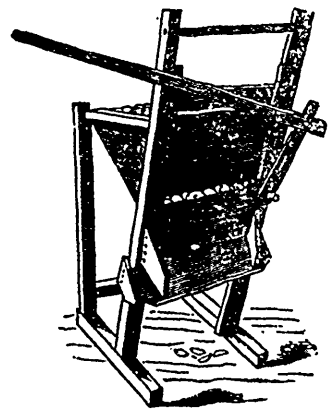
little else; and the air contibutes almost all of the woody part of them—what would disappear if they were burned; and each in the course of a very few years receives back again to itself whatever each had given, ready to be used over again to make new crops and new produce—new food to feed another race of men.

In the case of the farm that yielded the five tons of cheese every year—it does not lose five tons of the cheesy part of the soil annually; the soil has no cheesy part to lose—all that it loses is just such a quantity of earth as the ashes of these five tons of cheese would amount to if they were burned? A very few pounds—and that is all the farm loses every year. Certainly it is not the common sand of the soil that exists in the cheese, but it is a part of the earth of the soil that is sent off with the cheese, nevertheless; a very small portion, however, and one which the soil could lose every year for a very long time indeed without being any the worse for it. I burned a ten-pound mangold wurtzel the other day, and here are all that remains of it; these ashes weigh about an ounce, all the rest of this root comes from the air, and it has all gone back to the air from which it came.

ROOT PULLER.

The above is a most useful implement in pulling out roots, stones and old stumps that a chain cannot easily be hitched to. It is made of strong pieces of iron welded together as seen in the cut. We have not as yet seen the article in our hardware shops, though much used in the northern States. A common blacksmith may construct it with the aid of the above cut, and we are satisfied that in many cases the *new* land farmer will find it exceedingly useful.

A HINT TO BEGINNERS.—The opening of the new year is a good time to "turn over a new leaf," and we would advise every housekeeper, young lady, clerk, apprentice, journeyman, student &c., to procure a little blank book, and keep an accurate account of their income and expenses during the coming year. It will prevent many little mistakes, assist you in forming methodical habits, and will often check a tendency of extravagance in the disbursement of your funds.



TURNIP SLICER.

Various are the machines used for this purpose. Perhaps the above which any ingenious farmer can make for himself is as good as any. The cutting part consists of a wooden frame moving in grooves to which a piece of an old scythe is attached. This is moved up and down by a handle as seen in the cut. Indeed the cut is sufficiently plain to show the construction of the entire machine. Such a machine will be found very convenient at this season of the year in preparing roots for cattle.

STATE OF FARMING AND FARMERS IN ENGLAND—EMIGRATION TO CANADA.

For the Canadian Agriculturist.

Brantford, C. W., Dec., 1850.

SIR:

In your November number you addressed some questions to me for information on various topics connected with the progress, present state of improvement, and general prospects of agriculture in England, and the comparative positions of the English and Canadian farmers, naturally inferring that the numerous facts bearing on the subjects referred to, would be peculiarly interesting to any practical man of common observation, after an absence of fourteen years.

To go into details on all the above subjects would trespass largely on your columns, but I embrace the first leisure to transmit a brief outline.

The introduction of the various new manures, since I left England, has enabled those few farmers who can afford the expense, to assume the appearance of extraordinary fertility on their farms; but this is very partial, and in the great majority there is no material improvement in good farming as practised in the best districts fourteen years ago. There has, however, been a great change in public opinion in the south respecting sheep stock; the high bred southdowns being now superseded by what are called the *Hampshire Downs;*—sheep of the same variety, but of greater weight of carcase and fleece, and having the advantage in early maturity, superior hardihood and better nurses. The sale of a large flock, a choice breed of this kind near Salisbury, lately brought prices not exceeded during the last war, and altho' the frequent and large importations of fat stock from Europe, the flockmaster, the grazier, and dairy-farmer, have suffered much less than farmers in the grain districts, especially on lands of heavy tillage. In these sections more especially has the operation of free trade paralysed the farmer's energies; instead of a diminution of burdens, ever numerous and heavy, in many cases they are positively increased, as in the case of tithes now commuted for money payment, but which is regarded as an improvement for the benefit of the clergy *only*. In vain was it urged by free traders at large protectionist meetings, that the ancient Statute set apart tithes for the threefold purpose of "Support for the Clergy," "Support of the Poor" "and to sustain the fabrick of the Church," but in general the clergy join the protectionist party. It is indeed fearful to contemplate the result of the two great parties (Free Trade and Protectionist,) now fiercely carried on and agitating the country, often causing bloodshed and bitter animosity; but the opinion prevailed that concessions to the agricultural class were intended, by remitting taxes which bear exclusively on them, and also that a duty would be levied on American flour, as a *manufactured* article, leaving wheat free as at present. A measure of this kind would give stability to the colonies and be well received after the refusal of the United States to come to any fair arrangement of reciprocal trade.

With regard to the great question of free trade and the political affairs affected by it, it is now evident to any unprejudiced observer, that it would, at this time, be impossible to return to the old system, or any general protection, and as a consequence of this position and prospect of low prices and high taxes, numerous and earnest were the enquiries with a view of emigration to Canada. After using my best exertions in endeavouring to promote the great object of my mission, I considered it a benevolent duty to take a tour through the counties of Hants, Wilts, and Dorset, amongst numerous old acquaintances, with a view of giving practical information on the subject of emigration to Canada and the success to be expected by suitable persons, and as a consequence a great many respectable persons have already arrived and many others are winding up their concerns with the same views, and doubtless will become good settlers, chiefly as agriculturists, besides two or three gentlemen of independent fortune for the benefit of their families. The public statements of my own experience, matured by fourteen years residence, were considered satisfactory, and will show that Canada has the balance of advantages, compared with the United States.

After what has been stated it may be superfluous to say much on your question, as to the "Comparative advantages of Canada and England," I may however mention that in making the tour before alluded to I found many instances of injustice, by farmers having had their crops destroyed by the landlord's game, and worthy men and their families thus brought to premature poverty; no adequate compensation being allowed for damages. Other cases of injustice in men being turned out of their farms for voting conscientiously, and others for being Presbyterians.!! This may scarcely be believed at this date; but the fact is well substantiated in a descendant of the Irish Prelacy, a mushroom Lord in Hampshire, also a notorious game-preserver; this man having turned out an industrious Presbyterian tenant, stated publicly that no Presbyterian should again occupy a farm of his. It is indeed a fact to be regretted that many of the aristocracy act on this principle, but few have the folly to confess or avow it. In conclusion, on a review of my journey I am very glad that I have undertaken it, because it has supplied facts on which to found a correct judgment, and I can assure you, Mr. Editor, that I returned to my adopted country and prospects with feelings of matured satisfaction and delight, and hope to be further instrumental in bringing out many who will become worthy settlers.

I remain, Sir,

Your obedient servant,

HENRY MOYLE.

[We are obliged to our respected correspondent for his communication, and hope that he will furnish us hereafter with more details. The difficulties of the British Farmer must now be felt almost overwhelming, and we are persuaded that no other agriculturists in the world possess sufficient energy and skill to bear up under them. The recent fiscal changes involved in the free importation of grain, &c., produced almost immediately a reduction in the price of all agricultural products of at least 25 per cent.; with the prospect of a yet greater diminution, that is likely to be permanent. It is impossible for the farmer long to endure this state of things, without a corresponding reduction in his general expenditure, including rent, taxes, tithes, labor, and tradesmen's charges. But thousands will be ruined before these changes take place. Some of the large landlords it is true have already made considerable abatement in their rents; but taking the farmers as a body, their fiscal and other pecuniary burdens are in 1851, pretty much what they were in 1847–8, when the price of agricultural produce was at least 25 or 30 per cent. more than it is at present. Tithes were commuted into a permanent money charge upon the land, under much higher prices than now, or are ever likely again to obtain; long leases were taken and large pecuniary engagements were entered into, under a scale of prices that has been subsequently so much reduced by legislation. Old Cobbett, were he living, would call out for *an equitable adjustment*, both of public burdens and private engagements; and we shall see whether something of the sort will not have to be resorted to ere long; in order to save the majority of British landowners, as well as farmers, from irretrievable ruin. The greater portion of the Hop growers, we see, have not yet paid the remaining moiety of the Hop duty for 1848. What would the Hop growers of America say if government were to impose a tax of $5 per cwt. weight, charged upon the article as soon as it is prepared, and which must be paid, at whatever price it be sold for. Hops, we believe, are generally as high in Canada, as in England; in the latter, however, the duty usually amounts to 25 per cent. of the market value, and sometimes to even 50 per cent.! No wonder then that Hop growers are in a state of distress!

Both the agricultural and manufacturing interests of England imperatively require the largest possible reduction of all fiscal burdens, which can only be effected by adopting throughout all departments of the State, *the utmost practicable economy*. While we advocate the policy of diminishing, as much as possible, the weight of taxation on the springs of a nation's industry; we think it to be the duty of England, in her peculiar condition, to impose moderate duties for *revenue*, rather than for protection, upon all articles of foreign production; and we can see no reason why wheat, or grain of any description, should be differently treated from flour. The fact is that all the *cultivated* productions of the earth, are in the strict and commercial sense of the word, *manufactured articles;* they are the results of capital and labor, aided by implements or machines. And it would be just as politic and legitimate to tax a bushel of wheat, as it would be a barrel of flour.

Our correspondent alludes to the oppressive and injurious effects of game-preserving upon some of the English farmers, a practice by the bye which we believe is now being kept more within proper bounds than formerly, and on many estates the preservation of game has been wholly abandoned. The instance adduced of the exercise of arbitrary power on the ground of religious opinions, we hope and believe to be simply incidental. We have known ourselves, a few similar cases, not confined to one church. The fact is the abuse of power, or in other words oppression, is a tendency of man's nature, not confined to any one form of government, to any peculiar phase or condition of society; nor is it bounded by parallels of latitude or lines of longitude. Its only sure antidote, in the individual, is the quickening and elevating of the moral sense; in society at large, the constraining power must be sought in the universal diffusion of sound knowledge, and the progress of a true Christian civilization. We believe that the landowners of England, as a class, are no more disposed to acts of tyranny or oppression than other men, possess-

ing the same means and influence. If we may speak on this matter from some experience and observation, we are compelled to say, that if a person desires a farm of moderate rent, where his holding may be secure by the ties of a moral and social bond, as well as profit, with the almost certainty of its descending to his posterity; he would not be nearly so likely to secure his object by hiring under a small landlord; or one who may have amassed vast wealth in trade, and invested a portion of it in land for the mere purpose of profit, as he would be by becoming a tenant of some great aristocratic landowner; a real old English Gentleman or Nobleman, who inherits a character as well as a title—a heart as well as an estate, both gentlemanly and noble, from a long line of chivalrous ancestors. If we are ever destined, on this side of the Atlantic, to have an aristocracy, may Heaven favor us with one of character and rank, rather than of mere wealth. Of the latter, however, there are already signs of danger in this western hemisphere.—"The love of money—as money—that is for mere social distinction or worldly pleasure, is the root of all evil."

We shall be most happy to find that our correspondent's visit to dear old Fatherland, has been the means of drawing attention of the right sort of people, such as possess character, industry and resources, great or small, to the wants and capabilities of this important section of Her Majesty's empire. Here, thousands that are struggling for a bare maintenance at home, might by the exercise of industry and frugality find comfort and plenty, make a suitable provision for the favorable settlement of their families; become quite as independent as the necessary conditions of human life can possibly admit; and, as to liberty, in the highest and widest sense of the term, why, we have more of it in Canada, than many people properly use.

We beg our respected correspondent not to regard these remarks as strictures on any thing that he has advanced, for such they are certainly not intended. The perusal of his interesting letter, awakened up in our mind, a train of reflection, which we have endeavored very briefly to express.]—EDITOR.

FARM MANAGEMENT.

For the Canadian Agriculturist.

Waterloo, Dec. 16th, 1850.

MR. EDITOR:

Sir,—Inclosed you will find two dollars, one for a Bound Volume of the Agriculturist which I received from your agent, and the other for the payment of the next year's Volume, which you will please forward as usual.

You will also oblige me by giving in your paper an answer to the following enquiries. I own a small farm of about thirty acres, and I have ploughed the whole of it this fall, with the intention of summer fallowing about one half, but if I do so I shall be short of feed for next winter. Now I want to know if I can't put in some sort of summer crop that will answer the double purpose of tilling the ground, as good as summer fallowing, and also give a crop that will be useful for feed. You will also state what kind of a crop will be best to cultivate for that purpose, and also the best method of cultivating it. I want to get into a method of cultivating my farm in rotation. I should like to know the best plan for that purpose. Our neighbours in Dumfries have got into a plan of ploughing their land deep in the fall, which is intended for summer fallow, and working it alternately with the cultivator and the harrow the following summer, and not ploughing any more at all, which they say effectually kills the spear grass on the surface, and rots it below the surface, so that they get rid of that nuisance. I should like to know your opinion on the subject as I have only got it by hearsay, yet it seems very likely to effect the object. If you think the plan good it would be proper to follow it here as our Township is full of it, and our method of working does not destroy it. In conclusion, Mr. Editor, I beg leave to submit the above to your consideration, and wishing your paper the success it justly merits, I remain yours most respectfully,

JOHN JOHNSON.

Waterloo, near Preston.

[We recommend our correspondent to seed down a portion of his farm as soon as possible. Sow liberally timothy and clover on a good tilth, after the land has been well cleaned. Many people make a great mistake is sowing too small a quantity of grass seeds per acre, thereby precluding a heavy crop of hay, and a thick enduring pasture. Having the whole of the farm under the plough, at the same time, cannot be profitable management; there must be something

peculiar in our correspondent's case, which he has not stated. Incessantly cropping land with grain, without an annual return of rich and varied manure, will be sure, in the long run, to exhaust and render worthless the richest soils.

To avoid so much naked fallow and to increase the amount of winter provender for stock, we recommend our correspondent to put in some half dozen acres with Swedish turnips, mangel-wurtzel, potatoes, and the Belgian white carrot. If the soil be heavy, parsnips are well suited, and they are excellent food for cattle, particularly milch cows. All these crops should be sown in drills, sufficiently wide apart to admit of the horse-hoe or cultivator;—an implement of small cost and which no farmer, however small his holding, ought to be without. The success of root culture depends greatly upon *the frequent stirring of the soil during the period of growth:* and if the land is not too weedy to begin with, it answers most of the purposes of a naked fallow.—It is, however, of importance to remark, that root culture can never be successfully carried on upon exhausted arable land, without a liberal dressing of manure, which, if farm-yard dung, should be deeply ploughed in, the previous fall.

The system of ploughing alluded to by our correspondent in Dumfries, we dare say is a good one. Will no farmer in that well cultivated township furnish us with particulars and authorative results? There are some soils, possessing such fine and adhesive particles, that have a strong tendency *to run together,* as it is commonly termed, after they have been thoroughly disintergrated by the plough in the fall. Such soils in the spring commonly require deeply ploughing again; we have seen no cultivators on this continent at all adequate to the purpose. In England, such as Earl Ducie's or Finlayson's, require the draught of four or five strong horses, in order to work from 12 to 18 inches deep. As to weeds in general, the only effectual way of getting quit of them is to destroy both root and branch, *by thorough cultivation.* When land is once got perfectly clean—a judicious system of rotation and manuring, with good culture, will not fail to keep it so; and at the same time keep up, or rather improve its productive powers. And this should be the object of every farmer, who desires in the long run, both profit and fame.]—EDITOR.

IMPORTANCE OF AGRICULTURE.

Agriculture has been aptly styled "the nursing mother of all the arts." It is the basis, the soul of our national prosperity. Commerce and manufactures conduce, in a great measure, to wealth; but the cultivation of the soil ever has been, and ever will continue to be, the fountain-head of all the streams of a country's resources.

There can be no strength in a state, and no moral health among the people, when the tillage of the land is neglected. We can date the decay of power and virtue of many nations from the decline of their agricultural industry. In Rome, for instance, when the wise policy of fostering agriculture was pursued, a heathful spirit pervaded the whole state. Then the laws were impartially administered, and justice done to all. Then labor was accounted honorable, and statesmen, and generals, and philosophers cultitivated their farms with their own hands. It was thne among the tillers of the soil arose a Regulus, a Cincinnatus, and an invincible soldiery. It was then that the "seven-hilled city" breathed defiance to her enemies, and caused nation after nation to yield to the resistless power of her legions, until the Roman eagle waved over the known world. But when largessess of corn were bestowed upon an idle populace, when agriculture was neglected, and war laid waset the fertile fields of Italy, then Roman virtue and Roman vigor fled. Soon intrigue, vice, and venality took firm hold in the state, until finally the "pale mother of empires" was abandoned to her enemies, and the palaces of the Cæsars echoed the tread of the victorious barbarian. History abounds in examples illustrative of the important fact, that the enduring greatness of a nation is mainly founded upon its agriculture, and rulers will do well to increase the prosperity of those who swing the scythe and hold the plough.

That country that does not possess within itself the means of affording subsistence to inhabitants, is, if we may trust the voice of experience, destined to sink to early ruin. National power based upon commerce alone, unsupported by a flourishing industry, which ministers to human wants and gratifications, must fall to the ground. Merely commercial states dependent upon contingencies for their very life-blood, and imbued with the spirit of speculation which tend to enervate the body and corrupt the mind, contain within their own basoms the seeds of dissolution. Phœnica, Carthage, Genoa, Venice, and Holland of the sixteenth and seventeenth centuries, all bear witness to this fact. There is much truth in the verses of the poet Goldsmith.:—

"Trade's proud empire hastes to swift decay,
As ocean sweeps the labored mole away;

While self-dependent power can time defy,
As rocks resist the billows and the sky."

To her unsurpassed agriculture England is most indebted for her support in the midst of those tremendous pressures which so often have threatened to crush her. It is the unparalled cultivation of her soil that has enabled the British people, placed upon a rockbound island, to excel the world in every article of fabric, to maintain an unrivalled navy, and plant their power in every quarter of the globe. Firm are the foundations of the strength of that nation, which in time of peace is nourished from the resources of its own industry, and in war can rely upon the strong arms and undaunted hearts of its yeomanry, to sustain its rights in the din of strife or in the loud roar of battle!

Upon agriculture, in addition to the necessaries and common comforts of life, depends the success of every other employment. It is agriculture that builds up our crowded cities, covers our fields with yellow grain, and diffuses life and vigor throughout the land.—It is agriculture that supports our gantic manufactories, ringing from their basement to their attic with the music of free labor, and causes our ten thousand ships to dance upon every rolling billow, and spread their sales to every propitious gale. Says Lord Erskine, in his political romance called Armata, "You might as well hope to see the human body in active motion when palsy had reached the heart, or a tree flourishing after its roots were decayed, as expect to see manufactures, or arts, or industry of any description, progressive, when agriculture has declined." Paralyze it, and you weaken the pulse of enterprise, stiffen the fingers of machinery, and clip the wings of commerce. Destroy it, and you bury in one common grave national power and individual prosperity.—*Martin's Address in Sinonian.*

AGRICULTURAL BUREAU IN THE UNITED STATES.

In surveying the various interests of the country, no one can fail to observe how little has been done by Government to promote the cause of agriculture. It is true the cultivator of the soil, in common with all other classes of society, enjoys the protection of the laws, and the blessings incident to good government. But something more seems to be due to a branch of industry which employs more than half our population, and, to a great extent, sustains the other.

The power of the general government over that subject is limited, but this furnishes no good reason why it should not be exercised so far as it does legitimately extend.

The ordinary means adopted to afford protection to the manufacturing and commercial interests are comparatively inoperative in regard to the agricultural. A tariff can do but little, directly, to benefit the farmer or the planter. The staple productions of the South are peculiar to that climate, and, therefore, are in no danger of competition from abroad. Those of the North and West, in consequence of the soil, and the low prices at which land can be bought, are produced at less cost there than in other countries, and consequently except under extraordinary contingencies, need no protection by imposts on the breadstuffs of foreign nations.

But still much may be done by government, at a small cost, to promote the interests of agriculture. The science is yet in its infancy, and great minds are now directed to the study and developement of its true principles. Experiments are in progress to ascertain the qualities off different soils; the comparative nutritive properties of different animal and vegetable productions: and the utility and efficiency of various manures in fertilizing and renovating the exhausted lands of the old States.

Encouragement may be afforded to enterprises like these, and facilities furnished for the collection of seeds, plants, and vegetables from all parts of the earth, and their distribution throughout the country.

Premiums may be offered for the best practical treatises on the different branches of husbandry, which can be published and sent abroad among the people. By means of these, a spirit of philosophic inquiry may be stimulated, and a great impulse given to the interests of agriculture. Much has already been done in this respect, through the agency of the Patent Office; but the subject is too important to be left in this dependant condition.

The last report from the department recommended the establishment of an Agricultural Bureau, to afford to this great branch of American industry the encouragement which it so well deserves. This is no novel suggestion. It had the sanction of Washington, who, in his last annual message, referring to the propriety of creating an agriculture board, said: "This species of establishment contributes doubly to the increase of improvement, by stimulating to enterprise and experiment, and by drawing to a common centre the results, everywhere, of individual skill and observation, and spreading them thence over the whole nation. Experience accordingly has shown that they are very cheap instruments of immense national benefit."

I therefore renew the recommendation of my predecessor for the establishment of a separate bureau, to be entrusted with the duty of promoting the agricultural interests of the country. The vast extent and rapid developement of the mineral resources of the country seem to require that adequate provision should also be made by law for the collection and analysis of the various mineral substances which have been, or may be discovered so that their properties may be understood, and their value correctly appreciated.

The purchase of a farm in the vicinity of the national metropolis, to be tilled and managed under the direction of the bureau, has been suggested as an important auxiliary in illustrating the best modes of culture. If this idea should be favourably received, I would respectfully add that Mount Vernon, whose soil was once tilled by the hands, and is now consecrated by the dust of the Father of his Country, should properly belong to the nation, and might, with great propriety, become, under its auspices, a model farm to illustrate the progress of that pursuit to which he was so much devoted.

Extract from Secretary of States Report.

Two interesting agricultural productions have just been introduced into France from the Equador by M. Bourcier, formerly consul general of France in that country. The one is the red and yellow *hocus*, which is of the form of a long potato, and has the taste of a chesnut; the other is the *milloco*, which has the taste and form of our best potatoes. These two productions, which are found in great abundance in the neighbourhood of Quito, grow rapidly in the poorest land.

They have been sent to the Jardindes Plantes, where no specimen of the kind has been before seen.

MECHANICS' INSTITUTE.

(From the Patriot.)

On Friday sennight, a lecture on "The Relation of Science to Modern Agriculture," was delivered by George Buckland, Esq, Editor of the *Canadian Agriculturist*, and Secretary of the Provincial Society.

The lecturer remarked, that in writing or speaking on the subject of Agriculture, it is usual to descant on its antiquity and importance.—Notwithstanding both, however, it seemed to him that this art derived less aid from the pursuit of physical science than any other of the useful arts of life. Many of the ancient nations understood as well, and practised as thoroughly, the practical principles of agriculture, 2, or 3,000 years ago, as many of the European nations did not more than two centuries since; nay, as well as they were understood at the present time in many parts of Europe and in a large portion of the continent of America. Within the last half century, the art had made a very rapid advance, particularly in Britain, and was now assuming a position to which it had hitherto been a stranger. Its generally slow progress was attributable to many causes. It was partly accounted for by the great diversity of climate in the world, each involving some peculiarity in the practice of Agriculture. The ancient cultivators of Egypt, or of Sicily, however skilful in their own countries, would have altogether failed if transported to the widely different climate of France or England. The same observation applied to the difference in the nature of the soil observable even in the same country. The Scotch deservedly held a high place as cultivators of the soil, yet there were numberless instances on record of failure by the most skilful Scotchmen when transported to the different soil which was found in several parts of England.—The experience of men in different climates and on different soils had rendered it difficult to form a regular systematic codification of results. But as the science of agriculture became better understood, these circumstances would be converted from obstacles into advantages, well calculated to subserve its interests and promote its improvement. Another obstacle was connected with the mode of life inseparable from agriculture. A farmer's life must always, to a greater or less extent, be an isolated one. The marvellous progress of manufacturing skill and industry was doubtless in a great measure attributable to the quickened intellect and unremitting enterprise which residence amongst masses of men was certain to produce. Of this advantage the farmer was deprived. Again: very much in agriculture depended on experiments which involved a large extent of time. The most rapid experiment required a year to develop its success or failure; and those experiments which were connected with the different methods of rotation in cropping required a much longer period. The co-operative principle furnished the only method of overcoming this difficulty. Numbers by associating and publishing the results of their different modes of practice, would speedily furnish such an accumulation of facts, that the scientific man would be able to generalise and to deduce some great principles. This process was going on in Great Britain and in some parts of America, and furnish solid grounds of hope for the future. Another encouraging fact was the intimate connection which must henceforward subsist between agriculture and other sciences. The labors of the geoligist and chemist would be of essential service to the farmer: the mechanician would assist him in other departments of labour; and the spread of railroads and other improved modes of transit and communication would produce a great agricultural as well as a great social change.—The lecturer proceeded to epitomise the history of agricultural improvement in England and Scotland. He characterised the introduction of the turnip culture in the Lothians, in 1723, as the beginning of the great change which was still going on. Root culture and the culture of artificial grasses, soon afterwards extended to England, and led to the rearing and fattening of large quantities of stock and to the improvement of their breeds; more manure was obtained, and in turn served to augment the grain crops; alternate systems of cropping to a great extent superseded naked fallows; while beneficial changes were all the time going on, first in the implements employed, and next in the mechanical texture of the soil by means of under draining and manuring.—Many of these improvements were yet little known in Canada or in the neighbouring States. Rotation of crops could hardly be said to exist here; but our farmers must be resort to it if they hope to cultivate their farms with profit. In Canada and New York the wheat crop averages only about fourteen bushels per acre; the average used to be larger, but it was gradually becoming less and it would continue to decline unless more scientific culture than now prevails be adopted. The only farming that could permanently pay, here or elsewhere, was high farming. Men tilling the soil must use their brains as well as their hands; for as Cobbett had remarked, "the soil though ever grateful, must have something to be grateful for." The education of the farmer, while adding to the profitableness of his labor, would tend more than anything else to secure to him the respect to which his true social position entitled him.

COAL AND WOOD ASHES.—A writer in the North-British *Agriculturist*, contends that coal ashes rank very low as a chemical meliorator of earth and soils. Wood ashes, according to Liebig are of far more value. We agree with the author and the chemist in their estimate of the value of coal and wood ashes, and so will our friends beyond the Atlantic, where there is more wood to spare for making ashes than on this side of the water. Soot is more favorably reported of; an analysis of it is given, and a report of the results as a Manure, in raising potatoes, appears favorable. Soot is one of those manures which acts rapidly on vegetables; but it seems of too volatile a nature to last long as a manure in the soil. From our own experience, we would say that at the rate of 25 to 30 bushels of soot an acre, as good a return of potatoes might be obtained, where the soil was not in an exhausted state, as with from 15 to 20 tons of farm yard manure. Green broom tops, as we have formerly stated, we have found to be much superior to either in raising potatoes.

RAISING GEESE.

A GOOSE is more easily raised than any other domestic bird of our experience. Here is the simple course we pursue: Feed the geese kept for breeders, moderately well all winter with a mixture of grain and boiled roots. Provide a warm, dry, well-sheltered place for sitting; and when the goose is on her nest, give her regular daily food, principally of cooked vegetables, lest she should get costive, and plenty of fresh, clean water. When sitting, a goose does not eat so much as ordinarily. If she inclines to come off the nest let her do so; and even let her go to the water and swim and dive to her heart's content. She is only

taking a necessary ablution; and as to the idea thas she will get wet and chill the eggs on her return, it is all nonsense. Who ever saw moisture adhere to the feathers of a well-fed, healthy goose.

After the goslings are hatched, let them run with the goose on the grass, but be careful that they are not exposed to wet, the first week of their existence; after that, there is little danger, unless the rain be particularly cold and enduring. With a small allowance of boiled vegetables, mush, or oats, the flock will do well the first fortnight; after that, they will subsist almost entirely on grass and in the water. In the fall, feed well with boiled vegetables and grain, and they will soon be sufficiently fattened for the market.

In order to guard against rats, minks, weasels, and other vermin, the goslings should be penned every night, till nearly half-grown, within a tight board or iron-wire fence, (the latter is much the best) about three feet high. Be particularly careful there is no hole in nor under the fence, that a rat or weasel can crawl through; and the fence must be so constructed that they cannot climb over it.

General Science and Miscellany.

Ventilation of School Houses.

Much has been said and written of late years on the proper construction and ventilation of school-houses, and it would seem that there could be no lack of information on this subject, yet many of the more modern structures, where children receive the first rudiments of knowledge, are built with an apparently perfect contempt of health, convenience, and comfort. It is true that they have a handsomer external and internal appearance than the rude log hut, with the fissures between the logs gaping wide—its slab seats—its huge three fathom fire-place and mud chimney, but if health is at all valuable the latter is much to be preferred to the former—for the simple reason that in the one we have the air of heaven, fresh and abundant, in the other the atmosphere is poisoned by frequent imubulations.

A school house, chaste in design and finish—surrounded with spacious play grounds which are adorned with trees, shrubbery and flowers, is beautiful to look upon. It is suggestive of pleasing thoughts and associations. It is an evidence of taste and thrift in the community, and of social and intellectual progress: but if, with improvements in appearance and design, we cannot secure proper ventilation, it would be far better to fall back to the rude log cabin, with all its unsightliness. Our Creator has surrounded our earth with an ocean of air to the depth of forty miles, and is a necessity of our physical well being, that we should have a free, all and constant supply, without it we wither, droop and die. The air is composed mainly of oxygen and nitrogen, in proportion of one of the former to four of the latter. Oxygen is the supporter of life and combustion—nitrogen is destructive of both. Any process, therefore, which deprives the air of its oxygen, renders it unfit for respiration, and destructive of health.

Breathing is such a process. At every respiration the air is deprived of a portion of oxygen, and its place is supplied with carbonic acid gas, generated in the lungs. This gas is well known to be as fatal in its effects, when pure, as the simoon of the desert. It is the same gas which is found in pits and the bottom of wells and has so often proved fatal to life. It is generated abundantly in the combustion of charcoal, and is especially dangerous in a close room. Taken into the lungs in small quantities it produces headache, dizziness and fainting—in large quantities stupor and death. There is, then, a process constantly going on, by which the air is deprived of its life giving elements, and its place suppled with a deadly poison. It is true that nature has provided a remedy for this evil, but none which will effect a close ill-ventilated room.

Every school boy has read of the Black Hole in Calcutta—a room 18 feet square—in which 125 human beings out 146 were in one night consigned to a miserable death, solely from breathing repeatedly the same atmosphere. "This terrible example" says Dr. Comb, "ought not to be lost upon us, and, if results so appalling arose from the extreme corruption of the air, results less obvious and sudden, but not less certain may be expected from every degree of impurity."

It is, therefore, cruel to crowd a large number of children together in a small room, as is frequently done, close every door and window, compel the little sufferers to breathe, again and again the same impure air.

The construction of school houses is sometimes such that even with all the windows open, and a breeze blowing from the cardinal points of the compass, the victims of education and advanced civilization, can only snuff the air afar off. I have in my eye such a house, and there are hundreds such. Here is the picture—look at it. The house is about 16 by 18 feet, and destined for 30 or 40 scholars; a door in one end; two small square windows on each side, as near as possible to the ceiling: the window sills five or six feet from the floor; the ceiling ten feet high. Now let the windows be opened, and the air blow in all its freshness and purity through the upper part of the room, the poor panting victims below may sigh in vain for a breath of the invigorating element. This may be endurable in summer, when a perfect ventilation may be obtained, but in winter when every crack and crevice must be closed, to exclude the cold air, who can compute the ravages made on the young constitution, embittering future life and consigning it to a premature grave?

It is computed by scientific and accurate chemists; that every person destroys four cubic feet of air per minute, so as to render it unfit for respiration. Suppose now that 40 scholars be assembled in this house, they will require 160 feet of air every minute, or 9,600 every hour, and the air will be poisoned so as to be unfit to be received into the lungs every 18 minutes. But no provision being made to renew this vitiated atmosphere, it is inhaled again and again, sowing the seeds of disease and death. Such houses as this are repetitions of the Black Hole on a limited scale, less speedy in their results, but not less certain and fatal.

Is it a wonder that headaches and fainting are common in such houses? or that the scholars are dull listless, and inattentive? In addition to the causes enumerated of vitiated atmosphere, may be mentioned the vapor breathed from the lungs and the matter thrown off from the body by insensible perspiration. It might be supposed that carbonic acid gas, having a specific gravity of 1.5, air being 1, would fall to the floor and such is the fact when it is cooled, but being heated in a warm room, it is readily diffused through the atmosphere, and the inmates begin at once to inhale the poison. A volume might be written on this subject. Statistics have been collected by scientific men which are perfectly appalling, but there is not space neither is it necessary to repeat them here. Let every parent, whose eye shall meet this article, visit the school room in his neighborhood, when, during the winter months, it is almost crowded to suffocation, and the air is heated and scorched by a stove; let him remain for a day and

breathe the foul atmosphere, and he will feel in his own person the truth of what has been said.

This subject commends itself to the earnest attention of every parent. School houses have and can be constructed in harmony with good taste and the laws of health. So that physical well being need not be sacrificed in the acquisition of knowledge.

FRESH AIR.

Man acts strangely. Although a current of fresh air is the very life of his lungs, he seems indefatigable in the exercise of his inventive powers to deprive himself of this heavenly blessing. Thus he carefully closes every cranny of his bed-chamber against its entrance, and he prefers that his lungs should receive the mixed effluvium from his cellar and larder, and from a patent little modern aquarius in lieu of it. Why should man be so terrified at the admission of the night air into any of his apartments? It is nature's overflowing current, and never carries the destroying angel with it. See how soundly the delicate wren and the tender little robin sleep under its influence; and how fresh, and vigorous, and joyous they rise amid the surrounding dewdrops of the morning. Although exposed all night long to the air of heaven, their lungs are never out of order; and this we know by the daily repetition of their song. Look at the newly-born bear, without any nest to go to. It lives and thrives, and becomes strong and playful, under the unmitigated inclemency of the falling dews of the night. I have here a fine male turkey, full eight years old, and he has not passed a single night in shelter. He roosts in a cherry-tree, and is always in the primest health the year throughout. Three dunghill fowls, preferring this cherry-tree, to the warm perches in the hen-house, took up their airy quarters with him early in October, and have never since gone to any other roosting-place.

The cow and the horse sleep safely on the cold, damp ground, and the roebuck lies down to rest in the heather, on the dewy mountain top. I myself can sleep all night long, bareheaded, under the full moon's watery beam, without any fear of danger, and pass the day in wet shoes, without catching cold. Coughs and colds are generally caught in the transition from an overheated room to a cold apartment; but there would be no danger in this movement if ventilation were attended to — a precaution little thought of now-a-days.—*Watterton's Essays on Natural History.*

SHOES.

The shoes of the horses should be of equal thickness throughout, with a flat ground surface, as those with high heels, which asinine smiths make in imitation of their own, are dangerously absurd. The toe, which ought to be raised, is thus lowered, and Nature's plan reversed, who elevates the point in order to avoid obstructions. The web should be wide, and of the same width throughout, instead of being pinched in, because Vulcan operator "likes to see the shoe well set off at the heels." This is both unphilosophical and detrimental; it deceives the eye of man, and injures the foot of the horse. "The *outer* edge of the foot rests on the inner edge of the shoe, and the remaining width of the web projects beyond the hoof;" so that the master who thinks his horse has a good open foot, only has to be proud of a bad, open shoe, which both conceals deformities underneath, and "invites with open arms a bad road to come and do its worst." The heels are made bare just where the navicular joint is most exposed; and if that be inflamed, what must the agony be when the unprotected foot treads on a sharp flint? The horse falls "suddenly lame," "drops as if he had been shot," "phrases in much too common use to require explanation;" and small is the pity which the suffering animal meets with from man; who having destroyed the use of his victim's feet, abuses him because he cannot go; and imputes "grogginess" to him as a crime, as if he werein liquor like a groom, and not in agony.—*Miles, Veterinary Surgeon.*

ARTESIAN WELLS.

A late Paris letter says, the famous Artesian Well, commenced in 1832, at Kissengen, a city of Rhenish Bavaria, is just finished. This immense work, of which the workmen began to despair, has given resulst which have never been seen before. Kissingen is situated in a saline valley at nearly 300 metres above the level of the Baltic sea. In the month of June, 1849, after 17 years of hard labor, they had succeed in reaching a depth of 560 metres, a (metre is about 39 inches) before getting to this it was necessary to cut through several beds of salt separated by masses of granite. They then arrived at a first bed of carbon acid gas, followed by new masses of granite, and finally the 11th of this month, a violent concussion knocked away without injuring any body, the scaffolding which marked the orifice of the well, and then was immediately presented the curious spectacle of a column of water 12 centimetres in diameter, which rose with prodigious force to the height of 30 metres spreading them on all sides like the branches of a magnificent palm tree, and thus forming the most extraordinary jet d'eau imaginable. The water clear as crystal, comes from a soil of a temperature of sixty-six degrees Fahrenheit and gives a volume of twelve cubic metres a minute. It is forced by an atmospheric subterranean of carbon gas, acting with the force of fifty ordinary atmospheres.

☞ We may begin to take Time into our houses and pay by the month as we do for gas and water—for a Mr. Peyrot of St. Etienue, has aranged an electrical clock, which at small expense and by means of communicating wires, will indicate the same moment upon a myriad of clock faces. In this manner one clock will serve a whole city. What a vista of pleasant possibil ities this discovery opens! No more inaccuracy in dinner arrivals—no more being caught at home by difference in clocks, at hours arranged for friends or creditors to call. Decidedly there is no end of the things of which our philosophy has not dreamed.

THE RICHEST FAMILY IN ENGLAND.—The Arkwright family is the richest in England. The head of the house died lately, and the personal property he exchanged for the narrow accommodations of the coffin, was sworn to be over five millions sterling—say $25,000,000. It was the inventive genius of Richard Arkwright, the barber, who made such great improvements in the manufacture of cotton, that elevated his family from poverty and obscurity to their present proud position.

MACADAMIZED ROADS IN TURKEY.

From the Boston Rambler.

The Turkish government have recently undertaken a work of internal improvement, which, considering the people who have engaged in it, and the difficulties to be encountered in the character of the country, must appear almost as magnificent an enterprise, in their eyes, as our Pacific Railroad does to us. It is the construction of a Macadamized road (so the Turks themselves call it, getting the name as well as the idea from the English) more than 30 feet wide from Trebizond to Erzroom, a distance of 200 miles. The present method of transporting goods is on the backs of animals; but it seems even the Turks have an inkling of better times coming, and begin to consider their camels, mules and donkeys as rather behind the age. The people of the interior wish to wear European broadcloths and American cottons, and drink New England rum, but they can hardly afford these luxuries when they are obliged to pay for transporting them horse-back 300, 500, or 1000 miles. And then, again, they must pay for these things in hard cash, for though their vast plains are capable of raising immense quantities of wheat, it will not pay to transport it on animals to the seaboard, and hence the balance of trade is ruinously against them. The exports of Trebizond, for instance amount to only one-fourth of the imports. The people are beginning to open their eyes to these facts, and one result is the contemplated road above mentioned. The work commenced about three months since, under the direction of European engineers, and the first load of pounded stone was laid upon the road with religious ceremonies, such as chantings, prayers, and the slaying of sheep in sacrifice. All Trebizond turned out to witness the commencement of this (to them) stupendous work, which it is calculated will not be completed in less than four years.

We have gathered the above facts from a letter in the *Puritan Recorder*, the writer of which gives an amusing account of the manner in which the Turks have gone about this rather Yankeeish enterprize. The mass of the laborers are to be drafted from the villages along the line of the road. More than 1000 have already been called out; and in the spring some 10,000 will be set to work at different points. The Sultan's orders are that these men are to be fed and well paid. They ought therefore to receive, at the common rate of wages, 8 piasters (32 cts.) each per day; they actually receive but 2 (8 cts.) It is said by those who are best acquainted with the way things are managed in that country, that without doubt the government is charged full 8 piasters for each man's day's work, and that the 6 piasters, which the poor villagers do not get, is pocketed by those in authority over them.

In defect of more solid comforts, however, the laborers have plenty of entertainment of a lighter kind provided for them. Music and dancing they have to the full. It is no unusual thing to see some 50 or 60 men marching in single file down the hill at which they are at work, each man with stone on his sholder, but they have a drummer at their head and march to the sound of his music. Go where two or three hundred are digging away a bank, says the writer referred to, and you will find on the top of the bank perhaps half a dozen drums, fiddles or bag-pipes all in full operation, with some buffoon playing fantastic tricks, as an accompaniment, or perhaps a knot of workmen dancing to the sound of the music, while their companions continue their digging. For any upon whom the music and dancing have not the desired effect, there remains the touch of the whip of overseers stationed in the rear. Under the combined influence of the two appliances, music before and whip behind, however, the men are kept pretty steadily at their work: sometimes indeed they are wrought up to quite a frenzy of zeal, then the way the handcarts loaded with earth or stone, come rattling down the hill, is, to say the least, alarming to any spectators who may happen to be in the way.—Eight or ten men will have hold of one cart, pullers and pushers all running and leaping and yelling like so many madmen.

Soon after the commencement of the work, the engineers came very near getting themselves into uncomfortably warm water, by proposing to run their road through a corner of a cemetery.—The fanatical feeling of the Turks were evidently rising, but the engineers ordered out extra music, and sent an unusual number of workmen to dancing, and while the attention of the crowd was diverted the necessary graves were removed, and that part of the work completed, beyond all undoing. The Turk, it is well known is a fatalist and when a thing becomes a fixed fact, he acquiesces without further ado. The engineers, therefore, ran little risk in proceeding as they did, for the laborers acquiesced in the sacrilege of the cemetery as one of the things fated by Allah, and beyond human control.

It is interesting to note the impetus which the civilization of Europe and America is giving to everything that comes in contact with its many and complicated wheels. The stagnent waters of barbarous and semi-civilized people are beginning to be troubled, and must soon yield to the current which is bearing the world onward with resistless power. The rusty mental machinery of the Musselman, the Hindoo and the Pagan, is beginning to feel the friction imparted on every side by the keen and active mind of the Englishman and Yankee, and must either move forward in harmony with the movements of that mind, or be ground to powder beneath their force. These new disciples to the go-ahead principle, it is true, are rather awkward in their first steps. When an English plough was introduced into one of the Hindoo provinces, and its superiority over their own rude instruments pointed out, the natives were so astonished and delighted with the contrivance, that as soon as the agent's back was turned they painted it red, set it up on end, and *worshipped it.* A Turk playing the Yankee as the reader has seen above, is almost as ridiculous a sight.—But let us be patient. Every thing must have a commencement, and national civilization and enterprize are not proper objects for contempt, even when we find them just bursting the swaddling-bands of infancy, or running about in short frocks and pinafores. The leaven, once at work will rapidly spread, till new life is infused through the body politic.

ANOTTA DYE.—This beautiful summer color is one of the readiest known to the good housewife; but as there are some who have to make it, we will give them the simple direction. First, be careful to procure the article pure, as it is one very subject to adulteration. Cut it into small pieces and boil it in soft water with an equal weight of pearlash, in a copperboiler, say one pound to four gallons of water. Rinse the articles to be dyed, in clean water, and then let them boil some time; take out and rinse.—The quantity of anotta used must be regulated entirely by the depth of color required. A little experience will soon teach that.—*American Agriculturist.*

DURABILITY AND DECAY OF PLANK ROADS.

A Plank Road may require a removal, either because it has worn out at top by the travel upon it, or because it has been destroyed at the bottom by rot. But if the road has traveled enough to make it profitable to its builders, it will wear out first, and if so it will have earned sufficiently enough to replace it twice over, as we shall see presently. The liability to decay is therefore a secondary consideration on roads of importance. As to natural decay, no hemlock road has been in use long enough to determine how long the plank can be preserved from rot. Seven years is perhaps a fair average. Different species of hemlock vary greatly, and upland timber is always more durable than from wet and low localities.—The pine roads in Canada generally last about eight years, varying from seevn to twelve. The original Toronto road was used chiefly by teams hauling steamboat wood, and at the end of six years began to break through in places, and not being repaired was principally gone at the end of ten years. Having been poorly built, badly drained, not sanded, and no care bestowed upon it, indicates the minimum of durability. Oak plank cross-walks are used in Detroit, the plank being laid flat on those of pine.—It is believed that oak plank, well laid, would last at least twelve to fifteen years. One set of sleepers will outlast two plankings. Several Canada roads have been re-laid upon the old sleepers, thus much lessening the cost of renewal.—*New Yorker.*

Continuous Railroad Iron.—Messrs. E. Pratt & Brothers have exhibited in the lower room of the Fair at Washington hall, specimens of the continuous railroad iron manufactured at Mount Savage Iron Company's Works, near Cumberland, Md. The rail does not differ in form essentially from the usual T rail, but is divided into two sections, longitudinally, and a continuous rail is thus obtained by breaking the joints. This, it will be readily perceived, is an important improvement, entirely obviating the liability to give way at the joints which is experienced in the use of other patterns of rail. The Utica and Schenectady Railroad Company, in New York, after thoroughly testing the rail by a twelve month's trial, have contracted for the supply of 1,000 tons of it, the larger portion of which has already been sent forward. With this rail a greater speed may be obtained over the road, with equal safety and less wear and tear to the road and cars, and it will no doubt soon recommend itself to general use.—*Baltimore Sun.*

Ice and Water.—Water is subject to a remarkable anomaly, which is often brought to our notice at this season. There is a poin in its temperature—about 40 degrees in our common thermometer—at which it is most dense or compact, and from which it expands in heating till it becomes steam, and expands in cooling till it becomes ice, which takes place at 32 degrees. This is a beautiful provision of nature. By being less dense than water, ice floats on the top, and, by forming a hard crust, prevents the mass of less cold liquid beneath from being greatly affected by the intensely cold atmosphere. Thus the lower stratum of water in lakes and rivers continues to maintain a temperature from six to eight degrees above the freezing point; and in this comparatively warm stratum fishes dwell as usual, till the return of spring brings them to the surface, to look out upon a new heaven and a new earth. Running streams resist congelation longer than lakes, and the ocean, in temperate climates, longest of all, partly from its depth, and partly from the quantity of saline matter it contains.

Distillation of Sea Water.—In June last, three of her Majestys ships—the Arrogant, 46, Captain Fitzroy; the Plumper, 11, Commander Nolloth; and the Reynard, 11, Commander Cracroft—sailed from Portsmouth, furnished with the Government distilling and cooking galley, constructed by Mr. Grant. By the improvements made since the introduction of the galleys into the naval service, the quantity of fresh water obtained by the distillation of salt water during the period it is required to keep the fires alight in the galley for the purpose of cooking, will, on the average, supply each individual on board the vessels with one gallon of distilled water every day. The latter kind of water continues to be preferred for drinking and culinary purposes to the water usually supplied to ships. It passes immediately from the condenser into the water tanks at the same temperature as the surrounding ocean. In these tanks it becomes perfectly aerated, losing altogether the vapid flavor, common to all distilled water, in the course of a few hours, without the aid of chemical preparation or mechanical arrangement, by the simple fact of the action imparted to the fluid by the motion of the ship when at sea. A series of interesting and important experiments have been made on board the Illustrious, 72, by Mr. Crosse, with the view of imparting, at the moment of distillation, the oxygen of which the water is deprived in the process, and giving to it that briskness which is found in spring water. This is effected by passing a proportionate currant of electricity through the particles of water by means of an extremely simple and self-acting apparatus. The results of the experiments made have been highly satisfactory. The only point to be determined is, whether any artificial means, either chemical or mechanical, are required for aerating distilled water on board ship, as it is found that such water becomes sufficiently aerated in the course of a few hours by the motion imparted to it by the ship; but if the distilled water be required for immediate use, Mr. Crosse's application produced the object desired most effectually.

☞ It is said that Capt Ericson is engaged in producing a steam carriage for use upon plank roads, by which immense loads may be transported at a good speed, with small cost. Fifteen years ago, many attempts were madein Enndgla to produce a steam carriage suitable to use on common roads, but no experiment resulted profitably. Either the expense of the power or the softness of the roads prevented the practical introduction of the machines, though many succesful steam journeys were performed. There seems to be no good reason why steam power cannot be successfully used on our plank roads, and we have no doubt it will soon be.

BELLS.—The nearer bells are hung to the surface of the earth, other things being equal, the farther they can be heard. Franklin has remarked that, many years ago, the inhabitants of Philadelphia had a bell imported from England. In order to judge of the sound, it was elevated on a triangle, in the great street of the city, and struck as it happened on a market day; when the people coming to market, were surprised on hearingthe sound of a bell at a greater distance from the city than they had ever heard any bell before. This circumstance excited the attention of the curious; and it was discovered that the sound of the bell, when struck in the street, reached nearly double the distance it did when raised in the air..

In air, sound travels at the rate of from 1,130 to 1,140 feet per second. In water, 4,708 feet per second. Sounds are distinct at twice the distance on water that they are on land.

RHETORIC.—The celebrated Dr. Emmons was once asked what was the best system of rhetoric for clergyman. His reply was, "First, have something to say; second, say it." For attaining perspicuity, and precision of style, his directions where, "Consider *what* you wish to say, and then *how* to say it." He very aptly likened style to a frame work to hold our thoughts. "It is like the sash of a window," he says, "a heavy sash will obscure the light. The object is to have as little sash as will hold the lights, that we may not think of the frame, but have the most light."

A RELIGIOUS HYPOCRITE.—While Dr. Chalmers was very busily engaged one forenoon in his study, a man entered, who at once propitiated him under the provocation of an unexpected interruption by telling him that he had called under great distress of mind. "Sit down, Sir; be good enough to be seated," said Dr. Chalmers, turning eagerly and full of interest from his writing table. The visitor explained to him that he was troubled with doubts about the divine origin of the Christian religion; and, being kindly questioned as to what those were, he gave, among others, what is said in the Bible about Melchizedek being without father and mother, &c. Patiently and anxiously Dr. Chalmers sought to clear away each successive difficulty as it was stated. Expressing himself as if greatly relieved in mind, and imagining that he had gained his end, "Doctor," said the visitor, "I am in great want of a little money at present, and perhaps you could help me in that way." At once the object of the visit was seen. A perfect tornado of indignation burst upon the deceiver, driving him in very quick retreat to the street door, these words escaping among others—"Not a penny, Sir; not a penny! It's too bad! it's too bad! And haul in your hypocrisy upon the shoulders of Melchisedek!"

LOVE OF HOME.

There is none, or but little love of home among the American farmers. One of the reasons, is, because they change that home so often, there are but few "homes of taste," which as you say truly, are only to be found where the "Architect of nature" is employed to ornament them. With more abundant cheap materials to form such houses, we probably have fewer of them than any other country on earth, which contains as many intelligent minds as this does. But unfortunately we have no schools to teach the "science of farming," and creating such houses; and so our people lack contentment in places that might be like a rural Paradise, because the attractive blandishments of taste are not there; and so they sell at the first "fair offer" and sever the easily-broken links that bind them to home, and away they go to the gold-teeming land of California, or to some wonderful wheat-growing land in the west, where ague helps them shake off all disposition ever to make such a home of taste as will bind them and their children to it, generation after generation.—*American Agriculturist.*

THE LONDON PORTER BREWERIES.—Twice the quantity of porter already brewed in London in a year would be something like equivalent to the estuary of the Mersey opposite the Pierhead at spring tide. When one of Meux's vats burst, it swept away a whole street—houses, inhabitants, and all like an overflow of the Scheldt; and that was in 1814, when vats were mere pipkins to what they are now. At Whitebread's which ranks but third in the trade, there is one of such prodigious dimensions, that its twenty-five hoops weigh from one to three tons each, and its contents are 20,000 barrels, being some twenty times the capacity of the Tun at Heildelberg. Barclay's brewery is already half the size of Paxton's Plate-glass Palace, and covers upwards of ten acres; so if the produce of porter be regulated by superficial extent of premises, and that there is to be double produce next year, the building ought to be fully equal to the Aladdinlike structure in Hyde-park. The firm brew about half-a-million of barrels a year at present, being at the rate of some ten gallons per head, or per mouth, or every man, woman, and child in London, saying nothing of what the six other great houses urn out.

☞ Female loveliness never appears to so good advantage as when set off with simplicity of dress. No artist ever decks his angels with towering fathers and gaudy jewelry, andour dear human angels, if they would make good their title to that name, should carefully avoid ornaments which properly belong to Indian squaws and African princes. These tinselries may serve to give effect on the stage or upon a ball room floor, but in daily life there is no substitute for the charm of simplicity. A vulgar taste is not to be disguised by gold and diamonds.

"——Loveliness
Needs not the foreign aid of ornament,
But is, when unadorned, adorned the most."

A BEAUTIFUL SIMILE.—"The tears of beauty are light clouds floating over a heaven of stars, bedimming them for a moment that they might shine with greater lustre than before.

☞ A witty word spoken by a rich relative is a very witty affair—even when the wit is not very apparent; but nobody laughs at the wit of a man in disgrace, or whose coat is out at the elbows.

RECIPES.

(From Mrs. Webster's Improved Housewife.)

GINGER NUTS.—Take one quart of molasses ; mix one pound and there quarters of sugar, oneand a quarter of butter, seven of flour, four ounces of ginger, a nutmeg, and a little cinnamon.

GRAHAM BREAD. — To be sure of having a good article, send good, clean wheat to mill; have it ground rather coarsely, without bolting; nd keep the meal in a dry cool place. Sift it through a common hair sieve, he before using it. This will sufficiently separate tgrosser particles. Take six quarts of this wheat meal one teacup of good yeast, and six spoonfuls of molasses, and mix them with a pint of milk, warm water and a teapoonful of saleratus. Make a whole in the flour, and stir this mixture in the middle of the meal till it is like batter. Then proceed as with fine flour. Make your dough when light enough, into four loaves. Make it hotter than forcommon bread; and bake it about an hour and a half. It is an excellent article of diet for the dyspeptic and the costive, and for sedentary persons, and for children.

CRACKERS.—Rub six ounces of butter into two pounds of flour; dissolve two teaspoonfulls of saleratus in a wine glass of milk, and strain it on the flour; add a teaspoonful of salt, and milk sufficient to roll it out. Beat it with a rolling pin for half an hour, pounding it out thin ; cut it into cakes with a tumbler bake them about fifteen minutes, and then take them out of the oven. When the rest of your things are baked enough, take them out, set in the crackers again, and letthem remain till baked hard and crispy.

FAMILY CAKE. — Take rice and flour, of each 6 ounces, 9 well beaten eggs, half a pound of pounded and sifted lump sugar, and half a pound of carraway seeds. Beat all well together one hour, then bake an hour in a quick oven.—This is avery light cake, and is very suitable for young persons and delicate stomachs.

PRESERVING LARD.—Take lard in the leaf excluding all bloody or lean pieces, then salt it down as you would pork. When wanted for use, try out enough lard to last a few weeks. This mode is communicated by a gentleman who has had much experience in this business, and he prefers this mode as the lard keeps perfectly sweet through the year.

TO TOUGHEN NEW EARTHEN WARE.—It is a bad plan to put new earthenware into boiling hot water; it should first be plunged into cold water, and placed over a fire, where it will heat moderately to the boiling point, and then be permitted to cool again. This process greatly promotes the toughness and durability of common earthenware, which is generally objectionable for domestic uses, on account of its fragility. The glazing on this kind of ware will remain uninjured by the boiling if a handful of rye or wheat bran be added to the water, and prepare it to withstand successfully, and for a long time, the action of acid or salt.

GOLIAH OF GATH.—The following account of this Giant is extracted from Malcolm's Bible dictionary: "Goliah of Gath was 11 feet and five inches in height; his brazen helmet weighed 15 lbs., his target or collar, affixed between his shoulders to defend his neck, about 30; his spearwas 26 feet long and weighed 58 lbs., its head weighing 38 lbs; his sword 40 lbs.; his greaves on his legs 30 lbs ; and his coat of mail 126 lbs! Making in all 223.

IMPORTANCE OF A SINGLE VOTE.—One single vote sent Oliver Cromwell to the Long Parliament, Charles Stuart to the scaffold, revolutionized England, and made Great Britain free. Four votes in the city of New York, made Thomas Jefferson President of the United States. One vote gave us the Tariff of 1842, and one vote madethe Tariff of 1846. One vote gave us Texas, made war with Mexico, slew thousands of our People andpurchased California — turned thither the tide of of emigration, and will change the destiny of the world!—*Day Book.*

QUEEN OF GREECE.—The Queen of King Otho of Greece, is said to be the most beautiful Queen in Europe. She is the daughter of the Duke of Oldenburg — is about 30 years of age, her figure elegant, fair hair, lovely blue eyes, clear complexion, and a most winning smile. She is a Lutheran, but the King is a Catholic.

A GREAT DINNER. — The Greatest Dinner ever given in was that of Lord Romney to the Kent Volunteers, when George the Third reviewed them near Maidstone. The tables were seven miles and a half long, and the boards for the tables cost £17,000.

THE WORLD. — The world contains nine hundred and seventy two million of Inhabitants. Of these six and half millions are Jews, one hundred and fifty millions Mahommedans, one hundred and seventy-five and a half millions Christiansand six hundred and forty millions Pagans.

GENERAL WOLFE.—It appears that a Packet, containing twelve original Letters, written by Wolfe to a very intimate Friend and brother Officer, have been lately discovered amongst thepapers of a relative of that friend in Glasgow. They embrace the period between 1749 and 1758, a space of nine years, and will appear in the next number of the New York Albion.—*Quebec Gazette.*

AMBITION.—There are few men who are not ambitious of distinguishing themselves in the nation or country where they live, and of growing considerable among those with whom they converse. There is a kind of grandeur and respect which the meanest and most insignificant part of mankind endeavor to procure in the little circle of their friends and acquaintance. The poorest mechanic—nay, the man who lives upon common alms, gets him his set of admirers, and delights in that superiority which he enjoys over those who are in some respects beneath him. This ambition which is natural to the soul of man, might receive a very happy turn; and, if it were rightly directed, contribute as much to a person's advantage, as it generally does to his uneasiness and disquiet.

THE INHABITANTS OF SPITALFIELDS.—Not a few of the inhabitants are the descendants of the unfortunate Huguenots, who fled from France in 1685, during the reign of Louis, the Fourteenthto avoid the cruel persecution which followed the revocation of the Edict of Nantz. To that proscription, as impolitic as it was barbarous, we owe the foundation and establishment of the silk manufacture in England.

TELEGAPH UNDER WATER.—There are there lines of submarine telegraph wire in working operation under the Hudson river, four under the Connecticut, two under the Delaware, and eigth under the Haarlem river, all coated with gutta percha. And one, we learn from the Chicago *Journal*, on O'Reilly's line, under the river at Chicago.—*Tribune.*

☞ Water contained in old cisterns, if it be covered, and some years old, is better than new water.

Editor's Notices, &c.

ENGLISH AGRICULTURAL SOCIETIES.

The Royal Agricultural Society of England has elected for the third time the Duke of Richmond as President. The report of the Council was very satisfactory, showing the great good which is being effected by this important Society. The next Exhibition of live stock will take place in Hyde Park, at the World's Exhibition, but the Society will hold no separate show for implements, &c., which will be incorporated with that of the great Industrial.

The Smithfield Christmas Cattle Show of fat Stock appears to have been equally well sustained as in former years; in some respects, indeed, improved. The premises have been much enlarged both for cattle and implements; the latter now forms a great addition and attraction. The quality of the animals, of all kinds, is highly spoken of, not being so exorbitantly fat as formerly. The Duke of Richmond is President, and the show was visited by the Queen and Prince Albert, who was as usual, a successful competitor.—The prices obtained for meat are loudly complained of by graziers as being wholly unremunerative, 4s. per stone of 8 lbs., being the top quotation for the first quality.

The Birmingham Christmas Cattle Show, which was founded in 1848 for the Midland district, would seem to have been eminently successful. A capacious hall has been erected at a cost of £6000, and both the Exhibition and arrangements are highly spoken of.—The Show of poultry of all kinds, ducks, geese, turkeys, &c., both as to quantity and quality is said to have scarcely been equalled before in England.

ADELAIDE ACADEMY, TORONTO.

It affords us much pleasure to state that this excellent Academy is in the most flourishing condition. Professor and Lady, the Principal and Preceptress, have long been known to the Canadian public as instructors of youth, and we can confidently recommend their establishment to parents desirous of giving their daughters a thorough and accomplished education. The number of pupils in attendance is larger than at any previous time. The next term commences on the 3rd of February, a most favourable time for pupils to enter.

THE GOVERNOR GENERAL AND AGRICULTURE.

Lord Elgin has just given another proof of an enlightened desire to promote the welfare of the country he governs. His Excellency has caused to be written, and circulated among the French Canadian farmers, a suitable pamphlet, embodying the results of practical experience, with the patriotic view of restoring the already exhausted lands of the Lower Province. More of this in our next.

AGRICULTURAL CHAIR IN THE UNIVERSITY.

The Senate, we understand, has passed the statute, introduced a short time since by Professor Nicol, authorising a Professorship of Agriculture in the University, and portion of the grounds to be set apart for an Experimental Farm in connection with the Board of Agriculture. The emolument of the office is left to be decided by the Commission of Visitation.

BOARD OF AGRICULTURE.

The Secretary of the Provincial Association, begs to acknowledge a donation of books, from Professor Nicol, for the proposed library of the Board of Agriculture. It consists of a complete set, in quarto vols. of the Transactions of the original British Board of Agriculture, under the able presidency of the late Sir John Sinclair. Donations of this kind will be thankfully received.

To our Brethren of the Press. We shall feel much obliged to those of our cotemporaries who will notice our January number, stating our terms, &c., for the information of their readers. Agricultural Societies or Clubs subscribing for 25 copies and upwards, will be supplied at half-a-dollar each. Single subscriptions, *one dollar*, always in advance.

The *Agriculturist* has proved an annual loss to the proprietor since its commencement, besides the time and labor bestowed upon it. Last year it nearly paid expenses, and we hope to realize hereafter something like remuneration for the heavy outlay we have incurred. We trust Societies and others intending to subscribe will forward their orders as soon as possible, we will thus be enabled to determine the size of our Edition, and not incur the loss of too large a surplus.

THE MARKETS AND WEATHER.

Agriculturist Office,
January 15th, 1851.

The "January thaw" has spoiled the roads and consequently our markets are sparely supplied. Yesterday evening sharp flashes of lightning and heavy peals of thunder startled the citizens. Rain fel during the greater part of the day and night. The wheat and flour market made a slight advance within the last week, as high as 4s. was paid for good samples of wheat. The Oswego millers are in the market, but they say they can't afford more than 3s. 9d. Those who can afford to hold their grain will not we think be wise to sell for less than four shillings.

	s.	d.		s.	d.
Flour, ℔ brl 196 lbs	16	3	@	18	9
Wheat ℔ bushel 60lbs	3	9	@	3	10
Barley ℔ bushel 48lbs	2	8	@	3	9
Rye ℔ bushel 56 lbs	2	3	@	2	6
Oats ℔ bushel 34lbs	1	1	@	1	2
Oatmeal ℔ bbl 196lbs	17	6	@	20	0
Pease ℔ bushel 60lbs	1	6	@	2	0
Potatoes ℔ bushel	1	3	@	2	0
Beef ℔ lb	2	0	@	0	3½
Beef ℔ 100lbs	10	0	@	17	6
Veal ℔ lb	0	2	@	0	4
Pork ℔ lb	0	2½	@	0	3½
Pork ℔ 100lbs	20	0	@	23	9