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CANADIAN AGRICULTURIST.



“The profit of the earth is for all; the King himself is served by the field.”—ECCLES. V. 7.

GEORGE BUCKLAND, }
WILLIAM McDUGALL, }

EDITOR,
ASSISTANT EDITOR.

VOL. III.

TORONTO, APRIL, 1851.

No. 4.

The Canadian Agriculturist.

Published Monthly, at Toronto, C. W.

TERMS:

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SPRING OPERATIONS.

We have now arrived at what may be termed, in many respects, the most interesting and important period of the agricultural year. To the farmer spring is peculiarly the season of active exertion and hopeful enjoyment; and the final

results of all his labor and anxiety, will be mainly influenced by the manner in which he now conducts his necessary and important operations.

In the cultivation of any crop, whether grain or roots, among the first and essential conditions may be named, *a deep and finely pulverised seed bed*. Not only should all noxious weeds be destroyed by frequently stirring the soil, but a sufficient depth should be obtained to enable the roots of plants freely to extend themselves in search of food and moisture; an object of the greatest consequence in a climate like ours. Much of the destructive power of drought, so frequently experienced, is occasioned by a shallow and slovenly tillage.

The selection of *clean and perfectly matured seed*, may also be placed, among the essential conditions of success. This is a matter seldom attended to as it ought to be; while some neglect it altogether, hence the inferior quality and diminished quantity of grain at harvest, with a co-

pious admixture of weeds and rubbish. The experience of centuries and of all countries, has fully established the advantages of a frequent change of seed, both as to variety and soil. The farmers of this country very much need increased facilities for securing this object; which can be best effected, perhaps, through the agency of societies. The Board of Agriculture, when got into operation, will we trust, make this important subject one of special consideration. By exercising a reasonable care in the choice and preparation of seed, in connection with adequate culture and judicious manuring, the grain crops of Canada may be improved in quantity and quality to an extent of which it would be difficult to form an adequate conception.

As to the precise time for sowing, no absolute rule can be laid down; since much must depend upon the character of the particular season, and other causes producing climatic differences, such as the state of the soil, elevation, aspect, &c. This much, however, may be safely said, the earlier *spring* crops are got into the ground the better, provided vegetation suffer no serious check by any severe, subsequent changes of temperature. It is always proper to sow, when the ground is in good working condition and the skies propitious. In this country, owing to the ill-drained state of the land and neglect of fall ploughing, much of the spring grain is frequently sown too late. Draining, therefore, is the only certain remedy.

Barley requires dry, sound land, previously ploughed in the fall, and worked thoroughly in the spring. In most situations it should be sown by the middle or latter end of the present month. Last year this grain was very inferior in Upper Canada; with proper precautions however, a much more satisfactory result may be reasonably anticipated the present year. This is a crop that will usually repay all reasonable pains bestowed upon it.

Peas require good land and should be sown in rows 10 or 12 inches apart, particularly if the land be infested with weeds. Row culture has the double advantage of admitting a free access of light and air, while it allows of the working

of the ground during the important period of early growth.

Grass seeds should be sown this month; clover can scarcely be sown too early, and a liberal amount of seed is by far the most remunerative. Grass seeds require but a slight covering of fine earth, and it is a good practice to consolidate the ground with a roller.

We would strongly urge upon our readers the importance of paying greater attention to the raising of roots, for the feeding of cattle. It is impossible to sustain improved breeds without a liberal supply of nutritious food; even the ordinary breed of the country may be made much finer animals and far more profitable by adopting such a course. A few acres of turnips, carrots, mangel-wurzel, &c., properly managed, will, in ordinary seasons, yield a large and remunerating return. The great thing to be attended to in such crops as these, is to manure liberally and cultivate thoroughly; in this manner one acre may be made to produce as much as two or three, under slovenly treatment. Frequently stirring the ground between the rows during the period of growth is found highly beneficial to the crop. The greatest care should be taken to select fresh and genuine seed, and to test its vitality before sowing. Much loss and disappointment might thus be obviated.



NIAGARA DISTRICT AGRICULTURAL SOCIETY.

The annual meeting of the members of this Society was held at St. Catharines, April 5th, 1851;—when John Lemon, Esq., and William McMicking, Esq., were re-elected; the former as President, the latter as Secretary. Edward Jones, Sam'l Parker, and Jas. Williams, Esqrs., Vice-Presidents. It is a rule of this Society that every member is a director; the annual subscription being one pound.—The following resolution was *unanimously adopted*.

“That this Society tender to the Senate of the University of Toronto, their most hearty thanks, for the liberal grant of a portion of the University grounds, recently made by that body, to the Board of Agriculture, for the purpose of an Experimental Farm. And this Society hail

with unfeigned satisfaction, the prospect now opening to the view of Agriculturists, in the contemplated appointment of a Professor of Agriculture in the Provincial University; and the fostering care extended to this important branch of Canadian industry, by the Government and Provincial Legislature."



THE EFFECTS OF DEEP AND THOROUGH CULTIVATION ON THE GROWTH OF GRAIN.

In a recent number of the *Agricultural Gazette*, Mr. Hewitt Davis, the well known English agriculturist, has directed public attention to a system of cultivation, adopted in a central portion of England with apparently extraordinary success. We will endeavor to give our readers an idea of the system in as concise a manner as possible.

"The ground is first laid out in stiches of five feet, each of which is thus appropriated,—one half is given to growing three rows of wheat, at intervals of one foot. The other half left to admit of being worked as follows: as soon as the young wheat shows, this part is trenched two foot deep, and to within six inches of the young wheat. The top soil being placed undermost and the bottom uppermost. In this state the wide intervals lie all the winter exposed to the action of the frost and atmosphere, which act beneficially on newly turned up earth. In the spring, this space is again turned over with the fork one spit deep, and has the cultivator run through it as often as the incrustation at the surface calls for it. In this period, so long as the growth permits, the young wheat receives several horse hoeings. As soon as the wheat is harvested, the fallowed space is again turned over with the fork, and levelled, and channels are made by a three-wheel presser to receive the seed, which is carefully dropped, grain by grain, three inches apart, at the rate of two pecks per acre. In this way upwards of 32 bushels of wheat have been grown from the same land, and without manure, for five successive years."

The following is the cost per acre, and the return, as actually obtained the last year of the five.

THE OUTLAY.

One double-digging of the fallow ground being 2 feet of every 5 feet,- - - - -	£1 10 0
Two single forkings; - - - - -	1 0 0
Pressing, sowing, hoeing, carrying, } threshing and rates, }	2 1 0
Seed, 2 pecks, - - - - -	0 2 6
	£4 13 6

RETURN.

Wheat, 34 bushels at 5s. per bus.- -	£8 10 0
Straw, 1 ton 12 cwt. at 40s. - - -	3 4 0
	£11 14 0

Now if £3 per acre be added for rent, interest on capital and contingencies, there will remain a clear balance of profit of £4 per acre. Manure in this estimate has not been charged, as none was employed. But it is a self-evident proposition, to all that have any acquaintance, either with the science or practice of agriculture, that soils are liable to deterioration by constant cropping, unless adequately manured. No cultivation, however deep or thorough, can, in the long run, dispense with a return of fertilizing substances. But experience has shown that deep culture acts beneficially both in a mechanical and chemical point of view. The breaking up of the sub-soil, exposing it to the influences of air and water, of light and heat, assists in the formation of new compounds, favorable to vegetation, as well as in correcting and decomposing such as are injurious. It would therefore appear that after allowing a sufficient annual expenditure for manure, the before mentioned system of cultivation would bear, even at the present reduced prices, a reasonable profit.

We are, however, fully aware, that such a mode of cultivation is altogether inapplicable to a country like Canada, and even in England, where labor is so abundant, it can be carried out at present only to a limited degree. Yet it is well that such investigations should be made; for they have decidedly an encouraging tendency; they point out the right direction we should pursue in order fully to develop the many yet hidden resources of the soil; which appears to be endowed with a power of production, commensurate with the increasing industry and intelligence of man. What better proof do we require of Creative wisdom and beneficence, which has so intimately connected man's physical well-being with the pursuit of knowledge and the practice of virtue?

REMEDY FOR THE GRIPES IN HORSES.—We need never lose a horse by gripes, provided we administer, when first attacked, 1 oz. each of spirits of nitre and paregoric, in a quart of warm water.

AGRICULTURAL SOCIETY OF THE UNITED
COUNTIES OF FRONTENAC, LENNOX AND
ADDINGTON.

At the annual meeting of the above Society recently held in the city of Kingston, the following address was delivered by the President, Angus Cameron, Esq. The *Argus* observes (whose remarks will be found after the address) that the Warden and members of the County Council were all present, and a number of the principal agriculturists of the district, among them the Rev. J. Allen, of Wolfe Island, a gentleman who brings much zeal and intelligence to bear on agricultural pursuits, "whose premises as a farmer, may be taken as a model, by farmers in Canada generally"; J. B. Marks, Esq., President of the Agricultural Association of Upper Canada, who has grown grey in promoting this ancient and most important of all arts; Messrs. P. Davy, W. Ferguson, Scott, Boys, Rankin, Cowan, Starks, &c., &c. We regret that we cannot find room for the resolutions, which confirmed the principal suggestions of the address; a document such as we should have anticipated from the well known zeal and ability of the author.

The complimentary terms in which the Treasurer, Wm. Ferguson, Esq., writes to us with reference to our humble labours, through the medium of the *Agriculturist*, to advance the agriculture of the country, cannot be otherwise than gratifying. And we hope soon to see such machinery put into operation as shall awaken enquiry and strengthen a spirit for improvement in all sections of the Province.

GENTLEMEN,—The design of the Legislature in passing the Act 8th Vic. chap. 54, as shown in the preamble, was "to give encouragement from the Revenues and people of Upper Canada to the science of Agriculture."

The same was the object in view in passing the Act 10 & 11 Vic. chap. 21, which provides for the incorporation of the Agricultural Association of Upper Canada.

The 7th clause of the Constitution of this Association declares that the object of the Association shall be—"The improvement of Farm Stock and produce, the improvement of tillage and agricultural implements, and other like matters; and the

encouragement of domestic manufactures, of useful inventions applicable to agriculture or domestic purposes, and of every branch of rural and domestic economy."

The same is our object in endeavoring to maintain this and the several Township Societies within these Counties; and to what extent that important object has been attained by the proceedings of this Society, during the last twenty years of its existence, you, gentlemen, and those you represent here, have had all desirable opportunities of knowing; and with so much experience as a guide, the present is a favorable opportunity for making such alterations and amendments in the Constitution, Regulations, and future practice of the Society, as shall appear to you the most likely to promote the end in view.

Were I to take upon myself to give an opinion, I would say that the main difficulty met by agricultural societies throughout the Province, is a general apathy prevalent amongst Farmers, and a want of union as to the means best calculated to carry out the object which all profess to approve and desire.

If this is true, our first and most important duty is, so to manage this Society as to render it attractive to the majority of the people whom it is designed to benefit;—to make it a means of creating throughout its limits a praiseworthy rivalry in the good work of reproducing from the earth, by industry, skill, and economy, a bountiful supply for the inhabitants thereof, thus contributing at the same time to the general and individual good.

As the premium list has a tendency to give direction to the exertions of agriculturists, care should be taken that it contains no misdirection, and that the truly meritorious part of the labor be not left in the back-ground unnoticed, while some portion more incidental in character, and of less utility, is conspicuously awarded a premium.

If the apathy which has so long prevailed in these as well as other counties of the Province, could be replaced by a lively zeal and emulation and a consequent increase of this Society, there is good reason to believe that a spirit of liberality and inflexible impartiality, in duly awarding the honor of premiums, where properly merited, on the part of the managers of the society, would secure its future increase and prosperity.

The Township Societies may have done some good, and in future may improve, yet their doings fall short of the benefits that might arise from an exercise of the functions of a County Society.

Since the organization of Township Societies it may be said that nothing has been done by the Counties but to draw and divide the Government allowance of money; this is but half doing the business, and in reality leaving the most important half undone.

It would be an improvement if in future no Townships within these Counties should hold: Cattle Shows on the same day, so as to give of us, as well as intending purchasers, an oppor-

tunity of being present at each of the fairs, which cannot be the case when two of them are simultaneously held;—and some alteration is required in the Constitution, so as to give better facilities for holding an annual County Show, which should not take place until after the Township ones; this arrangement would be proceeding from the smaller to the greater, giving an opportunity of ascertaining, first, the best articles locally, then bringing them into a more extended competition.

All competitions for premiums at these exhibitions excite, as they are meant to do, a keen spirit of rivalry, and as, from the imperfection of man's nature, we are all more apt to observe the beauties than the defects of our own properties, it is often difficult to convince even the candid and honest that they have been justly dealt with in the awarding of premiums; therefore great pains should be taken by the Directors to afford all possible satisfaction in this respect, so that the society may maintain the confidence of the people, which is indispensable to its prosperity.

In addition to the foregoing remarks on the management of the society, it would be the duty of the President, and is my inclination to discharge that duty, if competent, to offer some suggestions of improvement on our present practice in farming as to stock, tillage, implements and the like.

The improvement of farm stock and produce, coupled as they are together in the foregoing constitution of the association, must likewise be coupled in our practical operations.

The natural wants of farm stock should be regularly supplied, whether that stock be horses, horned cattle, sheep, swine or poultry; they should have shade, salt, drink, and good pasture in summer; they should be well housed, carefully attended and fed in winter;—this can be most advantageously done on a productive farm, and there only can the keeping and rearing of good stock be rendered profitable.

As the keeping of good stock requires a productive farm to afford them these requisites, so does the productive farm require good stock, the better to convert its coarser products into cash.

Although the common breed of cattle in this country drag out a miserable existence, without being housed, with little attendance, and scanty fare, they would yield a better return to the owner under better treatment; it is a loss to neglect even the inferior description of stock, and as care is necessary, that care may as well be bestowed on an improved as on an inferior stock.

The growing of root crops is a highly profitable branch of good farming, and almost indispensable to the wintering of stock. In some parts of this Province as much as 800 bushels of turnips per acre is frequently raised: this quantity properly secured and regularly fed during the winter to ten head of cattle, at the rate of half a bushel per day each, with a proper allowance of hay and straw, would yield a good return to the dairy or the shambles, as well as in the superior health and

growth of young stock. It may be said of both farm stock and produce that they yield remunerative returns in proportion to the nourishment which they judiciously and economically receive.

The manure heap is the great source of nourishment to the soil and its products: the housing and good feeding of stock gives increase to the heap beyond what it would arrive at without the system of housing and good feeding. Industry in collecting and skill in economizing manure, whether liquid or solid, is one of the most valuable lessons inculcated by the advocates of high farming. Every farmer should have a manure pit into which the liquid manure would run from all his cattle-houses, and into which should be collected everything convertible to the same purpose that could conveniently be obtained. "A penny saved is a penny gained." Every nuisance could there be converted into gold—even the Canada thistle as well as every other noxious weed that springs up. So careful of manure are the farmers become now in parts of Great Britain, that to prevent the escape of the more active gases so beneficial in stimulating the varied forms of vegetable re-production, they cover over with soil each little heap carted out on the fields, till it can be conveniently ploughed into the soil, digging little ditches around those heaps to catch the rains that wash them, and carefully returning this liquid again into those heaps.

The sooner we follow their example in this respect the better.

The proper keeping of superior stock, good ploughing, substantial fencing, an occasional covered drain, with plenty of open surface ones, a good supply of manure mixed into the soil, a seasonable sprinkling of lime, due regard to a rotation of crops, with skill and promptitude in securing them, constitute an important portion of good farming; and until we understand and practice these plain rudiments of the science, elaborate research into the modern discoveries in agricultural chemistry would but little avail in the balance sheet of profit and loss at the end of the season.

The Committee appointed at the special meeting of the society, held in October last, to purchase improved Stock, have reported their proceedings to the Secretary, which report with other communications will be read for the information of the Society.

Lastly, gentlemen, permit me to recommend that a change of President take place annually, as the honorable distinction of holding that office for a season would be likely to stimulate the influential and intelligent portion of the agriculturists to exert themselves in this common cause; and under this impression, I return you my sincere thanks for the honor done me in my appointment a year ago to the office, and now beg leave to tender you my resignation.

The Society having appointed their President to purchase a number of Durham Bulls, he procured four animals of the best description of that

class, and they are now within these Counties. The keepers of them are allowed £25 each, annually, a charge of one dollar to be made to Township Societies for the service of each when applied for, and of two dollars to all other parties. The animal in charge of Mr. John Ovens, at Waterloo, is said to be the finest in the Province. As a three years old, he took the first prize at the Provincial Agricultural Exhibition, held at Niagara last Autumn. He now weighs over 2000 lbs. Mr. Cameron also purchased for his own farm, the first, second and third premium Cows, and a flock of Leicester Sheep, all of which are splendid animals, and will, in a few years, with the others above mentioned, afford Agriculturists in this vicinity, an opportunity of increasing their stock of short horn Durham Cattle and Leicester Sheep, both very desirable and much wanted, our Counties being particularly adapted to the establishing of Dairy Farms, and to grazing.

The successful establishment and working of our Provincial Agricultural Association, has tended to infuse a spirit of enterprise for the improvement of stock, amongst the Farmers of Upper Canada which cannot fail to produce most beneficial effects, and which, we feel convinced, will continue to spread throughout the rural Districts in an increasing degree, as it must inevitably prove that such investments will yield a profitable return.

For a good Cow of pure Durham blood, £50 is not an unusual price, and for a Calf of the same breed, from £10 up to £30 is frequently paid. Fat Leicester Wethers were sold from this Province, as we have been informed, to the Boston Market, last year, which weighed 50 lbs. per quarter, and brought the farmer five pounds each. Surely this must pay, and ought to make some of our inert, stick-in-the-mud country friends, now resident within a circle of ten miles around our good city, bestir themselves in time to raise Leicester Sheep in time for export at the first whistle of the Locomotives which will be traversing our Counties *en route* "all the way to Boston" within the short space of three or four years. Let them make hay, therefore, while the sun shines, improve and increase their stock of good cattle and sheep, and be ready for the Rail. With one suggestion to the Farmer, we will drop things Agricultural, and that is, that being faithful believers in the wonder-working power of a well filled half bushel, good winter feeding, and comfortable stabling upon live stock of every kind, all animals intended to show and sell well, ought to be well cared for at a season when they, most require the attention of their owners.

ADDRESS OF THE COMMITTEE AT BROCKVILLE
TO THE PEOPLE OF CANADA.

To the farmers, mechanics, and all interested in the prosperity of Canada, look forward and prepare specimens of your Agricultural advancement, and evidences of your mechanical skill, for the great Provincial Exhibition, to be held at

Brockville, on the 17th, 18th and 19th September, 1851.

In view of this Exhibition and to meet the necessary accommodation at Brockville, the Committee have secured a handsome Park Lot under grass, containing about twenty acres, in the vicinity of the centre of the Town, together with a beautifully sheltered wood land adjoining, affording ample accommodation for the Exhibition; designed as it is to bring prominently forward the handy work of the Country Lass, as well as the Town Maiden; the ingenious application of Machinery in the hands of the industrious Mechanic, as well as the evidence of careful and intelligent management on the part of the Stalwart Yeoman, the bone and sinew of the Agricultural interests of Canada.

No pains will be spared by the Committee of Management to sustain the creditable appearance which all classes in the United Counties of Leeds and Grenville are desirous of making in competition with the inhabitants of their Sister Counties in the Province, and in affording the necessary accommodation to Exhibit prominently the large collection of articles which will be brought forward upon this occasion, and which, it is confidently expected, will surpass any previous Exhibition in Canada.

While the Committee promises this much on their part, they cannot but reasonably look to all interested in the matter for countenance and support in an age when Telegraphic Railroads, Steam Navigation, and the various appliances of modern invention, have happily supplied the place of the one-handed Plough, and the shoulder-bruising pole-propelled Durham Boats of days now happily bygone in the history of Canada.

In order that all within your reach and influence may meet the views of the Committee, it is necessary that you should take a lively interest in the production and exposition of every article in your vicinity, serving to exemplify skill, ingenuity or originality of design in the various economic arrangements of life; that not only the fire-side of the prudent house-wife of the happy Country house should be represented by specimens of weaving, knitting and sewing, together with the farmer's valuable dairy products, but that the less useful but more ornamental branches which constitute a luxury in our Country, should be exhibited; That the Embroidery frame, the Painter's Easel and the Crotchet-Needle, should each contribute and place specimens of its industry side by side with the Plough, the Loom and the Anvil, while at the same time the great mineral wealth of the Country should not be forgotten, and ample evidence of its importance be adduced in the specimens at the Exhibition.

In furtherance of these views, it is suggested that Messrs. _____, _____, _____, _____, with power to add to their number, should be constituted a Committee to enlist as many as possible in this important work, to call the attention of Farmers and Mechanics within your locality and influence to this important matter, requesting

their co-operation and assistance in the preparation of articles for the Exhibition, and assuring them that in addition to the pleasing satisfaction of being the successful competitors in the friendly strife we are desirous of provoking. The Association will undoubtedly fix their premiums on as liberal a scale as possible.

Impress upon them that in a competition where articles of manufacture and mechanical skill will be received from all parts of Canada and the United States upon equal terms,* it will be a proud pre-eminence on their part, should they be the successful competitors; that it will be for the credit of their Country, that every exertion should be used to exhibit her growth and improvement.

While the eyes of all Canada will be upon the United Counties where the Exhibition is to be held, it is confidently expected that they will not appear in the back ground in an object where, upon former occasions, others have shown so much enterprise. To give the Canadian Agriculturists an opportunity of presenting the public with some of the riches of their intellect, the Committee offer a Gold Medal, with suitable inscription for the best Essay upon Agriculture and its advantages as a pursuit, the response to which they confidently trust will be such as to do credit to Agriculturists as a body.

In conclusion the Committee beg to say that they will be most happy to receive suggestions from all parties who may feel an interest in the Exhibition.

On behalf of the Committee,
GEORGE S. McCLEAN,
Secretary.

Brockville, C. W., Feb. 21, 1851.

AGRICULTURAL PRIZE ESSAY.

A Gold Medal of the value of £10, will be given by the Directors of the Johnstown District Agricultural Society, for the best Essay upon Agriculture and its advantages as a pursuit, to be read before the Agricultural Association, at the Provincial Exhibition, to be held at Brockville in September next. The Essay to be written by a Canadian Agriculturist whose pursuits are wholly Agricultural, to be sent in to the Directors of the Society, before the 15th day of July next, under seal, with the name of the writer in a sealed note. The Directors reserve the right of deciding whether the Essay is worthy a premium or not. The Essay to be the property of the Society, and to be in such condensed form as to permit its delivery within the space of forty minutes.

GEORGE S. McCLEAN,
Secretary.

Brockville, 15th February, 1851.

* The rule of the Association, hitherto, has been to have a separate class for foreign productions, and we are not aware that any deviation from such regulation is contemplated by the Directors.—[EDITOR.]

EXTRACTS FROM HON. F. S. MARTIN'S ADDRESS BEFORE CATTARAUGUS AGRICULTURAL SOCIETY, N. Y.

"There is one marked feature of our national character, which is often displayed in our county. I allude to the great desire of change. The often futile hope of bettering their condition by some lucky turn in the wheel of fortune, has induced many a farmer who was doing well, to abandon all, and seek a new home upon the rich prairies of the west. A large proportion of this class would be very glad if they could return to their old localities, and exchange the ague and chills—fevers imbibed in their land of promise, for the bracing air and pure water of Cattaraugus.

"The amount of capital invested in agricultural pursuits, is always safer than in mercantile operations; commercial revolutions, the hazards of floods and of fires, often destroy the earnings of a life spent in the latter pursuit. The success of a very few of this class of men, is not a proper criterion by which we are enabled to form a correct judgment. They are only the exceptions to the general rule. Of the numbers who have commenced in mercantile business, it has been estimated that ninety-five in every hundred have failed.

"In conclusion allow me to impress upon every young man, that the pursuits of the farmer are not incompatible with the character of a gentleman. He is in a position which enables him to feel a degree of independence which few, if any, professional or commercial men can arrive at, and an education is as important to him as to the professional man, and no substantial reason can be given why it is not. It may not be important for you to be able to conjugate the verbs, and trace out the roots of the dead languages, but it is important for you to know the chemical analysis of the different soils which are daily under your feet, and ascertain their adaptation to the various kinds of crops. Do all in your power to sustain your county society: its influence is humanizing and exalting. Instead of wishing things better, go to work and make them so. Instead of spending your time in vain regrets for some advantages in our neighboring counties, strive to equal and to excel them; and not five years will have passed until cold frosty Cattaraugus will take a rank among other counties of the State, to which her natural resources and wealth justly entitle her."

AN EXAMPLE TO YOUNG FARMERS.

The following interesting fact is related by John Delafield, Esq., in the annual report of the Seneca Agricultural Society, of which he was President. It affords another illustration of the old proverb, "Where there is a will, there will soon be found out a way."

The President then called the attention of the

society to the cases of minerals on their tables, which had attracted much attention during the day, and many inquiries. These minerals, said the President, are the fruits of study, bestowed by a young and hard working farmer upon his profession. He had watched the planting, sowing, growth and maturity of seeds: he had helped to manure and turn the earth, when an intelligent, inquiring mind led him to ask, what is soil? what are its elements? why are some naturally fertile, others naturally barren—and why the difference of manures used in farming? how does yard manure produce certain results, and plaster of Paris certain other results? To ascertain these facts, he picked up stones, examined them, and compared them with the soil; he sought information from books, which he considered as the store-house of ideas and facts gathered, and treasured up by wiser men: and thus he has arrived at truths, which must make his path, as a farmer, more easy and certain in results for the remainder of his life. If he is present, in this room, he can explain the nature of the minerals you have examined, and we may all gather useful knowledge from the investigations of our laboring fellow-farmer.

The young farmer's name is Mr. Alexander Kirkwood, who was a laborer by the month on Mr. D's farm. He came forward, and by request, explained the study he had pursued, in a manner that would have done honor to a scholar, who has made the sciences alone, his study and pursuit. We regret that we cannot find place for his valuable address. This is the right direction for the young men on our farms. When they shall generally, be thus instructed, the pursuit will be one of intellectual pleasure as well as a healthful and profitable adventure.

ON DEEP PLOUGHING, &c.

To the Editor of the Canadian Agriculturist.

SIR,—As there is so much difference of opinion upon almost every subject, in these days of theory and much learning, permit me to address you with the few following lines upon farming, or cultivating what are here called clay lands, or the loamy lands of this part of Canada; as I know of no business more honorable than agriculture, although free traders will not allow its occupants either sugar to their tea or plums to make a Christmas pudding with, or indeed any other luxury; they are so anti-christian and selfish.

Theory says, plough your land very deep; the sound practice of by-gone days, for ages past, did not say so; indeed I have seen the most luxurious crops of grain and clover grown in England, from 1790 to 1834, without it. But after many years experience in agriculture and horticulture, I beg leave to give you the experiments of last summer. I took some clay from a furrow ploughed up about 8 inches deep at a cost of about \$2 $\frac{3}{4}$ per acre, instead of \$1 $\frac{1}{4}$ for ordinary depth. I put it into garden pots 4 $\frac{1}{2}$ inches deep by 4 $\frac{1}{2}$ inches wide,

the plants, oats planted 26th June, grew weakly, and produced from 6 to 9 kernals each, at the same time I took some common earth the 3rd and 4th inches (rejecting the first 2 inches of sod) and in the same size pots, side by side, placed on a board to keep the roots from touching any other ground, these plants were fair and healthy, and produced 24 kernals on each of good grain and fine straw, I also tried some in moderate cucumber mould, 1 part dung, 2 parts common earth, and 1 part sand, as drainage; these were still finer with 29 kernals each; but, Mr. Editor, I have not seen a field of cucumber mould to sow oats upon in Canada, at present. Thus it seems that ploughing deep is not necessary, as it is double the expense, creates great labour for man, team and ploughs, &c., even down to the water-furrowing and hoeing, &c.; in a wet season in England, I should have required an extra horse for every team in harvest-time to haul the grain off the land; these lands with moderate ploughing, say 4 $\frac{1}{2}$ to 5 inches deep (uniform) kept clean of weeds, and dunged every fourth year for peas and clover, would seem to produce fair crops at moderate expense on an average of years. I saw a piece of land (new) ploughed deep last spring produce near 14 bush. of oats per acre, and land at no great distance produce over 40 bushels per acre. When the lands are laid up too high by deep ploughing with but few moulds, the great heat of this country dries them up and spoils the crop; but where the lands are ploughed up only a moderate depth in autumn and sown and scarified in the spring to make moulds and destroy weeds, or, drilled, which is much better, I have always seen good crops; indeed out of 3,000 acres, I had not one that failed.

Professor Johnston seems to have misled many by saying that clay has produced great crops of wheat *without any vegetable matter*, but he should have stated what were the *great powers of vegetation contained therein*. Professor Way says that 3 tons of clay require 2 tons of sand to pulverise it, and make it porous, and he might have added 1 ton of good rotten dung and 2 bushels of lime, as these would not have hurt it. But, I think with the present *low free-trade price of grain*, it would be well for the farmers of this country to pursue the plain system of farming adopted in England, from 1795 to 1830, as the surest and cheapest way of cultivating the clay lands of this country. That is to say, a fallow twice ploughed, 3 or 4 times scarified with a good set such as I have by me, which will do 6 or 7 acres per day at a cost of 2 or 3s. per acre York Cur'y, with one or two harrowings; to be sown with oats the next spring, (this straw and crop being the best,) followed by half clover and half peas, these to be manured for fall wheat, to be sown after the peas, and spring wheat after the clover, but not ploughed deep after peas or clover, or at any other time, as I have seen the wheat crop lost by so doing; and I could always grow more grain with 3 or 4 inches of moulds, with a little manure and clear of weeds, than I could by any other means. Fallow or rest the land after the wheat, that being the great ex-

hausting crop, except great means of high and powerful vegetative manures are at hand. This system I have always found to facilitate the labour of the farm at a cheap rate, and the lands and crops would always bear inspection by men of business.

The powers of vegetation seem often to have escaped the observation of men of science, (so called,) which have long and much surprised me. You know, Mr. Editor, that amateur horticultural men base all their hopes of a crop upon this theme, being obliged to confine themselves to a small pot of mould for the growth of rich and splendid fruits, (without ploughing up dead clay,) to say nothing of the forbidden fruit, oranges, lemons, citrons, passion-fruit, &c. I have grown queen pine-apples, weighing 2 lbs. in a pot of earth 9 inches wide by 8 inches deep, and have seen numbers of them weigh 3 and 4 lbs. grown in pots 10 inches wide by 10 inches deep; and the mealy Providence pine-apple, grown in about a cubic foot of earth, weigh from 10 lbs. to 11½ lbs., but no dead clay in these moulds. I assure you Mr. Editor, that a near neighbour of mine here grew the finest crops of melons in the open air, finer than I ever saw in any part of England, by laying four or five layers of 2 inch thick common sod (called maiden-earth by gardeners) upon each other, bottom upwards, but no clay. Herewith I enclose some club-wheat straw, grown on land ploughed 8 inches deep, probably it would have been much better if the ground had not been ploughed at all. I have seen a field whose crop of wheat was lost by it, not far distant; that is, a good clover ley well dunged and ploughed deep, sown with spring wheat, that produced only one bushel of poor wheat per acre. Wheat is sown too often here.

I think that a fallow every fourth year, to renovate the land and clear it from weeds and grass, should be done as effective and as cheap as possible, as the expense is to be spread, as it were, over the three succeeding crops, and the wide scarifier kills grass and weeds better than the plough and produces more moulds. My scarifier—simple in its construction, all the irons wrought, and by separating the blocks, or changing them, it marks out lands for corn, potatoes, peas, &c., and will hoe these crops, about six acres per day, much cheaper and better than any other plan that I could adopt. But I have also a simple double plough, which goes with a wide share to cut up the weeds, and then a narrower share and mould-boards, to finish and earth up with the second or last time; and it strikes up or cleans out the common furrows also. The rhomboidal harrows seem best for this country also.

And now Mr. Editor, if these few lines, or any part of them, should be of any use to your agricultural friends or readers, in these hard times of free trade delusion, I shall have much pleasure in presenting them, and beg to subscribe myself,

Yours, very sincerely,
ROBT. F. COOKE.

Cayuga, Feb'y 28th, 1851.

[Our Correspondent's experiments with oats and flower-pots, seem to us but very remotely connected with the question of deep ploughing. A soil taken within two or three inches of the surface, especially when that surface consists of sod, will unquestionably possess more organic matter, or in other words, more of the materials for building up the structure of plants, than soil taken at a greater depth. Experience has decided that deep cultivation upon poor wet clays requires to be accompanied by under draining; or more harm will be done than good. Upon a farm where shallow ploughing has been pursued and which has become exhausted by frequent cropping, we would recommend deeper cultivation by *degrees*; say, ploughing an inch or two deeper every crop for five or six years. To effect this, the sub-soil plough must be brought into requisition during the close of the term. The advantages of a deep seed bed are, a larger amount of active soil in which the roots of plants find nourishment, the absorption of a larger amount of air and moisture, and consequently a much smaller risk of suffering from the effects of drought; which in a climate like ours is an object of much importance. Deep cultivation, however, without manuring and a judicious rotation of crops, will not be found in the long run successful. The specimens of straw sent us were certainly miserable enough. Some startling facts connected with deep and thorough cultivation, will be found in a separate article, in our present number. The additional cost, and the price of produce, must of course, as our correspondent observes, be regarded by practical farmers, in the solution of all questions of this nature.]—EDITOR.

STRENGTH OF VITRIFIED CLAY PIPES.—Those of three-inch bore, lately tried at the works at Glasgow, stood the pressure of a column of water 230 feet high, and those of four-inch, 140 feet, without breaking. These pipes are said to be much cheaper than lead.

THE OBJECT OF MIXING CHARCOAL DUST WITH FRESH URINE.—Ammonia is the product of the putrefaction, which soon takes place in the urine; and the propriety of adding charcoal dust to the fresh liquid depends on the advantage of retaining the volatile products of that decay in its earliest stages.

THE PHYSIOLOGY OF DIGESTION.

The following remarks from the *Montreal Transcript*, may be advantageously read, as a supplement to the article on winter management and feeding of stock, which appeared in our February number. We are obliged to our contemporary for the correction of an inaccuracy, which had escaped our observation. We employed the word *stomach* in too loose a sense; the lungs are the appropriate organs for renovating the blood, by exposing it to the action of the Oxygen of the air, by means of respiration; a simple and beautiful contrivance that is intimately concerned in the sustentation of animal heat.

We extract the following valuable article from the *Canadian Agriculturalist*, (Toronto) for February. Farmers ought to know, though they do not generally, that the expenditure of fat, by an animal in developing heat from the lungs and skin, is precisely that which would keep the place at the same temperature if converted into candles. The enormous consumption of train oil, by Laplanders and Esquimaux, and the consumption of oil or lard of any kind near the tropics; the appetite for fat meat acquired by exposure to sharp air and wind, which rapidly carries of the heat from the body, and the inability to eat anything but the fibrous and gelatinous parts of the meat by persons confined to warm rooms; the consumption of fat in winter by bears and other hibernating animals;—from these causes, the fact was suspected, but it was reserved for Liebig to demonstrate it by chemical analysis. Perhaps we rather over stated the case, for if the fat is burned in the animals body, none of the heat is wasted, while if it were burned outside of it, some of it would be wasted. But the principle is, that if all the heat could be economised, to produce it would require the same amount of fat to be "burned," as chemists literally style it, whether the heat be developed by flaming, as in a candle, or by the action of the capillaries of the lungs on the blood, which carries it to that important organ from the absorbents of the bowels, or if those fail in supply, from the stores in the body; that is, either prevent the animal getting fat, or if food fail, make it leaner by converting the fat into heat.

Nor are the remarks as to ventilation less important. It is almost as pernicious to cattle as to human beings, to keep them warm by limiting the supply of pure air. The want of ventilation produces in cattle, complaints closely analogous to typhus and consumption in man. A collection of highly animalised vapours is poison to the nerves. The stomach then does its work imperfectly, and food passes through indifferently digested. The contents even of a root house, will perish if there is not means of escape for the gases.

The difficulty is to combine ventilation with

heat, and to keep the temperature equable, and that is not very easy in a climate where the fluctuation is so great as this, and an animal cannot so easily change his coat as its owner can his. We are informed by the President of the Montreal Agricultural Society, whose success in raising the finest sheep is well known, that he adopts the plan of leaving it to the discretion of the animals. He finds them a warm covered pen, not however artificially warmed, for sheep have a very warm covering of their own, and leaves them free to take the fresh air when they please, by going into an inclosure well littered, which protects their feet.

The best animals require the most care in this respect, just as a thorough-bred racer, to be kept in condition, requires more grooming than a Shetland or Canadian poney; not that they or any other animals, particularly cows and pigs, are worse of good grooming. We remember about twenty, or five and twenty years ago, when the Teedsdale breed of cattle found their way from the plains of Durham, into the more moist and mountainous county of Cumberland, the hill farmers admitted that the short-horns were much better animals when fattened, and gave more return for their meat; but they said, what was true, that the long-horn was a much hardier animal, was less subject to disease, and starved over a late spring better than the other. They soon however, began to see this was no argument for keeping an inferior breed of cattle, but one for better farming. Accordingly they improved their farm buildings and their cultivation, and now an original unimproved long-horn is rarely seen, except on lands too cold and barren for any thing better.

There is in Canada a curious instance of the general application of the principles of vital chemistry. The lumberers, it is well known, are fed upon fat pork, pork so fat that it cannot be found in any quantity in this country, but is imported from the United States. That is not altogether a matter of taste, it is one of economy, pecuniary and physiological. They want the oil of the fat to enable them to resist the cold, and would consume an enormous quantity of lean pork, of which the fibrin and gelatine in the muscle and membrane, does not supply the materials of combustion so largely. They commence by total abstinence, and in about a fortnight the smell of spirituous liquors become positively odious and disgusting to them. As the season advances they commence eating the fat pork raw, and prefer it in that state, and will not relish it cooked. So we have been assured by a gentleman of unquestionable veracity.

The reason is plain. Alcohol, whatever be its merits or demerits in other respects, is a great supporter of combustion. The cooking of the pork would diminish the element they principally want, the oil or lard. And besides, it would do another thing; it would have the same effect as boiling down meat into soup or *bouilli*, it would make it too absorbable, enter into, and leave the system too rapidly. So that on precisely the same principles on which a man who has a

weak stomach, cooks his meat carefully and skims off the fat, a man with an active stomach, which is compelled to find fuel to the furnace of the lungs to keep him warm, eats his meat raw to give it work, and to save all the fat. These principles apply equally to the feeding of cattle as to man.

GOLDEN STRAWED WHEAT.

Published by authority of the Board of Agriculture
Halifax, N. S.

We have much pleasure in publishing the following authenticated statement of the productive and safe qualities of the "Golden Strawed" Wheat: This variety of early wheat was imported from the United States, and sowed in Windsor, by Mr. James O'Brien, shortly after the first attacks of the wheat fly. It did not arrive in Windsor till late in the season, consequently no correct opinion could be formed of its properties, though its luxurious growth attracted the general attention; it matured sufficiently for the purpose of seed, and the following year several farmers who had formed a correct opinion of its early and productive qualities, procured samples, and sowed them about the 10th June,—thereby escaping the season of the fly's existence. The straw being of a compact texture, and covered with a glazed cuticle is impervious to moisture, consequently resists "rust," to which late sowings of soft strawed wheats are so liable. It is more productive than the black sea wheat and rather earlier. The following returns obtained from the golden strawed wheat, give evidence of the productiveness this season. In one instance, it yielded 22 bushels after 1 bushel sown; another instance gave 17 to 1; and a third, gave 14 to 1; all the excellent quality weighing in some instances 64 lbs. per bushel. Our informant who is a judicious farmer, says: "In cultivating the golden strawed wheat, we have nothing to fear from the fly if we sow during the first week in June; the crop only requires three months propitious weather to mature it." And he adds; "had we adopted this variety, and understood the theory of late sowing in time, we would long ago have starved out the fly, in place of being starved out by it."

This subject ought to engage the attention of our local Societies, and if they manifest a disposition to introduce this valuable variety of wheat more generally, we shall lend our assistance in procuring seed.

J. IRONS, Sec'y B. B. A.

Halifax, Jan., 1851.

PIGS AFFECTED BY COLD.—Fine-bred pigs, having little hair, must have a much warmer temperature than sheep. When pigs huddle together, it is a sure sign that they are not warm enough. Cold, stopping the circulation in the skin, drives the blood to the internal organs, and causes inflammation.—*Amer. Agr.*

MANAGEMENT OF SHEEP.

The following observations from a correspondent of the *Rural New Yorker*, who has had much experience in sheep husbandry, will be found useful to many of our readers.

I do not consider Indian corn a desirable grain for feeding ewes with reference to producing a supply of milk. It is a strong and heating grain, and will produce founder, will induce a fever, sooner than any other grain, if fed out liberally. It has no tendency to increase lacteal secretions, but its influence would be to dry them up. For the purpose of keeping store sheep in heart, and of recruiting a flock in low flesh, no grain is so good as corn if prudently fed, that is, regularly, and in very small quantities to each sheep. I greatly approve of grinding the corn and cob together. There is some value in the cob, and the use of corn in this way, is much safer than when not thus ground.

What would be the effect of intermixing the meal with carrots, I cannot, from any experience, suggest. If the meal and the carrot should be combined, the meal in small quantities with the view of keeping the sheep in condition, and the carrot in larger proportion to produce a flow of milk, I think it might do well. I have cultivated mangel wurtzel and carrots for large stock, but not for sheep.

I consider the carrot a more valuable root than the mangel wurtzel, and should esteem it preferable to the beet, in producing a flow of milk. But I think the same ground and same tillage will produce a larger product of the beet; than of the carrot. In my own experience, the beet has attained the largest size. Which would be the most profitable crop to feed to ewes, all things considered, it might be difficult to decide. If the circumstances of the soil and culture were such, as to ensure a great yield, I should prefer risking the carrot, for I consider it the richest and most nutritious root.

No grain I have ever fed to breeding ewes, has been so available in producing a flow of milk, as good shorts from wheat. They induce no febrile action, are nutritious, and seem to exert a specific influence in producing milk. One bushel to a flock of 30 ewes, fed twice a day, say morning and evening, would be about two quarts each per day. Shorts of good quality should weigh 15 or 16 lbs. to the bushel. This affords about 1 lb. to each ewe per day, and I have found it sufficient, and to produce satisfactory results. But it may be objected, that this practice would involve an outlay of cash, to pay the miller's bill; and that the farmer should contrive to sustain his flock within his own resources.—This is true. In planning a disbursement the farmer should at the same time devise the means to meet the disbursement. And how shall it be done? In my own case, I have raised annually a crop of barley, for the special purpose of sustaining my flock in the winter, with a small saving under the circum-

stances and necessities. One acre of barley on good soil, well tilled, produced 80 bushels. (I have had it largely exceed this amount.) This' at 60 cents per bushel, (and I have often obtained 75,) produced \$18. This sum purchased 300 bushels if shorts at 6½ cents per bushel, weighing 15 to 16 lbs. per bushel. From the first of December to the last of April is 150 days, and at two bushels per day just consumed the 300 bushels. Of course, one acre of barley furnished an ample supply of grain for 30 ewes for five months; and three acres would suffice for 100 ewes. As to the amount of labor, any farmer knows what it is. Barley requires a wheat soil—not low wet land. Ploughed late in the fall, and sowed in the spring soon as sufficiently dry to drag well, and the labor is done; and has interfered with no other work. The straw, is the most valuable straw produced. It is sweet and nutritious, and cattle eat it almost as greedily as they do hay.

Should a small number of ewes, as is sometimes the case, happen to yeain in the winter, and give little or no milk through want of green food, the evil can be remedied entirely, by converting one mess of the shorts daily, into a warm mash. This will cost but little labor, when the farmer has a cauldron kettle set for farm use. The mash should be just so thin as to pour easily, and constitute a drink. Being as warm as it is safe for them to drink, all the evils of filling them with cold water will be remedied. If the troughs are filled with the mash while the sheep are shut up, and all are let out to them at once, no one can overreach and defraud his neighbor. It will astonish one to see with what eagerness they will consume it.

I have made these suggestions, in answer to the inquiry, "What is the best feed for breeding ewes, in reference to producing milk;" not in the least degree intending to disparage the root culture.

E. D.

TO MAKE BUTTER IN WINTER.—In many parts of our country, the art of making good butter in the winter is very imperfectly understood. Indeed many good dairy women suppose it is absolutely impracticable to make it at that season. Now, in some places, at least in New England, it is constantly practised, and the process is as familiar as that of making butter in May or October. The short history of it is this:—The cows should be stabled and fed on good sweet hay, and if other provender is added, so much the better. Instead of keeping the milk in a warm place, it should be kept in a cold one, no matter how soon it freezes. Freezing will separate the cream much more perfectly than it will rise without, and it is taken off with much less trouble.—When the cream is churned, the churn should not be placed too near the fire. The ordinary warmth of the kitchen will be sufficient. Too much heat will destroy both the complexion and flavour of the butter. It will require a little more time in churning than it does in warmer weather; and that is all the difficulty in making as good butter in Janu-

ary, as can be made at any season of the year. Butter cured with one half ounce of common salt, one-fourth ounce of saltpetre, one-fourth ounce of moist sugar, pounded together and used in the proportion of one ounce to the pound of butter, will, on trial, be found to keep any length of time, and have a much finer flavour than when salted in the usual manner.

TWO CROPS AT ONCE—HIGHLY IMPORTANT TO FARMERS.

While nature has done so much to favour the cultivation of flax seed, and while the demand for it is unlimited in all our markets at fair prices, it is surprising to me that you have not turned your attention to its production. In Ohio the farmer depends upon it for a large portion of his yearly receipts. The reason, I think, must be because the thing has not been introduced, nor any pains taken by any body to bring it before the farmers, and this is sufficient reason for this article from the writer, who has been a practical western farmer.

Oats and flax I have grown together, and had full crop of each. In raising flax seed no attention should be paid to the fibre, the farmer should start out with this distinct principle, that to make the crop profitable, he must count the straw nothing, and look to the seed for profit. It is a very common notion with farmers that Flax is very exhausting upon land, and that more than one crop cannot be raised upon the same ground in five years; the correctness of this is unquestionable where the crop is raised for the fibre, but in raising it for the seed exclusively it is not correct. My course was this:—On a field I wish to stalk down I commence operations in the spring, say 1851, prepare the ground as early as possible, harrow well before sowing, it will take the seed more evenly, sow oats first, do not scrimp the seed, harrow well and then mix the flax and clover, or flax, clover, and timothy seeds together, not more than eight quarts of flax seed to the acre, and harrow or brush it well, and then apply the roller and the ground is well faced for mowing. The oats and flax will ripen together and can be cradled; they should be cut a little green to guard against shelling. The oats and flax can be thrashed with a machine, and separated with a fine screen or sieve at the time, the barn floor must be perfectly tight as it will sift like powder. The same ground will give good feed for cows in the fall; from the clover seed, in 1852 it will be a meadow; in 1853 mow early, take off the hay and keep every thing out and there will be a good crop of rowan or seed, plough it under about the 10th or 15th of September and sow wheat. The land is again stalked down and in good heart for the wheat crop. It should be well rolled to prepare it for the scythe.—ONE WHO HAS TRIED IT.—*Correspondence of the Norfolk Messenger.*

RECIPE FOR MAKING BUCKWHEAT CAKES.

Do, dear Jane, mix up the cakes :
 Just one quart of meal it takes ,
 Pour the water in the pot,
 Be careful that its not too hot ;
 Sift the meal well through your hand ;
 Thicken well—don't let it stand ;
 Stir it quick—clash—clatter—
 Oh ! what light delicious batter.
 Now listen to the next command .
 On the dresser let it stand
 Just three quarters of an hour,
 To feel the gentle rising power
 Of powders melted into yeast,
 To lighten well this precious feast.
 See, now it rises to the brim—
 Quick—take the ladle, dip it in ;
 So let it rest until the fire
 The griddle heats as you desire.
 Be careful that the coals are glowing,
 No smoke around its white curls throwing.
 Apply the suet softly, lightly--
 'The griddle's face shines more brightly.
 Now pour the batter on—delicious !
 (Don't, dear Jane, think me officious,)
 But lift the tender edges slightly—
 Now turn it over quickly, sprightly.
 'Tis done—now on the white plate lay it.
 Smoking hot, with butter spread,
 'Tis quite enough to turn our head.
 Now I have eaten—thank the farmer
 That grows this lucious mealy charmer—
 Yes, thanks to all—the cook that makes
 These light, delicious buckwheat cakes

--Genesee Farmer.



INTERESTING PHYSIOLOGICAL FACT.—It is remarkable, as among the millions of other proofs of the wisdom and provident care of the Supreme Being, that in the milk of a female, who has a fractured limb, the lime is reduced in quantity until the fractured bone is again united. The eggs, also, of a fowl, which has a broken limb, are without shells until the broken parts are again united.

ANCIENT FARMING.—It is stated in an article on this subject, in the July number of the London Quarterly Review, that the average product of wheat in the home provinces of Rome, in the time of Varro, was 32 bushels to the acre, far more than the present average in Britain, and probably three times as much as that of the United States.

AGRICULTURE IN SWITZERLAND.—Dr. J. V. C. Smith, the editor of the Boston Medical and Surgical Journal, has been travelling in that mountainous region of the world, and in one of his letters, notices some of the agricultural products of

localities where the best efforts of the husbandman produce but a poor return in grain or potatoes. Hence the production of crops unknown to American farmers. One of these is poppies, which are grown by thousands of acres ; not for opium, but the seed, from which a beautiful transparent oil is produced, which is much used in house painting, and is considered far superior to linseed oil, because it is almost colorless, and when used with white-lead, does not turn yellow like the oil of flaxseed, when exposed to the light. Poppies can be grown upon soil too sandy and light to produce flax. Why should not this new crop be sown in this country ? Who will try it ?—*American Agriculturist*.

GREAT AGRICULTURAL MOVEMENT IN GROWING FLAX IN ENGLAND.—A company comprising many of the leading nobility and land owners, is seeking from government a Royal Charter to give encouragement to agriculturists and farmers to bring into immediate cultivation, at least one hundred thousand acres of land, for the production of flax straw ; which substance the promoters of the charter have, (by new and peculiar processes never hitherto adopted,) the power to convert into a fit state to hold competition with the best flax imported from foreign nations, without the aid of steeping, kiln-drying, nor mill scutching. The machinery by which the fibre is separated from the stalk, without steeping, is of a very simple and inexpensive kind, requiring no previous knowledge to work it. The unsteeped flax is uniform in strength, and free from stains, so that all after processes of manufacturing and bleaching may be conducted with a facility and exactness not hitherto attainable.—*Agri'l Gaz*.

PHOSPHATE OF LIME.—We have it in our power, at last, to record the discovery of an extensive deposit of phosphate of lime, at Crown Point, on the north shore of Lake Champlain. It is said that 92 per cent. only of the rock is phosphate, but even this amount will render it a valuable acquisition for the farmer's fields. In some of our previous volumes, we noticed the absence of any information on this subject in the extended report of the state geologists, and then predicted we should ere long find some deposits of this valuable manure which they failed to detect. We shall hope for the speedy discovery of still richer, and to us and the farmers of the Atlantic seaboard, more accessible accumulations of this long-stored treasures.—*Amer. Agricult'st*.

PLOUGHING IN EGYPT.—An American traveller writes from Egypt: "To-day I saw a buffalo and camel yoked together, ploughing near the river. I have seen two cows drawing by the horns in Belgium. an ass and a cow in Switzerland, but this team beats all others for ludicrous effect. A pole full twelve feet long is laid across their necks, they being all of nine feet apart ; in the middle a rope is made fast, attached to the apology for a plough. Our friends at the agricultural warehouse in Quincy Market would be astonished, were they present, to see how a furrow can be turned up with such a strangely crooked stick, and about as well as it could be done with one of their beautiful, costly patent ploughs."

Horticulture.

GARDEN PEAS.

Prepare for an early crop as soon as the frost is out of the ground. Select a warm sheltered situation,—well manured. For later crops sow suitable varieties in succession.

The *Horticulturist* recommends the following,—*Prince Albert*, for the best *early* pea. It is a variety of the old "Early frame," but earlier and a better bearer.

Champion of England, a first rate marrow-fat pea, very large and of excellent flavor. It comes early and is a plentiful bearer.

Knight's Tall Marrow, a later variety, bearing a long time and very productive. It is more prolific than *Knight's Dwarf Marrow*, and is well suited to strong soils.

TO DESTROY THE WOOLY APHIS.

The *Cultivator* observes that this insect can be readily got rid of by the use of fish-oil. Put a little on the insects with a brush; it will kill those that it touches, and cause the others to leave the tree. Care should be taken not to use so much oil as to injure the tree.

THE APPLE.

(From the *Montreal Witness*.)

In the *Witness* for September, October and November, 1849, I gave ample directions for orchard planting, which, as they chiefly referred to apple orchards, and as the most of your readers must have seen them, I need not repeat here.

I did not then give any directions to enable those unacquainted with the best varieties of apples, to make a selection suitable to their locality, and I therefore, now intend to supply that want as far as I can, by giving select descriptive lists which I think will prove satisfactory to all who may give them a fair trial. Some of the varieties here recommended probably have not yet fruited in Eastern Canada. It therefore cannot be positively said whether they would be suitable to that climate or not—all however, would be adapted to Western Canada.

As with the Pear, it may be well to take the

experience of the good folks of Maine, as a guide, so far as they have gone, in ascertaining what varieties not already proved in Eastern Canada, are likely to prove suitable to the climate. The fruit committee of Maine in their report before alluded to, gave the following list of apples that succeeded in the greatest perfection with them, viz: *Summer Apples*. Red Astrachan, Bough, Williams' Favourite and Golden sweet. *Autumn Apples*, Gravenstein, Portei, and Duchess of Oldenburgh. *Winter Apples*, Fameuse, Ribstone Pippin, Rhode Island Greening, Roxbury Russet, Baldwin, Danver's Winter Sweet, and Tallman, all of which are first rate apples. They do not appear to have tried our Pomme Grise, which, with the Baldwin, are in my opinion, the two best winter apples for any part of Canada.

The apple is not so much influenced by soil and climate as the pear, still some varieties are affected by these to a considerable extent, some doing best in a warm sandy soil, others in a rich heavy soil, while some prove equally good in almost any soil. On the other hand, some succeed well at the north, while others that are first rate there, are worth little further south, and others again are equally good at the north and south. The Ribstone Pippin, for instance is not worthy of cultivation here, at the extreme south of Canada, or in Ohio, or Southern New York, as, instead of being a fall and early winter apple, it ripens in September, turns quickly mealy and falls from the tree. East of Toronto, and in the more northern of the New England States, it is one of the very best, and sustains the high character that it has in England; again, the Newton Pippin, which is considered the best of all apples, taking all its qualities into consideration, appears only to attain its highest perfection in or near its native locality, Southern New York. It is very doubtful if it will do well in any part of Canada, unless in some very warm suitable soil, and in late warm autumns, as even here it seldom attains any degree of perfection, and could hardly be recognized as the same fruit so highly appreciated in the New York Markets; still it does not appear to be want of heat that prevents its attaining perfection, as throughout Ohio and the South Western States generally, it is quite inferior. If it does well in any part of Canada, I would be much obliged by those conversant with the fact, to inform me of the particulars, and also the kind of soil the trees are planted in.

Nearly all the best apples in this country have originated in the United States and Canada. There are however, a few European apples, that prove excellent in this climate, such as the Red Astrachan, Gravenstein, Ribstone Pippin, and a few others, which we could not do well without, but as a general thing, the finest apples for this climate have originated on this side of the Atlantic.

The following select list of twenty-four varieties, I can recommend as being amongst the very best; tastes however, differ so much, that some may prefer varieties not in this list to some that are in it, but as a whole, and taking the ave-

rage of tastes and other circumstances into consideration, it will I think, give satisfaction to all who may make their selections by it.

SUMMER APPLES.

Early Harvest.—Medium to large size: color, pale yellow; flesh tender, sub-acid, fine. Tree a moderate grower, but very productive; ripens latter part of July and early in August, and considered by many the best of its season; probably not so suitable for the north as the following. It needs rich cultivation.

Red Astrachan.—Large, nearly covered with a brilliant deep crimson, with a fine bloom like a plum, one of the most beautiful apples, ripens about the same time or a few days later than the *Early Harvest*; flesh rather crisp, acid. Tree vigorous, with large foliage, a good bearer, and a most desirable apple, either for desert or cooking.

Early Strawberry.—Size hardly medium, skin smooth, nearly covered with bright and dark red stripes; flesh tender, slightly tinged with red, with a mild pleasant flavour and agreeable perfume. Tree grows very erect, a good bearer, and proves good in nearly all localities; ripens during August.

Williams' Favorite.—Large, oblong, nearly covered with fine dark crimson; flesh rich and excellent, moderately juicy; a moderate grower and good bearer; suitable for the north, and proves excellent here; ripens during August.

Bough, or Large Yellow Bough.—Large, pale yellow, very tender, sweet and excellent; a moderate and regular bearer; ripening early in August.

American Summer Pearmain.—Medium to large, oblong, skin yellow, nearly covered with broken streaks and dots of red; flesh very tender, rich, sub-acid, and delicious; one of the best apples but not suitable for orchard culture as some, owing to the extreme tenderness of the flesh, it sometimes cracks open in wet weather, or when it falls to the ground. Tree a slow, but handsome erect grower, and a good bearer, ripens latter part of August and September.

SUMMER APPLES.

Gravenstein.—Rather large; color yellow, beautifully striped and dashed with light and deep red and orange; flesh tender, juicy, very rich with a fine sub-acid flavour. Tree very vigorous and erect, and very productive; first rate in all localities; ripens in September and October.

Fall Pippin.—Very large, roundish oblong, yellow; flesh tender, rich, aromatic, and delicious. Tree large, vigorous, and spreading, a good bearer, and excellent in nearly all localities; generally esteemed; ripens October to December.

Porter.—Rather large, oblong, bright yellow, with sometimes a dull blush in the sun; flesh tender, rich sub-acid, of a fine, sprightly flavor. Tree moderate growth and productive, esteemed generally at the north; ripens in September.

St. Lawrence.—Large, surface broadly and very distinctly striped with dark red on a greenish yellow ground; flavor rather acid, very juicy, moderately rich and agreeable; a very handsome and productive apple, ripening in September and October, keeps all winter.

Late Strawberry, or Autumn Strawberry.—Medium size, nearly the whole surface covered with broken streaks of light and dark red; flesh tender and juicy, with a very fine sub-acid flavor. Tree very vigorous and productive, one of the best early autumn apples; ripens in September and October, and sometimes keeps till winter.

Houley or Douce.—Quite large, skin pale yellow, and slightly oily when kept; flesh fine grained and tender, with a fine mild, rich, sub-acid flavor; a most valuable apple. Tree grows moderately, and bears well; ripens in September and October; new.

WINTER APPLES.

Baldwin.—Large, nearly covered with bright red on a yellowish orange ground; flesh yellowish white, crisp juicy, with a very rich and high flavor. Tree grows very strong and upright, and is enormously productive every other year; fruit uniformly fair and handsome, and upon the whole, I consider it the very best apple for Canada. Ripens from December to March; here it is in perfection in the latter part of January and February.

Pomme Grise.—Small greyish russet; flesh tender, very rich, and high flavored; tree grows large and bears well; this fruit is well known in all parts of Canada, and succeeds admirably every where, and taking its hardness, fine flavor, and good keeping qualities into consideration, it is unsurpassed as a winter dessert apple; in eating, from November till April.

Fameuse or Snow Apple.—Medium size, nearly covered with deep red, interspersed with darker red stripes; flesh very white, tender, juicy and delicious; tree a vigorous grower, and one of the most uniformly productive; succeeds in all parts of Canada; ripens in November, and in use till January.

Northern Spy.—Large, handsomely striped, and quite covered on the sunny side with dark crimson, with a slight bloom; flesh juicy, rich and aromatic; keeps through winter and late into spring, and even summer; often retaining its freshness of flavor and appearance till June and July; tree remarkably thrifty and erect in its growth, leafing out later in spring than any other variety, with the exception of the *Courti Pendu*. In poor soils the tree must be highly cultivated.

Rhode Island Greening.—Large, green, bearing greenish yellow, with a dull brown blush in the sun; always fair, skin smooth oily; flesh yellow, fine grained, tender juicy, with a rich rather acid flavor, and excellent either for desert or cooking; trees grows very strongly, rather crooked or oblique when young; very productive, and keeps through the winter into spring; succeeds well in

all parts of the country; ripe from November to March.

Esopus Spitzenburg.—Rather large, surface nearly covered with a deep rich red with grey dots; yellowish, streaked with red on the shade side; flesh yellow, firm crisp, rich and excellent, with a delicious spicy flavor; tree when young rather a feeble grower, but afterwards growing vigorously; shoots rather long and slender, not so fine in some soils or localities as in others, but generally esteemed as excellent.

Roxbury Russet or *Boston Russet*.—Size, medium to large; skin covered with a rather rough brownish russet on a greenish yellow ground, with sometimes a dull brown cheek; flesh greenish white, moderately juicy, with a rather rich sub-acid flavor, although not high flavored, not to be compared in that respect to the *Pomme Grise*; its uniform productiveness and fairness, and its long keeping qualities, render this variety very profitable for orchard culture; ripens in January, and may be brought to market in June.

Red Canada.—Medium size, surface nearly wholly covered with red, interspersed with large whitish dots; flesh fine grained compact, with a rich sub-acid and excellent flavor; one of the best apples, and succeeds in nearly all localities; tree a rather slender grower, productive, and fruit always smooth and fair; ripe from November til May.

Swaar.—Large, yellow, sometimes slightly russeted, with numerous brown dots; flesh yellowish, fine grained, tender, with an exceedingly rich aromatic, slightly sub-acid flavor, and a spicy smell; esteemed by many as the finest winter desert apple, succeeds best on a deep rich sandy loam, and does not thrive on cold moist soils; requires good culture to bring it to perfection, when it is one of the very best apples; tree a moderate erect grower, and bears fair crops; is in season from November to April and May.

Hubbardston Nonsuch.—Large, color striped and splashed with pale and bright red, on a rich yellow ground; considerably russeted near the stalk, and resembling the *Ribston Pippin* a good deal; flesh yellowish, juicy and tender, very rich and sweet, with an agreeable mingling of acid; flavor excellent, considered by some superior to the *Bullfinch* and equal to the *Swaar* in richness; a strong grower and good bearer; in season from November to January.

Melon or *Nor'on's Melon*.—Large medium; color pale yellow, with bright red stripes; flesh white, tender, juicy, nearly melting, with a fine spicy, slightly sub-acid flavor; growth of tree rather slow, but a good bearer; ripe from October to March, and retains its freshness late in the spring.

Ladies' Sweet.—Large, smooth, nearly covered with red in the sun, pale yellowish green in the shade, with broken stripes of pale red; the red is sprinkled with greenish dots, and with a thin white bloom; flesh greenish white, exceedingly tender and rich, juicy and crisp, with a delicious sprightly agreeably perfumed flavor; the tree

does not grow very strong, but it is thrifty and bears abundantly; ripens in November, and keeps without shrivelling or losing flavor till May.

The time of ripening given in the forgoing list, is the time they would ripen in average seasons west of Lake Ontario. East of that they will be later ripening, and of course will keep in season longer. As the summer however, is as warm in Eastern Canada as here, it will be found that summer apples will ripen pretty much at the same time all over Canada. Some fruits that would be only autumn here, will be late autumn and early winter at Montreal.

JAMES DOUGALL.

Amherstburgh, C. W., March, 1851.

Scientific.

THE FAVORITE POISON OF AMERICA.

(Concluded from our February Number.)

And what, then, is the mystery of fine physical health, which is so much better understood in the old world than the new?

The first transatlantic secret of health, is a much longer time passed daily in the open air by all classes of people; the second, the better modes of heating and ventilating the rooms in which they live.

Regular daily exercise in the open air, both as a duty and a pleasure, is something looked upon in a very different light on the two different sides of the Atlantic. On this side of the water, if a person—say a professional man, or a merchant—is seen regularly devoting a certain portion of the day to exercise, and the preservation of his bodily powers, he is looked upon as a valetudinarian,—an invalid, who is *obliged* to take care of himself, poor soul! and his friends daily meet him with sympathising looks, hoping he “feels better,” &c. As for ladies, unless there is some *object* in taking a walk they look upon it as the most stupid and unmeaning thing in the world.

On the other side of the water, a person who should neglect the pleasure of breathing the free air for a couple of hours daily, or should shun the duty of exercise, is suspected of slight lunacy; and ladies who should prefer continually to devote their leisure to the solace of luxurious cushions, rather than an exhilarating ride or walk, are thought a little *tete montee*. What, in short, is looked upon as a virtue there, is only regarded as a matter of fancy here. Hence, an American generally shivers in air that is only grateful and bracing to an Englishman, and looks blue, in

Paris, in weather when the Parisians sit with the casement windows of their saloons wide open. Yet it is, undoubtedly, all a matter of habit; and we Yankees, (we mean those not forced to "rough it,") with the toughest natural constitutions in the world, nurse ourselves, as a people, into the least robust and most susceptible *physiques* in existence.

So much for the habit of exercise in the open air. Now let us look at our mode of warming and ventilating our dwellings; for it is here that the national poison is engendered, and here that the ghostly expression is gotten.

However healthy a person may be, he can neither *look* healthy, nor remain in sound health long, if he is in the habit of breathing impure air. As sound health depends upon *pure blood*, and there can be no pure blood in one's veins if it is not re-purified continually by the action of fresh air upon it, through the agency of the lungs (the whole purpose of breathing, being to purify and vitalize the blood,) it follows, that if a nation of people *will*, from choice, live in badly ventilated rooms, full of impure air, they must become pale and sallow in complexions. It may not largely affect the health of the *men*, who are more or less called into the open air by their avocations, but the health of women, (*ergo* the constitutions of children,) and all those who are confined to rooms or offices heated in this way, must gradually give way under the influence of the poison. Hence, the delicacy of thousands and tens of thousands of the sex in America.

"And how can you satisfy me," asks some blind lover of stoves, "that the air of a room heated by a close stove is deleterious?" Very easily indeed, if you will listen to a few words of reason.

It is well established that a healthy man must have about a pint of air at a breath; that he breathes above a thousand times in an hour; and that as a matter beyond dispute, he requires about *fifty-seven hogsheds* of air in twenty-four hours.

Besides this, it is equally well settled, that as common air consists of a mixture of two gasses, one healthy (oxygen,) and the other unhealthy (nitrogen,) the air we have once breathed, having, by passing through the lungs, been deprived of most of the healthful gas, is little less than unmixed poison (nitrogen.)

Now, a room, warmed by an open fire-place or grate, is necessarily more or less ventilated, by the very process of combustion going on; because, as a good deal of the air of the room goes up the chimney, besides the smoke and vapour of the fire, a corresponding amount of fresh air comes in at the windows and door crevices to

supply its place. The room, in other words, is tolerably well supplied with fresh air for breathing.

But let us take the case of a room heated by a close stove. The chimney is stopped up to begin with. The room is shut up. The windows are made pretty tight to keep out the cold; and as there is very little air carried out of the room by the stove pipe, (the stove is perhaps on the air-tight principle,—that is, it requires the minimum amount of air,) there is little fresh air coming in through the crevices to supply any vacuum. Suppose the room holds 300 hogsheds of air. If a single person requires 57 hogsheds of fresh air per day, it would last four persons but about twenty-four hours, and the stove would require half as much more. But, as a man renders noxious as much again air as he expires from his lungs, it actually happens that in four or five hours all the air in this room has been either breathed over, or it is so mixed with the impure air which has been breathed over, that it is all thoroughly poisoned, and unfit for *healthful* respiration. A person with his senses unblunted, has only to go into an ordinary unventilated room, heated by a stove, to perceive at once, by the effect on the lungs, how dead, stifled, and destitute of all elasticity the air is.

And this is the air which four-fifths of our countrymen and countrywomen breathe in their homes,—not from necessity but from choice.

This is the air which those who travel by hundreds of thousands in our railroad cars, closed up in winter, and heated with close stoves, breathe for hours—or often entire days.

This is the air which fills the cabins of closely packed steamboats, always heated by large stoves and only half ventilated; the air breathed by countless numbers—both waking or sleeping.

This is the air—no, this is even salubrious compared with the air—that is breathed by hundreds and thousands in almost all our crowded lecture-rooms, concert rooms, public halls, and private assemblies, all over the country. They are nearly all heated by stoves or furnaces, with very imperfect ventilation, or no ventilation at all.

Is it too much to call it the national poison, this continual atmosphere of close stoves, which, whether travelling or at home, we Americans are content to breathe, as if it were the air of Paradise.

We very well know that we have a great many readers who abominate stoves, and whose houses are warmed and ventilated in an excellent manner. But they constitute no appreciable fraction of the vast portion of our country-

men who love stoves—fill their houses with them—are ignorant of their evils, and think ventilation and fresh air physiological chimeras, which may be left to the speculations of doctors and learned men.

And so every other face that one meets in America, has a ghastly paleness about it, that would make a European stare.

What is to be done? "Americans will have stoves." They suit the country, especially the new country; they are cheap, labour-saving, clean. If the more enlightened and better informed throw them aside, the great bulk of the people will not. Stoves are, we are told, in short essentially democratic and national.

We answer, let us *ventilate our rooms*, and learn to live more in the open air. If our countrymen will take poison in, with every breath which they inhale in their houses and all their public gatherings, let them *dilute it largely*, and they may escape from a part at least of the evils of taking it in such strong doses.

We have not space here to show in detail the best modes of ventilating now in use. But they may be found described in several works, especially devoted to the subject, published lately. In our volume on COUNTRY HOUSES, we have briefly shown, not only the principles of warming rooms, but the most simple and complete modes of ventilation,—from Arnott's chimney valve, which may for a small cost be placed in the chimney flue of any room, to Emerson's more complete apparatus, by which the largest apartments, or every room in the largest house, may be warmed and ventilated at the same time, in the most complete and satisfactory manner.

We assure our readers that we are the more in earnest upon this subject, because they are so apathetic. As they would shake a man about falling into that state of delightful numbness which precedes freezing to death, all the more vigorously in proportion to his own indifference and unconsciousness to his sad state, so we are the more emphatic in what we have said, because we see the national poison begins to work, and the nation is insensible.

Pale countrymen and countrywomen, rouse yourselves! Consider that God has given you an atmosphere of pure, salubrious, health-giving air, 45 miles high, and—*ventilate your houses*.

A CHAPTER ABOUT THE INDIA RUBBER TREE.

The following account of the mode in which the very useful and increasingly important article

of commerce, named caoutchouc, is obtained, will, we doubt not, prove interesting to our readers. We are indebted for the statement to the Brazilian correspondent of an American paper:—

"The caoutchouc tree grows, in general, to the height of forty or fifty feet without branches, then branching, runs up fifteen feet higher. The leaf is about six inches long, thin, and shaped like that of a peach tree. The trees show their working by the number of knots, or bunches, made by tapping; and a singular fact is, that, like a cow, when most tapped, they give most milk or sap. As the time of operating is early day, before sunrise we were ready. The blacks are first sent through the forest, armed with a quantity of soft clay, and a small pick-axe. On coming to one of the trees, a portion of the soft clay is formed into a cup and stuck to the trunk. The black then striking his pick over the cup, the sap oozes out slowly, a tree giving daily about a gill. The tapper continues in this way, tapping perhaps fifty trees, when he returns, and with a jar passing over the same ground; empties his cups. So by seven o'clock the blacks come in with their jars ready for working. The sap at this stage resembles milk in appearance, and somewhat in taste. It is also frequently drunk with perfect safety. If left standing now, it will curdle like milk, disengaging a watery substance like whey.

"Shoemakers now arrange themselves to form the gum. Seated in the shade, with a pan of milk on one side, and on the other a filagon, in which is burned a nut peculiar to this country, emitting a dense smoke, the operator having his last, or form, held by a long stick or handle, previously besmeared with soft clay, (in order to slip off the shoe when finished,) holds it over the pan, and pouring on the milk until it is covered, sets the coating in the smoke, then giving it a second coat, repeats the smoking, and so on with the third and fourth, until the shoe is of the required thickness, averaging from six to twelve coats. When finished, the shoes on the forms are placed in the sun the remainder of the day to drip. Next day if required they may be figured, being so soft that any impression will be indelibly received. The natives are very dexterous in this work. With a quill and a sharp pointed stick they will produce finely-lined leaves and flowers such as you may have seen on the shoes, in an incredible short space of time. After remaining on the forms two or three days, the shoes are cut open on the top, allowing the last to slip out. They are then tied together and slung on poles, ready for the market. There, pedlars and Jews trade for them with the country people; and in lots of thousands or more they are again sold to the merchants, who have them stuffed with straw and packed in boxes to export, in which state they are received in the United States. In the same manner, any shape may be manufactured. Thus toys are made over clay forms. After drying, the clay is broken and extracted. Bottles, etc., in the same way. According as the gum grows older, it becomes darker in color and more tough. The number of caoutchouc trees in the province is countless. In

some parts whole forests of the trees exist, and they are frequently cut down for firewood. Although the tree exists in Mexico and the East Indies, there appears to be no importation into the United States from these places. The reason I suppose must be the want of that prolificness found in them here. The caoutchouc tree may be worked all the year, but generally in the wet seasons they have rest, owing to the flooded state of the woods; and the milk being watery, requires more to manufacture the same article than in a dry season."—*Western Literary Magazine*.

FROGS IN STONES.

We have several apparently well authenticated instances on record of frogs and toads having been found enclosed in masses of rock, to the interior of which there is no perceptible means of ingress. It has been the fashion, however, with naturalists, to dismiss all such cases on the assumption that there must have been some cleft or opening by which the animal was admitted while in embryo, or while in a very young state; no one, as far as we are aware, believing that the sperm or young animal may have been enclosed when the rock was in the process of formation at the bottom of shallow waters. Whatever may be the true theory regarding animals so enclosed, their history is certainly one of the highest interest; and without attempting to solve the problem, we present our readers with an instance taken from the Mining Journal, of January 18th, 1845:—"A few days since, as a miner, named W. Ellis, was working in the Penydarran Mine Works, at forty-five feet depth, he struck his mandril into a piece of shale, and to the surprise of the workmen, a frog leaped out of the cleft. When first observed, it appeared very weak, and, though of large size, would crawl only with difficulty. On closer examination, several peculiarities were observed; its eyes were full-sized, though it could not see, and does not now see, as, upon touching the eye, it evinces no feeling. There is a line indicating where the mouth would have been, had it not been confined; but the mouth has never been opened. Several deformities were also observable; and the spine, which has been forced to develop itself in angular form, appears a sufficient proof of its having grown in very confined space, even if the hollow in the shale, by corresponding to the shape of the back, did not place the matter beyond a reasonable doubt. The frog continues to increase in size and weight, though no food can be given to it; and its vitality is preserved only by breathing through the thin skin covering the lower jaw. Mr. W. Ellis, with a view of giving his prize as much publicity as possible, has deposited it at the New Inn, Merthyr, where it is exhibited as "the greatest wonder in the world—a frog found in a stone forty-five feet from the surface of the earth, where it has been living without food for the last 5000 years!"—*Chambers' Journal*.

DESCENT IN A DIVING BELL.

The Bunker Hill Aurora, states that Capt. Taylor afforded a highly interesting exhibition, on board the Spitfire, while lying near the Navy Yard a short time ago. A number of gentlemen had been invited on board, and about fifty were present, including Commodore Nicholson, Collector Morton, Mr. Parmenter, Capt Sturgis, Hon. Benjamin Thompson, and others. One of Capt. Taylor's men first went down in the sub-

marine armor and explored the bottom for some time, being fully supplied with air from the air-pumps. After he was drawn up, Capt. Taylor taking a friend with him, went down in one of his new copper Diving Bells, which he had just been making for the government. They descended to the depth of about forty-five feet, and remained on the bottom about half an hour. While there they sent up a message, written on a piece of board, for a bottle of Porter, which came down, with a corkscrew and tumbler, and each gentleman "took a drink." At one time there was about a foot of water in the bell while Captain Taylor permitted the air to escape at the top of the bell so as to keep it fresh; by turning the stopcock, the air was condensed, and the water expelled to within an inch of the rim of the bell. The experiment was completely successful and highly satisfactory. A strong tide was running, but the bell was so constructed that it was but slightly affected by it. The bottom was thoroughly explored, for a circumference of twenty feet around the spot where the bell descended. Various kinds of fish were seen and could have been taken with a spear. The atmosphere inside the bell was warm, but the heat was not oppressive or disagreeable. In descending, the pressure of the air on the tympanums of the ears was rather painful; but this was obviated as soon as the system became adjusted to the pressure. While at the bottom the sensations were pleasant and rather exhilarating. The bell appears to us to be a most perfect apparatus, and to possess many advantages over all others which have heretofore been used.—*Literary Messenger*.

GREAT DISCOVERY IN ILLUMINATING AND MOTIVE POWER.—The *Railway Times* has the following:—"The decomposition of water has at length been obtained, and that at a merely nominal cost, and with unerring precision. This great discovery originating in America, has been perfected by the experiments of an eminent German chemist, and patented in the three kingdoms by Mr. Shepard. The carburetted hydrogen may be formed to any extent, which, while possessing an illuminating power, equal to that of coal gas, is capable of being itself applied to the same purposes as steam at a remarkably high pressure. The gas is also capable of producing an amount of caloric equal to that of live coal, and consequently well and cheaply fitted to act as a combustible agent in the conversion of water into steam. This tremendous power has been for some time engaging the attention of our most eminent engineers, and will, when sufficiently tested, be experimented upon before the public. If successful, as there is every appearance of its being, the revolution it must effect in the economic working of railways, and indeed in every branch of trade and manufacture where steam is employed as a motive power, is altogether incalculable. It almost opens to the wondering gaze the Utopian vista in which unskilled manual labor shall be no longer necessary. It is sufficient for us, however, to state that several leading railway companies are in treaty with the patentee; and that, consequently, if anything whatever is capable of being made out of the discovery, the railway interest will possess at once the first benefit and chief honor in its realization."

HEATING BY STEAM.—This is by no means a modern invention. In 1745, Col. William Cook improved upon a plan of heating hothouses, suggested by Sir Hugh Platt, many years before, and in 1755, we find him recommending it as applicable for the forcing of fruit.—*Nor.h-British Agriculturist*.

IMPORTANT TO TANNERS OF LEATHER.—Henry W. Ellsworth, Esq., says the *Lafayette Journal*, has shown us several specimens of leather, which were tanned under his own eyes, in the space of ten minutes, by a process of which Marion Hibbard, of Rochester, New York, is the inventor.—This statement may seem almost incredible, when it is considered that six, eight or ten months are required by the ordinary process.

Mr. Ellsworth has in his possession a pair of boots and a pair of shoes made from a raw hide tanned in less than a day and a half, by his new process. The leather is tanned by a compound of chemicals, and in time and materials is a saving of at least five hundred per cent. over the present slow method of making leather.

The right, says the *Journal*, for Connecticut and Massachusetts was sold for \$500,000; Ohio for \$150,000. This undoubtedly is one of the greatest improvements of the age.

MAKE YOUR OWN CANDLES.—Take twelve ounces of alum for every ten pounds of tallow, dissolve it in water before the tallow is put in, and then melt the tallow in the alum water with frequent stirring and it will clarify and harden the tallow, so as to make a most beautiful article, for either summer or winter use, almost as good as sperm.

If the wick be dipped in spirit of turpentine, the candles will reflect a much more brilliant light.—*American Farmer*.

PHENOMENA ATTENDANT ON IMMERSING THE HANDS IN MOLTEN METAL.—M. Corne, in a paper submitted to the Paris Academy of Sciences, says:

"Having determined on investigating the question whether the employment of liquid sulphurous acid for moistening the hands, would produce a sensation of coldness, when they are immersed in the melted metal, I jammed my hands, previously moistened with sulphurous acid, in the melted lead, and experienced a sensation of decided cold. I repeated the experiment of immersing the hand in the melted lead and in fused cast iron. Before experimenting with the melted iron, I placed a stick previously moistened with water in the stream of liquid metal, and on withdrawing it, found it to be almost as wet as it was before; scarcely any of the moisture was evaporated. The moment a dry piece of wood was placed in contact with the molten metal, combustion took place. M. Covlet and I then dipped our hands in to vessels of the liquid metal, and passed our fingers several times backwards and forwards through a stream of metal flowing from the turnace; the heat from the radiation of the fused metal being at the same time almost unbearable.—We varied these experiments for upwards of two hours, and Madame Covlet, who assisted at these experiments, permitted her child, a girl of nine years of age, to dip her hand in a crucible of red hot metal with impunity. We experimented on the melted iron both with our hands quite dry and when moistened with water, alcohol and ether. The same results were obtained as with molten lead, and each of us experienced a sensation of cold when employing sulphurous acid."

Literature, &c.

THE USEFUL AND THE BEAUTIFUL.

The tomb of Moses is unknown; but the traveller slakes his thirst at the well of Jacob. The gorgeous palace of the wisest and wealthiest of monarchs, with the cedar, and gold, and ivory; and even the great temple of Jerusalem, hallowed by the visible glory of the Deity himself—are gone; but Solomon's reservoirs are as perfect as ever. Of the ancient architecture of the Holy City not one stone is left upon another; but the pool of Bethesda commands the pilgrim's reverence at the present day. The columns of Persepolis are mouldering into dust; but its cisterns and aqueducts remain to challenge our admiration. The golden house of Nero is a mass of ruins; but the Aqua Claudia still pours into Rome its limpid stream. The temple of the sun at Tadmor, in the wilderness, has fallen; but its fountain sparkles as freshly in his rays, as when thousands of worshipers thronged its lofty colonnades. It may be that London will share the fate of Babylon, and nothing be left to mark its site save mounds of crumbling brick-work. The Thames will continue to flow as it does now. And if any work of art should still rise over the deep ocean of time, we may well believe that it will be neither a palace nor a temple, but some vast aqueduct or reservoir; and if any name should still flash through the mist of antiquity, it will probably be that of the man who in his day sought the happiness of his fellow men rather than their glory, and linked his memory to some great work of national utility and benevolence. This is the true glory which outlives all others, and shines with undying lustre from generation to generation—imparting to works something of its own immortality, and is some degree rescuing them from the ruin which overtakes the ordinary monuments of historical tradition or mere magnificence.—*Edinburgh Review*.

FATAL SOOTHING SYRUPS.

CAUTION TO MOTHERS.—Indisputable facts prove the extent to which this system is adopted. Walking about Manchester and Birmingham, advertisements of "Mothers' quietness," "Soothing Syrup," arrest the attention at every turn. It is easy to observe that the druggists are driving a good trade—that the quiet homes of the poor are reeking with narcotics. The report of the Board of Health furnishes some appalling facts on this head. In Preston, twenty-one druggist sold, within the space of one week, no less a quantity than sixty eight pounds of narcotics, nearly all of which were for the use of children; and the calculation of the quantity of Godfrey's cordial sold in Preston, gave a weekly allowance of half an ounce to each family! Generally, Godfrey's cordial is mixed in the proportion of one ounce and a half or pure laudanum to the quart, and the stronger it is the faster it is sold. It may be had at general dealers as well as at

druggists; and on market days the people from the surrounding neighborhoods regularly provide themselves with this "mothers' comfort," as they purchase other household provisions. About two thousand gallons of Godfrey's Cordial are sold in Manchester alone every year. Mr. F. C. Calvert, at a recent meeting at Manchester, stated that in one chemist's shop in Deansgate, two hundred and fifty gallons were sold in the course of a year; the same quantity in a shop; one hundred gallons in another; the same quantity in a shop in Hulme, and twenty-five gallons each in two shops in Chorlton-on-Medlock. These nurses to whom the children of the factory people are entrusted, are either laundresses or superannuated crones. The more they drug the children entrusted to them, the greater number they can undertake to manage. This consideration acts as a powerful incentive to drug. That wholesale death is the result, is fully proved. Among the gentry in Preston, for instance, the average number of deaths of children under five years old, was 17 per cent.; among tradesmen, about 38 per cent.; and among operatives 54 per cent. Of every one hundred children born among the gentry, ninety-one reach their first year; eighty among the trading classes, and sixty-eight among the operatives. The vital statistics of Preston for six years, shows that no less than three thousand and thirty-four children were swept away before they had attained their fifth year, who, had they been the offspring of wealthy parents, would have survived that period of their childhood."—*Dickens' Household Words.*

Our Fashionable Girls.

Mrs. Swisshelm, of the Pittsburgh Saturday Visitor gives the following matter-of-fact information in one of her admirable "letters to country girls:"

"There are hundreds of girls in every large city who parade the streets, in feathers, flowers, silks and laces, whose hands are soft and white as uselessness can make them, whose mothers keep boarders to get a living for their daughters. These mothers will cook, sweep, wait at table, carry loads of marketing, do the most menial drudgery toil late and early with very little more clothing than would be allowed to a southern slave, while their hopeful daughters spend their mornings lounging in bed, reading some silly book, taking lessons in music and French, fixing finery, and the like.

"The evenings are devoted to dressing, displaying their charms and accomplishments to the best advantage, for the wonderment and admiration of the knights of the yard-stick and young aspirants for professional honors—doctors without patients, lawyers without clients—who are as brainless and soulless as themselves. After a while the piano sounding simpleton captivates a tape-measuring, law-expounding, or pill making simpleton. The two ninnies spend every cent that can be raised by hook or crook—get all that can be got on credit in broadcloth, satin, flowers, lace, carriage, attendance, &c.—hang their empty pockets on somebody's chair, lay their empty heads on somebody's pillows, and commence their empty life with no other prospect than living at somebody's expense—with no higher purpose than living genteelly and spiting their

neighbors. This is a synopsis of the lives of thousands of street and ball-room belles, perhaps of some whose shining costume you have envied from a passing glance.

"Thousands of women in cities dress elegantly on the streets, who have not had a sufficiency of wholesome food, a comfortable bed, or fire enough to warm their rooms. I once boarded in a "genteel boarding house" in Louisville. There were two young ladies and a piano in the house; halls and parlors handsomely furnished. The eldest young lady, the belle, wore a summer bonnet at ten dollars, a silk and blonde concern that could not last more than two or three months; silk and satin dresses at two, three or four dollars per yard, and ten dollars a piece for making them, and the entire family women, boys and babbies, nine in all, slept in one room, with two dirty bags of pine savings two straw bolsters, and three dirty quilts for bedding; no sheets, no slips, and there on the wall hung the pea green and white satin, the rich silk and lawn dresses.

"These ladies did not work, but played the piano, accordeon and cards; and nearly broke their hearts the week before we were there because another, who I presumed lived just as they did, called on them with a great, clumsy gold chain on her neck. None of them had one, and Miss Labalinda, the belle, could eat no supper, and had a bad fit or sulks to console her for want of a chain. But, dear me, I had no notion of running away off here. I was just thinking how busy you country girls are apt to be in the fall, and this led me to think what a blessing it is that you have something to do and that you think it a disgrace to live idly. It is a greater blessing to live in the country where it is a credit to work, for idleness is the parent of vice and misery. So do not get weary or think your lot a hard one when putting up pickles or preserves, apples, butter, sausages and sauces for future use.

Lake of Alligators in Scinde.

This curious place is about eight miles from Kurachee, and is well worth inspecting by all who are fond of the monstrous and grotesque. A moderate ride through a sandy and sterile tract, varied with a few patches of jungle, brings on to a grove of tamarind trees, hid in the bosom of which are the grisly brood of monsters. Little would one ignorant of the locale suspect that under that green wood in that tiny pool, which an active leaper could half spring across, such hideous denizens are concealed. "Here is the pool," I said to my guide rather contemptuously, "but where are the alligators? At the same time I was stalking on very boldly with head erect, and rather inclined to flout the whole affair, *à la adonco*. A sudden hoarse roar or bark, however under my very feet, made me execute a pirouette in the air with extraordinary adroitness, and perhaps with more animation than grace. I had almost stepped on a young crocodilian imp, about three feet long, whose bite, small as he was, would have been the reverse of pleasant. Presently the genius of the place made his appearance in the shape of wizard looking old Falcer who, on my presenting him with a couple of rupees, produced his wand—in other words, a long pole, and then proceeded to "call up his spiiits." On his shouting "Ao! ao!" "Come! Come!" two or three times, the water suddenly became alive with monsters. At last three score huge alligators, some of them fifteen feet in length, made their appearance, and came thronging to the shore. The whole scene reminded me of fairy tales. The solitary wood, the pool

with its strange inmates, the Fakcer's lonely hut on the hill-side, the Fakcer himself, tall, swart and gaunt, the robber-looking Belochce by my side, made up a fantastic picture. Strange, too, the control our showman displayed over his "lions." On motioning with the pole, they stopped (indeed they had arrived at a very disagreeable propinquity), and on his calling out "Bait-tho," "Sit down," they lay flat on their stomachs, grinning horrible obedience with their open and expectant jaws. Some large pieces of flesh were thrown to them, and to get which they struggled writhed, and fought, and tore the flesh into shreds and giblets. I was amused with the respect the smaller ones had to their overgrown seniors. One fellow, about ten feet long, was walking up to this feeding ground from the water, when he caught a glimpse of another much larger just behind him. It was odd to see the frightened look with which he sidled out of the way evidently expecting to lose half his tale before he could effect his retreat. At a short distance, perhaps half a mile, from the first pool I was shown another, in which the water was as warm as one could bear it for complete immersion, yet even here I saw some small alligators. The Fakcer told me these brutes were very numerous in the river, about fifteen or twenty miles to the west. The monarch of the place, an enormous alligator, to which the Fakcer has given the name of "Mor Shaeb," "Lord Mor," never obeyed the call to come out. As I walked around the pool I was shown where he lay, with his head above water immovable as a log, and for which I should have mistaken him but for his small savage eyes, which glittered so that they seemed to emit sparks. He was the Fakcer said, very fierce and dangerous, and at least twenty feet in length.—*Dry leaves of Young Egypt.*

SCENERY OF LAKE SUPERIOR—ISLE ROYALE.—The scenery of Lake Superior is, in many respects, different from, and better than any other in our country. Our Geological Corps are the only persons who have fully surveyed it. From their account, there is much in the scenery and atmosphere of Lake Superior which should attract the attention of travellers in search of pleasure and novelty.

The following description of Isle Royale is from the pen of Dr. Jackson, late United States Geologist:

Isle Royale is a most interesting Island, singularly formed, cut up into deep bays, and sending out long spits of rocks into the lake at its north-eastern extremity, while at its south-western end it shelves off far into the lake, presenting slightly inclined beds of red sandstone, the tabular sheets of which, for miles from the coast, are barely covered with water, and offer dangerous shoals and reefs, on which vessels and even boats would be quickly stranded if they endeavor to pass near that shore. How different is the coast on that portion of the Island where the rocks are of igneous origin. Bold cliffs of columnar trap and castellated rocks, with mural escarpments, sternly presenting themselves to the surf, and defy the storms. The waters of the lake are deep close to their very shores, and the largest ship might in many places lie close to the rocks as at an artificial pier. The color of the water affected by the hues of the sky, and holding no sediment to dim its transparency, presents deeper tints of blue, green and red prevailing, according to the color of the sky and clouds.

I have seen at sunset the surface of the lake off Isle Royale of a deep claret color—a tint much richer than ever is reflected from the waters of other lakes, or in any other country I have visited. Added to the fantastic irregularities of the coast and its castle-like Islands

—the abrupt elevation of the hills inland rising like almost perpendicular walls from the shores of the numerous beautiful lakes which are scattered through the interior of the Island and corresponding with the finest of the mountain upheaved—we observe occasionally rude crags detached from the main body of the mountains, and in one place two lofty twin towers, standing on a hill-side, and rising perpendicular, like huge chimneys, to the elevation of 70 feet, while they are surrounded by deep green foliage of the primeval forest. I requested my assistant (Mr. Foster), to make a sketch of these singular towers while I was engaged in measuring their height.

Not less strange and fantastic are the effects of mirage on the appearance of the peculiar scenery of this Island, and the coast of the lakes seen from it. For weeks in summer, the traveller may be gratified by a view of the most curious phantasmagora—images of the Island and mountains being most vividly represented, in all their outlines and their tufts of evergreen trees all inverted in the air and hanging over the terrestrial originals, and again repeated upright in another picture directly over the inverted reflection.

THE TRULY GREAT.—It is not improbable that the noblest human beings are to be found in the least favoured conditions of society, among those whose names are never uttered beyond the narrow circle in which they toil and suffer, who have but "two mites" to give away, who have perhaps not even that, but who "desires to be fed with the crumbs which fall from the rich man's table;" for in this class may be found those who have withstood the severest temptations, who have practiced the most arduous duties, who have confided in God under the heaviest trials, who have been most wronged and have forgiven most; and these are the great, the exalted. It matters nothing what the particular duties are to which the individual is called, how minute or obscure in their outward form. Greatness in God's sight, lies not in the extent of the sphere which is filled, or of the effect which is produced, but altogether in the power of virtue in the soul, in the energy with which God's will is chosen, which trial is borne, and goodness loved and pursued.—*Rev. Dr. Channing.*

ENERGY.—Energy is omnipotent. The clouds that surround the houseless boy of to-day are dispersed, and he is invited to a palace. It is a work of energy. The child who is a beggar one moment, in a few years to come, may stand forth the admiration of angels. Who has not seen the life-giving power of energy? It makes the wilderness to bloom like the rose; navigates our rivers; whitens the ocean; levels mountains; paves with iron a highway from State to State; and sends through, with the speed of lightning, intelligence from one extremity of the land to the other. Without energy what is man?

TEMPER.—Bad temper is oftener the result of unhappy circumstances than of an unhappy organization; it frequently, however, has a physical cause, and a peevish child often needs dieting more than correcting. Some children are more prone to show temper than others, and sometimes on account of qualities which are valuable in themselves. For instance, a child of active temperament, sensitive feeling and eager purpose is more likely to get into constant jars and rubs, than a dull passive child, and, if he is of an open nature, his inward irritation is immediately shown in bursts of passion. If you repress these ebullitions by scolding and punishment, you only increase the evil,

by changing passion into sulkiness. A cheerful good-tempered tone of your own, a sympathy with his trouble arising from no ill conduct on his part, are the best antidotes; but it would be better still to prevent beforehand, as much as possible, all sources of annoyance. Never fear spoiling children by making them too happy. Happiness is the atmosphere wherein all good affections grow, the wholesome warmth necessary to make the heart blood circulate healthily and freely; unhappiness the chilling pressure which produces here an inflammation, there an excrescence, and, worst of all, "the mind's green and yellow sickness—ill temper."—*Education of the feelings, by Charles Bray.*

EFFECTS OF HABIT ON THE INFANT MIND.—I trust every thing to habit—habit, upon which, in all ages, the lawgiver, as well as the school-master, has mainly placed his reliance; habit, which makes every thing easy, and casts all difficulties upon the deviation from the wonted course. Make sobriety a habit, and intemperance will be hateful and hard;—make prudence a habit, and reckless profligacy will be as contrary to the nature of the child grown an adult, as the most atrocious crimes are to any of your lordships.—Give a child the habit of sacredly regarding the truth, of carefully respecting the property of others, of scrupulously abstaining from all acts of improvidence which can involve him in distress, and he will just as likely think of rushing into an element in which he cannot breathe, as of lying, or cheating, or stealing.—*Lord Brougham.*

NOBLE SENTIMENT.—I envy no quality of mind or intellect in others—not genius, power, wit or fancy; but if I could choose what would be most delightful, and I believe most useful to me, I should prefer a firm religious belief to every other blessing, for it makes life a discipline of goodness, creates new hopes when all earthly hopes vanish, and throws over the decay, the destruction of existence, the most gorgeous of all lights; awakens life even in death, and from corruption and decay calls up beauty and divinity; makes an instrument of torture and of shame, the ladder of ascent to paradise; and far above all combinations of earthly hopes, calls up the most delightful visions, palms, and amarantus, the gardens of the blessed; the security of everlasting joys, where the sensualist as a sceptic view only gloom, decay, and annihilation.—*Sir Humphrey Davy.*

THE AFFECTIONS.—There is a famous passage in the writings of Rousseau, that great delineator of the human heart, which is as true to human nature as it is beautiful in expression: "Were I in a desert I would find out, where within it to call forth my affections.—If I could do no better, I would fasten them on some sweet myrtle, or on some melancholy cypress to connect myself to; I would court them for their shade, would write my name upon and declare that they were the sweetest trees through all the desert. If their leaves withered, I would teach myself to mourn, and when they rejoiced I would rejoice along with them." Such is the absolute necessity which exists in the human heart of having something to love. Unless the affections have an object, life itself becomes joyless and insipid. The affections have this peculiarity, that they are not so much the means of happiness as their exercise is happiness itself. And not only so, if they have no object, the happiness derived from our other powers is cut off. Action and enterprise flag, if their be no object dear to the heart, to which those actions can be directed.

Editor's Notices, &c.

PROVINCIAL AGRICULTURAL ASSOCIATION.

We have much pleasure in directing the attention of our readers to the Address, which will be found in another page, of the Committee of the Johnstown District Agricultural Society. We trust, for the credit of the country, that its earnest and hopeful spirit, will be generously responded to by all classes of our Canadian community.—The prospect of the next Exhibition, to be held at Brockville, is so far quite cheering. The town and county will raise £500 towards the funds of the Show, and we are happy to learn that a zealous spirit to excel, is actuating the principal inhabitants of the locality. In addition to donations previously announced in the *Agriculturist*, we have now to mention one of £10, from the Counties of Lanark and Renfrew Agricultural Society, and £12 10 from the Gore District Society. Active preparations are about being made, particulars of which, together with the Prizo List, we may probably give in our next publication.

The Prizo offered by the Johnstown Society for the best Essay on Agriculture, evinces a discriminating liberality; and we think the Committee have acted wisely, in confining the competition to persons *exclusively* engaged in practical agriculture. Farmers of Canada, try your pens in expounding the true principles of the noble science, which you have acquired by experience; upon the advancement of which mainly depend, the prosperity and happiness of your country.

AGRICULTURAL SOCIETY OF PRESCOTT AND RUSSELL.

Mr. Sheriff Treadwell informs us that a Depot for Agricultural seeds, implements, &c., has been commenced at 1st Original, for the benefit of the farmers in these Counties. The enterprise is of a private or individual character, but it will receive, as it deserves to do, the patronage of the Agricultural Society; with which the idea originated. Similar arrangements might easily be made in different sections of the country, to the great convenience and advantage of farmers, and to the furtherance of their necessary and important art. We shall be glad to hear of the example being generally followed.

CANADA; PAST, PRESENT AND FUTURE. BY W H SMITH. TORONTO: THOS. MACLEAR.

The third part of this useful work is before us. It comprises a minute description of Wentworth and Halton, commences the County of York, and contains a neatly executed map of Middlesex, Oxford and Norfolk. The Directory appended to each County will be found peculiarly useful to the man of business; while the general reader will find much to interest and amuse in other portions of this instructive publication; which cannot fail to become a standard work, in reference to all the important characteristics of Upper Canada. We are glad to hear that it has already obtained, as it justly deserves, an extensive circulation.

PLOUGHING MATCH.—We understand that a match for £100 (£50 a side) between the townships of Vaughan and Markham, is to come off at Mr. George Miller's farm, 9th Concession of Markham, on Friday, April 25th. A keen competition is expected.—*Patriot.*

DOMESTIC ANIMALS AT AUCTION.

THE postponed yearly sale of FULL BRED SHORT-HORNS and IMPROVED DIARY STOCK, consisting of about fifty head, will come off at my farm on Tuesday, June 24, 1851 at 12 o'clock. M. I shall sell all the improved Dairy Stock which is composed of the finest Short-Horn, with a slight cross of Amsterdam Dutch, which some writers say was part of the original ingredient which composed the improved Short Horns.

I am now breeding the Short-Horns, Devons, and Ayrshires, each separately and pure, which owing to the limits of my farm, make it necessary to confine myself to those three breeds. By the awards of the State Agricultural Society, the American Institute, and my own country Society, [with the exception of last year, when I was not a competitor at either,] it will fully appear that I have been a very successful exhibitor. The cow which won the FIRST PRIZE as a milker, at the American Institute last year, was bred by me, and composed of the above alluded to Dairy Stock. Several of the Bulls will be of the most appropriate age for efficient service for the coming season. All cows and Heifers old enough, will be warranted in calf at the day of sale, by my imported Bull "the Lord Eryholme," or my celebrated Bull "Lamar-tine."

I own two through bred Devon Bulls: one the celebrated old Major, the other, one and a half years old imported by me from Devonshire. One of the above animals will be sold—which one, I have not as yet determined.

A full catalogue, with the pedigree of each animal, will be published in due time, with minute description of sale, &c.

I also have a number of Suffolk Sows, in pig to my imported Boar, most of the progeny of which will be old enough to dispose of on that day.

I also have about 20 South Down Ewes, most of which I imported from the flock of Jonas Webb, and now in lamb to imported Buck "Babraham." Some of their Buck Lambs will be offered at auction on that day.

This sale will not only offer an opportunity to obtain Stock from my previous Herd, but will also enable persons to procure calves from my imported Bull, lambs from my imported Ram, and pigs from my imported Boar—all of which animals were recently selected by me in person, when in England.

The mode of warranting the Cows and Heifers in calf, is this: in case they prove not to be so, it shall be optional with the purchaser, on his certificate of the fact, either to receive from me \$25 (ay twenty-five dollars,) or to send the cow to my farm, and I will keep her the proper time (free of expense) to have her got in calf to either of my Bulls, which he shall choose. I will give \$25 for any heifer calf from either of the Cows or Heifers sold at the sale, delivered on my farm at two weeks old.

Stock purchased to be sent a distance, will be delivered on ship-board or railroad in the city of New York, free of risk or expense to the purchaser.

Persons living at the south, in a climate to which it would not be well that stock should not be transported, at that hot season of the year, may let such animals as they may purchase, remain with me until the proper season, and I will have them well taken care of, and charge only a reasonable price for their keep. One of my objects in breeding improved domestic animals, is to assist in distributing throughout the Union, deeming it one, if not the most important feature to promote profit to the cultivating of the soil, and to benefit the consuming country at large.

All communications through the Post please prepay, and I will prepay their answers, and also a Catalogue if required. Catalogues will be to be had at all the principal Agricultural Warehouses and offices of the principal Agricultural Journals, on and after the 1st day of June next.

Persons wishing to view the stock at any time will find my superintendant, Mr. Wilkinson, to give them the desired information when I am not at home.

Dated this 4th day of March, 1851 at Mount Fordham, Westchester County, eight miles from the City of New York, by Harlem Railroad.

April 2.—3t

L. G. MORRIS.

GREAT SALE OF SUPERIOR THOROUGH BRED SHORT HORN CATTLE.

The subscriber having more stock, than he can well sustain on his farm, will offer at public Auction about 30 head of his improved short horn cattle, consisting of Bulls, Cows, Heifers and Heifer and Bull Calves, on the 26th day of June next, at his farm 2½ miles from the City of Troy.

It is known to breeders of improved Stock, in this country, and in Canada, that the proprietor of this herd, during the past 12 years, has through the medium of importations, from England, and selections from the best herds in this country, spared no expense to rear a herd of Cattle from which superior animals could be safely drawn, for improvement and crosses upon other herds. His importations have been derived from that eminent breeder, the late Thomas Bates, Esq. of Kirkcaldington Yorkshire, England, which herd it is well known has recently been disposed of at public sale by his administrators, and dispersed in many hands, and can no longer be resorted to as a whole for improvement. The announcement of that sale created great interest, and all short horn breeders in England seemed emulous to secure one or more of these animals, to mingle with the blood of their own herds, and at the day of sale, there was found assembled the largest audience ever before witnessed upon a similar occasion, numbering as was said from 4000 to 5000 persons, and among them the best breeders in England, and several from other countries, some of the animals bringing prices that seemed incredible to many.

In the herd now offered for sale will be included, the Imported Bull Duke of Wellington, and the premium Full Meteor, these are Bates's Bulls, and their reputation as stock getters are too well known, to need any comment. I am however authorized by Lewis F. Allen of Black Rock, one of the most prominent breeders in this country, and who has had ample means of forming a judgment, that in no instance to his knowledge had these two Bulls been bred to short horn Cows of other herds, previously imported into the United States but what the produce were superior in general qualities to such herds.

The most of the stock which is now offered for sale, has been bred from these two Bulls and the proprietor, having a young Bull more remotely connected with that portion of the herd, he retains (being about 14 in number) can spare these two valuable Bulls. There will be in the stock offered for sale, 6 young Bulls from 8 months to about 2 years old, in addition to the two named above, and the remainder of the stock will be composed of Cows, (most of them possessed of extraordinary milking qualities) Heifer and Heifer Calves. It is believed that no herd of short horns has ever been offered for sale in this country, exhibiting more of the valuable combinations of qualities which contribute to make up perfect animals. A catalogue containing the pedigrees of these animals, will be ready for delivery at an early period in which the terms of the sale will be particularly stated. A credit will be given from 6 to 8 months. Gentlemen are invited to examine the herd at their convenience.

GEORGE VAIL.

Troy, near Albany, New York.