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THE

ONTARIO FARMER;

A MONTHLY JOURNAL OF

Agriculture, Horticulture, Country Life, Emigration, and the Mechanic Arts.

VOL. I. TORONTO, MARCH, 1869. No. 3.

REPORT OF THE COMMISSIONER OF AGRICULTURE AND ARTS OF THE PROVINCE OF ONTARIO, FOR THE YEAR 1868.

We have before us the first annual report of the Hon. John Carling, Commissioner of Agriculture and Arts, published by order of the Legislative Assembly of Ontario. It is a goodly-looking octavo of nearly 300 pages, and comprises a synopsis of the Returns from the Agricultural Societies of the Province for 1867, and most valuable information in relation to Agriculture and Horticulture for 1868.

The volume commences with the Commissioner's Report to His Excellency the Lieutenant-Governor, in which a brief and succinct account is given of the organization of his department, and the important charges affecting Agricultural and Horticultural Societies and Mechanics' Institutes by the new Agricultural Statute. It will be seen by the attentive reader that a fresh and salutary impetus has been given to the most important industries of the Province, and to the special enlightenment of the great classes engaged in the pursuits of Agriculture and Horticulture, and the Mechanical and Manufacturing Arts.

The Commissioner's concluding remarks, form an admirable summary of the Report. They scarcely admit of abridgment, and will, we are sure, be read with much interest.

"In reference to the results of the present year's crops, in the Province of Ontario, it is difficult to form an estimate that will apply to all sections of the country; since, in so wide an area, considerable differences obtain.

"From an analysis of the reports forwarded to my department by the Electoral Division Societies, I indulge the hope that, when prices are taken into consideration, our farmers' receipts in a pecuniary point of view will not fall below an average of years. Considering the length and intensity of the drought, with which we, in common with many countries of Europe, were visited, there is reason for us to be thankful to an All-gracious Providence for the degree of success which has crowned the labors of the husbandman.

"It is a source of regret, that the enterprise so much encouraged among us for the past few years, of growing flax, and preparing it for market, has not met with the success that was anticipated. The great reduction in the price of cotton, consequent on the termination of the American civil war, will in a great measure account for this result. Notwithstanding, it would be undesirable for our farmers to abandon altogether the culture of this important plant. Markets will probably somewhat improve, and the seed alone is of very great value for feeding stock.

"Greater attention, I have been assured, is now being paid by farmers in the older settled districts to improved systems of cropping, adapted to their respective soils and localities; and also to a more economical management and application of farm yard manure, the waste of which has been, and still is—in too many instances—a source of great loss, and a stigma on Canadian farming.

"We are not yet, it is true, sufficiently advanced in this new country to adopt a rigid system of rotation, as practised in older ones; but it is satisfactory to find increased and more enlightened attention being given to this important matter, and also to farm yard manure, which may justly be regarded as the Canadian farmer's sheet anchor.

"The increased value imparted of late years to live stock, cannot fail to act beneficially on arable culture. Farmers are now keeping more and better animals than formerly, feeding is more liberal, and consequently an increased amount of manure of better quality is made, and the arable land brought into a much better condition—particularly when subjected to a deeper and more thorough cultivation, for the production of grain. Draining, too, is receiving more attention, and its practice extending every year. Draining tiles of good quality and of moderate

prices are now being made by machinery, in many of the older settled parts of the Province, which presents a wide and remunerative field for the application of the art of draining, and which, in wet lands, forms the basis of all agricultural improvements.

"New and improved varieties of seeds are frequently enquired after by members of the agricultural societies, and I trust that means will speedily be provided for testing in a trustworthy manner all such as are at all likely to be suited to the soil, climate and markets of this Province; such operations, however, will necessarily involve time, caution and perseverance, and should be conducted at first on a comparatively small scale. To facilitate the changes of seeds of known and approved varieties, grown on different soils at considerable distance apart, is what appears at present to be most urgent and pressing.

"It is an encouraging fact that during the last year in particular, mowers and reapers and labour-saving implements have not only increased in the older districts, but have found their way into new ones, and into places where they were before practically unknown. This beneficial result has, no doubt, mainly arisen from the difficulty, or rather, in some cases, impossibility of getting labour at any price; but in consequence of the operations of Agricultural Societies, and the information so widely and cheaply diffused by the press, there is an increasing desire felt by farmers to avail themselves of the valuable aid of the mechanic, whose skill and enterprise will be found adequate to meet any increased demand of this nature that may arise.

"The working of Agricultural Societies under the new statute, during the year, has been on the whole as satisfactory as could be anticipated. It will take another year or two before the new system can be brought to anything approaching maturity. It is a matter deserving the earnest attention of such as have had a large experience in the management of our agricultural organizations, whether it would not be more advantageous for the interests of agriculture for two or more township societies to unite, at least occasionally, and hold but one exhibition. There is a prevalent feeling abroad that we have too many shows, and consequently a frittering away of means which might be otherwise more beneficially employed.

"From the returns sent to my Department, it it is gratifying to observe that several Township Societies, during the year, have expended considerable portions of their income in purchasing superior animals, with a view to improving their stock. The breeds of all kinds of stock have of late been steadily improving, and the Province owes a debt of gratitude to those enterprising men among us, who from time to time have imported animals of the best blood at great risk and expense. If such individuals have not in all cases received the full benefit to which their large expended capital justly entitled them, the country at large has shared greatly in the advantages.

"We live in an age remarkable for the application of scientific knowledge to the practical purposes of life.

"Agriculture has, in all countries, advanced more slowly than most of the other industrial arts, though it forms the foundation of the prosperity of them all. It is earnestly to be hoped that in the Dominion of Canada, and in the Province of Ontario in particular, our numerous Societies, so wisely and liberally fostered by the Legislature, will become more and more efficient in the discharge of their important functions, by availing themselves of all the light which the science and practice of other countries can impart, and consequently more efficacious for eliciting and diffusing a taste, among young men especially, for the study of such branches of physical science as have a direct application to the practice of their valuable art.

"The position of the Province to-day is a cause for patriotic congratulation. In almost every branch of industry, a steady progress is to be seen, and the aggregate wealth in the hands of the industrial classes is greater than it has been at any former period of our history.

"Farming in this Province should become, and with many it is fast becoming, every year less a mere matter of manual drudgery, and more an occupation where education and intelligence, earnest experiment and scientific research should assert their claims, and make themselves felt as a necessity to success. Farmers should realize that on the farm, quite as much as in any other sphere of life, the highest mental culture can find not simply the fullest exercise, but an ample reward."

There are several important appendices to the Report, notice of which we must reserve for a future issue.

COUNCIL OF THE PROVINCIAL AGRICULTURAL ASSOCIATION.

This body held its first meeting on Wednesday, February 24th, in the Agricultural building, Toronto. As some of the members had not arrived on that day, owing to detention of trains, adjournment was had until Thursday. On proceeding to business, Mr. E. Mallory, of Napanee, was appointed President, and Mr. L. E. Shipley, of Falkirk, Vice-President. Mr. Geo. Graham, of Brampton, was elected Treasurer at a salary of $400 per annum, without after-claps, per centages, or "casual advantages." A motion by Mr. Cowan that it is advisable to appoint a new Secretary was lost, and Mr. Hugh C. Thomson retained in office. It was resolved to keep the funds of the Association in the Bank of British North America; and to take security of the Treasurer to the amount of $30,000, himself

in $10,000, and four others in $5,000 each. Prof. Croft was appointed consulting chemist; Mr. A. Smith, veterinary surgeon and referee; Mr. J. Fleming, seedsman; Mr. W. A. Cooley, general superintendent of the Provincial Exhibition; Mr. J. E. Pell, superintendent of the arts and manufactures department; and Messrs. J. Fleming and W. H. Mills, superintendents of the grain, roots, and horticultural departments. The auditors' report was read, showing a balance of $14,283.87 remaining to be accounted for to the Association by its late treasurer, Mr. R. L. Denison. A mortgage payable in three months had been obtained securing this amount, less $5,138 claimed by Mr. Denison as per centage. An interview was had with Mr. Denison, which resulted in a prospect of litigation in enforcement of his per centage claim. If this takes place further investigation will be had of the accounts, a thing of which there is much need. A communication was read from the Solicitor of the Association giving it as his opinion that the mortgage, though a second, was ample security for the amount covered by it. It was ordered that a monthly statement should be made up by the Treasurer of the finances of the Association, and published in the agricultural journals of the province. A by-law was passed appointing the President, Messrs. Christie, Walton, Rykert, and Cowan an Executive Committee. It was agreed that the Annual Provincial Exhibition be held September 20–24.

The above is a brief summary of the business done by the Council, beside which there seems to have been much caucusing, altercation, and personality indulged in. Mr. Christie took occasion to reiterate his complaints as to the treatment the old Board had met with from the Commissioner of Agriculture and others. Mr. Denison evidently considered himself a much-abused individual, and there was extreme sensitiveness all round. No admission of short-coming was made, no further scrutiny of the old accounts provided for, but the predominant feeling seemed to be that it was a great shame so snug and nice an official nest had been stirred up. We much mistake public sentiment if all this high-toned justification and self-praise is allowed to pass unchallenged. Certainly the circumstances of the case do not sustain it. We can only say that our first impressions of the affair are confirmed. The funds of the Association have been very improperly dealt with by the late Treasurer, with the cognizance and complicity at least of the late President and Secretary. No satisfactory explanation or apology has been given, the whole thing has been huddled up as far as possible, censure dealt out to those who have sought to protect the public interest, and official responsibility evaded. Even those who at first sought to screen the old Board, are dissatisfied with the proceedings of the Council, and the end is not yet.

THE AGRICULTURAL ACCOUNTS.

Seeing that in a manner almost defiant, the fullest publicity and closest scrutiny have been challenged for the financial and other doings of the late Board of Agriculture, it may not be amiss to note a few things on which a little more light might be advantageously thrown, if those who have the means of illumination in their hands would condescend to use them for the purpose.

So far as we know, the public has never been informed on what grounds the late President and Secretary considered themselves justified in becoming parties to a note on which money was borrowed when the Treasurer's books showed a balance far exceeding the amount of that note. We desiderate from officers who court enquiry into their acts, a statement of reasons for making and several times renewing the note in question.

Inasmuch as the late Treasurer has evidently been in the habit of taking care that good money should not go unused, we confess to a little curiosity as to what amount of Association funds was actually in the hands of the Bank of Upper Canada at the date of its failure. Was the entire balance held by the Treasurer then on deposit? It was, to say the least, a strange and unlucky conjunction, if at that particular time and then only, the Treasurer's balance was in the bank.

If we take a look through the Parliamentary return of last session, several minor beauties in the accounts meet the eye. We cull one here and there:—

"Petty cash, H. C. Thomson, $36.10." Under the same head are such sums as "$45.02," and "$57.87," amounts which no business man would think of entering as "petty cash." "Petty cash" indeed! Most people would think such sums very considerable cash, and rightly.

"The fees paid 37 Judges in the Arts Department, say $148, have been inadvertently omitted from the accounts."

"Attending State Fair at Rochester, Thomas Stock $12, David Christie $25, R. L. Denison $26." Does it cost more than twice as much to entertain such gentlemen as Messrs. Christie and Denison, that it does a plain farmer like Mr. Stock?

"David Christie, expenses of self and Messrs. Burnham and Stone to Cattle Convention at Springfield, $300." It is a remarkable, though certainly not an impossible circumstance, that the travelling expenses of these delegates should amount exactly to the even and lump sum of "$300." Only one more item.

"Committee of Agricultural Society, liquor and cigars at Royal Hotel, $20.70." That "bangs Banagher." It must either have been a very large Committee, or it must have met a number of times, or the members must have been hard drinkers and great smokers. There is internal evidence that there was only one sitting of this Committee—it was held during Exhibition week—and the above entry follows almost immediately on this one, "Hotel bill for board and officers $266," a sum which itself leaves a trifle of margin for "liquor and cigars." Seriously, while we are not going to question any man's right to indulge in such superfluities, we do contend that if an Agricultural Committee wishes to guzzle and smok , it ought to do so at the private cost and charge of its members, and not at the public expense.

The fact is the accounts bear much internal evidence of extravagant expenditure and slovenly book-keeping, as well as great want of a conscientious sense of responsibility in the custody and use of the funds of a great public interest, and nobody knows how much longer this state of things might have gone on, had it not been for the timely and much-needed interference of the Commissioner of Agriculture.

THE APPLICATION OF SEWAGE.

The British Legislature having by statute prevented the future pollution of the natural watercourses of the country, by being made the receptacles of the contents of town sewage, or other contaminating matter, the question has arisen amongst corporation authorities as to the means to be devised to get rid of their sewage. Well, what can be done with it? If lakes, rivers, ponds, open drains, and cesspools are *not* to receive it, where is it to go? The natural answer is, into the land. To the land it belongs—it was originally taken from it; and no sufficient substitutes having been applied in its place, to the land it should be given back. How do we in Canada stand in relation to this subject? Have we no swamp in the City of Toronto contaminating the waters of our bay, from which the supply for the domestic uses of its inhabitants is drawn? Have we no poor farm and garden lands in its neighbourhood—naturally poor, but made more so by exhaustive cultivation for the purpose of supplying the city with its vegetable food; land famishing for want of the very sewage that now goes to pollute one of the prime necessaries of the citizens? If this is the case with Toronto, is it not, in its degree, equally applicable to other cities and towns in our Province and Dominion? Undoubtedly it is; and as the subject is now *forced* upon the attention of the British people, we may expect soon to hear of means being devised for its proper collection, conveyance, and distribution over the land. Already has much been said and written upon the subject, and successful experiments on a limited scale have been made. A pamphlet, by T. Cargill, C.E., has just been published by Robertson, Brownan, & Co., of the *Mechanic's Magazine*, 166 Fleet Street, London, on "Sewage and its General Application to Grass, Cereal and Root Crops; showing the results obtained by actual experience down to the present date with plans and sections illustrating the method of forming the ground for the different systems and for distributing the sewage over irrigated fields."

Our Dominion Government, also, has recently re-issued a pamphlet, by the Rev. Henry Moule of England, edited by E. A. Meridith, LL.D.

Under-Secretary of State for the Provinces, on "Earth Sewage *versus* Water Sewage; or National Health and Wealth instead of Disease and Waste." A supply of this publication has, we understand, been received by our local Government, and distributed to the Superintendents of the chief asylums, hospitals, and gaols in the Province, for their consideration and experiment.

This system not only puts night-soil sewage in a convenient and, we may almost say, clean form for removal, but in its daily application acts as a complete deodorizer of all fœcal matters; and where there is a sufficient quantity of land to furnish a constant supply of soil for drying, and a superabundance of unemployed labour to manipulate it, in connection with any institution, as is the case with the Toronto new gaol, there can be no difficulty in giving the system a fair trial. The health of all the employees and inmates would be benefitted, and a rich fertilizer for the land obtained for either farming or gardening purposes.

TORONTO HORTICULTURAL SOCIETY.

The Toronto Horticultural and Botanical Gardens Society held its annual meeting on Tuesday, Feb. 16, in the Mechanics' Institute, Toronto—the President, Hon. G. W. Allan, in the chair.

The minutes of the last meeting having been read and confirmed,

The Rev. E. Baldwin read the report, which showed that the sum of $157.90 had been added to the balance of $217.12, with which the past year was commenced, so that the Society begin this year with a balance on hand of $374.02, the gross receipts being $2,765.04, while the expenditure was $2,390.02.

After the adoption of the report, the following officers were elected:—

President—Hon. George W. Allan; 1st Vice-President, Mr. James Fleming; 2nd Vice-President, Mr. P. Armstrong; Corresponding Secretary, Mr. W. S. Lee; Recording Secretary, Mr. J. A. Simmers.

Directors—Rev. E. Baldwin, Messrs. T. D. Harris, George Leslie, sen., Professor Buckland, J. A. Simmers, George Vair, S. Platt, W. Ince, J. Paterson, J. Grey, F. W. Coate, J. Gibson, Isaac Gilmour, J. Forsyth and Alex. McNabb.

Auditors—Messrs. F. Small and G. W. Buckland.

TRANSFER OF COMMENDATION.

"Leicesterensis" is kind enough to inform us that his "commendatory letter" which appeared in the *Canada Farmer* of Jan., 15th, was written under the impression that we were going on in our former editorial position, and expresses the wish that we would transfer it to the columns of this journal, as more properly belonging to it. We are much obliged to him for the well-meant compliment, but the letter is the right thing in the right place, and it would be unfair to others who contributed materially to the efficiency of the *Canada Farmer*, for us to take all the praise of its great merit to ourselves. We shall be very glad to get "a commendatory letter" from "Leicesterensis" at the end of this year of grace, if he thinks we deserve one. Meantime, "honour to whom honour."

THE CHEMISTRY OF ODOURS.

On the evening of the 19th Jan., Mr. S. J. Lyman, of Montreal, delivered a lecture on the above topic before the Chemists' Association of that city. The *Daily News* of the 20th Jan. reports the lecture in full, and we should hope the Association had it printed in pamphlet form before the type was distributed. It is well worth preserving, and will repay any body's perusal, combining as it does, scientific accuracy with interesting facts, arrayed in a very pleasing word-dress. Only its length forbids our publication of it in full, and we may yet cull some extracts from it for our "Arts and Manufactures" department. Mr. Lyman has our thanks for his politeness in mailing us a copy of the *Daily News* containing his lecture.

EDITOR'S BOOK TABLE.

John A. Bruce & Co's., Descriptive Catalogue for 1869.—In this pamphlet, which is the same size as the Ontario Farmer, and contains 64 well-filled pages, the Messrs. Bruce advertise "things new and old" in the seed and nursery line. Their assortment is as usual very complete, and they are up to the times with all novelties, not forgetting the far-famed "Early Rose Potato." The Messrs. Bruce, send their Catalogue post-free to all applicants. Need we say their address is Hamilton, Ont.?

VICK'S ILLUSTRATED CATALOGUE AND FLORAL GUIDE, FOR 1869.—The completest and choicest thing of its kind we know of, published by that noted seedsman and florist, James Vick, of Rochester, N. Y., and sent by him to all applicants for 10 cents. It is worth four times that amount as a picture-book of choice flowers, and as much more for the practical directions it gives for cultivating flowers and vegetables. It is also worth twice its price as a guide where to find rare and choice seeds. We have thus made its value one dollar; and if it couldn't be got for less, it would be cheap at that price. Send and get it every body.

SUNSHINE AND SHADOW IN NEW YORK.—By Matthew Hale Smith, (Burleigh), 8vo., p.p. 718. We are indebted to Mr. Chauncey Loomis, agent, for a specimen copy of this work, which appears to give a very full and fair account of "Life in New York." It consists of a series of graphic sketches; contains a number of pen-pictures of representative men; is beautifully illustrated; and is on the whole, a most readable, interesting, useful book.

The Farm.

THE MONTH OF MARCH.

March is *par excellence* the uncertain month of the year. Enrobed in a white and stately mantle, or exposed in all the sombre nakedness of slumbering nature, this month, is now illustrative of the hoary majesty of winter, and anon puts on a maiden's coyness. The frosty sparkling day is followed by the cold cutting wind, and again stealing a march upon its successor she sounds the first notes of bright and joyous spring. The irrepressible weather prophet will, during this month, best show his wisdom by silence. Let him foretell a bright sun to-morrow and it rains all day, arrange a sleighing party to his neighbours and perchance he finds himself as the vulgar have it, "up to his eyes in mud."

The fitful changes of this month are the heralds of approaching spring, and the premonitory symptoms of the dissolution of winter's empire. The farmer who is wise will do well to take timely warning and prepare with energy to meet the exigencies of the coming seasons. The careful householder in town or country will no longer neglect to lay in a supply of ice. As long as our blood feels chilled by wintry blasts we have not a just appreciation of the value of natures' cooler, and are too often tardy in procuring that cheap and useful luxury. We will suppose that the farmer has taken advantage of the slack time in winter to cut his year's supply of firewood, and of the good sleighing to draw it to some spot convenient to the homestead. He has not, however, done his duty by the "women folk" until the fuel be cut, split and piled in the woodshed, and in sufficient quantity to supply the kitchen through the busy seasons. We know of no greater nuisance (and we must confess to the experience of it) than when everything is prepared upon a beautiful day in harvest, the men in the field, the horses hitched, and we are about to take the ribbons on the reaper to be implored to "please send a hand to cut some wood with which to cook dinner," or "if you don't give us some wood you'll have to go without your meals." There is nothing that more quickly sours the temper or makes life miserable than such petty vexations as these—vexations to the farmer, to his men and to his family.

The loss of some hours at a busy time when you are paying, perhaps, two dollars per day to your harvest hands is surely a poor recompense for the privilege of having taken your ease in March instead of providing for the future wants of the house. Neglect to forearm for the "rainy day" and you will encounter many; but the careful purveyor will not feel the "rainy day" whenever it may supervene. The farmer says, perhaps, "there are plenty of wet days during which we can do such odd chores." Our experience has not been such. We have always found plenty of work on such days to be done about the barns, repairing rakes, grinding machine knives, scythes, &c., visits to the blacksmith and the town, and various jobs of the season. Now is the time to get the tools in order and arranged so that at a minute's notice you may lay your hands upon them. Overhaul your implements. Your plough irons will require sharpening and straightening. If you put off your visit to the blacksmith until spring fairly opens you may lose a day's ploughing in loung-

ing about the smithy waiting for the attention of the smith to your wants. Get the lost bolts of last season replaced; get a clevis in lieu of the piece of chain that last year drew your plough, or the rope that fastened your double tree. In fine, *fix up* waggons, racks, ploughs, harrows, cultivators, horse-hoes, rollers, hand-hoes, horse-rakes, hand-rakes, scythes, cradles, reaping-machine, thrashing-machine, horsepower, &c. Make a special job of going through every implement. Each season has its especial duties for the farmer. There is a time for cultivation and a time of preparation; the two cannot be done together without confusion and loss of time. Now is the day of preparation. It may be a somewhat hackneyed proverb that "procrastination is the thief of time," but it stands as true to nature now as on the day when first uttered. The amount of time and labour saved by early preparation is inestimable. Then you have your cellars to clear out before the warm weather renders them an intolerable and stinking nuisance; your barn to get in order for the reception of grain and hay, and farmers will do well to plan early the arrangement of their barn room. Take time by the forelock and obtain your seeds early; select it carefully and store it in readiness for use when required. If you do not actually bring it home, know where you may obtain it. Many hours have been lost in the busy seeding time by farmers running to and fro for seed, and when found the chances are that it is bought because it is near at hand rather than for any superior qualities or adaptation to the requirements of your land.

Our space forbids us to enter into a more minute account of the several works of preparation which should occupy a farmer's time during this season of the year. For the same reason we must only mention that during this month we have generally a good share of the days most suitable to the maple sugar maker. One warning had almost slipped our memory. Be careful in the blustering month of March to keep all doors close shut; we have known the roof of a barn wrested from its support by one strong sudden gust of wind where the farmer had carelessly left, perhaps, half of his barn door unfastened. We would direct the attention of the reader to the great importance of putting his live stock well through this month. It is common to speak of the weakening influences of the spring weather upon cattle, but this depression is more often due to want of proper food and care than to the elements as controlled by nature. There is a class of farmers who think that if during the cold weather their animals can obtain shelter upon the lee side of a stack or shed it will suffice them, and following out such inhuman views, when spring begins to break, the poor creatures no longer allowed even a shelter, are sent forth to the open fields fetlock deep in slush, to swell out again their sunken flanks with a food which mother nature holds covered till a more congenial season.

In March the days are yet short and farmers have plenty of time in the evenings to themselves. Employ some of it in mapping out your summer's work, arrange the system upon which you propose to work each field in the coming seasons, weigh carefully each new plan and adapt your operations to the advantage of each crop, and the enriching of your farms. The consequences of such careful forethought will, depend upon it, bring wealth and prosperity to the industrious husbandman. Weigh carefully these counsels, and you will at least be strengthened in the opinion that preparation and progress must go hand in hand.

SAVE THE MANURE.

Farmers are not aware how much is wasted on their farms, that with little care and trouble might be made into valuable manure. Everything that can be decomposed, either in process of time, with the assistance of the elements, or by the aid of chemical agents, should be saved for the compost heap. Select some place in the barn-yard, or adjacent lot where it will be convenient of access, and there gather your compost, adding from time to time such solvents as may be necessary. Here bring all the weeds, sods, briars, thistles, &c., that you are compelled to dig and cut up through the summer, and add to these from time to time whatever you have of waste material, muck from the swamp, decayed fruits, potato vines, leaves, the deposit from the sink, &c., and at the close of the year you will be surprised at the size of your heap, and be able to see for yourselves how much is really wasted on your farms that might be turned to valuable account.—*Rural American.*

MAPLE SUGAR MAKING.

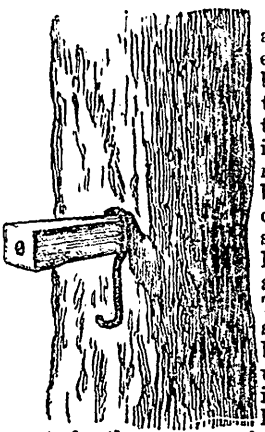
We propose to give a few hints and suggestions about Maple Sugar making, and to adapt them both to the new settler in the back woods who has only the rudest appliances for the business, and the well-to-do farmer who is able to avail himself of every convenience and improvement that money can purchase. In so doing, we shall re-produce part of an article on this subject which we wrote for the *Canada Farmer*, and which appeared in that journal under date of March 1, 1864. The "Country Parson" says a clergyman may safely repeat an old sermon once every three years, and perhaps after a lapse of five years, it may do to repeat an editorial.

We will suppose that a new settler in the woods has resolved to make sugar the present season. His first business will be to provide something in which to catch the sap. For this purpose let him take his axe and proceed to the bush, to make a sufficient quantity of troughs. He should choose trees of about a foot in diameter of some description of soft timber that will split freely and work easily, such as poplar, bass or cherry. On felling a tree of this kind, let him cut it into lengths of from two and a half to three feet. These must be split through the centre, and the blocks thus formed dug out with the axe and made of sufficient capacity to hold from one to two pails of sap. The troughs provided, spouts are wanted to conduct the sap from the tree to the trough. To make these, take some timber that splits well and saw or chop it into blocks about a foot in length. These must be split into thin narrow staves. This is best done with a crooked "frow," but our new settler may be obliged to use his axe. If so, a shallow groove must be cut on one side for the sap to run in, and one end of the spout must be sharpened to fit the incision to be made in the tree by the tapping iron. This tool is about a foot long, and made of iron, tipped with steel, somewhat in the shape of a gouge, the sharp end being about two inches wide. A place must now be prepared to boil the sap. Choose a location at the lower side of the sugar-bush, that the sap may be drawn down hill, and fix the sugar camp, if possible, close to a stream of water to facilitate the cleansing of vessels used in the boiling process.

Build a shanty according to taste and materials at hand: log sides and slab roof will do if nothing better can be had. Fell a large hardwood tree, cut two logs from the butt end, the length to be governed by the number of kettles to be used. If there are only two kettles, the logs may be about six feet long. Place these logs parallel with each other, with a space between wide enough to hang the kettles. When these are burned up in the process of sap-boiling, others may be cut from the same tree and rolled in to fill their places. At each end of the logs set a crotched stick into the ground, lay a pole across these, and suspend the kettles from the pole. The ordinary sugar kettles are of cast iron, and hold from twelve to fifteen gallons. A large cauldron kettle is often used, and is hung on the short end of a long pole resting on a single crotched stick set in the ground. This pole is so balanced, that when the kettle is full of sap, the other end of the pole will rise up, and let the kettle down to the fire; but when the sap boils low, the kettle will rise out of the way of the

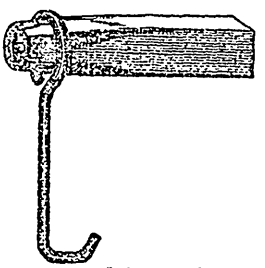
fire, and escape the danger of burning the syrup. This is a safeguard, if the person who is attending to the boiling should be absent for some time collecting sap or otherwise engaged. A large barrel or capacious trough must be provided for the purpose of storing the sap when gathered. A good supply of firewood, (dry if possible), should be on the spot, before operations are commenced. All being ready, when the sap will run, the trees must be tapped, the spouts fixed, and the troughs set. The common method of tapping is by making two gashes in the body of the tree, near the ground, in the form of the letter V. Just below the angle formed by these cuts, the tapping iron is driven in to make an entrance for the sharpened end of the spout before described, and the trough is placed so as to catch the sap as it flows from the spout. A simple, open barrel on an ox-sled, answers well for collecting the sap, and it will greatly lighten the labor if a team can be used for the purpose. A circular board, an inch or two less in diameter than the inside of the barrel will be useful to float on the sap, and keep it from splashing out.

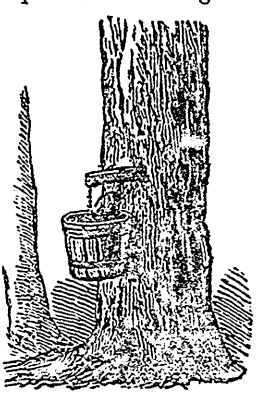
In what has thus far been said we have described the simplest and most primitive arrangements—such as any beginner in the bush may make with scarcely any outlay except for the kettles. That a good article of sugar may be made even with such rude and imperfect facilities, there can be no doubt; but the best quality cannot be produced without better conveniences. Sugar-making, like everything else, must be pursued under difficulties by the new settler, and it is only by unremitting care and attention in the way of regulating troughs, straining sap, skimming and clarifying syrup, &c., that good sugar can be made with such rough and ready contrivances as we have been describing. Pails of wood or sheet-tin are greatly preferable to troughs. Troughs are clumsy things, heavy to lift, liable to get out of place and waste the sap, and are very much exposed to leaves, dirt and rubbish. Wooden pails are the cheapest, tin ones the best. If made of wood the pails should be rather smallest at top to prevent the hoops falling off. It is a great improvement to paint them both outside and inside. They will cost from $10 to $15 per 100, according to size and finish. Tin pails are easily kept clean and are less likely to impart sourness. They should be made largest at top so as to pack away in nests when not in use. They will cost from $20 to $30 per 100, according to size, make, and quality of tin. There is also a better mode of tapping the trees, than the common one to which reference has been made. The V shaped cut inflicts a serious and unnecessary wound upon the tree. It has been found by repeated experiments that a small auger hole will yield as much sap as a large gash, the flow being in all cases in proportion to the depth of the hole. It does not take many years to girdle and destroy a maple tree on the old plan, whereas the auger hole will grow over, and leave the tree uninjured. Spouts may be made as already described, only shorter, or of tinned sheet-iron, which are considered better. Some adopt the plan of hanging the pail on the tree by an iron spike or old horse-shoe nail, the tin pails having a hole just below the wire rim, and the wooden ones a small wire loop for this purpose. The nails are however objectionable, especially if the tree should ultimately be chopped into firewood or sawn into lumber. Altogether, the best arrangement of spout and pail that we have met with, is that represented below.



On this plan a single auger hole say seven-eighths of an inch, is bored into the tree to the distance of about three-quarters of an inch. The spouts are made out of thick inch board about four inches long. They are shaved at one end just large enough to fit the auger-hole in the tree. To get them the right size, bore a hole in a board and shave each until it will exactly fit it. A hole is bored lengthwise through the spouts for the passage of the sap.

The hook for the pail is made of very stout iron wire, and is of the shape figured in the accompanying cut. The small end of the spout is passed through the loop of the hook before it is driven into the tree. The lower part of the hook passes through a hole near the top of the pail and the curve secures its hold. The hook is held against the tree by the slight shoulder of the spout, and is capable of sustaining a heavy weight. The subjoined cut represents the arrangement complete.





Kettles are not good boilers for maple sugar-making. From their shape they become unevenly heated, and a portion of their contents is liable to become burnt. Shallow sheet iron pans are much better. They may be kept cleaner, they evaporate more rapidly, make finer sugar and economize heat. A good form for them is described by a correspondent of the *Country Gentleman*. A convenient size is 3 by 6 feet. The following is his description :—

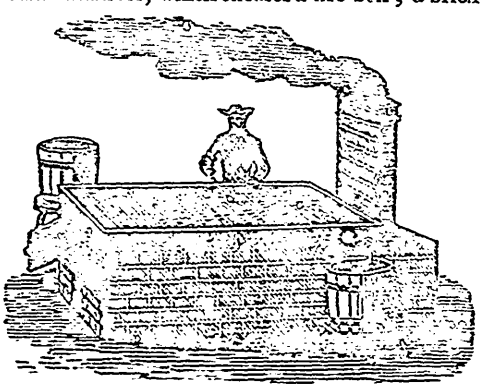
"Having bought your iron, get it cut the proper size by the tinsmith, or if you have shears large enough to cut it, you can do it yourself. Turn over three-quarters of an inch of each inside edge, and lock them closely together with a hammer. Place it on a solid block of wood, and with a punch make a row of holes, half an inch apart, the whole length of the seam. Then put in your rivets, and clinch them tightly. Now with a straight edge mark off 7 inches all around the edge of your iron, then cut it in the shape shown in fig. 1.

"Turn up the ends first, next the sides, which will project beyond the ends; these must be bent over and riveted with two rows of rivets to the ends. Scrape the inside lower corners with a file till they are bright—then apply with a brush a few drops of muriatic acid, diluted with as much zinc as it will dissolve. It can then be soldered the same as tin. The bale should be an iron rod ½ inch in diameter. Get the blacksmith to bend the corners and weld it. To put it on, cut down each corner one inch and bend the iron round the bale. The last thing is the handles, four in number, which the blacksmith will also make, and you have a finished pan, warranted not to leak, at a cost of say.

30 lbs. iron, at 7 cents	$2 10
Punch	12
Rivets, acid, solder, etc	25
Iron for bale and handles, and making same	75–$3 22

"Such a pan," he says, "will last 12 to 16 years, and be large enough for 200 trees, without much night work. The rivets may be bought at hardware stores for 25 cents per 1,000. It should have ears or handles riveted on at the corners, for convenience in lifting."

A better contrivance than that just described is the Evaporating Pan represented in the accompanying illustration. The entire arrangement as shown in the engraving, consists of a brick chamber, which encases a fire-box; a brick



chimney to carry off the smoke; a raised barrel to supply sap to the pan; the pan itself, made of tin, sheet iron, or copper, and crossed by raised ledges with open spaces at alternate ends to produce a lessened flow of the liquid to the outlet; and finally a tub or vessel to receive the syrup when the boiling process is finished.

The philosophy of this Evaporator is embodied in the following principles:—

1. To evaporate with the utmost rapidity. Too long boiling darkens the syrup and injures the crystals.

2. To heat intensely and cool quickly for skimming purposes. This operation secures a more perfect clarification than by the use of chemicals.

3. To remove the syrup from the evaporator upon the instant it has attained the point of crystallization, and yet in such a manner that there is no danger of the syrup scorching after it is deposited in the coolers, as it is liable to do when removed in large batches.

To secure rapidity of evaporation, a very shallow body of juice is used; and, as this shallow body would be liable to burn if not in continual motion, a running stream of juice is introduced. But this would be of little avail were no means provided for increasing or retarding its speed to correspond with the heat, so that it shall always reach the outlet just as it has attained the right thickness. For this purpose gates are used. By means of these it is easy to change the motion, and thus increase or retard the speed of the current.

Cool surfaces are afforded at the sides, to which the scum will retire, and thus prevent remingling with the sap and injuring the sugar, as is the case in common pans.

The ledges are introduced:—1. To lead the juice back and forth, first, over the heated centre of the pan; then to the cool sides, where the scum is collected. 2. These ledges serve as arrests to prevent the scum passing down the pan into the finished syrup. 3. A great advantage in the use of a transverse current is that the syrup may be safely brought to a sudden and much higher heat than in the common pan, for it is immediately led to the cool side, the scum deposited, and all danger of scorching obviated.

The Evaporating pan is constructed of sheet metal, copper or iron, with wooden sides, and so divided by ledges as to form a continuous transverse channel.

From the foregoing description any competent tinsmith can make the pan in question, but we have authority from Mr. L. F. Bungay of Norwichville, Ont., for stating that he is prepared to furnish them at the following prices:—

No. 1. Iron, 40 in. by 10½	$20
No. 2. Iron, 40 in. by 12½	27
No. 3. Iron, 40 in. by 14½	30
No. 4. Iron, 40 in. by 16½	35

We add the following directions for using this Evaporating Pan:—

1. Place the pan upon the arch, perfectly level, and close the outlet with a cloth-covered plug; cover the bottom of the pan with juice. As the juice becomes reduced, draw off some from the lower channels, and return to the upper, until the syrup in the last channel has become of the right thickness, when the plug may be opened sufficiently to allow of the escape, into coolers, of a small stream.

2. Use good wood, about three feet in length.

3. IMPORTANT TO REMEMBER! The supply of sap should be fully equal to the evaporation, but no greater.

4. KEEP THE FIRE AS HOT AS POSSIBLE. There is no danger of scorching, if the third rule be carefully observed.

5. So regulate the rapidity of the stream through the pan, by means of the gates, that the syrup will reach the outlet just as it has attained a waxy consistency, when it should be allowed to flow out in a continuous stream. Be careful, in drawing the plug, to open far enough to allow the escape of the syrup just as fast as it is made.

6. Loosen the substance deposited on the bottom of the pan, occasionally, with a stiff broom, that it may rise with the scum, and be removed.

7. SKIM FAITHFULLY. Impurities must not be permitted to remain in the syrup.

8. Do not allow the arch, back of the gate, to become choked with coals or ashes.

9. Do not change the level of the pan suddenly; a slight change makes a great difference in the speed of the current. Persons often imagine they have burned their pan, when they have only burned the deposit from the syrup, with which the bottom is coated. Upon exploration, they will find the pan all right below. This deposit ought never to be allowed to collect or harden, but should be removed with a stiff broom, according to directions. Should it, however, once harden on the pan, it may be removed by a little vitriol, or by greasing it and warming it gently, when it will readily scale off.

The syrup should be most carefully skimmed, and reduced to about 225 to 228 degrees Fahrenheit, or until the steam escapes in little puffs from the syrup in the last channels.

The above evaporator was figured and described in the *Canada Farmer* of Feb. 15th., 1868. Those who were induced to try it speak very highly of it. One party says that not only did it enable him to make his sugar more easily, but the quality was so improved that he got two cents a pound more for it than the ordinary market price.

Along with these improvements it is desirable to have a comfortable boiling house, entirely closed in from the weather, and covering in the fire-place and boilers. It must be well lighted, so that dirt and impurity may be really seen. It is well to fix the sap reservoir in such a manner that the bottom of it will be a little higher than the boilers, so that the sap may easily run into them with a faucet.

A few brief hints about boiling and sugaring off will complete what we have to say on this subject. Cleanliness at every step of the process is the prime thing to be secured. Boil the sap as fresh as possible. It should never stand twenty-four hours if it can be avoided. Sap varies in quality and requires reducing by boiling to from one-twentieth to one-thirtieth of its bulk to make good syrup. Whatever dirt and scum arise on the surface of the sap while boiling, should be removed with a skimmer. On taking the syrup from the fire, it should be strained through one thickness of home-made flannel into a clean tub or barrel, and left to cool and settle from twelve to twenty-four hours. Sugaring off may be done either in one of the pans, or in a separate brass kettle. Pour off the portion of syrup that is clear into a pan or kettle, leaving the sediment in the tub. In sugaring off, the fire requires to be under control either by a damper in the flue, or by means of a crane for the kettle to hang upon. If it is thought needful to clarify the syrup, add a beaten egg and a gill of milk to every gallon, keeping it hot but not boiling until the scum has risen and been skimmed off. Some good sugar-makers think the milk and eggs unnecessary, and contend that if every vessel is kept clean, and the syrup is thoroughly strained and settled, it will be free from all impurities. The final boiling must be carefully and rapidly performed. There are various ways of telling when the sugar is boiled enough. If it is to be put into tubs and drained, it requires less boiling than if it is intended to be put up in cakes. When snow can be obtained, a good plan is to take a dishful, and when some of the hot sugar is put on the snow, if it cools in the form of wax on the surface of the snow, it is done enough to put in tubs to drain. But when it is to be caked, it should be boiled until, when it is cooled on the snow, it will break like ice or glass. On this point the *Register of Rural Affairs*, says:—

"When the bubbles rising to the surface burst with a slight, or just perceptible explosion, from the tenacity of the thickening liquid; or if a drop hot from the kettle into an inch of water forms a distinct solid globule slightly flattened when it strikes the bottom; or if a drop between the thumb and finger will draw out into a fine thread half an inch long, the process has gone far enough." Another mode is thus described by a correspondent of the *Country Gentleman*: "Take a short twig, limber it by dipping its end into the boiling sugar, and then form a loop with a hole half an inch in diameter. Dip the loop into the sugar, bring it up quickly and blow through the loop-hole. When it will go off into a ribbon eight or ten feet long, it is done. It will ribbon a few feet before it is done, but wait a few moments and try again till it will perform according to order."

When sufficiently boiled, it is poured into vessels to cake. It must not be allowed to cool too much before being put into the moulds as it hardens fast at this stage. If fine sugar is desired, it should be stirred moderately while cooling. The mould should be wet with water to prevent the sugar from sticking to it. To obtain dry sugar, place it in a tub, barrel, or hopper-shaped box, with holes for draining off the molasses. The sugar may be whitened by laying a few thicknesses of flannel on the top of it while draining, the flannels to be daily washed in cold water. They will absorb and wash out the colouring matter.

PLATT'S MIDGE-PROOF WHEAT.

Mr. Thos. Walker, of Coldspring, Northumberland Co., writes the *Globe* in praise of this variety of wheat, narrating his own experience in regard to it, as follows :—

"In the spring of 1867, I received one bushel from Mr. J. J. Watson, of Adolphustown, and I sowed it on three-fourths of an acre, from which I had eighteen bushels. It was entirely free from midge and rust. My Club and Fife wheat, with the same condition, and on the same quality of land, only yielded twelve bushels per acre. If I had sown all the land I had in wheat in 1867, with the Midge-Proof, and sold it at the same price as other varieties, I would have made over one thousand dollars more than I did out of my crop. So well satisfied was I of its superiority over other varieties of Spring wheat, that last Spring I bought a sufficient quantity from Mr. Giles Memberry, of Adolphustown, at a high price, to sow fifty acres. I have just thrashed it, and I must say that it has fully come up to the expectation. Much of the crop yielded over twenty bushels per acre—this, too, in spite of last summer's drouth—and my land is naturally dry ; consequently, the crop was injured to some extent. My neighbour, Mr. John McKinlay, had twenty bushels from fifty-three pounds of seed."

PRESERVING OUR FIREWOOD.

To the Editor of the ONTARIO FARMER.

SIR,—Perhaps the hardest labour the farmer has to do in winter is chopping firewood. Nearly all farmers whose land is wooded carry on an incessant warfare with timber. In fact so much has been chopped from our forests that wood is getting very scarce and dear. Should there not be some way of remedying this evil? If our woods disappear so rapidly during the next century as they have this, what will coming generations do for fuel? Most farmers chop indiscriminatly old and young trees. Why not leave the young ones to replace the old? By that means our supply would last much longer than there is any show of it doing at present. We could then keep our good old wood fires, and our timber would be preserved for other uses. Even the saw mills are getting so little really good timber to saw that many are obliged almost to give up the business. We may anticipate a scarcity of good timber, and will some day regretfully remember the good stuff we wasted in the time gone by. Do you not think Mr. Editor something might be done in this matter, for it is of the greatest importance that our timber should be preserved? I was reading lately in one of our newspapers that in consequence of the scarcity of timber that answers their purpose, the hub and spoke manufactures of Canada have entered into a combination and raised their prices considerably, on spokes nearly $1.00 per set. Please inform us in your next issue of the ONTARIO FARMER what you think can be done to have our timber protected. Could not the Legislature do something for us? Could they not frame laws for the better protection of this article which adds so much to our revenue?

ENQUIRER.

March, 1869.

ANS.—We are pleased to have attention called to the above important subject, and think one of the best things that can be done in reference to it is for those who, like our correspondent, are awake to the evil pointed out, to try and rouse others to co-operate with them in correcting it. We do not see how Government could very well interfere.

HAY TEDDER WANTED.

DEAR ONTARIO FARMER,—Your Feb. number has come to hand ; good again. I have just been reading "Tim Bunker on the Hay Tedder." I should like to have a thing like that to make the "grass shake" in July. Please say where it can be found and what the price is in your next issue.

Yours, &c.,

HEAVY GRASS.

Montreal, Feb. 22, 1869.

ANS.—There are several styles of Hay Tedders manufactured in the U. S. "Taylor's Patent Hay Tedder" can be had of the "Ohio Mowing Machine Co., Millbury, Mass.," for $60 Am. money. "Bullard's Improved Hay Tedder" can be heard of by addressing "S. S. Whitman, Little Falls, N. Y." We do not know the price of it, but think it is in the neigbourhood of $80. One of the best made, if not the very best, is the "American Hay Tedder," manufactured by the "Ames Plow Co., Boston, Mass.," and sold at $75.

SEED WHEAT WANTED.—"If any of your readers have for sale any Black Sea, Rio Grande, or Platt's Midge Proof Wheat, I will be glad to be placed *en rapport* with them."—J. S. RUSSELL, Kirkfield.

GLEANINGS FROM THE AGRICULTURAL PRESS.

Under the above head, we shall collect brevities from all sources, and we request those to whom we are indebted for items, to accept the acknowledgment implied by the word "Gleanings," when more express mention of authorities is not made.

A bed of marl 27 feet thick has been discovered near Vineland, 200 feet below the surface.

In Tennessee they talk of attaching to their Agricultural College a big shop for making all farm tools.

A law is proposed in the Massachusetts Legislature to punish, in heavy penalities, those who sell adulterated manure.

Prairie agriculturists are apt to despise manure. But New Jersey raises one-half more corn to the acre—on the average—than Illinois. Manuring does it.

The Southern Planter and Farmer published in Richmond, Va., gives this test of good farming: every crop is better than the one before, and the profits of the farm increase each year.

Guano, as applied by the best farmers, is a stepping-stone to something better. On worn lands it braces till enough yard manure can be produced. It should be used as an aid to, not as a substitute for, bulky fertilizers.

A correspondent of the *Journal of Agriculture* says he finds his clay loam grounds increase more in productiveness by the use of eight bushels of salt to one bushel of plaster per acre, than from the application of barnyard manure.

Suel Foster, of Iowa, sowed two parts of the same field to wheat All the conditions of the two where the same exceept the seed. On one portion very clean, plump, nice wheat, costing $2.25 per bushel, was used; on the other ordinary wheat, worth $1.75 to $1.80 per bushel, was sown. The good seed averaged 53½ bushels per acre; the poorer 18½.

As Mr. Jonathan Brewer, of Gainsboro,' was driving to St. Catharines, he met on the road, between St. Catharines and Jordan, a man going in the opposite direction, with a reaping machine. The two sleighs passing very near to each other, a sharp portion of the reaper came in contact with Mr. Brewer's face, inflicting a deep wound on his nose, and almost destroying one of his eyes.

The sprouts of the potato contain an alkaloid, termed by chemists *solanine*, which is very poisonous if taken into the system. This does not exist in the tubers, unless they are exposed to the light and air, which sometimes occurs from the accidental removal of the earth in cultivation. A potato that shows a blackish-green tint on the one side should never be cooked for the table or fed to stock. So says *Hearth and Home*.

The *Farmer* (Scottish) says:—Mr. Mechi has some misgivings respecting the next wheat crop, and quotes the opinion of old men who believe that a full moon at Christmas implies light sheaves at harvest, as well as that of a practical farmer who "never knew an abundant wheat harvest to follow a mild winter."

Donald G. Mitchell, *apropos* of good drainage, says that "big barns, and big walls, and steam-engines, and bulls with pedigrees are by no means essential to great crops; but a good, friable condition of the soil is; and if a man cannot secure this with the labor and capital at his command upon fifty acres, let him sell and try twenty-five; if he cannot secure it on twenty-five, let him sell, and try it on ten; if he cannot secure it on ten, let him off with his coat, take to the spade, and make a farm out of his garden."

PERUVIAN GUANO.—It is officially intimated that Peruvian guano has been found at thirty-five places on the mainland and islands of Peru, independent of the other localities well-known before. Accurate surveys are ordered, as in the case of the Maccabe, Gunapo, and Lobos. One place is estimated to contain 3,000,000 tons, situated near the River Loar.

The Live Stock.

SPRING SHOW OF THE ONTARIO POULTRY ASSOCIATION.

The above Society, inaugrated in the latter part of 1866, for the improvement of the different breeds of Poultry and Pigeons, have announced their intention of holding their fourth Exhibition in April next, as may be seen on reference to our advertising column. The prize list which we subjoin is both varied and extensive, the aggregate amount offered being $173. Three Exhibitions have already been held under the auspices of the Association, each one of which excelled its predecessor in number of entries made and excellence of the specimens shown, and it is confidently expected that the coming show will in this respect far surpass any of the previous ones, as it is known that several fanciers have during the past year largely imported specimens of the rarer breeds, and several orders yet unfilled are expected to arrive in time for the Exhibition. Since the formation of this Society, a great impetus has been given to the raising and breeding of Poultry in this country, and it is highly gratifying to its promoters to know that their efforts have been so successful. Many persons heretofore indifferent to such matters have recently become fowl fanciers and breeders, not

simply for the amusement which it may afford during idle hours, but also for the profit which may be derived therefrom, particularly the luxury of having during the winter season a supply of fresh laid eggs, which can always be relied on where a good class of fowls is kept and properly cared for. One and not the least of the public benefits derived from the Association is, that any person desirous of becoming the possessor of a breed of fowl unknown in his locality, can, by applying to the Society be informed where such breed may be procured, provided they are for sale, and many have already taken advantage of this feature. Much as has already been done towards the development of this branch of domestic economy, far more still remains. It is a subject which should engage the attention of our farming population more generally than it does. By keeping some of the improved breeds, not only is a larger number of eggs got from the same number of fowls, but also the chickens of the larger breeds mature earlier and bring higher prices than those of the common kinds, which the cost and trouble of keep are no greater.

PRIZE LIST.

POULTRY.

BIRDS TO BE SHOWN IN PAIRS—(*vide Rule* 13.)

CLASS 1—*Cochin China:* Buff or Cinnamon.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 2—*Cochin China:* White or any other colour.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 3—*Brahma Pootra:* Dark.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 4—*Brahma Pootra:* Light.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 5—*Dorking:* Coloured.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 6—*Dorking:* White.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 7—*Spanish.*
1st Prize.....$4. 2nd Prize.....$2.

CLASS 8—*Game:* (Black-breasted and other Reds.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 9—*Game:* (Duck-wing, Greys and Blues.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 10—*Game:* (White, Pile and any other variety.)
1st Prize.....$4. } Given by A. McLean How-
2nd Prize.....$2. } ard, Esq.

CLASS 11—*Hamburg:* Gold or Silver Pencilled.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 12—*Hamburg:* Gold or Silver Spangled.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 13—*Polish:* Gold or Silver.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 14—*Polish:* Any other variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 15—Houdan, Crève Cœur, La Flèche, and other French Fowl—(any age.)
1st Prize.....$4. 2nd Prize.....$2.

CLASS 16—*Bantams:* Gold or Silver laced.
1st Prize.....$4. 2nd Prize.....$4.

CLASS 17—*Bantams:* Game and any other variety.
1st Prize.....$4. Given by Wm. T. Goldsmith, Esq., St. Catharines. 2nd Prize.....$2.

CLASS 18—*Turkeys:* Any variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 19—*Ducks:* Aylesbury.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 20—*Ducks:* Rouen.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 21—*Ducks:* Any other variety.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 22—*Geese:* White.
1st Prize.....$4. 2nd Prize .....$2.

CLASS 23—*Geese:* Coloured.
1st Prize.....$4. 2nd Prize.....$2.

CLASS 24—*Any other variety of fowl* not mentioned in above classes—(any age.)
1st Prize...$4. 2nd Prize...$3. 3rd Prize...$2.

PIGEONS.

BIRDS OF ANY AGE—TO BE SHOWN IN PAIRS, EXCEPT CARRIERS AND POUTERS.

CLASS 25—*Carriers.* Cocks. Any colour.
Prize.....$2.

CLASS 26—*Carriers.* Hens. Any colour.
Prize.....$2.

CLASS 27—*Pouters.* Cocks. Any colour.
Prize.....$2.

CLASS 28—*Pouters.* Hens. Any colour.
Prize.....$2.

CLASS 29—*Tumblers.* Any variety.
1st Prize...$3. 2nd Prize...$2. 3rd Prize...$1.

CLASS 30—*Jacobins or Frills.* Any colour.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 31—*Fantails.* Any colour.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 32—*Barbs.* Any colour.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 33—*Turbits.* Any colour.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 34—*Trumpeters.* Any colour.
1st Prize.....$2. 2nd Prize.....$1.

CLASS 35—*Any other variety of Pigeon* not mentioned in the foregoing classes.
1st Prize.....$2. 2nd Prize.....$1.

Parties wishing to make entries will address:

THOS. McLEAN, Esq., Hon. Secretary,
Box 25 P. O., Toronto.

CARE OF SHEEP IN EARLY SPRING.

At this season we must have an eye to the sheep. As the lambing season approaches great care must be taken of the breeding ewes, but be it remembered that care now, though it may do much to remedy the evil, will not counteract the bad effects of a winter's neglect. As the time of lambing draws near, the ewes' food should be gradually improved in quality. Opinion is very much divided as to the benefit of turnips to the pregnant ewe. Some feed none, others provide them too abundantly. Before the grass is matured enough for pasture a moderate supply of succulent food undoubtedly tends to increase the secretion of milk, but on the other hand an overdose of roots is apt to sour a stomach already predisposed to disease by the extra strain upon its functions. Oat or peameal will help to increase and enrich the milk and strengthen the animal, enabling her better to endure the strain of labour. Pens should not be overcrowded, so that on the entrance of the shepherd, the ewes may not push upon one another, so as to injure themselves. When lambing commences take care that your pens be kept warm, dry and clean, and yet use as little straw as possible for litter. If a lamb be dropped in a dirty spot the mother will often refuse to lick the membrane from its body, an operation which instinct has taught the ewe to promote the circulation of the blood; and again when the lamb lies amongst long straw it experiences great difficulty in rising and obtaining food from its mother's teat. In cases where the ewe has difficulty in dropping her lamb she should not be interfered with unless very urgent necessity demand it. Indeed it is hard to lay down any rule for the guidance of the attendant in such cases; experience and common sense are his best advisers, but at the same time we cannot be too earnest in warning him not to interfere hastily. By handling the sheep in such straits you divert her attention and energies from her situation, and she is very apt to injure herself in attempting to release herself from your hands. Though you may assist nature you cannot force her. There is no doubt that more lambs and mothers have been lost from a well-meant but too hasty interference than from any other cause.

MR. WILLARD ON THE REQUISITES TO FINE FLAVOUR IN BUTTER AND CHEESE.

Our space in the present issue does not admit of a full report of the admirable address given by Mr. X. A. Willard at the annual meeting of the Canadian Dairymens' Association, held in Ingersoll last month, but we give extracts which comprise the substance of what was said on the important question how to secure choice flavour in butter and cheese.

"With all our knowledge and experience in New York we have not been able the past year to avoid having some bad off-flavored cheese during the hot weather, especially in July. I took some pains to study this question, and I found by examining farms in numerous instances, that stagnant, putrid water, was one of the leading causes. There were other causes, but this one was invariable. In one instance, the cause was attributed to the milk of one of the patrons whose cows had been drinking from frog ponds; this man changed his fences so as to get good water, and so the trouble ceased. In the private dairies of New York and England, particular attention is paid to this matter. I wish I could impress this thought upon every dairyman present, as it is one of the faults which will have to be corrected before the highest standard of excellence can be reached. On farms where springs are deficient, the defect is to be overcome by digging a well and applying wind power for pumping, which can be inexpensively erected, and made durable. Another point on which the old dairy farms are in error, and which is the cause of great impurity in milk, is the bad construction of milking stables, most of which are little better than pest houses, owing to bad ventilation. So bad are some of them that I have seen delicate women faint away in them in hot weather. Follow the milk which comes from these places to the factory, after having been confined in the can under a close fitting cover, and you will find it most offensive in odour and putrid. If there is any manufacturer present who can make clean flavored goods from such milk, I should like to see him and hear his process. In this respect the English farms are ahead of ours. Their milking stables are open on one side, cool and well ventilated, and milking is made a pleasure to animal and milkmaid. I must say the new dairy districts are in advance of the old in this respect. I beg of you not to fall into the errors of the old dairy districts. After you have provided a clean, well ventilated milking stable, let each milker take a pail of water and towel into the stable, wash the cow's udder and wipe it dry with the towel, and then proceed to milk; you will then have no filth dropping into the pail, and water is so cooling and grateful to the animal, that she is quieted, gives down the milk at once, and will yield enough more during the season to pay the whole

cost of milking. It is an inhuman practice to cut the cow's tail to get it out of the way of the milker. By means of a rubber band it may be fastened to and unloosed from the cow's leg. On the subject of milking, Mr. Willard gave a description of the structure of the udder, and then went on to say: Preparatory to milking, the teats ought always to be well washed with a sponge and cold water. This is not only a cleanly habit, but it keeps the teats in good order, and frequently prevents inflammation, and in certain cases restores the flow of milk by warm applications. A cow that has always been treated kindly will generally stand quietly, and appears to enjoy the operation. Milking should always be done by one and the same person, and I am in favour of women as being more tender, cleanly, and more patient of temper than men. Heretofore attention has been chiefly directed to the manipulations of cheese and butter-making, now the necessity of having good milk is forcing itself upon us. To insure the delivery of pure, sweet milk, he urged the Convention to adopt the following rules, to be posted on the door of every factory, and addressed to the patrons, saying:—"This is the unanimous voice of the Dairymens' Convention of 1869."

1st.—That no milk is good which is made from filthy, stinking waters of slough and frog ponds.

2nd.—That no milk is good that comes from cows dogged or over-driven in hot weather, from the pasture to the stable.

3rd.—That no milk is good that comes from cows pounded or kicked and cruelly treated by brutal men.

4th.—No milk is good that comes from diseased cows—cows that have sores filled with pus, or that have udders broken and running with corruption.

5th,—No milk is good that comes reeking with manure and filth from the stable.

POULTRY JUDGING.

Mr. Sheldon Stephens, a Montreal poultry fancier, says that some very absurd judgments were given in the poultry classes at the last Provincial Exhibition in Montreal. Among other illustrations he cites his own case:

I was myself awarded a prize for Cochins, for a pair of dark Brahmas, at the last Exhibition, and to judge from appearances, no pains are likely to be taken to prevent the recurrence of such mistakes, or "jokes" as they are termed. Henceforth dark Brahmas are to be Cochins, and Cochins no fowl at all; Jersey Blues to remain as they are until further orders.

We recommend our friends at the East to organize a Quebec Poultry Association, and make a strenuous effort in the way of reform and improvement. That is the best way of curing the evil pointed out by Mr. Stephens.

LIVE STOCK GLEANINGS.

Great numbers of cows in Staffordshire have recently cast their calves.

In dairies where roots are feed to milch cows we do not hear of many untimely births.

Recent observations by bird fanciers go to show that for every berry a robin picks he consumes five wire-worms.

Cheese rinds, bits of meat, and such kitchen refuse will be found very edible when transmuted into eggs by your hens.

Hamiltonians are smacking their lips over large receipts of splendid brook trout from the frozen streams near Quebec.

Laminitis or "founder," both in its acute stage and in its results, admits of curative treatment; but it is best in all these cases to consult some qualified veterinary surgeon.

The fossil remains of a horse which could have been only two feet high, were recently found in Nebraska Territory. This beats the smallest Shetland pony now known.

The *Bee-Keepers' Journal*, Vol. 1, No. 1, published at Nevada, O., has made its appearance. Mrs. Ellen S. Tupper, is one of its editors, and the paper is full as a honey comb of bee wisdom.

A Massachusetts farmer thinks he can winter his cows on steamed feed for one-third less expense than on dry feed, and get one-fourth more milk. This is the result of five years experience.

Many English farmers feed no hay to their work horses, but keep them in high working order with straw, roots, and shorts. The equivalent of twelve tons of hay can be produced on one acre in roots.

If it is true, as is stated, that the last half pint of milk drawn from a cow's udder has sixteen times the quantity of cream in it of the first one, it is quite plain that shiftless milkers who do not "strip" closely are very unprofitable servants.

At the Newcastle Farmers' Club, Mr. Throckly gave six good rules for beef raisers: 1. Never buy a bad-bred beast. 2. Cheap bought is half sold. 3. Feed the best food. 4. Give it regularly, and clean. 5. Keep them warm and dry. 6. Sell as soon as fat.

Peas, soaked twelve hours and then boiled, are found to be excellent winter food for milch cows, both for fat and milk.——A horse's lungs lie adjoining the stomach, and the simple reason why he can't travel well on a full stomach is that the lungs are too crowded to furnish the "wind."

The New York State Wool Growers' Association held its annual meeting at Syracuse on the 27th of January. The attendance was large. The chief business, besides the election of officers, was the consideration of the feasibility of holding a wool exposition during the year, a question ultimately referred to a committee, and the discussion of a new reciprocity treaty with Canada, against which the meeting unanimously and urgently protested.

The *Pionnier*, of Sherbrooke, mentions a farmer of Bedford, who, from a piece of wooded land, last spring, obtained sugar to the amount of $35; then he cut down the wood, burned it for potash, and got $46 for it; then he planted potatoes, and in the fall sold them for $250—making a total of $321 in nine months.

A good preventative for the chafing of horses' breasts by the collar is said to be, to take a piece of thick and smooth leather, cut it out just the size of the collar, or a little wider, and let it lie flat on the neck and shoulders of the horse. This will lie smooth on the neck, while the collar itself moves about on it.

A student of crow habits reports in the *Massachusetts Ploughman* that he finds that the ratio of good done by the crow in destroying noxious insects, &c., is to the harm done in eating the eggs of more effective insect destroying birds, pulling corn, &c., as 229 to 2,976. Poor showing for Mr. *Corvus Americanus*.

Wool growing in South America has grown into mammoth proportions. Even the Australian breeders have cause for alarm from this competitor. It is reported, on good authority, that the number of sheep shorn there exceeds 70,000,000. The export of wool to Europe and the United States amounts to about 230,000,000 pounds.

A singular case is that of a cow belonging to Mr. Robert Doidge, of the township of East Whitby, which, on the 17th ult., had half of her tongue bitten off by a horse. The cow was on one side of the fence, and the horse on the other. She put her mouth through the fence, and attempted to seize some hay which the horse was eating, when he seized the tongue of the robber and bit it off.

Somebody says that as a general thing horses get too much whip and too little hay. If a man loses his hat while driving his horse, he whips the horse to pay for it. If he runs into another waggon, through his own carelessness, he whips the horse to make it all right. If he slips or stumbles, he gets whipped for it; if he does anything, he gets whipped; and if he don't do anything, he gets the same.

The *Ohio Farmer*, in an article on Angora Goats, and the "fancy notions" respecting them, says that "there is an intrinsic value of from eighty cents to one dollar per pound for Angora fleece, and we have no doubt but that a fair business might be done at raising these goats in localities and under circumstances favourable for keeping them. Crossed on the common goat they grade up rapidly; they are cheaply kept on rough land; the pelts of high grades make beautiful Afghans and sleigh robes; the fleece makes super-excellent hosiery, takes a beautiful dye, is very handsome for fringes (when such are in fashion), and will sell in the market as mohair, at about the same price as Leicester and Cotswold wool—a little higher for full blood. We have been a careful observer of this goat business for the last fifteen years, and this is what we think of it now."

Button your cattle horns. It is an improvement to their looks; it checks the bad habit of hooking; if the old ones have already formed this habit, it prevents mischief, and all the animals fed in the same yard eat more quietly and thrive better.——To make good butter in winter: when the milk is strained set the pans on the stove and warm the milk slowly; when as hot as the finger can easily bear, set the pans away in a room not cold enough to freeze. Keep the cream-pot moderately warm.

There are now twelve pork packing establishments in operation in the Province of Ontario, and great complaint is being made by the proprietors of them in reference to the scarcity of hogs. Mr. Davies, of the Toronto Packing House, says the business is almost at a standstill for the want of the raw material, and urges farmers to hurry up and fat all the porkers they can, as the demand is going to be brisk all through the coming season.

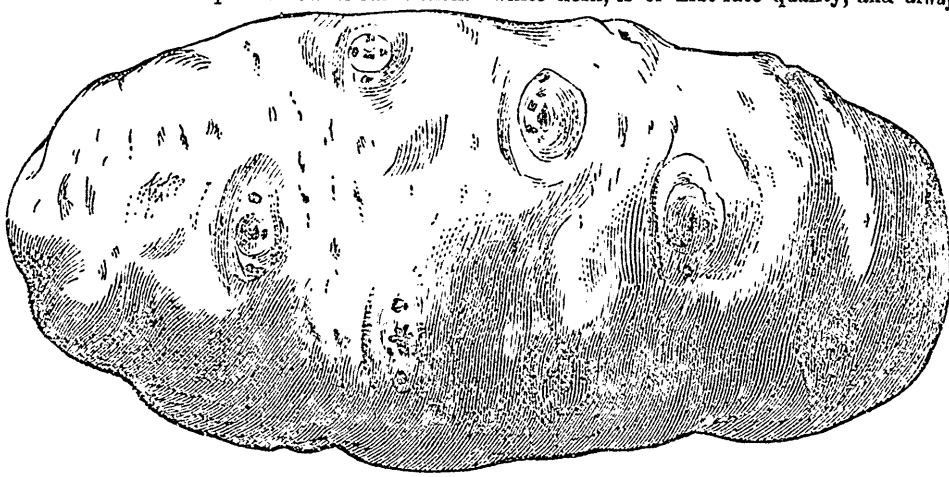
Mr. J. H. Thomas, Apiarian, of Brooklin, Ont., informs his bee-keeping friends that he is in possession of a secret of great value, which he hopes to be able to make public in time for this year's operations. It is a method of securing the impregnation of queens by selected drones, and is, he thinks, far superior to the Kohler process which was published last summer. Though he has not tested the new method, he speaks of it with much confidence. It is the discovery of an American lady, whom he does not name, but whom we suspect to be Mrs. Tupper, of Iowa, one of the most skilful bee-keepers in the world.

A practical farmer says that calves will not thrive so well on milk that is rich in butter as on that of a poorer quality. It isn't the butter that they need.——Lime water is said to be beneficial for an occasional drink to fowls. It is a preventative of many diseases, and assists the formation of bone and eggs. It is prepared by pouring over quicklime some warm water, and when the lime is slackened and settled, drawing the clear water off, which can be kept for a considerable time.——An old dairyman says that if cabbage and turnips are fed to cows immediately *after* milking they will not flavor the next yield of milk.——The mistake is often made of underestimating the amount of water horses and cows need. Some large cows will require twelve or fifteen gallons each; and they will not yield a full flow of milk if such a quantity of pure water is not supplied. A trough where ten full-grown animals are watered should be capacious enough to hold not less than five barrels of water.——A correspondent of the *Journal of Pharmacy* catches mice by putting a rag saturated with chloroform in places they pillage.

The Garden.

CHOICE EARLY POTATOES.

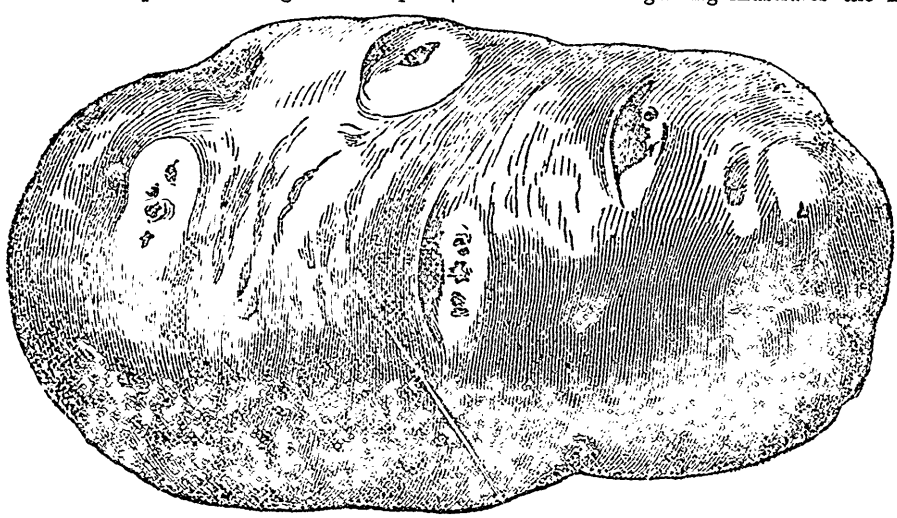
We present herewith engravings of two noted early potatoes of American origin, which, there seems no reason to doubt, are valuable additions to the varieties of the potato now in cultivation.



EARLY GOODRICH.

The first is called the Early Goodrich, and is named after the late Rev. Chauncey E. Goodrich, of Utica, N. Y., by whom it was originated and introduced to the public. This gentleman spent fifteen years in experimenting on the production of new varieties of the potato, and during that time raised over sixteen thousand seedlings, among which were a number possessed of excellent qualities. The Early Goodrich was considered by its originator, the best of all the potatoes obtained by him, and although several others have become well-known, and considered excellent varieties, this has the highest reputation of any among them. It is very early; of large size, has white skin, smooth eyes, delicate white flesh, is of first-rate quality, and always perfectly solid. These are qualities which must recommend it to all who are fond of a good potato.

Our second engraving illustrates the Early Rose, a variety only recently brought into notice, but whose career is suggestive of the tulip mania and the hen fever. The most extravagant prices were paid for it the past season, an



EARLY ROSE.

almost everybody in the United States was in a *furor* to get it. Happily the potato is a rapidly-multiplying plant, and already the Early Rose is offered at prices which bring it within the reach of all who are willing to go to a little extra outlay to obtain the best seed. Although we know nothing by actual trial of this new favourite, there seems no good reason to doubt that it is an early potato of great excellence and value. It is a seedling of the Garnet Chili, and was originated by Mr. Albert Bresee, an intelligent Vermont farmer. The skin is of a dull blush or rose colour (in some soils it is nearly white), the flesh is perfectly white and solid, and the eyes are very shallow. It is said to produce fewer small tubers than any other early potato, boils through quickly, is very mealy, and of choice flavour. The good qualities claimed for it are more especially the following:

1. It is from ten days to a fortnight earlier than any other potato.

2. It is of larger average size than any other early potato.

3. It is in table quality and delicacy of flavour without an equal.

4. It is in productiveness the most astonishing variety ever offered to the public, and the reports of the yield from single pounds during the past season are marvellous, as testified by a large number of trustworthy persons who have made trial of it. Mr. G. W. Best, of Utica, N. Y., who has been the most prominent dealer in the Early Rose, publishes a large number of letters from customers in all parts of the United States, all of whom speak in the highest terms of this new sort. One or two parties in Canada made trial of it with the most satisfactory results. When at Rev. H. W. Beecher's farm last summer, he spoke to us in terms of highest eulogy respecting the Early Rose. We intend giving it a trial in our own grounds the coming season, and advise others to do so.

It will be seen from our advertising columns that the Messrs. Bruce, of Hamilton, and Mr. Charles Arnold, of Paris, offer for sale both the potatoes we have noticed. Mr. Arnold advertises the five best varieties introduced by the late Mr. Goodrich, packed separately in one barrel, together with one pound of Early Rose, for $6. We regret that through a mistake of the printer this was made to read $6 per bushel, instead of $6 per barrel, in our last issue.

DISCUSSION ON SHADE TREES.

At the recent winter meeting of the Fruit Growers' Society of Western New York the chief topic discussed was, "What deciduous trees are most desirable to plant for shade and ornament, or timber?" One speaker suggested that our forests should be regarded not as a thing to be preserved but to be renewed, and the timber regarded as a crop to be taken off when at its proper stage of growth; in short, that timber should hold its place in the greater cycles of rotation of crops.

The native elm was thought to be one of our most graceful and desirable ornamental trees; also the sugar maple, especially when planted in clumps; and the silver-leaf maple for planting singly. The Norway maple was highly esteemed as a beautiful species that grew rapidly. The tulip tree was very much admired, but it was difficult to transplant it. The different varieties of the linden or basswood were held in much esteem, particularly by bee-fanciers. The horse-chesnut was mentioned as being suitable for lawns. The European larch was very highly spoken of as a rapid-growing and beautiful tree, and at the same time very valuable for timber. The locust was also very valuable, but of late years had been almost destroyed by the locust borer.

GRAFTING FRUIT TREES.

To the Editor of the ONTARIO FARMER.

SIR,—In reading the last issue of the *Canada Farmer* for 1868, I observed an enquiry from one of its subscribers respecting the grafting of young fruit trees which are taken up in the fall and packed away in the cellar. As I am in the habit of root grafting a large number every winter, I will give a few plain directions, and if the enquirer should in any way be edified thereby I shall consider myself handsomely rewarded for writing.

And, first, I may truly say that I have found to my sorrow that mice are very destructive things to young trees, in the cellar as well as out; they will burrow through the earth, eat the roots, build their nests, &c., rendering numbers of the trees worthless. In order to defeat their designs I have a box large enough to contain a sufficient quantity of earth or damp sand and sawdust, and the young trees and have found it to be mice proof. Very much depends on the size of the young trees, whether they should be root grafted or planted out without grafting. If they are about the size of ordinary grafts, one inch above the roots, so that the inner part of the bark will be likely to correspond on each side, then by all means graft them

now in the winter, but if they are three or four feet high, and nearly as large as a bean pole, it would be better to plant them without grafting, and let them have one year to strike root before they are grafted. I have tried grafting such trees immediately after planting, a few are doing well, but I had more blanks than prizes; the sap rises slowly, and the grafts die for lack of food. Apples, plums and pears do well when root grafted, but cherries and peaches succeed best when budded.

If the winter stock of fruit and vegetables are stored away in the cellar, and not ventilated, it would be a very unfit place to graft trees in, for the gases arising from the decayed vegetable matter would render the air unfit to breathe for any length of time. An upper room is preferable, and by spreading a sheet to receive the chips a man can graft with ease and comfort, but care should be taken that the roots are not dried by the heat of the fire. As soon as the trees are grafted they should be packed away in boxes with a liberal supply of damp sand and saw dust. Every distinct kind should be numbered on a label, and that placed in the box with them; the same number and the name should then be written in a book. If more than one kind be put in the same box great care is necessary or they will get mixed, so that a Newton Pippin will not be known from a Rambo until the fruit comes to be borne. Guard at all times against the mice, or they will put a finishing stroke on the trees.

THOS. HOOPER.

Columbus, Jany. 11th, 1869.

HORTICULTURAL GLEANINGS.

Roses thrive the best and produce the finest flowers in a deep, rich soil.

A distinguished horticulturist learned by chance that the best way to label a tree is to write with a lead pencil on zinc. The name cannot be erased at first, and it grows more distinct and durable with age.

The sweating process has been applied to the grape for several years past, and a large portion of the vines sold were grown from green cuttings, and we all know the result was thousands of poor, weakly, diseased vines, which no amount of care would restore to health. If our potato growers wish to make an already diseased vegetable still worse, they have only to follow up the same method of propagation.

Every farmer ought to have one or more boxes ready in which he can raise early plants, such as cabbage, tomatoes and early salads. By having a box 18 inches high, (the size of any old window sash that can be had for a small amount), and making a bed of fresh long manure 18 to 20 inches high, and setting the box on this manure with one end six inches higher than the other, and filling six inches of wood mould mixed with some rich, loamy soil.—Early cabbage, tomato and other plants will repay you handsomely for the small outlay.

Some of the Southern grape-growers, after a fair trial, have discovered that a vine cannot be made to grow and look as it does in a picture.

It is stated that grape vines do the best when planted on lately turned sward, and that it is a good thing to seed down the space between vineyard rows and plough the sod under.

Twenty-one years ago a farmer in Stark county carelessly threw a large pair of antlers into the "crotch" of a box alder sapling in front of his house. A few years after he found it fastened by the growth of the tree, and the "prongs" were long used as hooks. Now the sapling is a tree with a top fifty feet across it and a trunk two feet in diameter with the horns completely out of sight, imbedded in the wood. What strange questionings some scientific hunter may start a hundred years hence, when he finds these horns in this venerable alder.

At a recent session of the Northern Illinois Horticultural Association, the committee on timber-growth recommended the following trees for cultivation: For Grove—European Larch, Black Walnut, Butternut, White, Red, and Blue Ash, White and Burr Oak, White Pine, Tulip Tree. Nut-bearing Trees—Butternut, Black Walnut, Shell-Bark Hickory. Shade and Ornamental Trees—White Elm, Silver Maple, Sugar Maple, White Ash, Tulip Tree, Mountain Ash, Cucumber Tree. Evergreens, &c.—Norway Spruce, White Spruce, Scotch Pine, Austrian Pine, White Pine, Red Pine, Balsam Fir, Arbor Vitæ, Red Cedar. The Osage Orange was added to the trees useful for cultivation.

AUTUMN TRANSPLANTING.—Ira Phillips, of Iowa, finds it much the best way to procure trees in autumn, when he can have the pick of the nursery, to bury them till sping, and plant early. He finds that they keep better, and with less injury, than when standing in the nursery row. This is the experience of many others.

NORWAY SPRUCE.—J. Glidden, of Clarendon, N. H., would know about this evergreen.

I do not advise him to buy the seeds, but the young trees. They are cheap, about $5 a thousand; and he will have bad luck if he attempts to grow from the seed. The seed can be had of most prominent seedmen. They should be planted in an oat or rye field, so as to be protected or shaded when young.—*W. S. Carpenter.*

CURIOSITIES.—A correspondent sends the *Advance* two items from his observation:

A good friend of mine has a fine red fuschia, in full growth and bloom. Some months since she noticed upon one of the large stems, a strange leaf. Intensely curious and interested, she watched its growth for several weeks, and then clipped it carefully from the fuschia stem and planted it in a pot. I saw it a few days since; it is now a foot high, with thick generous stem, large leaf, and blossom and fruit side by side. The fruit looks somewhat like a small green tomato. This curious child of the fuschia, nurserymen call The Golden Oak—a very singular freak of nature.

GESNERIA EXONIENSIS, deserves better attention than has hitherto been bestowed upon it, for it is one of the most noble plants of the race to which it belongs, and one of the best winter flowering plants in cultivation. The figure published as an advertisement, conveys but a poor idea either of the superb velvety leaves or brilliant clusters of scarlet flowers by which, when well grown, this plant is distinguished. We strongly recommend this plant to cultivators in need of first class winter flowers.—*Gardeners' Weekly.*

SHADING YOUNG EVERGREENS.—Suel Foster, of Iowa, remarking that shading is absolutely necessary for the young plants, says that at Douglass' nursery, at Waukegan, three modes are adopted. 1. Strips of building-lath are nailed on two narrow strips of boards, so as to make screens four feet square, which are easily handled—the spaces between the lath admitting only one-half or one-third of the sun's rays. 2. Cross boards are nailed horizontally, seven feet high, on tall posts, and brush worked in below the cross boards. 3. Brush is stuck up at the south side of the beds.

PASSIFLORA MUNRO.—A hybrid between P. alata, female, and P. cœrulea, male. This will be a valuable greenhouse climber, the foliage resembling that of the male parent (cœrulea), while the flowers are intermediate in character between those of both parents. The whitish or bluish tint of the male parent and the reddish colour of the female become here amalgamated into a lovely pale bluish voilet. The threads of the corona, too, have, while preserving the the peculiar barred markings of the female plant, lost their coarse texture, and assumed more of the delicate fringe-like appearance and rich colour of the corresponding parts in P. cœrulea. The fragrance is that of P. alata. It is altogether a very elegant and charming addition to a group already not destitute of attractions.—*Gardener's Chronicle.*

GOLDEN CHAMPION GRAPE.—It is not only a decide'l novelty but a noveltyof the very highest excellence—free and robust in growth, hardy and prolific in habit, magnificent both in berry and in cluster, and exquisite in flavour. The bunch is moderately large, compactly shouldered and somewhat tapered, with a stout fleshy stalk. The berries are very large, with stout, warted footstalks, some two inches long and three and a half inches in circumference; and they are generally of an ovate shape, but occasionally somewhat roundish, and they have a thin, pale yellowish green skin, which acquires a rich golden amber tinge with a slight bloom when they are fully ripe. The flesh is tolerably firm, but tender, with few seeds, very rich and juicy, with a flavour which compared with that of the Black Hamburg is, to our taste, much more saccharine and luscious than that variety, even when grown on the same stock. It has received a first class certificate from the Fruit Committee at South Kensington. The foliage is very slightly lobed and deeply and sharply serrated.—*Florist and Pomologist.*

POTATO ROT AMONG NEW VARIETIES.—It seems that the growers of the new varieties that bring such a high price are tempted to kill the goose that lays the golden egg. An exchange states that some of the new varieties of potatoes have begun to rot, and attributes the cause of the disease to the use of unnatural means to obtain great growth:—

The people were desirous of making them yield as great a crop as possible, consequently stimulating manures were abundantly applied to the soil, and in a few instances diseased tubers were the consequence. There were some who were not satisfied with merely cutting up the potatoes into pieces, containing only a single eye; but they put them into a propagating house, and when the tops were a few inches long they were cut off and forced to produce roots, and this process was continued until late in the season. We know of one instance where two barrels of potatoes were produced from one tuber, but nearly one-half rotted soon after they were dug, and no wonder, after being subjected to such a steaming process. There are several new varieties of potatoes in the market, some of them selling very readily at fifty dollars each, and it must be expected that those who pay such prices will do their best to increase the stock.

ERROR AS TO PRUNING.—On page 58, the *American Agriculturist* for February, 1869, says: "The best time for pruning is after the trees have completed their Summer's growth; the worst time is when they are growing in Spring." Fifteen years experience has taught me exactly the reverse of this theory. That is, the best time for pruning is in the Spring, when the trees have just commenced their growth. Why? Because the wound is not exposed three or four months to the snow and the cold, the freezing and the thawing, the wind and the rain, which in some instances materially injure the tree, no matter how well protected by grafting wax. If the pruning is done just as the tree commences its growth with a fine sharp saw or other pruning tool so as to bruise the wood and bark as little as possible, the healing process ("the ring of wood and bark") commences to grow almost instantaneously. Hence the wound will grow over sooner with much less injury to the tree than if done in Autumn. I have made this statement for the benefit of those "who find themselves in charge of trees for the first time," and hoping that Mr. Judd will give us in his succeeding articles a little more "why" and a little better "when."—*A. A. Hull, in N. Y. Tribune.*

STRAWBERRIES.—J. F. C. Hyde (President of Massachusets Horticultural Society) names the following as among the most valuable proved sorts in the eastern portions of the United States, *Wilson's Albany*, not of first rate quality, but the great market strawberry for the million. *Triomphe de Gande*, nearly the only foreign sort for field culture—to be grown in hills—popularity rather waning. *Brighton Pine*, one of the best market sorts; its only drawback is that it

is only medium in size. *Hovey's Seedling*, the old well known standard sort, too well known for further comment. Of the new varieties, the *President Wilder* is, of course, the highest in promise—"few, if any, surpassing it in flavour," and so far as trial has yet been made, it is much preferred to Hovey, Jucunda and Triomphe de Gande. Among the sorts that have been cultivated to a considerable extent, but which will never probably become widely popular, are named the following:—Agriculturist, Austin, French, Boston Pine, LaConstante, Durand, Downer's Prolific, Green Prolific, Lennig's White, Russell, Ripawam, Jenny Lind and Napoleon III. Jucunda does not succeed well at the north generally, however excellent in certain localities. Burr's New Pine, of the best quality, proves too tender. Jenny's Seedling, Longworth and McAvoy's Superior have passed to the rejected list. The following are stated to be but little cultivated at present:—Hooker, Genesee, Rival Hudson, Cushing, Scott's Seedling, Orange Prolific, Crimson Cone, Pennsylvania, Brooklyn Scarlet, Cutter's Seedling, Fillmore, Monitor, Great Eastern.—*Co. Gent.*

Our Country.

TO INTENDING EMIGRANTS.

Our British and old country readers, no doubt, are aware that there is such a country as Canada, although where it is, and what it is like, many of them do not know, except by looking at a map of the American continent. To all such who may desire to mend their present position, to become freeholders, instead of leaseholders or annual tenants, to own a farm of their own, instead of sitting under the shadow and will of a landlord, to those who cannot get leases whatever their improvements may be, and who in short feel too independent for their present position, we say unhesitatingly "come to Canada"—and come to the Province of Ontario in Canada. Take shipping to Quebec or Montreal, then take the Grand Trunk Railroad for Toronto, and from Toronto set out on the immediate exploration for a new home.

Ontario has all soils, and all sorts of situations available. To the poor labouring man the free grants are open, and although the forest is hard to clear, yet when the settler feels that every stroke of his axe is a strike towards independence, the labour becomes light and pleasant. If the free grants do not please, there is plenty of wild land to be had on the easiest possible terms; the price will vary from two dollars to ten dollars per acre, according to soil and situation; and the terms of payment are made according to the requirements of the seller whose object it always is to sell. The poor man can, however, always get land on such terms that he can live on it, and pay for it from off the land itself; he is always sure of employment when he wants it at from three-quarters of a dollar to a dollar and a quarter a day, according to the kind of labour he is fit for, and he can choose his own employer at these prices, and never need be out of work. Our space will not admit of full particulars as to passage money and all the rest of these details, they can all be had by application to the Government Emigration Agents. The Canada Company also, No. 1 East India Avenue, Leadenhall street, London, England, will always forward full information to all enquirers. They have pamphlets on hand with all particulars, and if more is required than they have, the intending settler will be directed where to obtain what he wants.

THE BEAUTY OF MODERN PARIS.

Travellers tell us that Paris is rapidly becoming one of the most attractive cities in Europe, and that this is largely owing to the shade trees which have been extensively planted during the past few years. Within some fifteen years, no less than eighty-five miles of streets have been constructed in the French capital, all of which have been lined with trees. The elm, chesnut, ailanthus, plane, locust, and paulonia have been chiefly used for the purpose, and most of them being of quick growth, they have already quite changed the appearance of the French capital. Not only are trees planted on the completion of a boulevard, or street, but they are carefully protected from injury, and cultivated with persevering attention. The trees that line the public thoroughfares are as well looked after as those that adorn the parks and gardens.

This is as it should be, and much as we are inclined to think lightly of old world ideas, there are some of them, this among the rest, which are well worthy of being put in practice here. Every village, town, and city in our land ought to be made beautiful with trees. It might be done at comparatively small expense. We have

all the means and appliances close at hand. Nothing can exceed the loveliness of our native forest trees, our elms, lindens, maples, and oaks. Among these, at small cost, might be interspersed, chesnuts, abeles, and others from the nursery. By alternating slow and quick growing trees, a beginning of improvement can be secured at once, and ultimately those of quick growth be cut out to make room for the others. In this wooden country we ought not to suffer ourselves to be outdone in tree planting by the inhabitants of densely crowded European cities.

A CANADIAN ON RECIPROCITY.

[With pleasure, we publish the following spirited letter from an esteemed Canadian correspondent—not to provoke any farther discussion, but as it seems no more than fair, in view of the statements contained in the article to which it is a reply. Eds. Co. Gent.]

Editors Country Gentleman,—I read your paper weekly, and like it on the whole; but articles communicated to your columns by some of your correspondents are certainly very amusing, those especially which discuss free trade and reciprocity with Canada. There is some ridiculous nonsense of this sort in your last number, January 14th, under the caption of "United Action," &c., page 43. I have nothing to do with the protectionist views of that article. You American people are entitled to settle that question among yourselves; but when you bring us "Dominioners," as the writer calls us, into the dispute, and represent us as knocking at your doors for the renewal of the reciprocity treaty, we can only smile at the delusion which seems to possess this class of writers. I am not aware that we have been so materially affected by the abolition of this treaty, as to give us much concern whether it is renewed or not. You have to buy from us what you want of our productions, and experience so far has shown that the duties you have imposed on those productions come out of your own pockets. Our prices keep up. Our pork, which used to be nearly all sent to you, is now cured at our own doors, and sent direct to England. Our cattle fetch good prices; our wheat, oats, and other grains pay well; our poultry, butter, cheese, and in short all our agricultural productions sell readily, and at remunerative prices. We find open markets for all we can raise, and we are not conscious that we are near so badly ruined as some of your correspondents suppose we are, by the abolition of the treaty.

At all events, the expressions used by your correspondent in reference to us are entirely unwarranted. I believe the great majority of the *people* of Canada did sympathize with you in your struggle with the South. If some did not, would you have us put on the gag or the thumbscrews? We have free speech here as well as you in the States. People will hold and express their own opinions. If the exercise of this freedom has offended you, it cannot be helped; but we do not think it should offend a free people like you to know that everybody does not see as the majority of your people see. In a few years, our intercolonial railway will be built, and we shall have access, even in winter, to the European markets, without passing through your territory at all. Your policy towards us has made this railway a fact, and has developed and is developing in a thousand ways the means of self-help. If you think it for your advantage to throw our trade out of your hands, and divert it into other channels by your anti-reciprocity policy, you have a right to carry out your views; but you must not, as this writer does, suppose that we are going to appeal to your "generosity" on the question. We never have done so, nor shall we in the future. It is a question of mutual advantage, not of mendicacy on the one side, and generosity on the other. We wish to live in peace and good neighbourhood with you—to do business with you if you wish us, but if you don't, we can do it elsewhere.

A Canadian.

London, Ontario, Jan. 19.

Note by Editor Ontario Farmer.—The above letter has the right ring in it, and will be endorsed by all sensible people throughout the Dominion of Canada.

CANADA AND NEW ZEALAND COMPARED.

By a Canadian Settler.

We copy, from a recent issue of the *Globe*, the following letter, which speaks volumes of advice to Canadians to be content with their lot, and repress love of change. It will also help to decide intending emigrants where to choose:—

(*To the Editor of the Globe.*)

Sir,—I notice an article in the *Globe* from Dr. Riddell, wanting information to give to intending emigrants, and I thought it my duty to send you an account of what I think of the country after two years' experience.

From the glowing accounts I heard about New Zealand before I left Canada, I thought I would be all right if I were only there; accordingly, I left Toronto on the 20th September, 1866, and after what was called a good run, arrived in Auckland on the 7th of March, 1867. I remained in town for some days, and whilst there saw plenty of men standing about having no work, and could get nothing to do at any price.

I was fortunate enough to procure work in the country, intending to purchase a farm when I was a little more accustomed to the ways of the country. I had my grant of 40 acres of land, which I was allowed to select from any of

their "waste land," but I did not understand at that time what this meant. I found, on going to look at it, that their waste land was what none of their big men would have; for when a piece of land is opened, these men have the first choice, and as there is only about 100 acres out of every 1000 that is fit for cultivation, I found it a very hard matter to get 40 acres that would produce enough to support me. I could show you hundreds of farms on which the men that took them had expended all their capital, and, when they found that they could not make a living, were forced to leave them—to sell out was out of the question.

I have met a great many that have come from Canada, but not with any that would stay here a day longer if they could get away.

I would advise all that come here to bring money enough to take them away again in the event of their not liking the country, for I can assure them they are leaving a good agricultural country for a bad one; a good government for a bad one; and a good educational system for none at all.

They talk about their gold fields, but I am certain that not one out of every 1000 make a fortune, and the majority go away poorer than they came.

Then, too, we have Fenians here as well as in Canada, besides an unconquered race of natives, who at present are murdering men, women and children, and in the last two or three engagements they have had the best of it. On account of the regulars being recalled, we are now trying to raise volunteers, but they are mostly young men, and besides not having sufficient drill, they have no confidence in their officers, for there are so many whites connected with the natives by marriage. The natives are thus kept constantly informed of every move of our troops, and it is such a broken country that those accustomed to the hills can very easily escape.

I am confident that there are 100 men here who would leave for Canada to one that would stay, could they only get back the money they have expended on their land.

I trust you will pardon me for encroaching on your valuable space; but I thought it was nothing but right that those who were intending to emigrate should be made aware of what they might expect to meet with.

"R. E."

Auckland, Nov. 23rd, 1868.

THE MUSKOKA SETTLEMENT.

We have had numerous inquiries addressed to us within the past year respecting the capabilities of the Muskoka district, recently opened up for settlement under the Free Grant policy of the Ontario Government. It is asked whether there are sufficient quantities of arable land to meet the wants of a large influx of population, and also whether the climate is so severe as has been described by those who point to the Western States as the emigrant's earthly paradise. To the first of these inquiries we have uniformly replied that a very large amount of good land, well timbered and watered, awaits the settler, although the whole country is crossed by rocky ridges where the primitive formation crops out, and which are of course unavailable for agriculture. We feel assured that though there may not be such large tracts of rich farm land as are found in the vicinity of Toronto and to the westward, yet that individual farms will be found in large numbers, which will compare very favourably with the farms in these fertile districts.

Our purpose at this time, however, is not so much with the first inquiry as with the second; and as we happen to have some information of a reliable nature before us, we purpose giving it as briefly as possible.

The Muskoka settlement is situated about ninety miles north of Toronto, and about thirty east of the Georgian Bay, in the immediate vicinity of three beautiful lakes—Muskoka, Rosseau, and Joseph. The settlement lies on the 45° parallel, which to the westward passes through the northern part of Michigan, the middle of Wisconsin, and the southern portion of Minnesota, and to the east passes out of Canada in the neighbourhood of Cornwall; so that the whole of Quebec, New Brunswick, Prince Edward Island, and Newfoundland, together with the greater portion of Maine and Nova Scotia, lie to the north of it. The city of Montreal is thirty-five miles further north than Bracebridge, the political and judicial capital of the district, and the French settlement at Riviere du Loup is over two hundred miles directly north of the same point. Observing this fact, and noting at the same time that the isothermal lines passing through Canada bend away to the north as they pass westward, we can laugh at these alarmists who would condemn the whole northern portion of Ontario to a more than Siberian cold. About two years ago a number of gentlemen of this city, who were in the habit of spending their vacation in the back country, made arrangements for a regular series of meteorological reports in this section of country. The observations were such as could be taken without any time interfering with the regular employments of bush life, and by the aid of very inferior instruments; yet, from the regularity with which they have been taken, a certain amount of value must be attached to them. The spot whence they were taken is situated on the southern shore of Lake Muskoka, exposed to the biting northwest winds of winter, and cooled by breezes from the lake in summer. At the foot of the lake there lies a small land-locked bay, about 3 miles long and 1½ wide. It is so situated as to make it almost impossible for ice to drift out of it, and so cut up by islands that in no one portion has the wind an opportunity of exerting any great force upon it. It forms, therefore, an excellent means of judging how long ice will resist the modification in the temperature, apart from any extraneous influences. In 1867, the ice took on the 4th of December, and in 1868 on December 1st.

In the same years the ice broke up on April 27th and April 16th. If then we assume for the time that the average period of freezing up in Muskoka Bay is December 2nd, and of opening April 22nd, we have an opportunity of comparing it with such harbours as Kingston, Montreal, and Quebec, the records of which are the only ones at hand. The average time of closing and opening for five years is as follows :—

CLOSING.	OPENING.
Kingston, Jan. 4th.	April 7th.
Montreal, Dec. 11th	April 17th.
Quebec, Dec, 9th.	April 22nd.

Comparing these, we find this small bay is only closed seven days before Quebec, and nine before Montreal, two harbours whose powerful currents and tidal influences combat the action of the frost, and one month before Kingston harbour, which receives the full force of the heavy seas running the whole length of Lake Ontario; while, as if showing that the ice when formed was of not so durable a nature, it opened only fifteen days after Kingston, five days after Montreal, and at the same time as at Quebec. Judging from these facts, we are inclined to believe that the lake itself remains open as long as any land-locked bay on the north shore of Lake Ontario.

In 1867 the coldst day was January 30th, 20° below zero; and in 1868, February 3rd, 24° below. The following table shows the mean results of the months of 1867-8, the observations being taken twice a day during the year :—

	1867.		1868.	
	6 A.M.	NOON.	6 A.M.	NOON.
January	11	23.3	13.4	27.3
February	22	34.3	8.12	26.3
March	25	37	22.2	43.3
April	32.3	51	28.2	54
May	41.5	60.1	45	59
June	61.4	78.3	55.2	75.5
July	62.4	82.4	48.5	91
August	62	81	58.2	74.5
September	43	71.4	50.3	68.1
October	38.3	62.4	34.3	49.4
November	29.4	41.2	27.1	40.3
December	14	28.5	.....	.....

A glance at this will clearly show that, if American climatologists are correct in their statements that the limit for the cultivation of Indian corn is a mean temperature for July of 67°, this grain, the most delicate of our cereals, should not be a stranger to the Muskoka district; and indeed we can readily testify to having procured from the Indians of that section as fine green corn as we have ever seen in Canada. And if corn, why not wheat, barley and oats, which flourish full three degrees further north? Within a few yards of where these observations were taken, the writer has seen citrons ripen, as they had ripened in succession for a number of years; while the beautiful flowers which adorn our gardens, and the fruits and vegetables peculiar to our country, flourished beside them; And if nature has given this region a climate slightly colder than the southwestern portion of Ontario, it is compensated by a steady and moderate covering of snow during the whole winter, so that when the cold blasts of March are spent, the husbandman's labours commence at once. Among other memoranda we notice that butterflies were first seen last year on April 19th, gulls on ths 11th, ducks on the 14th, and the first wild flowers on the 19th. How much earlier are we in Toronto? —*Globe.*

SEA SICKNESS.

The November number of that excellent monthly, the *New York Medical Journal*, contains an essay on sea sickness, by Dr. Fordyce Barker, for the following synopsis of which we are indebted to our valued contemporary, the *Country Gentleman*:—After remarking that there are few other maladies which produce such an aggregate of human suffering, and none which the medical profession has done so little to relieve, or for which it is so seldom consulted, Dr. Barker proceeds to characterize and combat what he denominates three common errors in regard to it—being ideas which are so generally held that their denial must surprise at least most non-medical readers. The first is the belief that sea sickness is often beneficial and never permanently injurious. The author not only doubts that it ever benefits the health at all, but thinks the improvement resulting from a sea voyage is generally proportioned to the freedom from sickness. In many instances, moreover, he has known serious and permanent injury to result; and he advises all persons of depressed vital powers with impaired digestion, whose past experience has demonstrated their liability to this ailment, to avoid exposure to such a hazard.

Then it is commonly thought that sea sickness is never dangerous to life. It does not often result fatally, but oftener, Dr. Barker suspects, than is generally supposed, having known of three deaths from this cause, and heard of three others. These deaths resulted from starvation, owing to the utter impossibility of retaining a sufficient amount of food.

The third error is the general belief that the medical art is powerless for the mitigation of the malady. There are indeed no specific drugs which will cure or prevent it, but every physician ought to be able to give such advice as will diminish the tendency to it, and mitigate the suffering. This advice our author gives, arranged in seven rules—of such a nature, unfortunately, that few will be guided by them, but we are assured that, if followed, they will prove efficacious.

1. Make every preparation at least twenty-four hours before starting. 2. Eat a hearty meal before going on board. 3. Go to bed before the ship starts, having conveniently arranged such articles as will be needed for a

day or two: this rule is important. 4. Eat regularly and heartily, but without raising the head for a day or two at least. 5. Take some mild laxative pills on the first night out. 6. Never rise in the morning without first eating something. 7. If the sea becomes rough, go to bed *before* getting sick.

MILD WINTER WEATHER.—The season appears to be exceptionably mild on the continent of Europe as well as in Canada. The *Mark Lane Express*, in reference to similar seasons, says:—There have been years in which no frost and snow whatever were seen. In 1172, so mild was the season, that the trees were covered with leaves; and the birds built their nests and hatched their young in the month of February. In 1289 there there was no winter; and in 1421 white blossoms were to be seen on the ordinary trees in March, and on the vine in April; cherries ripened in the latter month, and the grape in May. In 1538 the gardens were bright with flowers in January; 1572 was like 1172; and 1607, 1612, and 1617 were remarkable for their genial temperature. Neither ice nor snow was visible in 1659; no stoves were lit in Germany in 1692; and the softness of the weather in 1791, 1807, and 1822 rendered those years quite phenomenal.

Arts and Manufactures.

CANADIAN FURNITURE AT THE FRENCH EXHIBITION.

The Lords of the Committee of Council on Education, gave directions to have prepared for the Science and Arts Department, a series of Reports on the late International Exhibition at Paris. The London *Builder* says the first volume, not yet issued, is to contain a general report and tables of statistics. Volumes two to six are published, the last of which "contains so many useful plans, and so much information, that it deserves to be made widely known, and to be consulted." It is, unlike the other volumes, not international in its character; it is exclusively English. The third volume relates exclusively to the processes of manufacture of foreign goods, and those of the colonies. This volume contains Mr. R. H. Soden Smith's report on household furniture, in which he says "Canadian household furniture, unpainted and unvarnished, made of oak, light pine, and hickory, stood out well by the side of that of other countries; for a chair of hickory could be sold for 1s. 3d., an arm chair for 2s., and a chest of drawers, of the three woods intermixed, for 15s." The furniture here referred to was that sent by Messrs. Jacques & Hay, of Toronto, and Edward Miall & Co., of Oshawa. This speaks well for our wood manufacturers, and is suggestive of the possibility of opening up an extensive trade in the branch of business referred to.

LONDON UNDERGROUND RAILWAYS.

Another section of three miles, of the "New Metropolitan Inner Circle" Railway, has just been completed, at a cost of $3,500,000 per mile. This portion of the line runs from Kensington to Westminster Bridge, completing the inner circle from Moorgate street to Westminster. About one-third of the distance had to be tunnelled, the remainder was open cutting—that is, a "broad, lofty square chamber, with a flat roof on massive wrought-iron girders. The greatest depth below the surface to the rails is about 32 feet, and the principal engineering difficulties were the coming in contact with and the bursting of sewers and water-pipes. At one portion of the line, below low water-mark, during construction, the water had to be pumped out at the rate of 4,000 gallons per minute; here it also passes under a large brewery, which is now wholly supported by a series of iron girders. To prevent damage by vibration to the walls of Westminster Abby, which it passes at a distance of 90 feet, the walls of the tunnel on that side are built "seven bricks thick, behind this comes the Victoria Sewer in a tube of iron, and behind all a bed of peat seven feet thick."

A company also proposes to tunnel between the Post Office and the Marble Arch, entrance of Hyde Park. The engineer undertakes that, during the construction of the line, the ordinary street traffic shall not be interrupted between the hours of six in the morning and ten o'clock at night. Excavations made during the night, will be covered in and pavement relaid, each morning, before the hour stated. Trains, drawn by wire ropes and stationary engines, will start every two minutes.

TWEER IRONS FOR FORGES.

A recent number of the *Scientific American* contains a description and illustration of an improved tweer iron, which combines the advantages of a

hot blast with a cool tweer face. This consists of a tank, or barrel, behind the forge, filled with water to a level about that of the twe. Inside this tank is a drum into which the blast enters, and passing through a pipe reaches the fire through the nozzle. This nozzle is a hollow casting, and is filled with water by means of a pipe from the tank already mentioned. Steam is thus generated in the nozzle, which is conveyed back to the tank by another pipe, and condensed. "The water entering the tweer nozzle is kept in a constant state of circulation by means of the steam created by the heat, and the face of the tweer nozzle is kept cool while a hot blast is passing through it. The tweer box is about fourteen inches long, ten wide, and eight deep, giving an ample chamber for the heating of the air before it reaches the fire."

The same journal says the London *Ironmonger* "speaks in very high terms of the actual working of the device;" and "all concur in the statement that the iron can be heated in one-third the time usually required, with a corresponding saving of fuel, and that the heat is softer and more 'suant,' not burning the surface before the interior is reached."

POISONED SHIRTS AND STOCKINGS.

Both in Britain and on the Continent of Europe, shirts and stockings, dyed with a certain red dye, have been found to produce a pustular eruption on the skin, very difficult to cure. In London a committee was being formed to investigate the cause, but scientific men in both Germany and France, state that it is a dye prepared from carbolic acid, being treated with oxalic and sulphuric acid, and afterwards with ammonia. It is advised that its use be discontinued, as, though it does no internal mischief, it causes great irritation. The *Mechanics' Magazine* suggests: "It may be that a new counter-irritant has been discovered which the doctors will appreciate."

CANADIAN BUTTER AND BACON.

The prices of Canadian butter, compared with that of other countries, as quoted in the London *Grocer* of February 20th, were: Canadian, from 101s. to 122s.; Normandy, from 118s. to 126s.; Brittanys, from 119s. to 126s.; Cork, from 104s. to 148s. Canadian sides of bacon, from 65s. to 66s. per cwt.; English, finest sides, from 74s. to 75s.

DANGEROUS STEAM-BOILERS.

There is a Steam-Boiler Inspection Company in Hartford, Conn., the operations of which—judging by its monthly reports—is likely to have a salutary influence on proprietors and managers of steam-boilers, in the prevention of explosions and injury to life and property. Its published statement for February says:—

"During the month of January, 275 visits of inspection were made, and 536 boilers examined —445 externally, and 166 internally—and in addition, 37 have been tested by hydraulic pressure. In these boilers 403 defects were discovered—51 of them being regarded as particularly dangerous. Furnaces out of shape, 21, and 1 dangerous. Fractures, 60, and 12 dangerous. Burned plates, 23, and 2 dangerous. Blistered plates, 48, and 6 dangerous. Cases of incrustation, 68, and 3 dangerous; the scale was so thick in these three cases as to keep the water entirely from the fire sheets, and they were consequently badly burned and weakened, and hence were positively dangerous. Cases of external corrosion, 53, and 6 dangerous. Where boilers are bricked in, we find this latter difficulty frequently, and if the joints of the steam-pipes, running from and over the boiler, are not tight; the leakage dripping down on to and through the brick covering, silently, but surely makes trouble. Internal grooving, 7. Water gauges out of order, 22. Blow-out apparatus out of order, 3. Safety valves over-loaded, 29, and 6 dangerous. Pressure gauges out of order, 70, and 5 dangerous. Boilers without gauges, 27—all of which we regard as dangerous; and one boiler is reported without either safety valve or gauge!

"The comments made by our various inspectors are as follow:

"One says: 'The dangerous defects noted in my report were two safety valves—one of them the lever was corroded in the socket so fast that it could not be moved without bending or breaking, and the pin could be got out only by drilling. The other valve had, in addition to its own proper weight of 160 pounds, another weight of 90 pounds on the lever. The pressure of steam required to lift this valve would be 140 pounds to the square inch.'

"These safety valves were each put in good working order, and properly weighted. Another defect was a very bad blister over the fire, which was repaired at once; and three mud drums were found so far gone that the inspector could drive his hammer through in various places; these also were put in good order.

"Another inspector writes that, in his territory, he finds a great many low-water indicators out of order and inoperative. And further, that in some places so much reliance is placed upon them that the guage cocks are seldom used; and in many instances, have become entirely useless from corrosion.

"Now, we most emphatically advise all parties

to see to it that their safety valves and gauge cocks are in the very best condition—no matter how many patent attachments there may be—by no means fail to see that those most important appliances—steam gauge, safety valve, and three-gauge cocks—are in perfect working order.

"One inspector reports thirty-three steam gauges incorrect; the variations are not large, except in two instances, where one indicated fifteen pounds, and the other twenty-one pounds less than the actual pressure carried.

"Our Home Office inspector contributes the following, which we commend to the careful perusal of paper manufacturers:

" 'The proprietors of paper mills, as a general thing, pay too little attention to the condition of the check valves of their bleach boilers. Where these check valves are out of order, the pulpy matter passes over into the steam boiler. And we have sometimes found it at and about the water-line, in places three inches thick. The lime also, which passes over, is deposited in the form of scale upon the sheets and flues, rendering them liable to be burned, beside causing great waste of fuel from its non-conducting character. The valves must not be left until there are positive indications that they are in a leaky condition, but they should be examined frequently and be replaced by new ones, in case there is serious leakage. Never trust to grinding by inexperienced persons for a tight valve—there are very few who can grind in a valve properly, and in many cases the leakage will be greater after the attempt. We have not referred to the danger resulting from vitriol, used in bleaching, being carried over into the boiler, as it must be obvious to every user, that such a mixture cannot be otherwise than injurious. The only way to keep things in a good and safe condition, is to pay attention to all the parts and appliances about the boiler.' "

The above reports show a shocking state of neglect, and recklessness of conduct, on the part of the parties concerned; but no worse than was discovered by the "Manchester" and "Birmingham" (England) companies, when first commencing their inspections. A great improvement, however, has taken place in consequence of the operations of these societies. Let Canadians take note.

STEAM PLOUGHING.

The Society of Practical Engineering held its regular meeting, Feb. 16, in Cooper Institute, the leading topic for the evening being Steam Tillage. Dr. A. W. Hall read a very interesting and instructive paper upon the subject of cultivating the soil by steam ploughing. He reviewed the methods now in use in England, as well as those which had been abandoned, and gave drawings of the machines on the black-board. These machines were expensive, and could only be used on level land, and by men of great wealth. Locomotives moving with the ploughs had long since been abandoned, because machines impinging with sufficient force on the ground to drag the ploughs, packed the soil injuriously, by their great weight. The ploughs in use in England consisted of stationary engines, and wire ropes by which the gang of ploughs were drawn through the soil. Notwithstanding the enormous expense attending that plan, it was found on large farms to be more economical and profitable than horse ploughing.

Dr. Hall then presented a plan which he thinks will prove practicable in the United States. A steel wire rope is to be stretched across the field, and attached at each end to anchors. A very light portable steam-engine is to be used with only enough weight to give strength, and not dependent on the action of the wheels on the ground for its locomotion. In the ordinary locomotive the "bite" of the driving-wheels on the rails secures the locomotion, and that is increased in proportion to the weight of the engine. But in this proposed machine the engine works a "clip drum," which takes firm hold upon the rope and thus pulls itself along and across the field, dragging the ploughs after it. This drum impinges upon the rope, which it lifts from the ground as it goes along. The great advantages claimed for this plough are: Immense force, with but little weight; the ability to travel over uneven ground; freedom from action, and general facility of working. Such a machine, he thinks, can do more work in a day than eight two-horse teams, and as many men. Beside, it can be worked all night, thus accomplishing as much work as 16 two-horse teams during the 24 hours.

The plan was illustrated on the black-board, and presented every appearance of feasibility.

AUSTRALIAN BEEF BANQUET.

A banquet of Australian meat was given on the 8th inst. at the Cannon street Hotel; Mr. Wm. McArthur, M.P., presided. The object of the banquet was to demonstrate the practicability of adapting beef and mutton, preserved in Australia, to the ordinary purposes of domestic use, as well as to that of the naval and mercantile marine. In addition to the various dishes being made of Australian meat, a number of tins of beef and mutton were opened in the room, and were partaken of by the company. The mode of preservation is that adopted by Messrs. John McCall & Co., 137 Houndsditch. We regret that pressure of space would not allow of a report in our last issue, and the same cause now precludes a lengthy review of the company's proceedings. However, we are glad to state that this most philanthropic as well as commercial enterprise is receiving that share of public attention which is its due. Mr. John McCall may justly feel proud of being the promoter of so useful an undertaking.—*London Grocer.*

MACHINE FOR MAKING PAPER PULP FROM WOOD.

A Mr. Burghardt, of Great Barrington, Mass., has invented an improved machine for the purpose above indicated. It consists of a cylinder mounted on a frame, the cylinder being covered with a jacket of rasping, filing, or cutting material, formed by successive circles of steel or chilled iron segments. At one end of the cylinder shaft the power is attached, and at the other end the shaft carries a worm that engages with a gear turning on a shaft in bearings attached to the frame. On this gear shaft are two cams, or eccentrics, that, turning between jaws or 'struts' of a sliding frame, give a gradual reciprocating motion to a hopper or receiver for holding the block of wood to be comminuted by the machine. The lower surface of the wood bears upon the rasping or cutting surface of the cylinder, and its gradual reciprocatory motion insures equality of abrasion, without leaving the ridges which otherwise would correspond with the interspaces of the cylinder coating. A weight or spring, or any other suitable device, can be attached, if desired, to the block for the purpose of graduating its amount of pressure on the cylinder. * * * * The material is deposited beneath the machine in any convenient receptacle. The fiber, as it comes from the machine, appears, under the microscope, and also when tested by the touch, to be well adapted for mixing with other paper stock. It is neither sawdust nor coarse threads, but a floss-like fiber similar to short-stapled cotton or flax."

The *Scientific American* of March 6th, has an illustration of the machine.

The Guelph Farmers and Mechanics' Institute has a balance on hand of $381 14. They should invest it in lectures, books and evening classes.

"The fine arts do not interest me," said Theodore Parker, "so much as the coarse arts, which feed, clothe, house and comfort a people. I should rather be a great man, as Franklin, than a Michael Angelo—nay, if I had a son, I should rather see him a mechanic who organized use, like the late George Stephenson, in England, than a great painter like Rubens, who only copied beauty.

A fortunate fellow says that his waggon tires wear out before they get loose. The reason is, that before the tire is put on he saturates the felloes in hot linseed oil for an hour, making them water proof, so that the shrinking and swelling that loosens the tire are prevented.—— A nail-hammar should never be used for pounding stones, or any other hard material. The face should be ground true and level, so that a line across the face will run parallel with a line cutting the middle of the handle. A hammer having a round face, when employed to drive nails, is very apt to bend the nails over before they are driven in.

Painting Zinc.—A difficulty is ofen experienced in causing oil colours to adhere to sheat zinc Boettger recommends the employment of a mordant, so to speak, of the following composition: One part of chloride of copper, 1 of nitrate of copper, and 1 of sal-ammoniac, are to be dissolved in 64 parts of water, to which solution is to be added 1 part of commercial hydrochloric acid. The sheets of zinc are to be brushed over with this liquid, which gives them a deep black colour; in the course of from 12 to 24 hours they become dry, and to their now dirty gray surface a coat of any oil color will firmly adhere. Some sheets of zinc prepared in this way, and afterwards painted, have been found to entirely withstand all the atmospheric changes of winter and summer.—*Scientific American.*

Coal Oil Test.—The Corry, (Pa.), Kerosene Oil Works recommend the following as a simple manner of determining the fire test of kerosene oil: "Take a cup or tumbler, fill it nearly full of water previously tested by the thermometer to be 110° or 111° Fah.), then take a tablespoon full of the oil, of which it is desirable to test the igniting point, immerse it in the water, and stir for a moment or two to permit the oil to reach the equal temperature of the water, pass a lighted match very closely over the surface of the oil once, which always floats on the water. If it does not ignite, it can be safely used, but if it does ignite, discard it, however low the price may be; this is a fair and sure test as far as safety is concerned. The other so desirable point—does the oil burn brilliantly and without charring the wick?—the experience of every family will soon detect. Something depends upon the wick, and something upon the lamp, but properly manufactured oil is the main thing needed."

Trades vs. Clerkships.—He who would turn up his nose in scorn at serving an apprenticeship at a trade where his hours of labour would be but ten at most, possibly only eight, out of the twenty-four, and who, at the expiration of three, four, or five years would be a competent workman worth a handsome compensation, possibly capable of acting as foreman, superintendent, or employer, chooses to agonize and struggle for a place in some mercantile business where he is the drudge of his fellow employes, and almost a thrall to his employers for years, only to find himself a clerk for the best part if not the remainder of his life. As a journeyman in almost any mechanical business his pay would be absolutely greater than as a clerk, his hours of labour would, in most cases, be less, his responsibilities less, and the wear and tear on his body and mind less. But—the mechanic labours with his hands and soils them, and wears overalls, and coloured shirts, and rolls up his sleeves, and carries the honourable insignia of toil about with him, while the clerk may sometimes keep clean hands, and dress neatly, and show a white shirt front, and carry only a pencil behind his ear; consequently the choice of the show with its accompanying drudgery, rather than the subsistance with its independence.—*Scientific American.*

Hearth and Home.

A TALK WITH THE YOUNG FOLKS ABOUT THE MONTH.

The month of March is blustering and stormy, especially marked by high winds, and in this climate is pretty cold. In England the proverb is,—

"March winds and April showers
Bring forth May flowers."

Our picture shows what we do not often see in Canada during this month, the process of ploughing and sowing. In Great Britain and other European Countries, also in the Middle States of America, March is the seed time. Occasionally we have an early spring which admits of ploughing in this month, but generally winter holds the ground in icy fetters, and the plough cannot start until about the first of April. It would be a great help to farmers if they could begin their spring work earlier, for it is a very short and hurried season, which so soon passes by, and always leaves a great deal of work undone, that they would like to do. In this respect it is like the period of youth, and indeed like human life itself. How short our time is and how soon youth and life are over. Let this teach us to live while we live by living to God.

It is pleasant after the dreary winter time to see signs of coming spring. The sun gets high in the heavens and shines brightly down. The days lengthen. Vegetable and animal life begins to stir. There is a sense of animation and quickening throughout all nature. Man feels the impulse, and is filled with gladness and joy.

We must remember who it is that sends the pleasant spring time. The Bible says: "Thou renewest the face of the earth." Only an Almighty Being could do it. If we were left to thaw out the earth by artificial means, and to get rid of ice and snow what an impossible task it would be. Why it gives us no small trouble to sweep away the snow from our door yards and to make paths here and there, through the winter. How helpless we should be but for the goodness and faithfulness of the Creator. God never forgets his creatures. He has promised that seed-time and harvest, summer and winter shall not cease. And so year by year the seasons come and go, each in their appointed course, without failure or confusion. How thankful we should be for his many mercies. "O that men would praise the Lord for his goodness, and for his wonderful works to the children of men!"

SOWING WILD OATS.

Young man! Do your friends say of you, with a benevolent, forbearing smile, "Oh! he is only sowing his wild oats. He will come out all right by and by?"

If so, do not believe them. Remember that a voice true as Heaven, and thrilling and solemn as Death, comes down to us through the ages; saying in trumpet tones, "*Whatsoever a man soweth, that shall he also reap.*" If you sow the wind, you will reap the whirlwind. If it is vice, riot, dissipation and intemperance, you may be sure of a harvest of shame, disease, and early death *here*; of remorse, unutterable agony, and the most terrible despair in the world to come. Did you ever see a man sow weeds, and raise a crop of beautiful flowers?—sow wild grass and raise grain?—sow thorns, and gather rich fruit!

"Whatsoever a man soweth *that* shall he also

reap." If the farmer does not sow in the spring time, but waits till the summer heats come on, his crop comes up poorly, and is nipped and blasted by the early frosts; and all his labour is lost for the season. And just so it is in human life. Our nature is such that we cannot help sowing, and having sown in our minds by others seed of some kind, that is sure to spring up and bear a crop. What others sow in our minds in childhood, we cannot prevent; and often have reason to deplore; but for what we sow ourselves in our own and other minds in later years, we shall certainly be responsible. The crop we raise—the fruit of all our earthly labours, must compose the sheaves, all will be required to bring into the heavenly harvest. If they are composed of tares, we are assured that they will be burned. If they are poor, and meagre, they *may be* accepted, as the best we can bring through a sincere but late repentance. But if they are rich in the precious fruits of love, charity, and self-sacrifice for the benefit of the human race and of a glorious example of patience and perseverance, in the cause of truth and righteousness, then shall we bring precious sheaves into that heavenly harvest.

And is not this something to think of seriously; something to strive for earnestly? Can you in the solemn night watches look forward to that time when the tares shall be bound in bundles, and the wheat gathered into the heavenly garner, and still continue to sow the evil seed?—*Cor. Advance.*

GAMBLING.

"Give me a cent and you may pitch one of these rings, and if it catches over a nail, I'll give you six cents."

That seemed fair enough, so the boy handed him a cent, and took a ring. He stepped back to a stake, tossed the ring, and it caught on one of the nails.

"Will you take six rings to pitch again, or six cents?"

"Six cents," was the answer, and two three-cent pieces were put into his hand. He stepped off well satisfied with what he had done, and probably not having an idea that he had done wrong. A gentleman standing near had watched him, and now, before he had time to look about and rejoin his companions, laid his hand on his shoulder.

"My lad, this is your first lesson in gambling!"

"Gambling, sir!"

"You staked your penny and won six, did you not?"

"Yes, I did."

"You did not earn them, and they were not given you; you won them just as gamblers win money. You have taken the first step in the path; that man has gone through it, and you can see the end. Now I advise you to go and give him six cents back, and ask him for your penny, and then stand square with the world, an honest boy again."

He had hung his head down! but raised it quickly, and his bright, open look, as he said, "I'll do it," will not soon be forgotten. He ran back and soon emerged from the ring, looking happier than ever. He touched his cap and bowed pleasantly as he ran away to join his comrades. That was an honest boy.—*Young Pilgrim.*

ON MAKING WINTER BUTTER.

When milking, be sure your hands are clean, strain and place in crocks in a cool place in a good milk house. Some argue long crocks are the best, some that shallow are the best; although the shallow crocks will raise cream the quickest, they are not so good as the deep ones, as the cream is not so good; let them stand in the water until the cream is perfectly separated, then skim and put the cream into a large cream crock, where it is allowed to remain until it is perfectly sour. The crocks and all vessels used should be scalded every time before they are put away after using. In cold weather it is sometimes needful to warm the sour cream before churning, but it is seldom the case; freezing and scalding both spoil the cream. To make good butter, churn in an up and down churn, which is undoubtedly the best there is to be found; never use scalding water, as it ruins the butter, but give good elbow grease till done. In dairies of more than one or two cows, a dog or horse power may be used, which saves a great deal of hard work. Take out the butter immediately and work out all the milk possible, then add a little salt and let it stand until the next morning, when it should be worked over again, allowing no milk to remain in it. Then have your butter crock scalded and rubbed with salt, place the butter in it, packing as tight as possible, cover with a fine piece of muslin, and pour on a brine which is to be made with salt and water.

HEARTH AND HOME GLEANINGS.

The Country Gentleman says that in the early days of New England boys saw hard times, not because they went barefooted, but because they had no shoes to slide on the ice.

The vices of Americans are brief:—1. An inordinate passion for riches. 2. Overwork of the mind and body in the pursuit of business. 3. Undue hurry and excitement in all the affairs of life. 4. Intemperance in eating, drinking and smoking. 5. Disregard of the true laws of life and health. Let all and sundry take warning.

A romantic pair in Pennsylvania are blessed with a number of daughters. The eldest was called Caro-line; the second, Made-line; the third, Eve-line; the fourth, Ange-line; when lo! the fifth made its appearance, and no name could be found with the desired termination. Determined, however, to "fight it out on that *line*," the parents pounced upon a name very popular in their neighbourhood, and forthwith the baby was called Crino-line!

Poetry.

THE GRECIAN BEND.

Let's have the old bend, and not have the new;
Let's have the bend that our grandmothers knew;
Over the washtub and over the churn,
That is the bend that our daughters should learn.

Let's have the bend that our grandmothers knew;
Over the cradle, like good mothers true;
Over the table, (the family round,)
Reading the Good Book 'mid silence profound.

Let's have the bend that at church they did wear,
Bowing them lowly in meek, humble prayer;
Not sitting erect, with the modern-miss air,
With the "love of a bonnet" just perched on one hair.

Leave the camel his hump—he wears it for use;
Leave the donkey his pannier—and cut yourself loose,
From fashions that lower, deform and degrade!
To hide some deformity, most of them made.

Let our heads of false hair and hot yarn skeins be shorn;
Let our garments be easy and light to be worn;
Don't shake in December and swelter in June,
And appear like unfortunates struck by the moon.

Let's spend the time in things nobler than dress!
Time that was given us to aid and to bless;
Time that is fleeting and passes away;
O! let us work while we call it to-day!

Let's have the old bend instead of the new;
Let's have the old hearts, so faithful and true;
Away with all fashions that lower and degrade!
To hide some deformity most of them made.