

FARMER'S ADVOCATE

AND HOME MAGAZINE.

VOL. XV.

LONDON, ONT., MARCH, 1880.

NO. 3.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

THE FARMER'S ADVOCATE

—AND—
Home Magazine.

WILLIAM WELD, Editor and Proprietor.

The Only Illustrated Agricultural Journal
Published in the Dominion.

SUBSCRIPTION:

\$1.00 in advance; \$1.25 in arrears, postpaid. Single copies 10 cents each.

Subscriptions can commence with any month. Subscriptions forwarded by Registered Letter or Post Office Order are at our risk.

The *ADVOCATE* is discontinued on notice and all arrears must first be paid.

Subscribers who desire to change their P. O. address will send both *old* and *new* address.

ADVERTISING RATES:

Twenty cents per line of nonpareil, and fifty cents per line for special notices in reading column.

Special contracts made for definite time and space.

CONDENSED ADVERTISEMENTS.

Farms wanted, for sale or to rent, under twenty words and not exceeding four lines, 50c. each insertion.

Live stock wanted or for sale, under twenty words and not exceeding four lines, 50c. each insertion.

Stock Breeders' Cards at \$1 per line per annum, in advance. For Commission to Agents on new subscribers, &c., address THE FARMER'S ADVOCATE, LONDON, ONT., CANADA.

The Month.

February has been unusually mild, and the sleigh bells have been very little heard. Mud, frost and bad roads have prevailed. January having also been so unusually mild, one would almost think that Ontario had run off the track, especially so when we compare it with the reports from the North-west Territory, where the cold has been unusually severe, and the snow and piercing winds have caused much suffering and inconvenience.

THE CROPS.

This open weather has been injurious to the clover, and has been especially so to all newly sown clover and timothy. The constant freezing and thawing has almost thrown some of the wheat plant out of the ground already, especially the late sown and that on undrained clay soils. The unusually rank growth made by the wheat last autumn proves to be the greatest protection, as there has been no snow to smother the blade. Thus we see the evils we often fear, and extra growths that we think injurious, are frequently in the long run found most beneficial. This is sometimes the course pursued by nature—man's judgment not always being correct.

DAIRYMEN'S ASSOCIATION.

At the annual meeting of the Western Ontario Dairymen's Association, which was held in this city, a very important battle was fought. The contest was whether Professor Arnold had discovered a new way of making cheese from sweet curd or not, and whether the process was superior to the old plan.

Many of the most powerful orators and writers on dairy matters were there from the States and Canada. The battle was well fought on both

sides, both parties believing they were correct. At the outset a cheese of inferior quality was exhibited that was made on Arnold's sweet curd process, and many of the opponents of the new process felt sure they had the field. But the following day Arnold's friends exhibited a cheese made on the sweet curd plan, and brought such an array of facts from scientific experiments and explanations from the Professor and numerous leading dairymen that had put his plan into practice, and found that they had better cheese and sold at better prices than that made on the old process, called the Acid or Cheddar process, that the opinion of the meeting was decidedly in favor of the sweet curd process. There were some who retained their opinion in regard to developing the acid, but the result will be that all will endeavor to make their cheese with as sweet a curd as possible, although they may not like to admit of Arnold's superior knowledge on the subject.

This we think a very important subject, as Mr. Arnold plainly shows that cheese made from sweet curd is more palatable and more digestible than that made from sour or acid curd, and that home and foreign consumption will be increased by it, and that better prices will be obtained on account of the superior quality and increased demand. T. Ballantyne, M.P.P., the President of the Association, was absent through sickness, but he endorses Prof. Arnold's process. Hon. H. Lewis, President of the N. Y. Dairymen's Association, also endorses Prof. Arnold's views.

We strongly advise our readers to read Mr. Arnold's addresses. One will appear in this issue, and one in our next issue, and when you have read them endeavor to put his closely studied and tested plans into operation, and you will be amply repaid. In our reports we shall publish the principal speech made in opposition to Mr. Arnold's plan.

On the question of salt another very important decision was arrived at. Cheeses were tested that had been salted with different brands of Canadian and Liverpool salt, and despite the puffs and advertisements that had been heralded over the land about Higgins' and Ashton's salts, the cheese that was made from Canadian salt was pronounced by the judges to be the best. This will stimulate the owners of our salt works to produce the quality required, and save our dairymen the unnecessary expense of using imported salt. This will add more wealth to our coffers, as it will enable us to retain the large sums that have been annually expended for foreign salt.

PRICKLY COMFREY.

An article from the pen of A. P., inserted in the January issue, on prickly comfrey, drew out a host of correspondence from the eastern portion of the Dominion—far too much to be inserted in one issue. By reading the discussion on this subject you may be able to draw correct inferences.

THE DUTY ON CORN AND GRANGE QUESTIONS.

An opening for discussion was given by inserting remarks about the duty on corn and a communication about the Grange. We have been flooded with communications on these two subjects, every one expecting their letters to appear, even if repeating what others have said. We do not wish this journal to take either side, but will leave them to those directly interested, as people will see things in the light in which they expect to get the most money. We can not allow the space of this paper to be too much occupied by these subjects; therefore only a half-column more on each side of these two vexed questions will be allowed, which must stop the controversy. If some of the numerous ready writers on the above subjects would devote their time and paper to giving information on other good subjects pertaining to farm and household, and its improvement in the thousands of ways open for such, they will always find a welcome corner in this journal. We much regret that many really good articles furnished by writers for prize essays cannot be inserted, as the frequent repetition of a similar subject becomes distasteful to our readers.

CLOVER.

The astonishing activity evinced by speculators in clover in Ontario caused many farmers to hold for higher prices. Some farmers whom we have heard of that were offered \$5.75 to \$6 for their crop as soon as threshed are now regretting their lot, as clover is now a heavy drug, and the prospects are that there is not much of a chance of any great advance until after another harvest. Considerable has been recently sold at \$3.25. The fall is a great one, and bears out our oft-repeated advice to sell as soon as you get ready, whether beef, fruit, roots or cereals.

SEED WHEAT.

Many continue to enquire which kind of spring wheat is the best to sow. There is no variety that we can commend as superior to all others. The Red Fern, Odessa, Gordon, White Fife and White Russian have each surpassed any other varieties in different localities, and each have been surpassed by each in other localities. There are some farmers who laud the Red Chaff, the Egyptian and the Chi'ian, or Arnecta, but from the reports of millers we think it right to discourage their cultivation, although some of them may have yielded good returns. The quality of the flour is weak and inferior, which tends to injure the reputation of Canadian flour, and this in turn tends to lower the price we should obtain for first-class flour. We should aim to have the best, and discourage the raisers of any inferior product. It is from the best that money is made. Do not regard any man that comes to your door with a sleek tongue and some new and wonderful tree, plant, seed wheat or patent right, or anything to which your name is to be attached. The swindling, the false swearing and the gross deception under which many farmers have been ruined should cause some of our legislators to endeavor to check deception and discourage falsehood and fraud in whatever garb it may appear, and aim to encourage a higher standard of honor and veracity than that which is now so rapidly demoralizing the atmosphere of our fair Dominion.

English Letter, No. 11.

[FROM OUR OWN CORRESPONDENT.]

Liverpool, Feb. 4.

You will be pleased to learn that the reports of the Farmers' Delegates have now been brought out in pamphlet form, and you will probably have received a copy ere this. I have attentively read considerable portions of these, and I cannot imagine a more valuable testimony, unanimous as they are in their praise of the Dominion and its great resources. If I am not very much mistaken, these reports will prove the finest stroke in emigration propaganda ever devised, and will bring large numbers of men with substantial means to try their fortunes amongst you.

Last week a pioneer consignment of cattle was landed here ex the steamship Brooklyn by a company which has recently been organized in the Maritime Provinces. Although these cattle were coarse in quality and caused no small amusement when passing through Liverpool and London by the clatter of their shoes, which were still on them, I am glad to say that they returned a fair profit. It should, however, be borne in mind that the beast which has been the faithful slave of some back-woods settler or lumbering firm in Nova Scotia or New Brunswick, for a decade or so, is not the sort of animal required for beef in this country. From what I hear, however, of the efforts which are being made by the farmers' societies in the Maritime Provinces to improve their breeds, and also from the remarks of some of the delegates on the resources of certain districts of those provinces, and especially their wonderful pasturage and their close proximity to the British markets, I cannot see why these provinces should not successfully compete with the rest of the continent in the production of choice beef and mutton for the British markets.

A quantity of fresh beef was also landed from the Brooklyn, but, owing to its not having been packed in a proper manner, a heavy loss resulted. On the other hand, some beef brought from the Eastern Townships, frozen and packed in cases which were firmly, indeed almost hermetically sealed, reached this port in good condition and turned a fair shade of profit. Still I should not like to recommend this system, for the experience of some years has now shown me that the best, most profitable and least risky way is to ship live stock and not dead meat.

We have again been experiencing very severe frosts—that is, for this country. This unexpected severity must retard field operations and prolong the period of indoor feeding; for the frosts, being without snow, have had a proportionably severe effect on vegetation. In the sheep-breeding districts, where grass and roots are scarce, this will have, I fear, a bad effect on the ewes next lambing time, now near at hand.

The prospects of the sheep trade in the immediate future are not very promising, for in addition to the scarcity of food the "rot" is so prevalent in many districts of England and Ireland as to cause quite a panic amongst the breeders of this class of stock, and a consequent desire to send all that they have at all fit to market as speedily as possible. Indeed, some, I fear, do not scruple to send animals so far gone with the disease as to be really unfit for food. I need not point out to you how such a course of proceeding will in due course react materially in favor of the importer. To be really successful, however, the shipper must be more attentive and careful as to the class of animals he sends. A few lots of sheep have recently been landed from Canada, and it is really astounding to see the careless manner in which your shippers have made their selections. The majority

of these sheep have been ewes and rams, as usual. The poor ewes are actually dropping their lambs on the quays and in the markets. What on earth can your people be thinking about? Is it likely that butchers will purchase ewes whilst they are dropping their lambs? and is it much more likely that they will find a market amongst farmers? How can your exporters expect to show a profit when they are guilty of such miserable neglect?

Mr. Alderman Mechi, of Tiptree Hall, who, as you are aware, is a leading agricultural authority here, has just published his annual report on the working of his model farm. For the first time in fifteen years the balance is on the wrong side; with all the usual care and no lack of means they have been unable to make ends meet. What then must have been the position of the average farmer? The deficiency is set down at £750 8s. 3d., compared with 1878. This is the result on land well drained, heavily manured, and deeply and cleanly cultivated. The live stock account shows a deficiency of £381, compared with the preceding year.

I have had the opportunity of glancing over the report of the Dominion agent at this port, and I note that he refers to several subjects of the greatest interest to the industry of dairying and stock-raising, and gives information of an unique and very important kind. I strongly advise in the interests of your readers, and of the agricultural community generally, that copies of the Minister of Agriculture's Report for 1879, in which the one I refer to is included, should be obtained. The cost, obtained through the Members of Parliament for the various districts, would be very slight. If influence could be brought to bear in the right quarter to get the report of your agent at Liverpool published in pamphlet form for circulation amongst your farming classes, I am sure the result would be very beneficial.

There is an unfortunate printer's blunder in my letter No. 9:—Speaking of Mr. Gladstone's speeches in Scotland, I wrote, "He has evidently the highest opinion of the resources and probable developments of the Dominion." Your printer has it "roughest."

From the United States.

[BY OUR OWN CORRESPONDENT.]

Washington, D.C., Feb. 18, 1880.

The rights and interests of the agriculturists of the United States, who number not less than 25,000,000, are about to be more fully recognized by Congress, before which body there is a Bill pending to greatly increase the powers and duties and usefulness of the Department of Agriculture, and elevate the Commissioner of Agriculture to the dignity and authority of a Cabinet Minister. Should this Bill become a law, it will be the only instance among all the existing Governments of the world where the farmers, planters and ranchmen of the country are represented in the Cabinet or among the chief counsellors of the nation's ruler. The Department of Agriculture as now organized is of great practical benefit to the farmers of this country. Its recent experiments, not only in the propagating grounds of the Department, but through the experimental and practical planters and farmers in different localities, is rapidly increasing the cultivation and growth of the most useful and valuable plants, trees, shrubs, grains, &c., collected with judicious care from different portions of the world. The experiment being made with several tea plantations in the South give great promise of success. The Assam tea, from India, which is larger and hardier than the Chinese varieties, and which is successfully cultivated in the higher altitudes of India by an English company, is said to be better adapted to the soil and climate of our Southern States. If

the results thus far achieved are any index of what is to follow, we may expect in a few years to see Canada securing her supply of tea from her Republican neighbor, instead of pagan China.

Another very interesting experiment is being made in the growth of the "Wattle," a tree recently brought from the colony of Victoria, Australia. Two of the three varieties of wattle brought from Australia are of great value, not only on account of the great rapidity of their growth and the production of the bark, known in commerce as "mimosa bark,"—which contains a larger percentage of tannin than any other article used in tanning, except cetechu of Bengal and Bombay—but for its wood, which may be utilized in the manufacture of all those articles requiring wood of a tough and durable grain. The commercial uses of the wattle are not limited to the bark and wood, for a fair revenue is to be derived from the gum which annually exudes from the tree, and as the price of Australian gum is high this alone should commend the strange tree for adoption. As the wattle will grow in any kind of poor soil, and grow rapidly, so that it may be stripped of its valuable bark at the end of five years, it is thought that many thousand acres of land unfit for pasture and agricultural purposes will be utilized and made profitable by the growth of this Australian wattle.

Gen. Le Duc, the Commissioner of Agriculture, has just received a letter from C. S. Read, M. P., from Norfolk, England, informing him that he had—at the former's request—purchased from an English farmer and sent to Gen. Le Duc a lot of English and Italian rye grass, varieties of oats, and some seed of a kale which can be raised without hoeing, yields abundantly, and furnishes excellent feed for hogs, cattle, &c. With this letter came a copy of a speech delivered by Mr. Read to his constituents, who gave him a welcome at the Market-Tea, South Norfolk, on his return from the United States and Canada, where he had been recently travelling in the interests of the agriculturists of England. As a part of his address relates to agriculture and Canada, I will give you an extract:—

"But are we desirous of having a Department of Agriculture?" I voted strongly for that last year, but that is a point in which the Government were beaten. I don't fancy we can gain any great financial benefit by it, but we should at any rate know to whom to apply in our difficulties. But how do they treat the farmers in America? There they have a Department of Agriculture presided over at the present time by Gen. Le Duc, who is a man of singular ability and administrative skill. I went to see him when I was in Washington, and in the course of our conversation I happened to make a casual remark that I thought our English rye grass was superior to the timothy grass that they grow there to a very great extent, and I also said I thought their varieties of oats were inferior to our own. Well, last week I received a letter from Gen. Le Duc, requesting me to send him \$500 worth of the best rye grass I could obtain, and \$500 worth of the best black and white oats I could get here. These will be distributed among the best experimental farmers in the different States of the Union. This fact will show you that agriculture in America receives an amount of attention and protection such as we cannot expect to enjoy here.

"Although I greatly admire America, and have contracted strong affections for many Americans; and though our brethren of Canada are deserving of all praise for their patriotic loyalty and untiring industry—(cheers)—yet I do say in the words of the poet,

"While I wish them to be blest,
England is my home—my rest;
My native land, I love thee best."

We had something to say of the profits of the nettle in the U. S., but will not nettle you by so prolix a subject.

Lorus.

Dairy.

Ontario Dairymen's Association.

THIRD ANNUAL SESSION.

The third annual meeting of this Association was held in the City Hall, London, Feb'y 18th, 19th and 20th. There was a large meeting, many of the most eminent dairymen of Canada and the United States being present. Among others were Prof. X. A. Willard, Little Falls, N. Y.; Prof. L. B. Arnold, Ithaca, N. Y.; Robt. McAdams, Rome, N. Y.; C. E. Chadwick, Ingersoll; Hon. Harris Lewis, Frankfort, N. Y.; L. R. Richardson, Kerwood; J. C. Hegler, Sec'y, Ingersoll; E. Casswell, Ingersoll; W. Watson, Falkirk. The Treasurer, Mr. C. E. Chadwick, called the meeting to order. He called on the Vice-President, Mr. E. Casswell, to take the chair, as Mr. Ballantyne, the President, was not yet come. Mr. E. Casswell regretted the absence of the President, saying he had received from him a telegram stating that he was suffering from a severe cold. Messrs. J. Wheaton, H. S. Lossee, C. E. Chadwick, W. Hill and W. Watson were appointed a committee on the order of business.

The Secretary read a communication from Mr. A. A. Ayr, who could not be present, as he had expected, to address the meeting on "Creamery Butter," a good paper, but our space is limited.

"THE COW AND THE GRASS."

C. E. Chadwick took up the question of the cow and the grass. He said a great deal more care was required in preserving the breed of good dairy stock. The short-sighted policy of the majority of our dairymen was to be regretted. With better stock would come better care of them. The treatment of dairy stock to produce the best results is a question that is not attended to sufficiently. Kindness, attention and familiarity are needed in attention to cows. The time and quality of feeding should also be well attended to. Grass is, of course, the natural food of the cow. Speaking again of the grasses, he thought we did not appreciate enough the value of them. We should study their nature and adaptation to the purposes for which they are used. It is estimated that at least one-sixth of the plants of the earth belong to the grass family. The most useful are probably timothy and clover for dairying purposes. A little red-top is sometimes added, and then we think we have done all man can do, nothing. We never think that in some of the fine English meadows are to be found thirty different kinds of grass. The reason why our meadows so soon get exhausted is that we do not pay that attention we should. In order to test the real merits of our hay agricultural chemistry is found of great value. He then referred to the advantage to cereal cultivation from an increase of grass land. He hoped a greater attention would be paid to this point in future. He asked in conclusion that more attention be paid to the cows and grasses in future, and he would feel well repaid for preparing his paper.

Hon. Harris Lewis regretted that in such a valuable essay, blue grass—without which the Canadian dairyman could not exist in dry weather—was not mentioned. Having been asked for a little information about this, he said in reply that this was the same as what was known as Kentucky blue grass. About the middle of June was generally the best time to sow. He would mix it with orchard grass for his pasture. Grasses are social in their habits of growth. If you want a perfect seed, sow these two and you will secure it. Corn fodder: this was good enough when you have nothing better. It fills a splendid niche—that is, when you have nothing else. (Laughter.) In reply to a question he said the long leaved grasses are the best for milk. Clover is one thing when it has its sap in and another thing when it is not sap-headed. He would sow the grasses in the proportion of one of Kentucky blue grass and from eight to ten lbs. of the orchard grass. With this they could get two crops. In seeding for pasture he would put a bushel each of orchard grass and Kentucky blue grass and then mix a little of every kind of leaf you can get. Hon. Mr. Lewis said he had tried Lucerne, and did not succeed very well.

Prof. Arnold—I believe the young grass produces more milk, more flesh and more butter than if cut later on.

Rev. W. F. Clarke said he was an enthusiast in regard to red clover. It was the only crop that leaves the land better than it finds it. It also

benefits the land by maturing its seed. Although those things are contrary to analogy of nature in other crops, there was not the slightest doubt but it was true. Still there seems to be a great prejudice against it. It is said it taints the butter, that it makes poor hay. This is a mistake. He believed red clover would be found preferable to subsoiling in improving the soil. While the subsoiler only went down a few inches, the clover would go down several feet and improve the soil generally. As a fodder, clover seed was far ahead of sweet turnips. He earnestly recommended the red clover seed, not only for its fodder purposes, but also for its efficiency in renewing the soil.

Prof. Arnold—If red clover derived all its growth from the atmosphere, could the land do such a thing as "clover sickness?"

Rev. Mr. Clarke—Certainly there can. There is a natural rotation of crops that must be followed in all crops. Many followed the high pressure style of farming, of never giving the land a change. This should be discontinued.

EVENING SESSION.

At the evening session, Prof. Arnold gave an address on "The Profits of the Dairy," which will be found on page 54.

THURSDAY MORNING SESSION.

The convention opened at 9 o'clock on Thursday morning. The President in the chair.

IMPROVING THE BREED OF CATTLE.

The Rev. W. F. Clarke offered some interesting remarks to dairymen. He spoke of the necessity for the formation of a National Society of Dairymen. The principal objects of this Society would be to test relative worth of the various breeds of cattle for butter and cheese making, and to obtain and encourage dairymen and farmers in raising an improved breed.

BUTTER AND BUTTER-MAKING.

Prof. Lewis referred to three kinds of classes: good butter, poor butter, and oleomargarine butter. He had found that in all herds individual cows gave poorer milk than others, and the cream from this poorer milk deteriorated from the quality of butter made by others and good cows in the same herd. In the production of first-class butter the food and treatment of the cow played important parts. Where a cow was cruelly treated and poorly fed she would not give as good milk if properly cared for and fed. He found that long-leaved grasses alone or mixed, with one quarter clover, formed the best food for producing butter. Milking was also an important thing to be considered in butter making. The butter making powers of many cows' milk were spoiled by improper milking; shallow pans had been substituted for deep ones, and they had also the centrifugal method of raising cream. The application of heat underneath and cold over the pans would assist in cream raising, but the currents must be steady to be effective. He had uniformly found that the best butter was obtained from shallow raised cream. To make butter from sweet cream no acids should be allowed. If sweet cream butter was desired, acid should be allowed to develop before churning. He regarded butter made from sweet cream as possessing the most delicious flavor, but less butter could be obtained from the same quantity of milk, and it would lack the keeping quality of that made from sour milk. If made from sour cream the cream should be skimmed as soon as the acids developed. Of all the kinds of churns with which he had met he found the old-time dasher churn, if properly constructed, to be the best and superior to all of recent invention. The churn and all wooden implements should be scalded after using, to remove all particles of acids, etc. With regard to the temperature, the churn should be stopped when the butter came into small globules, and temperature reduced. After the butter had been washed he took it out and placed it on an inclined slab, V-shaped, and put about one ounce and a half of salt to a pound of butter. For the general market three-fourths of an ounce of salt to a pound of butter was sufficient. In seaboard districts and to foreign residents, less salt was required than in inland districts and among the active Canadians. The butter made now seemed to require the old Welch tub for packing purposes. White oak, thoroughly deodorized, he regards as the best wood for butter purposes, but spruce and hemlock were good for butter if wanted for keeping. The butter should be packed firm and solid in the tubs as soon as possible after leaving the churn. Butter will keep longer and better at a temperature of 55

degrees if it was to be subjected afterwards to the difference of our climate, and if he could always keep his milk at 60 degrees he would be very glad. It was also necessary to be very particular in milking not to allow any impurities to get into the milk. He also related many amusing anecdotes of his apprenticeship, which kept his audience in the best of humor. Poor butter, he said, was produced by many. He also advised dairymen not to eat onions whilst butter making, as it tainted the butter; even if their breath did not smell, the scent percolated through the pores of the skin, and was thus communicated to the butter. With regard to oleomargarine butter, he asked them to remember that one pound of this grit, fat butter, was equal to sixteen ounces of good butter. Were this butter sold for what it really is, it might be legal and just from a commercial point, but unfortunately it was sold for pure butter, and thus robbed hundreds of dairymen of an honest profit.

Prof. Willard read an interesting paper upon the same subject, dealing with the recent inventions for butter-making. After referring to the great information derived from the display of novelties at the late International Exhibition, he proceeded to give a description of the construction and principles of the leading implements displayed there. The centrifugal machine attracted great attention, and astonished the butter-makers, demonstrating the possibility of separating cream from the milk within a few minutes, and it was also claimed that it cleaned the cream from impurities. The "Excelsior Creamery," of Canadian manufacture; "Butler's Cabinet Creamer," "Clarke's Revolution Plan," "Ferguson's Bureau Creamer," were also commented upon.

With regard to the raising of cream, the speaker advocated raising the cream at the farm as preferable to sending the milk to the factory to be skimmed. By adopting this method the cream was raised better, quicker, and in larger amounts per gallon of milk than by the other.

It was moved, seconded, and carried, that this association take the earliest opportunity of petitioning the Dominion Legislature for the removal of duty on cheese and butter cotton bandage, and that the chairman appoint a committee for drafting out a petition for the carrying out of the same.

AFTERNOON SESSION.

The Convention met pursuant to adjournment at 2 o'clock. The meeting having been called to order,

ELECTION OF OFFICERS.

The report of the Committee on nominations, wherein they recommended the appointment of the following officers for 1880, was read and adopted: President, E. Casswell, Ingersoll; 1st Vice-President, L. R. Richardson, Strathroy; 2nd Vice-President, John Wheaton, London; Directors, Rev. W. F. Clarke, Guelph; Adam Spiers, Cais-torville; H. L. Lossee, Norwich; Wm. Hill, Seaforth; Thos. Ballantyne, M. P. P., Stratford; Wm. Thompson, Arkona; C. P. Perkins, Barrie. Auditors, Wm. Watson, Falkirk; J. S. Scarrif, Woodstock.

Prof. L. B. Arnold read an interesting address upon "Arnold's Process of Cheese Making," which will appear in another issue.

FRIDAY—MORNING SESSION.

The chairman stated that the finances of the Association were in a better state this year than ever. He had heard from an unofficial source that the Government had appropriated \$1,500 towards the Association. They had enough money now to supply all the patrons with a copy of the report.

The Executive Committee were empowered to publish extra copies of such portions of the transactions or addresses as they may deem advisable for distribution among the patrons throughout the Province, and that each cheese and butter factory send the secretary the number of patrons belonging or connected with it, and that the manager of each factory applying for copies send at the same time the approximate number of cows usually supplying their factory, and that the returns be made by the 1st of March.

Mr. Weld offered to publish and distribute free to all patrons of the factories and others the report of the Convention if furnished to him.

Mr. Weld asked Prof. Brown whether he had ever heard of the existence of pleuro pneumonia, hog cholera, or of foot and mouth diseases in Canada.

Prof. Brown replied to Mr. Weld, and said he had never known that any of above named diseases had existed at any time in Canada.

Mr. McAdams asked permission to address the meeting, and said he was sorry that Prof. Arnold was not there. He, the speaker, was prepared to accept Prof. Arnold's challenge of last night on condition that Prof. Arnold come to Oneida county, New York, in July, and they would make cheese together for ten days; the factory to run four full vats of milk, and each man to take half the milk and make cheese without aid. Prof. Arnold to make it by his system and Mr. McAdams to make by the Cheddar process, as described by him. Each to have access to the other's vats. Mr. McAdams offered to put up \$1,000, the product to be submitted to New York shippers as judges of their merits and value; the maker of the three highest to take the \$2,000; each to pay full market price for the milk used.

Mr. W. Weld offered to back Prof. Arnold for \$500, and requested Mr. McAdams to bring up his challenge when face to face with Prof. Arnold.

The Rev. W. F. Clarke moved, That this Association has listened with great interest to the address of Prof. Brown, of the Ontario Agricultural College, and hereby expresses its thanks therefor. It also takes this opportunity of reaffirming its high appreciation of the institution with which Prof. Brown is connected, and its earnest desire for its continued and increasing prosperity.

Mr. Chadwick objected to the motion as introducing politics.

Mr. A. H. Brentnall enquired whether the gas that causes curds to float could not be expelled from the curd during the process of coagulation.

Mr. McAdams thought the gas was generated during the process of coagulation, and might be expelled by heat. The gas would expel itself. So far as it was concerned, it was simply carbonic gas, which is as harmless as sawdust would be in a pudding.

In reply to other questions, Mr. McAdams said that he did not place much reliance on the hot iron test, as he could take a piece of curd, and tearing it in two pieces he could make one draw with the iron whilst the other half was not affected in the slightest. This would be done by dipping the one piece in the whey and not the other.

Mr. Gillard, in reply to a question, said that he had found the Arnold cheese to sell well and be adapted to the English market.

Prof. Arnold said he had been informed that there was a gentleman in the room who had two cheeses made, one by his process, the other by the Cheddar process.

It was proposed that the cheese be examined by competent judges and a written report brought in. Messrs. Grant, McPherson and Birrell were appointed a committee for that purpose.

SALT PRIZES.

The committee appointed to judge cheese salted with different salt presented their report, awarding prizes as follows: First prize, Coleman & Gowenlock's fine dairy salt; second, Ransford's patent salt; third, Coleman & Gowenlock's common salt; fourth, Higgins' salt.

EVENING SESSION.

The Secretary read the Auditors' report for the past year, from which it appeared that during the year the receipts, including \$122.60, balance in hand from previous year, were \$2,132.96, and the disbursements \$1,675.62, leaving a balance of \$457.34 in the Treasurer's hands.

DAIRYING UNDER LOW PRICES.

Prof. N. A. Willard read an interesting paper on "Dairying Under Low Prices." He maintained that it was necessary to have a diversity of dairy manufactures to stimulate home consumption. The production of cheap food was becoming a matter of necessity, and was not alone for the benefit of the producer. For twenty years past such good prices had been obtained for dairy produce, that the low prices of last season were a great surprise to the dairymen, and had resulted in loss to many. It had been always thought that England would take all the surplus produce. So long, however, as the American meat was thrown into the English market in great quantities, this reduced the amount of cheese sold. The cheese-makers themselves were in a great measure to blame for not keeping a better article for home consumption. The average dairymen shipped their best cheese to England, and kept bad, inferior cheese for home consumption. This should not be. Were they to supply good cheese to our own people, more cheese would be eaten. He found

that it was only necessary to consume six pounds of cheese per head per annum to consume the whole production of the country. He found that the best butter makers in the world came from countries where mixed farming was carried on. The dairymen must go back to raising their own stock. If there is money made by the drover in fattening lean cattle, why should not the dairymen put this profit in his pocket. If the calves were not wanted, instead of being slaughtered at three or four days and thrown away, they should be vealed. The dairymen must direct his attention to dairying and give up railway and other stock and all kinds of speculation. They must carefully study everything, and they would come out on the right side. He would not advocate the manufacture of oleomargarine, but he thought in the end it would drive all inferior butter to the wall. The introduction of refrigerators on ocean steamers had opened up a grand field of business for the higher grade of butter; he was not sure but Mr. Higgins had discovered a method by which butter could be transported any distance without losing any of its flavor. When a barrel of 100 lbs. was sent to London, England, the consignee made it up in English style, and it sold in London as "Prime Dorset," the highest priced butter in England. The Swedes and Danes sent butter in sealed cans to foreign countries, and he thought it a disgrace to Canada that she should be behind these distant countries. The average product of the season was in favor of winter grain fed cows. There had been many systems of creaming recently invented which would create a revolution in dairying. Especially does this apply to the "cow milker." Mr. Durand brought this machine down to my house last summer. With it we milked cows for several days. This machine is a power, and will milk twenty-five cows per hour. He has also a hand machine, which does not work so rapidly. The machine works by suction, having exactly the same motion as a calf. The machine, after a few trials, when the cows became used to it, milked clean. The profits of the dairyman might be enhanced considerably by manufacturing fancy cheeses. One of the first things to be studied by dairymen was to learn what were the requirements and tastes of his customers. The kind wanted for the English market was improved cheddar, the best type of cheese made, and they had a formula for making that cheese. It brought a higher price than American cheese, being quoted some twenty shillings higher. Cheese is now sold in England purely upon its merit. The people are a cheese-eating people, and they readily distinguish inferior cheese. We shall never be able to produce a reliable kind of cheese until the curative process has been improved.

The Rev. W. F. Clarke urged upon the farmers and dairymen to economize in every branch of farming. He called upon Hon. H. Lewis to tell what he knew about the cow-milking machine.

The Hon. H. Lewis happened to know something about this milker, and thought they could not get twenty-five cows milked by it in an hour. If would take five minutes to get some cows in position, and then they would have to put her in backwards.

Mr. McAdams—The price I got for my cheese is similar to that got in New York for first-class cheese.

Mr. Harris related the method by which the cheese were made which took the sweepstakes of the world. These cheeses were produced by a combination of the Arnold and the Cheddar systems. The whey is drawn perfectly sweet.

Mr. Robertson—What of Prof. Arnold's system is new to the world of dairymen?

Prof. Arnold—It's new so far as I know by being able to remove by oxidation odor from milk. The idea of ripening the curd and developing the cheese before putting it in the press; I am willing to go this summer with Mr. McAdams or any one else for three or four days, and take sweet milk or bad milk, and he had no fear of the result.

Mr. L. R. Richardson addressed the convention on the "Handling and Hauling of Milk." He said he had been in the business since 1870. At that time he hauled his milk twice a day, but now he hauled it only once a day. The farmers then drew the milk and they gave two cents per pound for making. Now he had to draw it, to make it himself, and return their whey to their doors. During the past four years he has had to pay half of the receipts of the factory for hauling the milk. He had tried to educate his patrons and his men to take good care of their milk and thoroughly

cleanse the cans. He always endeavored to have all his milk in the factory by 8 o'clock. He then detailed the methods of cheese making.

Hon. Harris Lewis said he had been instructed by Prof. Arnold to state that he would enter into a trial with Mr. McAdams between the systems of cheese making. The question was one of public interest and was not a personal matter. It was not of importance to cheese makers in Ontario alone, but to the cheese making and cheese eating world at large, and Prof. Arnold was not inclined to make any profit out of the question.

Mr. C. E. Chadwick expressed the great pleasure he felt at seeing so many American gentlemen present. The Association were deeply indebted to them for the many valuable suggestions and information given to them. He moved, seconded by H. S. Lossee, that this Association would express its gratification at the presence, in such force, of eminent dairymen from the United States: firstly, Hon. X. A. Willard, whose visits have been, from an early period in the history of Canadian Dairying, so welcome and useful to us; secondly, of Prof. L. B. Arnold, to whose practical instructions our cheese makers are so largely indebted for the skill and success to which they have attained; thirdly, of our general philosopher farmer, Harris Lewis; and lastly to so distinguished a maker of Cheddar cheese as Robert McAdams, Esq., to each and all of whom we hereby tender a cordial expression of personal esteem and grateful appreciation of the service they have rendered the Dairy interests of Ontario.

The resolution was adopted unanimously.

Messrs. McPherson, Robertson and Podmore were appointed to judge between two cheeses which were made on August 4th, 1879, at the Black Creek Factory. The cheese were made at the same time from the same vats. Mr. Arnold made one on the sweet curd principle, and Mr. Ballantyne's cheese-maker made the other on the acid principle. After being absent for some time the report was brought in by Mr. McPherson. After carefully examining the two cheeses, the committee came to the conclusion that the cheese made by Mr. Arnold was a better cheese, and one that would bring a higher price in the market, being of finer texture, and having a better flavor.

QUERIES PROPOSED AND REPLIES.

From W. J. Johnston—In Mr. McAdams' method of making would you prefer milk perfectly sweet or to have age before setting?

Mr. McAdams—I would prefer to have night's milk to mix with the morning.

From Wm. Angur—What is the cause of foul and hoof disease in cattle, and how can it be guarded against; also, its cure or remedy?

Hon. H. Lewis—It is caused by a parasite. I have made many microscopic examinations, but never found a parasite uninjured. The best cure is oil of cinnamon. A good remedy is to put a bushel of lime at the stable door, so that every cow will put her foot in it.

From J. T. Williams—If, as Mr. McAdams admits, that a good cheese can be made by drawing off the whey sweet when milk is of flavor or tainted, why can not a better cheese be made when milk is in good condition by drawing the whey when sweet?

Mr. McAdams said: Good cheeses may, and many good cheese are made by drawing the whey sweet and keeping it so, but I aim at a higher quality of cheese than good. I want the best.

From Mr. Shannon, jr.—When Mr. McAdams uses rennet, or rennets, what kind?

Mr. McAdams said he has used rennet extract, but the price was too high, otherwise it was very good. The best rennets are the farmers' rennets, picked up at the factories. When the milk is far advanced towards acidity I use cows' rennets.

From James Laing—Asking Prof. Willard and Mr. Casswell whether they would advise making small cheese; if so, what size is best?

Prof. Willard—On our side there is a great demand for cheese that can be retailed without cutting, say six to ten pounds weight.

Mr. Casswell said that he found that sixty pound cheese divided into thirty pound cheese in one box to be the best cheese for English markets.

Mr. McPherson was heard with reference to rennet extract. He had found Anson's rennet to give entire satisfaction. The only objection he had to it was that it was not up to standard strength.

A motion appointing a committee to test the salt question was laid upon the table.

(To be Continued in April No.)

Manitoba.

We had an interesting conversation with a surveyor who was engaged by the Government during the winter of '78-'79 to ascertain some points in regard to the lay of the country (he requested us not to mention his name). He was out nearly three months without any kind of a tent, sleeping on the snow in the open air every night. His bed consisted of a single buffalo robe made in the form of a bag, which he had to get into feet first. This, with his ordinary clothes, was all the protection he had from the winter frosts. He had no frost bites, and looked more healthy and vigorous than the average Canadians. The cut inserted on page 67 shows our surveyor getting up on Christmas morning, 1878. He had three attendants. He generally managed to make his headquarters near some wood. They would take their morning and evening meal by the fire, turning first one side to the fire and then the other to keep warm. Their food consisted principally of pemican and tea. Men require a large quantity of strong food to keep up the animal heat when undergoing such exposures.

The provisions are drawn by four dogs hitched to a toboggan. Their load weighs about 600 lbs. The dogs are fed on fish, and at night they are tied up to prevent them stealing the provisions. The mode of tying them is to fasten a stick to the neck of the dog and secure the other end to a tree. This prevents the dogs from freeing themselves, as they would easily gnaw a rope or strap in two, but the stick prevents them from getting at the tree, and they cannot gnaw the leather off their own necks.

The Acts of the Manitoba Legislature demand a more than ordinary notice. A good and stable Government without an Opposition—a representative Legislative Assembly not divided into parties is a new feature in such august bodies. The members of the Legislature, as well as their constituents, are of different nationalities, yet there is entire harmony. They have carried some measures that must be very advantageous to the country. A law has been passed dividing the Province into twenty-six municipalities, having more immediate care of local affairs and the providing for public improvements. There is also an Act providing for a system of drainage throughout the Province. This measure will, it is expected, be the means of bringing under cultivation much valuable land that would otherwise remain detrimental to the Province. They have passed a law for the establishing of County Agricultural Associations. There is also an Act empowering corporate bodies, though outside the Province, to lend and invest money within it. A "Herd Law" was passed, permitting the settler whose crops were injured by the trespass of cattle to seize and impound them, a cheap and summary process being provided, by which they can be sold if the damages assessed by the appraiser be not promptly liquidated. An experimental Temperance Act was passed to prevent habitual drunkards from obtaining liquor from a licensed dealer, also for imprisoning incorrigible drunkards with a view to their reformation, and also permitting licenses at a reduced rate to be granted for the sale of beer and porter only, it being contended that the establishment of good inns would be thereby stimulated in which the evils of whiskey drinking would be interdicted.

REPLY TO INQUIRERS.

We went to Manitoba with one of Patterson's parties, and we had first-class accommodation all the way. Everything was as well arranged and managed as it could be, and all seemed satisfied. By all means purchase a return ticket if you can. The railroad is preferable to the water route any month in the year except August. That is the only month that you can expect to escape the disagreeable, cold, damp fogs on the upper lakes. Take a good supply of meat. You will find it

better to purchase implements, clothing, tents, &c., in Winnipeg, than to take them with you. You can lay in your stock of clothing and groceries as well in Winnipeg as by taking them with you. We would rather take oxen than horses, for you can depend on them at all times. There is a fearful dearth of horses in Manitoba. When you get yourself in good circumstances and understand the country, then you may get horses. Your plowing should be finished in June for next year's crop. Prairie land broken late in the summer and in the fall is useless work; it must have the hot summer to rot the sod.

The Pork Trade—Disease or Health.

Recently we walked through one of the numerous pork-packing establishments in operation in Canada. We find that American live hogs are being imported by the car-load; these hogs are imported free of duty in this way: the duty first has to be paid, but after being packed and shipped it is refunded to the importer. The hogs are killed, some being singed, cut and cured in the form of Wiltshire sides; others are cut to represent the Cumberland bacon; others are shipped under the name of Staffordshire, each being cut, cured and named to suit the different demands. Canadian pork is also dressed and shipped in the same factory under the same names. We could not ascertain whether any pork was shipped as American meat. On enquiry we were informed that the pork packed by our Canadian farmers is of better quality than the pork imported from the States. We are also informed that the slop-fed hogs and dairy-fed hogs are much inferior to hogs fed by farmers.

It appears to us that our farmers are not realizing the full value of their good meat, and that the American pork and our slop-fed pork being all packed and shipped in similar form and under the same name, this tends to reduce the value of farmers' good meat. It is now no longer denied that the Americans have many diseases among their stock that do not exist in Canada. Some European countries have already prohibited the importation of American pork. We should by all honorable means endeavor to retain the confidence of our native country and all other nations. We do not think it right that hogs, that perhaps are suffering from Hog Cholera or infested with Trichina, should be allowed to be brought into Canada, dressed and packed in the form of the best English brands, and shipped to England under the pretence of coming from Canada, or be sold in England as coming from their own counties.

We do not say that hogs suffering from Cholera or infested with Trichina are being imported and packed, but we see nothing to prevent its being done. We trust that at least one honorable member of our House of Commons may be found who has the spirit to make enquiries and give his attention to the real interests of the farmers, as seeds of disease that may now be averted or disseminated throughout this Dominion from the introduction of diseased animals, may add or detract millions of money annually to the revenue of our country. It may prevent death from disease and pestilence from devastating our homes.

Prize Essays.

The greatest number of responses have been in favor of essay No. 5, written by J. A., Guelph. Will the writer please forward his name in full, and the money will be paid. The next prize of \$5 is offered for the best essay on the following subject: "The Comparative Profits to the Farmer and Farm of Tillage and Stock-feeding." The essay not to exceed two columns, and to be in this office by April 15th.

The embargo on stock has been removed between Canada and the States. Stock can now be shipped from and to either country.

The Question of Whole or Cut Fodder.

In answer to the views on this subject submitted to me, I first remark, that there is no end to this discussion, for the reason that some men will insist that what is good for them must be good for everybody. "Circumstances alter cases." One extensive and very successful farmer of my acquaintance, who milks from seventy to eighty cows, and Winters about 120 neat cattle and horses, not only cuts his fodder but cooks it thoroughly—cutting and cooking by steam. He does not husk his corn, but harvests it simply by cutting up the stalks and putting them in well-made "stooks," there to remain until wanted the next Winter, the ears being left on. As the corn is required for consumption, the stooks are loaded on sleds and drawn direct to the powerful cutting machine, where stalks and ears are cut into lengths of about an inch, and fall directly into the steam box and are cooked until the corn is so soft that the animals digest it perfectly.

Now, I do not advise all farmers to follow this man's example, though I am well convinced that he saves fully \$10 in the cost of Wintering each of these 120 animals—estimating the value of food at the prices of the time he commenced his present methods. His economy is due to the large stock that he Winters, and to the great saving of labor in handling his corn crop. He has tried root crops, but much prefers Indian corn after full trials of both. Our own farming is quite unlike the case I have given. We raise wheat, barley, corn and oats, and keep only sheep and neat cattle to make manure to raise the grain. We feed corn-stalks, without cutting them, to our cows and young cattle during the Winter. The butts of the stalks are not eaten, but the finer parts are, the coarser parts increasing the manure heap.

We have tried cutting up our stalks, but it did not pay, and even when cut, the butts were not eaten unless the cattle were starved to it; meal put on would be licked off. Either very close feeding or cooking appears to be necessary to make cattle eat the coarse, woody, dry butts of heavy corn crops. We do feed our young calves a little grain every day during Winter, and give them hay, clover and timothy mixed, but we do not cut it up; that would cost too much for the amount saved. Clover cut when in full bloom, mixed with timothy that is just coming into head—properly cured—will make sheep colts and young cattle grow and fatten very satisfactorily. Plenty of straw for bedding, and warm sheds and good water, are required.

We cut hay for our work horses in the Spring, and this is all we use a cutting machine for. From the time the ground is settled so as to be in good condition to work, until Spring work is over, the horses (we use no oxen) are worked to their utmost capacity. We feed them ground corn, and oats on moistened cut hay of the best quality we have, and with all the food they can eat they will lose some flesh in the six weeks or so that the severe work lasts. I mention these practices, not as worthy of anything like universal application, but as best adapted to our farming. In the grain-growing section the cutting machine is but little used, and yet it is of great value in many cases, and particularly where large stocks of horses or cattle are to be fed on food that has considerable market value.—[G. G. in N. Y. Tribune.

WHAT CORN TO PLANT.—The N. Y. World says: Experiments among feeders, as well as the analysis of the varieties of corn, appears to indicate that where good bread is wanted the white flint corn, which abounds in starch and is lacking in oil, is the best kind. Coming in analysis nearer to oats, it is also generally conceded better for working animals than yellow corn, which last, containing a large proportion of oil, is excellent for fattening animals. The experience with sweet corn as stock feed is that it will produce flesh very fast, and the stalks, if cut when green and well cured, will be relished by working-cattle and serve as an excellent substitute for hay.

Mr. J. Clizbe, Mich., tells *The Farmer* of that state that he thinks "20 cents worth of plaster on clover-meadow will make half a ton of hay worth \$4." He sows every Spring, whether the seeding is new or old, or pasture, using less on moist land than on dry. This has been his practice ever since twenty years ago, when he scattered plaster zig-zag across a meadow, and in June found the grass a foot higher all along the irregular line than where no application was made.

The Profits of the Dairy.

An Address by Prof. L. B. Arnold, at the Dairymen's Convention held at London, Ont.

The elements of profit in the dairy are numerous. I do not, to-day, propose to discuss all of them. What I wish, in the hour allotted me, is to call the attention of the dairy farmers who are present to a few of the leading circumstances which most affect the net revenue of milk producers. These may be classed under a few general heads, and relate chiefly to the cost of producing milk, and the quality of the goods made from it. Entering into the elements of profit are the cost of dairy farms, dairy stock, the cost of manufacture and sale of the goods made, etc., which it would be very interesting to consider if there was time. But no one can in an hour consider fully all the points that enter into the revenue of the dairyman. Such an effort would require long and patient study—a life-long study, indeed, for the dairyman, and even then he will find it in many respects so complex and obscure as to defy his comprehension.

My remarks now are intended for the dairy farmers who have farms already located with buildings and stock upon them, who are considering whether to go on or to stop and change to something else with the hope that it will prove more remunerative. I omit therefore making any special reference to such items as the dairyman will be unable to vary much from year to year, and which amount to fixed facts in his business. The cost of manufacturing, for instance, has dropped to a point where it must stop. However much the dairyman may desire to reduce it, no material reduction can be effected. Neither will the cost of transportation and sale be materially changed by anything he can do. The prices of farm stock and farm labor, and the land itself, must remain about where they are, with more likelihood of rising than falling. All these are interesting because they are concerned in the returns of the dairyman. But they are comparatively invariable elements and beyond his control. There are other circumstances which it is within his power to vary in a way that will contribute essentially to his welfare, if his attention can be so directed to them that he will appreciate their importance. It has been an unfortunate circumstance for the good of the dairy interest in this country, as it has also been in the States, that the producers of milk, when prices were drooping, have sought for relief where little could be afforded. For example, when the price of cheese was suspected of getting too near the cost of producing the milk it was made of, the patron's first impression for relief is generally to cut down the price of making it, which competition has already reduced too low, or to raise the price by holding back his cheese to diminish the supply, which is about as effectual as damming a rivulet to lower the level of the ocean; or perhaps he does what is still worse, fails in the care and food supply for his herd.

There is no use in warring against the inevitable, or in looking for relief where there is none to be had. It is all well enough—indeed it is necessary that every one should carefully survey all the circumstances of his business to see where he can avoid loss or increase income. The profits in dairy farming, as in all farming, consist in the difference between the cost of production and the selling price, and the effect in swelling those profits will be the same if the cost is lowered, as it would if the price was raised. When the margin between cost and sales comes too near living rates, it is idle to complain of prices which cannot be raised, or to despair until every effort to swell profits by reducing cost is exhausted. There is yet much room for relief to dairy farmers in this direction. The cost of producing milk is far from being reduced to a minimum, and until it is there will remain a hopeful prosperity for the dairy business. The truth of this statement is sustained by a comparison of dairying here and in Europe. Farmers in Scotland, England, France, Holland, Switzerland and other countries live by dairying. The cheese made by several of the countries competes with ours in the English market. They farm it on land worth from \$500 to \$1,000 an acre, with

only the single natural advantage of a greater nearness to the common market. This gives them an advantage of 85 cts. on a hundred pounds of cheese, but this vantage is counterbalanced several times over by their greater cost of land. I do not know just what it costs there for land to make a given amount of cheese from, but it must cost at least four times as much as it does here. Their milk is no better than ours. They make no better cheese than we can make from our milk. How, then, do they sustain their side of the competition? It will not explain the difference to say that their seasons are longer than ours and their winters are milder. Their cattle food costs so much more than ours that if their seasons were as long and as mild as at the equator, the Europeans would go under at once if they adopted our course of dairy farming. Prof. J. P. Roberts, of Cornell University, stated last year that he saw the dairymen of North Holland making cheese on land that was worth \$1,000 an acre, and from cows which cost three times as much as ours—from \$100 to \$200 a piece—and were fed freely on grain raised west of Chicago, and yet were competing with us in the English market, and were prosperous and happy. In the transportation of cheese to the English market the Hollanders have the advantage of us, probably, of 50 cts. a hundred, which is more than counterbalanced, I have no doubt, in the very heavy taxes imposed to keep their net-work of canals in order. If the people of that little country can, as they do, annually furnish England with 50,000,000 lbs. of cheese under such disadvantages, as cheap as we can, there must be some large leaks in our dairy farming or manufacture which keep us from rising above such odds, and it would be interesting to know just where they occur; and if you will have patience with me, we will now look over some of the dairy practices of this country, and see if we can discover some of them.

To bring the matter home as nearly as we can, let us begin right here and now in mid-winter, and study the situation as it is to-day. I have every winter to travel a great deal through dairy districts, and as I have passed the dwellings of farmers I have noticed that their herds of cows were very often standing out exposed to the bleak winds, with their backs humped up, their rumps to the wind, their heads low down, and their feet in a friendly proximity to each other, slowly raising a hoof occasionally to relieve the steady pressure, as if in expectation of staying there all day, as doubtless many of them do.

It will not require a very extended knowledge of physiology to divine some of the effects which must follow such a daily exposure of herds through the long tedious winters of this latitude. They will get some good from the sun when it shines, while they endure the bleak winds that blow. The former is only occasional, the latter almost constant. Sunshine is an uncertain reliance for keeping cattle warm, or for counteracting the Borean blasts of our snowy winters. Standing all day enveloped in an atmosphere 50 to 60 degrees or more below the temperature of their own bodies, heat is rapidly absorbed away from the whole exterior by the cold air, and is carried off and lost. From this exposure several effects follow, one of which is that by chilling the whole surface the skin becomes so cold as to close the millions of pores it contains for the escape of the insensible perspiration through which much of the bodily waste should be cast out. When the pores are thus closed the waste is retained to the injury of health and vigor. Cows thus exposed all winter have their systems become foul by the unnatural retention of the constant bodily waste, and in extreme cases become actually sickened and weak. Digestion becomes impaired and food enough is not digested to maintain health and strength and flesh. Often the horns and extremities become cold, the coat stares and feels rough, the appetite fails, and the eyes grow dim and the nose dry, and the neighborhood is scoured for information how to restore a "lost cud," or to cure the "tail ail," or the "horn ail," or some other "ail" which is the effect of prolonged exposure. But by and by they "do well" will at length recover their vigor, for the milk glands acting as they do as a scavenger of the body, will gradually carry off the waste which should have escaped through the skin, and eventually cleanse the system and restore health; and the careless dairyman may not even suspect that there has been anything wrong, unless, perchance, he wonders why the milk tastes so strong and "cowey" or why his spring butter or cheese is so much inferior to that of other seasons. Whether the careless dairyman sees, in all this,

anything wrong or not, the thinking dairyman must know that cows thus exposed cannot be expected to do what they would if better cared for.

Animal life depends on maintaining a specific temperature of body. If the body is cooled below the living standard, the lost heat must be restored at once or life becomes extinct. Nature has made provision in case of necessity for restoring lost heat by a temporary draft upon the fat and flesh of the body, which in the end must be paid back to the body in extra food. Every degree of heat lost by exposing a herd to needless cold must be compensated for by additional food. This costs and makes milk expensive, and occasions a leak in the profits of the dairy, to what extent we will presently see. Error in wintering cows is not confined to exposure to wintry winds during the day. It consists also in exposure during the night. Many of the dairy barns which I see in travelling through the country are made by siding consisting of a single course of boards nailed perpendicularly upon a frame, with cracks between wide enough to admit so much wind as to keep the temperature of the stable nearly the same as that outside. A stable with cracks in the sides and doors and windows and floors so open that every alternate pressure and lull in the wind is felt by the cows within it, is a poor place for wintering dairy cattle.

Another very common defect I notice in the arrangements for stabling cows, consists in having the stable and body of the barn in a single open room, so that the heat radiating from the cows rises and spreads, without hindrance, over the whole barn and leaves the cows in an envelope of cold air all the time, and they are compelled to eat extra food enough to compensate for the heat thus lost. But such a barn is better than no barn. Every protection from the cold counts for something. I made a test by putting cows in a stable thus arranged, and sided up and down in the usual way, and I found that from a little saving in waste of hay by foddering in a manger, and the little protection from the cold it gave, it took two pounds and a half less hay per day to keep cows thus stabled and foddered, than it did to fodder out of doors and let the cows lie in the yard at night. This was worth saving, but it did not do enough. By making the outside walls tight and double, and ceiling over head and all around except openings which could be regulated for ventilation, I saved 5 pounds per day more. The figures were 25 pounds of hay per day for cows running out all the time, 22½ when kept in a common stable at night, and 17½ a day when kept in a stable where they could be comfortable in any weather. Had I provided as well for the comfort of the cows during day as I did during the night, the saving would have been still greater. I have known of several experiments by others, where improvements in comfort both for the day and the night were made, in which a saving of one-third of the fodder formerly used was effected. This waste of cattle food by needless exposure is worse than a dead loss, because the cows in the summer do not do as well as when comfortably wintered. This defect constitutes a great leak which puts us at a disadvantage with our competitors who avoid such wastefulness. The foddering season here is about 200 days in length. At a pound of hay a day for every 50 pounds of live weight when comfortably cared for (which is a pretty safe rule), it would take two tons of hay or an equivalent in other food to winter a cow weighing 1,000 pounds, and three tons if she has a cold stable at night and an unprotected yard during the day. Suppose such a cow to give 5,000 pounds of milk in a year that would make 500 pounds of cheese, the extra ton of hay at \$5 a ton would be one cent a pound on the cheese. If her yield was but 4,000, as it would more likely be, it would be a cent and a quarter on each pound of cheese she would make. This matter of comfort in the wintering of cows is a prominent element in the profits of the dairy, and one that needs very much more attention than it receives. I have no doubt from what I have seen of the arrangements and conveniences for dairy stock in cold weather, that Ontario as a province could easily save a cent a pound in the cost of her cheese in this direction alone, and while I say this I do not charge her with a greater dereliction in this respect than is common to other dairy districts. Dairymen cannot afford this waste. It makes milk cost too much. It would be some mitigation for this waste if somebody profited by the neglect. But it does nobody any good. To turn cows into a cold stable or expose them to the wind all day, to warm the passing breezes, is rather a useless attempt to tamper with the climate. The effect will not reach the nearest neighbor.

Another element of profit in the dairy consists in full feeding. A very large proportion of dairy men fail to appreciate how much more it makes milk cost to feed sparingly than it does to feed flush. This fact was well demonstrated last spring through the entire dairy belt of the continent. Butter and cheese were low and dairymen generally scrimped the feed of their cows, and the consequence was that they lost flesh all winter, and when they began to give milk in the spring on their scanty feed they ran down at a fearful rate and became very thin. I never saw such an amount of poor cows as I did last spring, and many of them apparently little else than skin and bones. The consequence was, it took all summer long to recruit; the milk they gave was poor and it was small in amount, and consequently costly, that is, it took a great deal of feed for a little milk. A little illustration will show how this works. To make the case as plain and definite as possible I will suppose a herd of cows when in full milk are living on good hay.

The food which it takes to support the daily waste of body varies a little with individual animals, but as a fair average it takes, when cattle are comfortable as when the air is at 60 degrees, one pound of good hay a day for every 50 lbs. of live weight. If the cows weigh 1,000 lbs. live weight, it will take 20 lbs. of good hay, or its equivalent in other food, to keep each cow a day without gaining or losing. If they are fed just 20 lbs. a day they can give no milk except at a sacrifice of their own flesh and fat which would have to be restored and the feeding would all be done at a loss whatever might be its cost.

But suppose you feed 25 lbs. a day, or an equivalent of other food, there would be 5 lbs. to spare for milk. A pound of good hay contains the material, according to the chemical tables, for 2 1/2 pounds of milk, which is a little over a quart. But as animals seldom utilize all that the tables show, we may put the milk for a pound of hay at an even quart, which will be very near the truth. With 25 lbs. a day we have 20 for support, 5 for milk, which will give five quarts a day—5 lbs. to 1 qt. If the hay is worth \$5 a ton, 25 lbs. will cost 6 1/4 cents, and the milk 1 1/4 cents a quart.

If the cows have 30 lbs. a day they can give 10 quarts each, and the milk will be furnished at the rate of 1 quart for every 3 lbs. of hay consumed, and at a cost of 3/4 cent per quart. Suppose by crowding a little, or giving richer food, we could get the cows to eat and digest 35 lbs. a day, they could give 15 quarts each, or a quart for every 2 1/3 lbs. of hay, and at a cost of 8 1/4 cents or seven-twelfths of a cent per quart.

For convenience in comparison we will tabulate these facts:

Hay lbs. fed.	Qts. milk.	Hay per qt.	Cost at \$5 per ton.	Cost of milk per qt.
35	15	2 1/3	8 1/4	5/6 ct.
30	10	3	7 1/2	3/4 "
25	5	5	6 1/4	1 1/4 "
20	0	—	5	—

In the first instance with hay \$10 a ton, and milk 2 cts. a quart, milk could be produced at a profit so far as cost of feed is concerned, for the 15 quarts would cost but 17 1/2 cts. in hay. In the second instance 10 quarts would cost 15 cts., but, are worth 20 cts., and, there is still a gain of 5 cts. per cow. In the third instance, the daily ration of 25 lbs. would be worth 12 1/2 cts., and the milk only 10 cts., making a daily loss of 2 1/2 cts. per cow.

When the food becomes grass which is supposed to be cheaper than hay even at \$5 a ton, the cost of milk by the selection of cows with naturally large milking capacity, by liberal feeding and good care of stock in winter so that the animals shall not be required to devote their food to flesh-forming instead of to milk, the cost of milk can be so reduced as to make dairying a paying business even at the prices paid last summer for good cheese.

It is in this direction of selection, care and feeding that the variable elements of profit in dairying lie; and it is the plan for the farmer to turn his attention to widen the difference between the price of a pound of cheese and the cost of the milk to produce it.

One of the secrets of manuring corn is to keep the fertility near the surface when applied.

It is proposed to find out which is the best breed of cattle for dairy purposes by the National Dairy Cattle Club recently formed for recording the performances of dairy cows.

Agriculture.

Sugar Production from Corn Fodder.

GEN. LE DUC, U. S. COMMISSIONER OF AGRICULTURE, AT THE ELMIRA FARMER'S CLUB.

In the appointment of the present Commissioner of Agriculture the authorities at Washington have been most fortunate. His exertions in promoting improvements in agriculture have been incessant and well directed. He has been long engaged in the production of sugar from cornstalks and sorghum, and the result has been astonishing. Despite the multiplicity of his engagements, he makes time to attend meetings of Farmers' Clubs, to stimulate their energies, and to hold counsel on the work done and projected. Knowing that many farmers had showed a great interest in the subject of sugar production, he had come with many samples of sugar made from the juice of amber cane, which were shown to the admiring view of the farmers, who had visions of great profits from this new industry.

After a description of the Department and its work, the Commissioner took up the question of sugar production, which he treated at considerable length, giving a concise history of the industry, beginning with the early civilization, when sugar became desirable as an adjunct to comfortable subsistence. Coming down to the investigations and experiments made by the Department of Agriculture, Gen. Le Duc gave a very interesting description of the work, and supplemented it by reports of observations made in Minnesota, Illinois and elsewhere in the west and northwest, where sugar-making has already become a successful industry attended by gratifying profits.

In a brief sketch like the present, it is only possible to note a few of the salient points of the remarkable meeting upon which the farmers of the Club may well congratulate themselves, as upon seed sown in ground, and sure to bear fruit, for it is reasonably sure that as the direct result of this meeting, sugar making will become an established industry in this valley in the current year. Of course it is not assumed that its proportions will be of great magnitude in so short a time, but there will be many fields planted with amber cane next spring, and the crop will be worked into molasses and sugar in this valley before another winter. Even corn stalks of the common field varieties, Gen. Le Duc has shown by practical experiments, which he described to the meeting, to be worth even more for sugar-making than the grain will bring in our markets, and this after the ripened ears have been plucked. By actual test of the crop raised on the Department grounds at Washington last year, he found, after gathering, the ears, sixty-nine bushels of shelled corn to the acre, and stalks yielded sugar at the rate of one ton from an acre. He gave it as his opinion, based on the most careful examination of the facts, that one-tenth of the area planted in corn in the single State of Illinois had sugar enough in the stalks to supply the people of all the country for a whole year, and of course the stalks from that area, if used for sugar making, would have more value than all the corn raised in Illinois, and there would be no diminution in the grain product, for it might be ripened and gathered without shortening the yield of saccharine juice in the stalks.

Maize of any variety, as well as sorghum, can by proper treatment be made to yield sugar of a fair quality. Commissioner Le Duc in his report says: "A fair conclusion from these investigations appears to be that there exists but little difference between the various kinds of sorghum as sugar producing plants, and that the juice of each of them is at a certain period of its development nearly as rich as that of the best tropical sugar grown in the country." The experiments confirm the general principle, viz.—The practical equality and value of each variety of maize and sorghum. This is a point of great value to Canada, where the more hardy varieties produce and mature superior crops.

U. S. LANDS THAT ARE NOT FIT FOR FARMING PURPOSES.—An U. S. Congressional Committee advise that all the public lands in Nebraska be at once withdrawn from sale and pre-emption, and leased for grazing purposes. The committee state that this tract of one hundred million acres is not fit for farming purposes, even with the aid of irrigation.

Indian Corn.

Professor Caldwell, in the N. Y. Tribune, in giving the results of analyses and deducing the extremes and averages with respect to the three most important constituents for food, says:—

It is plainly shown in this table that while different varieties of common corn do not differ essentially from each other, sweet corn is decidedly the richest both in albuminoids and fat. If a bushel of sweet corn could be produced as cheaply as one of common corn, it would undoubtedly be profitable to farmers to turn their attention to raising it; but sweet corn as now cultivated is usually the product of a rich garden soil; with the same treatment that other corn usually receives it might grow poorer in quality, at least with respect to the albuminoids. White corn appears to be more variable than other kinds in composition, especially as to the albuminoids, and also to be the poorest of all kinds in this important constituent. Eastern and Western corn are practically alike in feeding value, notwithstanding that the latter, in its air-dried condition, is ever two per cent. richer in water.

He adds: There is practically no difference between different varieties of common corn, as Flint and Dent—why they are raised in the same or in different parts of the country; there is also practically no difference in compositions. Results have shown that richer manuring yields better grain, richer in the constituents for food and for fodder.

Some Wheat Crops in New Brunswick.

Mr. James Malone raised upwards of one hundred bushels of good clean wheat, off less than four acres of old pasture land, without manure, and only twice ploughed. Mr. Joseph Thorburn raised upwards of eighty bushels off three acres of land. Malcolm Buchanan, of Williamsburg Settlement, raised twenty-seven bushels from one bushel and a half peck of seed. Edwin Sanson, of Greenhill Settlement, raised fifteen bushels from a half-bushel of seed. Mr. John Rodgers, of Maple Grove Settlement, raised twenty-four bushels off less than three-quarters of an acre. All the above mentioned lots weighed from 62 to 65 lbs. to the bushel.

Messrs. Edwd. and Andrew Humble raised thirty-one hundred bushels of oats, three hundred bushels of buckwheat, six hundred bushels potatoes, and thirty tons of hay, being only the second year's farming on their own account.—[Maritime Farmer.]

An Agricultural Creed.

The following is given by the Massachusetts Ploughman, which says: "The agriculturists of Canada met in convention not long ago, and adopted for themselves the following." When and where they met we have not heard; but whether they held such a meeting or not, the articles of the creed are good for farmers, and we give them to our readers.

We believe that the soil lives to eat, as well as the owner, and ought therefore to be well manured.

We believe in going to the bottom of things, and therefore deep ploughing, and enough of it. All the better if it be a sub-soil plough.

We believe in large crops which leave the land better than they found it, making both the farm and the farmer rich at once.

We believe that every farm should own a good farmer.

We believe that the fertilizer of any soil is a spirit of industry, enterprise, and intelligence; without these, lime, gypsum and guano would be of little use.

We believe in good fences, good farm houses, good orchards, and good children enough to gather the fruit.

A KANSAS CROP.—The Clinton New Era says that a former resident of that county, who some time ago emigrated to Kansas, last year sowed one hundred acres in wheat. From this he reaped 240 bushels, which he sold at 80 cents per bushel, realizing therefor from his hundred acres \$192.

A famous horse breeder of France has reared his stock for twenty years on a diet of parsnips instead of carrots and oats, with the result of "great vivacity of spirit and sleekness of coat"—conclusive evidence of healthful condition. The yield is about twelve tons per acre; the roots can remain safely in the ground, even during an "Icelandic Winter," it is said, and efforts are making to extend their cultivation for cattle and milch cows.

Teosinte.

There has been a noticeable interest taken by the farming community in all plants which promise to be beneficial as producers of green fodder. Among the varieties of new plants recently introduced is the Teosinte. The seed has been sent from the Royal Gardens at Kew, England to various British colonies, including the Bahamas and West Indies, Cyprus, South and Tropical Africa and Australia. Most of the above localities, and others, speak very favorably of it. Australia reports it as withstanding the severest droughts.

It is evidently of wonderful promise in southern localities. Seed sown in Madras were put in five feet apart and soon the plants so spread that they all touched, the produce of a single seed being 100 to 120 stalks. It reaches a height of 12 feet or more when fully developed, and being a perennial it will admit of being repeatedly cut, and we judge that the amount of fodder that an acre of Teosinte will produce in a favorable climate is something enormous.

What we have said of the plant refers to southern latitudes, and we do not know that it will be valuable in the north.

Plan of Convenient Stable.

SIR,—Seeing that you invite correspondence from your subscribers, I take great pleasure in sending you a rough sketch of a barn-stabling, 54 x 78 feet, leaving 50 x 74 feet clear inside; the root-house, 10 x 46 feet, is along one side, right opposite the centre, so that it has a door opposite each feed passage to make it convenient for feeding. It has a box stall opposite the cow stalls, 10 x 12, and another opposite the horse stables, 10 x 16, which makes it handy for to put any animal in loose.

The cow stalls are 7 feet long and 6 wide. The stall between the cattle is made by placing a post 4 feet from the feed passage 3 feet above the pavement and along each feed passage; it should be 3½ ft. high; this will give a nice raise to the stall towards the head of the cattle, and leaves a space of three feet behind each post, which makes it handy for milking and going around letting the cattle out. The cattle feed-room is placed under the floor with pump and feed-trough in the main passage. The horse feed-room is at the other end of the cattle feed-room, with an oat-bin in one corner. The horse stable is 16 x 36, with two double stalls and four single stalls. The letter D represents the door-way to each of these places, and W the windows in the walls.

If more details are required I shall be glad to furnish them to any of your readers, for there is much need of a reform in buildings to make them convenient.

The narrow space behind the cattle represents the drop. If this meets the approval of my brother farmers I will send you the specifications of a barn that will correspond with this stabling.

YOUNG FARMER, Braemar, Ont.

Provincial Association of New Brunswick.

EXTRACTS FROM THE SECRETARY'S REPORT.

Situated as we are on the seaboard, in possession of one of the finest winter ports of North

likely to be a permanent business, the question is one of much interest to the farmers of New Brunswick, as to what extent they can participate in the trade.

The breeding of sheep and fattening them is suited to the circumstances of farmers of moderate

means. There can be no question as to the results, as we have good reasons for believing that sheep-farming will pay, as good if not better than cattle raising. Our Province is well suited to the raising of sheep, and as our woollen factories are steadily increasing the volume of their productions to enable them to meet the increasing demand for their goods, our farmers will meet with a ready sale for their wool, and should as far as possible supply the raw material required.

Wheat was much more extensively sown than the year previous, and the yield per acre greater. Our farmers are satisfied with the results and express a determination to sow a greater breadth the coming seasons.

Potatoes were planted to a much greater extent than usual and were an abundant crop. There has been but little demand and consequently low prices, and farmers are feeding them to their stock.

The farmers and manufacturers have interests in common with each other, each requiring the productions of the other, while all other classes reap the advantages of the successful prosecution of either industry. Our country is rich in natural resources, and only requires capital and well directed efforts to develop them.

Fossil Marl as a Fertilizer.

The farmers of Connecticut are having their attention called to a new fertilizer—New Jersey fossil marl. A practical farmer of W. Hartford having tried it and known its value as a fertilizer, has become general manager for its introduction to the Connecticut farmers. If taken in sufficiently large quantities it can be shipped to the different landings on the rivers at the low cost of \$4 per ton. Marl, though little appreciated in America, cannot be said to be "a new fertilizer." It has been long appreciated in Great Britain for its fertilizing property; nor is it altogether unknown in Canada. A sample of it was sometime since sent to this office, by a subscriber enquiring of its nature and value. Marl deposits are often found at the bottom of ponds, and under marshes, as a thin white mud filled with minute fresh water

shells. It often contains as much as from 40 to 60 per cent. of carbonate of lime. All marl deposits are not of equal value. It exists in many parts of Ontario.

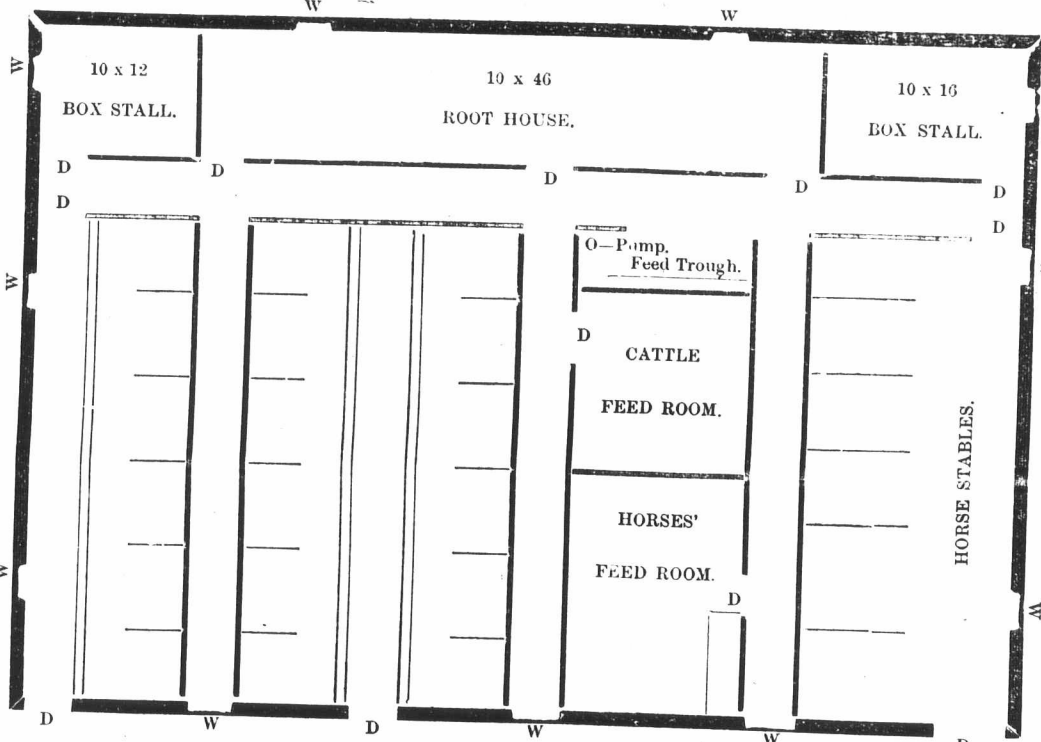
Farmers' Clubs.

The following extract from the N. E. Husbandman is suggestive of useful work that may be done by Farmers' Clubs: At the annual meeting of the Franklin Farmers' Club J. S. Grinnall recommended to the Club that each member select some experiment to be made through the whole year, and during the winter experiments in dairying and feeding stock, and such others as would be carried on by farmers at this season of the year, a report of which is to be furnished to the Secretary of the Club. At the meeting many members stated what had been the

method pursued on the farm during the year, and what had been the profit. In this manner each Farmers' Club is a good school of agriculture. From experiments carried out by individual farmers more truly practical knowledge is often gained than from technical Colleges.



TEOSINTE.



PLAN OF CONVENIENT STABLE.

refer you to the reports of the English farmers who visited the Dominion during the last summer, at the request of the present government.

Considering the very extensive trade in beef cattle, which is going on between this continent and England, and in view of the fact that it is

Garden and Orchard.

Beautify the Home.

The accompanying illustration shows a neat plan of laying out grounds about a house. This appearance contrasts greatly with many a farm house we have seen that scarcely had a tree near them. This is the residence of H. M. Thompson & Sons, of St. Francis, Wisconsin, U. S. They are enterprising nurserymen, and are sending wholesale and retail orders to all parts of this continent.

Currants.

What a faithful friend the old-fashioned currant is! It survives neglect, bears fruit with patient regularity, never winter-kills nor mildews, resists the competition of weeds and the robbery of grass, and with a little help will triumph over its enemies. And then how grateful it is to the taste,

We have preserved a splendid row of currants for years, in this way. The fruit is best started by slips, either rooted or fresh cut, and grows quickly. La Versailles, Red Dutch and Victoria are the best sorts, and the White Grape adds a most pleasant variety. Set four feet apart, and mulch in dry weather.

The Family Fruit Garden.

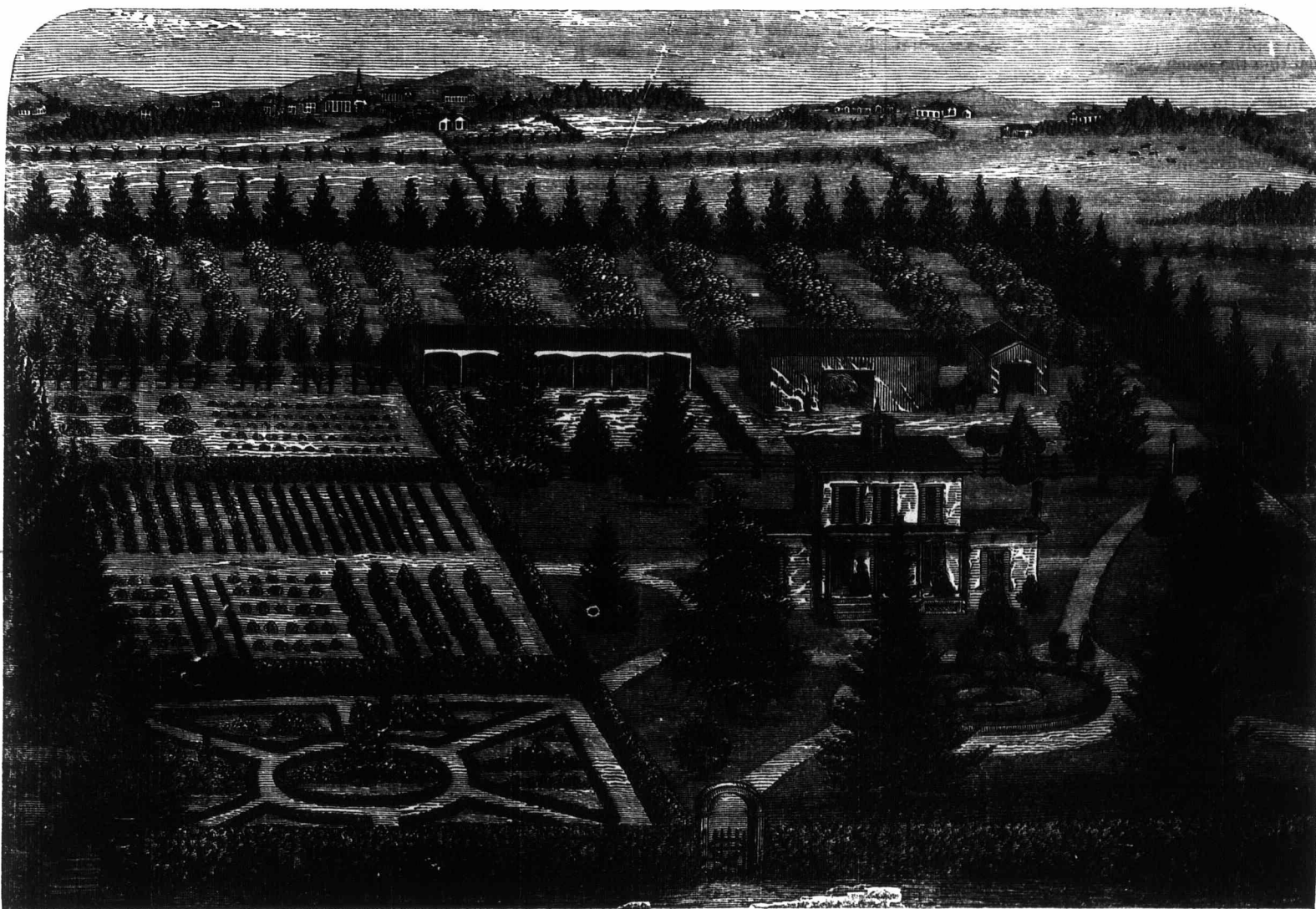
STRAWBERRIES.—This delicious fruit not only makes the quickest returns for the capital and labor invested in it, but it affords us the first fruit of the season. It comes after a long interval of fresh fruit, when fruit is specially acceptable. There are quite a number of varieties that have proved desirable or promising for the family garden, among which we name:—Wilson's Albany, Charles Downing, Triomphe de Gand and Jucunda.

RASPBERRIES.—Of this species the Black Caps are the most hardy and easily grown, and by many the flavor is preferred to that of the reds. They do not sprout, and therefore are kept clean

lacerate the roots, and the same thing may be said of red raspberries. The largest blackberries are Dorchester, Wilson's Early, Kittatinny and Lawton, but it is well to have, also, some Snyder's to fall back on in case the others winter-kill.

CURRENTS.—From the berries that grow on biennial canes we turn to the berries growing on the perennial shrubs, and speak first of summer's finest, most agreeable tart, the currant. This is one of the oldest fruits of the farmer's garden, and once was considered more necessary even than now. The devastations of the currant worm, devouring its foliage, have made it a stranger in many gardens where it was once the most familiar of fruits. The Red Dutch and White Dutch are the favorite old varieties, superseded in many gardens by the larger Cherry and White Grape, but not excelled by them in quality.

GOOSEBERRIES.—Are quite highly regarded by many for pies and tarts. Downing and Smith's Improved are the finer native varieties, and the foreign are too much affected with mildew to be desirable in this country.—[Rural Home.



A PLAN TO BEAUTIFY THE HOME.

and how healthful to the system, with its sparkling acid, and its rare sweet that is not too sweet. What the apple is to fruits, the currant is to berries—sturdy, faithful, reliable, easy grown, health giving. And yet the currant repays care as well as the daintiest berry; and the choice, large, new varieties show that it is susceptible of improvement. Take the form in which it is most commonly grown—the bush—and cut out the old stalks, thin out the spindling growths, cut back the vigorous shoots so as to make them stocky; hoe them as clean as you would a row of strawberries; give them all the old chips from the wood-yard, with a mixture of ashes and manure; and you will be surprised see how the quantity and quality of the berries will be increased. That destructive pest, the currant worm, can be destroyed, and the bushes preserved in all their greenness, for a few shillings expense and by very little care. A little powdered white hellebore sifted over the bushes when the worms first appear, with an additional dusting at their re-appearance for four or five times during the season will do the business effectually,

with less labor. They are propagated by layering the tips of the canes when they are in proper condition, in August and September, when they will form good roots, and buds will grow into thriving canes the next season. For a family supply extending over a season of three or four weeks we name the following:—Davison's Thornless, Doolittle, Mammoth Cluster and Gregg.

Red raspberries are a little more delicate than black, and a little more difficult to grow, owing to the fact that foreign varieties require a little winter protection, and native varieties sprout badly and need considerable tillage to keep down the sprouts. Of this class we name:—Clark, Turner, Brandywine and Highland Hardy.

BLACKBERRIES.—We do not become tired of berries at the close of the raspberry season, but generally have a very fair appetite for their natural successors, the blackberries. Their culture is very similar to that of red raspberries. As they sprout pretty badly, some labor is necessary to keep the sprouts cut up clean. They will sprout less if the culture is rather shallow, so as not to

Early Bearing of Fruit Trees.

We have not the least doubt that allowing trees to bear heavily when young is injurious both to the health of the tree and its future bearing. We have noticed upon our own premises on several occasions that whenever we allowed young trees to bear unreasonably it affected their future bearing for two or three years. We have since reduced the early product of a tree from one to three specimens, the number being increased with the increased age and vigor of the tree, and have found the trees afterwards to go on bearing regularly. It is the same case when a tree, of whatever age it may be, is permitted to mature three times as much fruit as it ought to do.—[German-town Telegraph.

Timbers in France are dyed by various colors being mixed with water and poured over the roots of the tree. Dahlias are colored by a similar process.

Fruit Growers' Association of Ontario

WINTER MEETING, FEBRUARY 18.

The Association met in the City Hall, Hamilton, the President, Rev. Dr. Burnet, in the chair.

The Yellows in Peaches.—Dr. Watt said that the consumption of fruit infected with this disease was dangerous as human food. A family at Drummondville had sickened from partaking of such fruit. He urged the appointment of a delegation from the Association to see the Government and urge the passing of a law compelling the cutting down of trees affected with the yellows.

Mr. Pettit—All fruit growers should do all they could to prevent the spread of the disease. The trees should be cut down. The yellows spread from tree to tree; he knew this of his own personal experience. Of his trees last year four were found to be affected; now some twenty-five in the neighborhood of these infected trees are very bad.

Mr. Cline had no difficulty in telling the yellows in the tree or fruit either. He had cut back the trees and manured well, but this did not effect a cure. He believed in cutting down the trees infected.

In reply to an inquiry from Mr. Roy, as to replanting the peach orchard,

Mr. Pettit said he would not plant in the same ground. He had heard that an application of lime and salt would be beneficial.

Mr. Smith, Drummondville, said the yellows were spreading in his neighborhood. Not a single tree had escaped. He gave an instance where he had spared one tree, and it communicated the disease to twelve others that year.

In reply to a question by Mr. Arnold, Mr. Smith said that the disease was carried by insects from tree to tree. He thought it might also be spread by using a saw on good trees which had been used in pruning diseased trees.

Mr. Woodward, of Lockport, N. Y.—The disease is giving a good deal of trouble in Western New York. They had no laws in regard to it. The people of Michigan were sanguine that under their law, which was being vigorously carried out, the Yellows would be stamped out. His idea was that the disease should be exterminated with the axe and fire.

Mr. Page did not favor the idea that the disease was carried by insects. It was lack of something in the soil or atmosphere.

Mr. Woodward—Prof. Beard has declared that in ninety-nine cases in a hundred it was communicated by insects.

The President—Were it the deficiency in the soil, the whole fruit would be diseased. His idea is that the disease commences in the branch. They possibly had been careless; hence the breaking out of this disease. He believed in the primitive soil, and thought that no such productions as potatoes, pumpkins, etc., should be put in to rob the delicate fruit trees of the elements of the soil which they required to bring them to perfection.

It was moved by Dr. Watt, seconded by Mr. M. Pettit, that a committee be appointed to draft a Bill to be presented to the Legislative Assembly on the best method of eradicating the disease called yellows in peaches; and further, that a deputation from this Association be named to present the same and urge the necessity of Government aid to help the orchardist to stamp it out.

Mr. Pettit, the President of the Grimsby Association, spoke of the rapid strides being made by the disease in that locality. The yellows spread more rapidly in a highly cultivated orchard than in others.

The resolution was carried, and the President appointed Messrs. A. H. Pettit, Roy, Saunders and Burnet a committee to carry out the resolution.

Mr. Beall, of Lindsay, read an interesting paper on "The advisability and feasibility of using the Canadian walnut tree as a shade and ornamental tree throughout Canada."

Mr. D. W. Beadle said there was one objection to the walnut—nothing would grow beneath its shade.

Mr. Roy knew differently. He had visited a fine walnut grove at Chief Johnson's, in Tuscarora, and saw luxuriant grass beneath the shade of the trees.

Chief Johnson said that the shade of the walnut did not prevent vegetation, and this idea was endorsed by Mr. Arnold.

Mr. Saunders, of London, read a paper "On some deciduous trees and shrubs desirable for more extended cultivation."

A number of the members took part in the discussion, valuable hints as to the best kind of shade trees and shrubbery being given by Messrs. Arnold, Beall, Beadle, Col. Brooks and others.

Two of the Six Nations tribe of Indians who had entered the room while the discussion was going on, were then introduced by Chief Johnson, and cordially welcomed by the President. They were heartily cheered on taking their seats at the Board.

Mr. Beadle informed the meeting that the Indians on the reservation took a deep interest in the welfare of the Association. There were no less than sixteen of the Six Nation Indians on the membership roll.

Mr. Smith, of Drummondville, read an excellent paper on "Raspberries," which was very well received. The closing sentence or two are:—It seems to me that here is a field not only for our hybridists, but for the enterprising sons of fruit-growers and farmers. All of our fine fruits originated from seeds, and the raspberry is very easily grown. Then why not, by a judicious selection of seeds from good varieties grown near each other, or by a careful hybridizing, produce something as good and hardy and lasting among raspberries as there is among other fruits? and if we would enjoy this fruit at all we have got to work for it, and attend to its cultivation, for as the country gets cleared up the wild berries disappear. Besides, it pays; not only as a market fruit, but it will pay any man who has a family and an acre of ground to grow it for his family, for he cannot find, in its season, a more delicious or beautiful fruit than the raspberry.

Old Fruit Trees.

A correspondent of the Rural Messenger writes: "I find that lime, wood ashes and old iron put around the roots of declining fruit trees have a very beneficial effect. These fertilizers restore the trees to a healthy condition, and also greatly improve the fruit in quality and quantity. I made the application on Winesap and Never Fail, about half a bushel of mixed lime and ashes to each, and dug it in with a hole some six feet around the trunk, and put the old iron immediately around the base of each. The trees put forth with renewed vigor, blooming abundantly, and yielding a good crop of fruit." But we may ask if the pressing of the roots by the digging, as well as the supply of fertilizers, has not something to do with its immediate effect? That the decay of trees in orchards is caused largely by the exhaustion of the alkaline matters in the soil is beyond any question. When we consider the amount of green wood matter which is produced by a tree in full growth, and which is never received back by the soil, except in the small amount in the fallen leaves, we can easily understand how the soil within the reach of the root feeders must be exhausted of all wood-forming material, and the tree become afflicted with disease and decay. Even the substance of the fruit itself is more than half composed of alkaline material.

Our Insect Enemies.

From the report of the Montreal Horticultural Society we take the following brief extract: The best remedy for this evil (that done by insects) will not be found until a better system of farming is adopted—until the plan of skimming the land and going west has given a place to permanent occupation—until the farmer sows what he hopes to reap. Many of these insect depredations would be serious in England, where the average yield there is no greater than it is here. But from an average of twenty-eight bushels of wheat to the acre the farmer does not miss what would cause heavy loss if taken from an average crop of thirteen to fifteen bushels. Better and cleaner farming, heavier crops from less land, combined with what most Canadian and American farmers excessively dislike—close and constant attention to little things, will be the most successful and practical remedy for the evil—perhaps the only one within the reach of the individual.

WATERING HOUSEPLANTS.—This is an important part of successful plant culture. The pots should be provided with proper drainage by putting in plenty of broken pieces of pots or oyster-shells. A good thorough wetting when water is needed is better than keeping the surface moist by frequently pouring on a little water. With good drainage, there is but little risk from over-watering. In watering in rooms, use water of the temperature of the air.

Swallows as Farmers' Friends.

A well-known French naturalist, M. Florent-Prevort, who has been engaged for a series of years in making observations on the contents of the stomachs of various insectivorous birds, recently communicated to the Senate the following interesting details in the food of swallows. He examined with the utmost care the stomach contents of eighteen of these, which he captured for that purpose at different periods of the season, with the results here appended. In the stomach of a swallow killed on April 15, he found 422 insects; April 19, 649 insects; April 27, 301 insects; May 1, 704 insects; May 4, 660 insects; May 18, 680 insects; May 29, 300 insects; June 3, 420 insects; June 14, 244 insects; June 28, 400 insects; July 11, 420 insects; July 20, 501 insects; July 24, 500 insects; August 5, 742 insects; August 19, 600 insects; and August 29, 384 insects. The eighteen birds together, therefore, devoured no less than 8,390, which were recovered undigested, or at a rate of 466 each per diem; and it must be remembered that these probably represent but a small portion of the total number they had eaten during the day. When we reflect that among all this mass of ingested insects there was not a single grain of corn, or the least particle of fruit, or a trace of any vegetable debris, we have some slight conception of the invaluable services which these little creatures render to agriculturists and fruit-growers.

Forest Trees by Mail.

The impetus given to tree planting by agricultural and horticultural writers, promises to work ere long an entire change in many parts of the country, especially in the Provinces and our great North-West. The seeds of the forest and forest trees are no doubt in great demand in such places, but the growing of seeds into trees takes time and there may be many failures, and the great distance from nurseries prevents the obtaining of young trees by any except the favored few. Seed may be sent by mail; and now a novel design has had a beginning. A seedsman in the U. S. has tried the experiment of sending by mail, dollar packages of forest tree seedlings. A years experience in this undertaking has proved successful; the packages have reached their destination in good condition. We hope to be able ere long to report similar enterprises on the part of our Canadian nurserymen.

CURCULIO REMEDY.—If there is any truth in the following it is important: A statement comes from South America that a singular property of tomato leaves has been discovered by a fruit-grower. Having cut down some tomato vines he used them as a mulch around his peach trees. He soon discovered that the curculio, which was destroying his fruit, had abandoned the trees surrounded by the tomato vines. Following up this accidental discovery, the free use of tomato vines proved a perfect protection, not only against the curculio, but other noxious insects.

Young orchards will be benefited by a good washing of the trunks and limbs as far as practicable with whale-oil soap (one pound to four gallons of water,) applied with an old cloth of some kind or stiff brush. If whale-oil soap is not obtainable, soap lees will answer the purpose nearly as well. The washing will rid the trees of all insects and their eggs deposited in the crevices of the bark, as well as keep the bark of the trees in healthier condition.

American clover seed has been imported into Germany in considerable quantities, but complaints are made that, on account of its not being well cleared, it does not bear comparison with the French and other European seed. The quality of the American seed is equally good and the prices as low as the European, but the difference in cleaning makes a difference of about \$2.40 per centner in favor of the European seed.

CHEAP HANGING BASKET.—A cheap way to make a hanging basket is to take a large sponge and attach a cord or wire to it, suspend it in a suitable place. Moisten the sponge, putting grass seeds and whatever you wish to have grow from it, into the small cavities. In a little while the seeds will commence to push out their spiny leaves from every part of the sponge; and falling down in tendrils as they rapidly increase, there will soon be formed a pretty mass of flowing green fringe, that will remain bright and cheerful to the eye for a long time.

PRIZE ESSAYS.

Fattening of Cattle.

When a farmer devotes his energies to this branch of agriculture there are four important rules or items which he is obliged to consider. First, the arrangement of his steading so as to effect the greatest saving of labor; second, the mode of feeding to be followed; third, the choice of breed which is the best for him, all circumstances considered; and fourth, that in order to gain all the advantages of feeding, experience shows that the feed should be steamed. These four items are very closely connected, and have a direct bearing upon the profit, but I propose to confine myself to the steaming of feed and the mode of feeding, repeating that unless the other two considerations are properly carried out, even a perfect system of feeding will be unprofitable.

In the first place, the age at which cattle can be profitably fattened depends upon the propensity of the breed to fatten early or late; also on the manner in which they have been raised, and they should be fattened at as early an age as possible. In choosing or in rearing animals the desirable points are—a large chest, arched ribs, large and rounded body, short legs, small bones, thick neck, soft velvety skin and fleshy buttocks.

In fattening cattle strict attention must be paid to cleanliness and regularity of feeding, and they must be perfectly quiet; it is better, if possible, that there should be a separate stall for each one, or so arranged that they cannot horn one another. Cattle housed all the time will lay on fat more economically and more quickly than if they are allowed to go out during the cold weather—more particularly if they get chilled by drinking cold water. The feeding of the cattle must be done at precisely regular hours, and they must be kept perfectly contented, as the more kindly they are fed and handled the better. There is no profit, of course, in keeping any kind of stock that is not improving on your hands—in many cases a direct loss, as in the case of a farmer buying a steer in the fall, and by negligence allowing it to lose one hundred pounds in weight; here would be a loss both of the meat and whatever feed the steer had, the loss being balanced by the manure made. There are some steers that can not be fed at a profit, which, with practice and attention, any intelligent farmer can soon detect. In fattening cattle the manure heap is an important item on the profit side of the ledger, and it would seem that on over-cropped soils or sterile soils this is one of the best ways of again making the land productive.

In summer the steers should have an abundant supply of excellent pasturage, and in this case the expense of grain feeding will be much lessened, as the better and more nutritious the pasturage the less grain will be required. Whether the steers are raised or bought, they must be obliged to keep laying on fat. The most important expense, however, in fattening, is in the winter, and in the stall-feeding, to which we will now confine ourselves. They must be fed very early in the morning for their first meal, which should consist of a fair quantity of turnips cut small and given a few at a time; then a little cut hay with three or four pounds of bran mixed, with also a couple of pounds of oil-cake or other fat-forming material, as six or eight pounds of corn meal—varying these quantities according to the requirements of each animal. The turnips and other feed must be steamed, and if practicable can be given at the same time. While they are being fed the stalls are to be cleaned out and plenty of fresh litter put in; and keep the steers clean by giving them a brush over with a curry-card; it takes but little time, and tends to keep the steers in better health. About the middle of the day they may be given a small quantity of hay or straw to distend the stomach somewhat, or rather to fill them up. At about four o'clock they are again to be fed with a ration similar to what they received in the morning. After three or four weeks the quantity of corn meal or oil cake is to be increased in a ratio proportionate to the wants of each animal. If mangolds are grown they ought to be kept till the swedes are done, being better in the spring than swedes; but never change from mangolds to swedes; finish the swedes first. The temperature of the stable is very important and should be maintained

even and equable, and the mangers must be kept clean. The following table shows the relative value of feed in fatty materials:

Indian corn, 9	Wheat straw, 3
Oats, 5½	Oat straw, 5
Wheat, 2	Peas, 2
Bran, 5	Beans, 2
Dry clover, 4	Rye, 1
Timothy, 4	Oil-cake, 9
Swedes, 5	Potatoes, 1

From this table it will be seen that corn and oil-cake are the richest in fatty materials, which accounts for their superior fattening properties.

We now come to the cost of feed, and herein lies the rub, because the cost varies so much in different localities that it would be cheaper to feed one sort of food than another. In the Western States corn can be grown much more cheaply than in the Eastern, on account of the difference in the value of the land, and also on account of the greater fertility of the former section. It is very difficult to give a special rule or a fixed rule as to the cost of a food, as the cost depends entirely upon the farmer himself, his mode of cultivation, the quantity grown and the value of his land. Again, a bad season will affect the cost of his feed, so that the only way is to cultivate thoroughly and feed the cattle as much as they will eat profitably; that is to say, feed them until they cease to gain in flesh. Of course, where oil-cake is fed, its cost can be estimated before feeding, as it is regulated by the market price. But say that a farmer has to pay a very high price for it and that the prices of crops are high (on account of a bad season); it is for him then to estimate whether it would not be better for him to sell his cattle instead of wintering them on high-priced fodder. Say, on the other hand, that three bushels of potatoes are worth seventy-five cents, and that two hundred and fifty pounds of hay are worth three dollars and a half; say that this quantity of hay is equal to seven hundred pounds of potatoes—it is evidently better to sell the hay and buy potatoes. A table of equivalents is therefore of use, as follows, taking the following quantities of each to equal the quantity of any other:

Hay, 100 lbs.	Peas, 45 lbs.
Oat straw, 225 "	Beans, 45 "
Potatoes, 195 "	Corn, 56 "
Rye straw, 400 "	Oats, 70 "
Mangolds, 350 "	Buckwheat, 64 "
Carrots, 300 "	Oil-cake, 50 "

It is evident that a certain amount of change in the food of the animal will be of advantage in order to keep the animal in health. It is also evident that a certain amount of "filling" food must be given, as it is possible to give an animal all its food, or at least the valuable portions of it, compressed within a very small compass. The animal must have something wherewith to chew the cud and expand the stomach. In some parts of the country it is profitable to sell them at twenty months old, forcing them from the time of their birth in April till eight months after the following April, so that they have the advantage of two summers and the drawback of only one winter.

HIRAM B. STEPHENS,
Slocum Lodge, St. Lambert, near Montreal.

Farm Management of Poultry.

Below please find some of our own experience in the farm management of poultry:—

In the first place, to manage poultry profitably it is necessary to secure good birds, just the same as in raising cattle, sheep or swine, in order to obtain the best results, we are compelled to keep only first class animals.

TURKEYS.—The qualities of size, hardiness and docility are found in a great degree in the bronze variety. The gobbler and hens should be selected from different yards, and we might say here that in all the species, when pairing the birds, obtain the males from different yards from the females. During winter turkeys need a comfortable place in which to roost at night and a dry shed or straw yard for the day time. They should be well fed on a variety of coarse grain. They will thrive on corn or peas alone, but will do better by having occasionally a substitute of barley or oats. When the turkeys begin laying the eggs should be carefully handled and kept in a cool room. We have usually got the most chicks by giving the eggs to a hen to hatch. When the birds are hatched they

require a dry coop. Let it consist of a box with slats across the front. Put it in the yard behind the house—every farmer's wife knows where that is. Let it face the south. Place two boards so as to form a yard leading from the coop. Put them on their edge in the form of a V. Confine the hen in the box, and allow the young birds the yard. Keep them well supplied with water and feed them bread soaked in milk, skim milk curd, a mixture of shorts and corn meal, also onion tops cut in small bits, and occasionally a hard-boiled egg chopped fine. When ten days old allow them their liberty, and continue giving meal and shorts, and in addition wheat screenings. They will soon shift for themselves, and do good service in capturing grasshoppers, grubs, &c. When the weather grows cold feed them on corn or peas, or both, either whole or ground. If ground it should be wet with luke warm water, and well mixed. We have tried the "cramming" system, but do not approve of it.

It pays better to sell well-bred well-fattened poultry dressed than alive. Pick and dress as neatly as possible, so that the birds will go to market in the best trim for selling. Scald the ends of the wings and take out all the feathers. Save the finer feathers for a cushion for the kitchen lounge.

GEESE.—In selecting geese choose from the Toulouse, Bremen or Chinese varieties. The Toulouse and Chinese are gray, the Bremen white. Geese do not object to the snow in the winter if it be not deep; but they should be allowed the shed or other enclosure in severe weather. They require only moderate feeding. We prefer allowing the geese to incubate their own eggs. When the goslings are hatched retain them until about a week old. Feed them a little bread or meal, but they will live chiefly on grass and water. The water should be placed in a shallow dish sunk in the earth until the top is level with the ground. The dish requires to be shallow. We had a friend who lost five young goslings by having a bucket sunk as above. The old birds splashed about half of the water out, and the young birds going in were drowned. When a week old allow them to go until fall, when they should be fattened the same as turkeys. When picking a goose submerge the bird in water almost boiling hot, then wrap in a coarse linen and place near the fire to dry. This is much better, easier and quicker than removing the feathers by the old method. Bring your goose in a nice condition to market.

DUCKS.—The favorite varieties are the Aylesbury, Rouen and Pekin. The Aylesbury and Pekin are white, the Rouen gray. Ducks require much the same winter management as geese, but cannot stand the cold as well. When they begin laying they must be shut in every night. If this be not done it becomes a difficult matter to find their eggs, as they are suspicious and change their nests very often. But, as they invariably lay early in the morning, the eggs are easily gathered by shutting them in each night. It is best to sit their eggs under a hen. When the young birds are hatched feed them the same as the young turkeys, only we would not give them the onion tops. Arrange for them the water dish which the goslings have left. If any appear weak give them a little new milk to drink. They require but little care in the summer. In the fall they should be fattened the same as the geese and turkeys. Pick the same as the geese, and be sure and have them looking their best when taken to market.

HENS.—There is a great difference of opinion in regard to the best variety of fowls for farmers' use. The Leghorns are great layers. They are handsome birds of medium size, and a good table fowl. The Black Spanish are very good layers, but poor table fowl. The Hamburgs are rather small in size, good layers, fair table fowl. The Dorkings are fair layers, good table fowl. The Plymouth Rocks and Houdans are deservedly popular, being good farmers' fowl.

In the large varieties the Brahmas are perhaps the best liked, being of large size, attractive appearance, and good winter layers. Have your poultry house face the south with a large window looking in the same direction. Have the window so that it can be opened in the summer. Put the perches on the opposite side from the nest boxes, or the birds may use the boxes for roosts. Have the first perch the lowest, say three feet from the floor, and each succeeding perch four inches higher until they reach the back. Having the same position as seats in the gallery of a public building the birds, after flying to the first, can easily reach the others. They do not have the same chance to

peck each other as when the roosts are the same height. Keep the nest boxes clean, and supplied with artificial nest-eggs—it will incline the hens to lay. Line the house inside with some cheap lumber and fill the space with straw. Whitewash the house inside, also the perches and boxes once a year. Feed the birds a variety of grain. Wheat screenings, oats and barley are good for eggs; corn and peas are good for cold weather. If in the summer you are troubled with hens wanting to hatch, shut them in an old out-building or corn-crib, give plenty of feed and water for a few days, and they will quit "clucking." Do not sit a hen where the others lay; set them after night; you can manage them better when it is dark. In setting your birds always set two hens at the same time, so that the chicks can be put with one of the hens and the other allowed to commence laying; if you are not troubled with vermin the ground is the best place, more particularly when setting goose or duck eggs. When setting eggs on the ground always use a box with the bottom out. This has often proved an effectual barrier to skunks. When the chicks are out give them much the same care as the young turkeys. Give your birds as much liberty as possible.

In assorting your poultry save only the best; kill all the culls. We consider it better to keep only well-bred poultry, because their good qualities are always more fixed, they are much finer looking, and thereby make the farmer's home more attractive. And by keeping pure breeds you can often obtain a handsome price for your surplus stock.

LEONARD REXOCANN, Springfield, Ont.

Poultry.

The Ontario Poultry Show.

The attendance at this show, which was held at Guelph, Ont., on the 5th ult., was large, and the fowls exhibited were creditable to the exhibitors as well as to the Association, to whom much credit is due for their laudable efforts to introduce and breed fowls of the best varieties.

The annual meeting of the Association was held in the Royal Hotel on Thursday afternoon. There was a very large attendance. At half-past two o'clock the President, Mr. Thomas Gowdry, took the chair, and then informed those present that only members who had paid their subscriptions had a right to vote. This hint was acted on at once by those who had neglected this most important duty, and Mr. McKenzie, secretary *pro tem.*, called the roll. The President said that no doubt it was expected by many of the members present that he should have prepared an address for this occasion, and he himself thought that he ought to have done so, but his time had been so occupied with the new business he had lately entered into, that he found it impossible to find leisure to do so, and thought that perhaps it was just as well, for when he looked around and saw such a large gathering of gentlemen so thoroughly posted in fowls, he felt sure he could have said nothing but what they knew already. He did not pretend to be a judge of all classes of fowls, but he did think he knew something about his favorites, Plymouth Rocks.

On motion of Mr. James Anderson, seconded Mr. W. Stevenson, the report was adopted.

Mr. Bogue, of London, moved, and Mr. W. H. Doel, of Toronto, seconded, that the show be held in Brantford next year.

The motion was carried unanimously.

ELECTION OF OFFICERS.—President, Mr. Kester, of Brantford; 1st Vice-President, W. H. Doel, of Toronto; 2nd Vice-President, Mr. Bogue, of London.

The President elect and Mr. Gowdry were appointed delegates to the Toronto Industrial Exhibition.

Mr. McLelland, of Peterboro, drew the attention of the meeting to the very high charges of the Express Companies for the carriage of birds to and from the shows.

Guinea fowls will keep all bugs and insects of every description of garden vines. They will not scratch like other fowls or harm the most delicate plants.



NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post-Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. 3. Do not expect anonymous communications to be noticed. 4. Mark letters "Printers' Manuscript," leave open, and postage will be only 1c. per 1/2 ounce. We do not hold ourselves responsible for the views of correspondents.

Cheap Root-house.

SIR—A subscriber, Bartonville, asks for plan of a root-house; the following is a description of mine, which you may give if you see fit:—

Dig out foundation for pit 6 feet wide; put posts in centre 10 ft. or 12 ft. apart, a stout cedar pole or log on top; good thick log flattened on upper side laid along each side of pit to rest slabs on; cover with stout slabs, straw and dirt; make door on one side of pit near the centre; the door can be lifted off when in use and put to one side; when shut cover with snow in cold weather. The ends of pit may be covered by cutting logs the proper length, banking with earth as you go along. Put ventilators on each side of door, about two yards apart—a 2-inch drain tile is just the thing.

The above will keep turnips as well as the best root-house made, and is tolerably handy. I have two such near my cattle-house door, and have had a good deal of experience in storing turnips. I have been farming for myself some 15 years, most of the time in South Ontario, and have grown turnips every year, sometimes having as many as 350 wagon loads, or about 9,000 bushels in one season, but for such quantities one needs large root-houses built of stone.

Split cedar would make desirable slabs.

J. T., Leith, Grey Co., Ont.

The English Coach or Cleveland Bay Horse.

SIR.—There is need of continually bringing before our minds the advisability of breeding from such classes of animals as the country requires, and what the outside world is wanting, not only in horses, but also with all kinds of our farm stock. As we view the different classes of horses in our country, horses of many kinds, Blood, Clyde, Percheron, Suffolk Punch, various families of supposed trotters, ponies, &c.; yet no horse has all the necessary requirements so much for all kinds of work and places as the English Coach or Cleveland Bay, standing to-day pre-eminent among horses. They are the most beneficial for all kinds of work, having hardy constitutions, being good workers, good travellers (many are among our fastest), splendid style, kind disposition. In short, too much cannot be said in their favor. In breeding horses great care should be taken by our farmers to use only the best animals to be had. It is a sad fact, finding so many people in various parts of our country using for stock purposes so many under-sized sires, having no form or comeliness to recommend them, having no advantage—that to the narrow minded of dollars and cents in the outlay. If our people would consider thoughtfully for a few minutes the detriment to our country in breeding from animals not having the requirements the country needs, nor what the outer world wants, they would drum a lot of miserable stock animals of all kinds forever from their midst.

The difference in cost of raising a good animal and a poor one is comparatively nothing. The difference is, the good animal is fed with satisfaction, the poor one almost grudgingly.

The loss to a country can hardly be calculated in using poor sire animals. The loss in one individual animal is dollars, and in thousands it is hundreds of thousands of dollars. If common sense is not sufficient to teach our people this lesson, our Government should take up the matter, for we want to improve our stock, the price of our land, the value of our country, and to brighten our homes. Let us therefore more earnestly improve our stock of horses, our cattle, all our kinds of stock. In so doing you are advancing your own personal interest, the interests of your country and fellow-man.

H. H., Chatham, Ont.

On Prickly Comfrey.

SIR.—In the January number of the FARMER'S ADVOCATE I notice an article from an "Old Farmer" on prickly comfrey. He says:—"I obtained some roots and planted them; they grew, and I guess would make a very good crop of leaves; and so would dock—just as good a crop and a great deal larger; but what good would it be? I cannot find an animal on my place that will touch the stuff."

In the same number I notice another correspondent, H. T., Point de Bute, N. B., who states he has just received a letter from the editor of the American Agriculturist, who speaks very highly of this new fodder plant, and he says he has as yet had no reason to change his opinion about the plant, and that it is a very valuable addition to the plants used for green fodder.

In the same number I notice again an article from David Mathison, Esq., and others, of Pictou, N. S., complaining of sickness and disease among their stock, especially in the early spring.

Now, sir,—as regards "Old Farmer,"—does he know that there are seven different kinds of prickly comfrey? Two of these are natives of the British Isles and useless as fodder, though much used medicinally; we have another native kind here from which syrup is made, but also useless for fodder. The variety used for fodder is the Caucasian, a native of the Caucasus, and will not germ from seed, nor will it increase or spread over the land, unless the roots are sub-divided and properly planted again, in which case the smallest piece will grow, and, if given high cultivation, will produce 160 tons of good green fodder to the acre. Let me instance the growth of a single root planted last of June, and measured in September:—Planted in the garden with my tomatoes, the measurement was 17 1/2 feet in circumference, the height 5 1/2 feet, and each leaf weighed one ounce on the average; planted as potatoes in hills three feet apart each way, from 80 to over one hundred tons can readily be raised, and being perennial it will last for twenty years; does not require half the cultivation of potatoes, nor yet one-half the manure, as every two years is quite sufficient to manure for ordinary crops. As regards horses eating it, I have known horses that were getting 12 and 16 quarts of oats eat it with avidity. As regards stock of all descriptions eating it, we have positive proof, as also to the increase of milk, being fully equal to green corn. We have known horses follow us round the barn-yard after it; and as for sheep and swine, they eat it most ravenously, in fact will endeavor to get the roots up out of the ground if allowed to run on it. As regards docks, they, of course, produce an enormous crop, and rapidly seed a whole farm, yet perhaps "Old Farmer" is not aware of the fact that many tons of docks are annually used in making up tobacco, so it is evident even they have their use.

Now, in the third case, as regards sickness in stock and its healthy use in the early spring, the instant the snow is off the ground the comfrey shows itself, and growing at such a rapid pace is fit for use in three weeks—before grass and clover are an inch high. The more repeatedly it is cut the more it will produce, the more tender it is, and the better for use. Stock have been kept shut up all winter and are naturally craving for the first green fodder they can get. If "Old Farmer" will cut his comfrey at this time and pass it through a hay cutter, sprinkling a little corn or other meal upon it, his stock will soon eat it if he perseveres. Caucasian or prickly comfrey being a new fodder, I presume stock do not in all cases take to it at once. I suppose it must be an acquired taste, the same as tomatoes with many people, but ultimately much relished, especially when no other green food can be obtained. In the course of a few days he can omit the meal, feeding from 12 to 20 pounds of the comfrey night and morning. If the gentlemen in Pictou County would try the same, I think they would find their stock in a much more healthy condition and not so liable to sickness or disease, as the comfrey itself is diuretic. When green and tender it resembles most the clover in taste; when cooked, as an article of diet, it mostly resembles the dandelion, though somewhat more bitter. It is full of a most nutritious gum or mucilage, which is nearly of the same composition as sugar when acted upon chemically. This change occurs in the mouth and stomach of animals eating such food. In the early spring cattle fed on comfrey are prepared while in the byres or stables to go out to the pastures later in the season, and being thus prepared will not browse with such intense voracity as to overload

their stomachs with the rank vegetation. During the summer months, though the stock are turned out to pasture, the comfrey should still be cut to prevent its going into blossom, and farmers who wish to save it can do so by passing it through the hay cutter and packing it away in tight barrels or air-tight pits, first placing two inches of cut straw, then eight or ten of comfrey, and so on till the barrel or pit is full. The only precaution required is to keep it air-tight, and not feed it out for three weeks after being packed away, and then feed in small quantities at first until they come on full seed. It will keep all winter if properly preserved. Again about the last of September the pastures are bare, still there is the Caucasian comfrey, and immense quantities of it can be cut daily until the heavy frost of December kills it. It requires no protection during the winter, as it is a native of even a colder climate than our own. I could furnish several testimonials as to its value here, and should like to hear how others have succeeded with it in Canada. Farmers should be careful and buy from responsible dealers, and be sure they get the true Caucasian, and not the wild varieties, the roots of which all resemble the Caucasian comfrey, or *Symphytum asperinum*. The others are *Symphytum officinale*, *Symphytum tuberosum*, *bohemicum*, *orientale*, *tauricum* and *cordatum*; from Britain, the East, Bohemia, Tauria, Transylvania and the Caucasus.

J. D. H., Digby, Nova Scotia.

Prickly Comfrey (*Symphytum asperinum*).

SIR,—When I addressed the letter to you which appeared in your January issue, and in which I incidentally mentioned prickly comfrey, I did not think that it would be the means of bringing out so many communications about the plant as your February number contained.

That great care should be exercised by any one contemplating going into the cultivation of this plant to any extent, to secure the "right kind," the following extracts which I have made from several horticultural works will go far to show.

Notable among those who write of it is Mr. J. Greives, of Patterson, N. J., who during several visits to Europe has made a business of procuring information regarding it. He says there are at least ten different species which Messrs. Jaques & Henrig describe in their "Manual des Plantes," and of one thing I am very clear—they are not all valuable alike.

Prickly comfrey was introduced into England in 1790. It found a place in Kew Gardens in 1799 as a foliage plant, and in 1811 it was fully brought out by the Messrs. Loddiges, eminent London nurserymen, as a shrubby and border plant. In 1830 it was introduced as a forage plant, after having figured in almost every garden of importance as an ornamental one. The following description of the true prickly comfrey, as copied from the London Garden, may be of use to some of your readers. I have added also descriptions of some of the other kinds which will serve to compare by. *S. asperinum* has a stem almost solid, full of gum and mucilage; is the tallest of the species, growing to six feet; flowers red, changing to blue.

S. caucasicum (two feet), white flowers, and *S. tauricum* (three feet), also with white flowers. *S. bohemicum* (two feet), with brilliant red flowers. *S. officinale variegata* is mentioned as "a handsome plant;" also *S. tuberosum* with yellow flowers.

The following seven varieties were published in 1818 in the Hortus Suburbans Londinensis, by Robt. Sweet, F. L. S., showing where they are natives of: *S. officinale*, native of Britain; *S. tuberosum*, Britain; *S. bohemicum*, Bohemia; *S. orientale*, Eastern; *S. tauricum*, Tauria; *S. cordatum*, Transylvania; and *S. asperinum*, Caucasus, the latter being the true prickly comfrey.

On its introduction in 1830 we read that the Farmers' Journal reprinted notices of the plant for the benefit of its subscribers, but the root of the other species so closely resembled the Caucasian variety that horticulturists sold it to the farmers as comfrey roots, causing disappointment and bringing it into bad repute; and the result is seen in different parts of the country even now. In France, also, Mr. Greives says, where it suffered from like causes, the result to-day is a variety of comfrey with small foliage and a pale indistinct color of flower, sometimes pink, sometimes lilac, but never the bright blue of the *asperinum*. I have known the prickly comfrey as a hardy herbaceous flowering plant for years, have dug up many of its roots for people who sought it for its reputed healing qualities, and as an old acquaint-

ance have no desire to write it down, but only to give such information about it as I have gathered from various sources to your columns (with your permission), where it will likely meet the eye of more parties interested in it than in the publications from which I have culled. I can claim to be not "altogether unacquainted" with the subject of these lines, as I think I have one plant of *S. asperinum* in my garden now.

A. P., Westminster, Ont.

Canning Peaches.

SIR,—In last month's number of the ADVOCATE J. F. O., St. Mary's, asks for information as to the successful growth of peaches in Western Canada—where they are to be found and who are the growers. The Niagara district, or the peninsula of land lying between Lakes Erie and Ontario, is the garden of Canada, and the place where peaches, grapes, pears and most other fruits are grown in abundance, and where the season is longer and the climate milder than in any other part of Canada. Peaches are shipped through the season from the town of Niagara by daily steamers to Toronto, Ottawa, Montreal and all parts of Canada—many hundreds and sometimes thousands of baskets daily. If J. F. O. will communicate with me, by letter, he shall readily be put in possession of all the information he requires, not only as to peaches, but of all other kinds of fruit suitable for canning grown in the district.

R. BERRIMAN, Stamford, Ont.

SIR,—There are in the vicinity of 20,000 bearing peach trees in this township. I should say that the town of Niagara would be a most convenient place for J. F. O., St. Mary's, to start canning. Toronto market regulates the price.

R. COURNEEN, Niagara, Ont.

Fruit, Stock, etc., in New Brunswick.

SIR,—I have been receiving the FARMER'S ADVOCATE now for two years, and have been much pleased with it. Your articles on and references to stock-raising and the nursery and orchard are particularly interesting to me, as I am engaged somewhat in the nursery business, as well as the stock. I was much gratified to see in your recommendations of the best kinds of apples to raise in exposed parts of the Dominion, that we have several of those kinds in our nursery, such as the Duchess of Oldenburg, Red Astracan, Pamuse, etc. I made 2,800 root grafts last winter, set them, and only lost about 150 in the whole lot that failed to take. How was that for a new beginner?

We have had a great improvement in our stock within a few years from the thorough-bred Short-horn bulls which our Agricultural Societies purchased from the importation made by the New Brunswick Government, from Bow Park principally. We had in this Society the "Earl of Barrington." A pair of steers exhibited this fall at our fair, a year and six months old, sired by him, weighed 2,260 lbs., and another pair, same age, sired by "British Baronet," of Harvey Society, weighed 2,140 lbs.

Your correspondents are quite correct in reference to the improvement in raising wheat in N. B. Some very good crops have been grown in this county this season, and there are large preparations for an increase in sowing for another year.

The N. P. has not made us rich, for we do not yet raise wheat enough to have any to sell; but we look for an improvement in business another summer, as the lumbering interest is becoming quite animated. G. M. P., Hopewell Hill, Albert Co., N. B.

Thorley's Horse and Cattle Food.

SIR,—Will it pay me to purchase Thorley's Cattle Food that I see advertised in the ADVOCATE? G. M., Moncton, N. B.

[This food is, comparatively speaking, a new one in this country, having been introduced about three years ago; yet in England it is of long standing and the best in the market. Sometime ago we received a quantity for trial, and we placed it in the hands of different feeders, also trying it on our own farm, and we feel confident in recommending it to our patrons, as the general tone of all those that tried it, when following the directions, was as favorable as of any food, while some of the farmers lauded it very highly.]

Amber Cane.

SIR,—Last winter I noticed several letters in agricultural papers about raising amber cane in Canada and the States, with the object of making syrup from it. I encouraged some of my neighbors to try it, and in the spring I sent to a Detroit seed firm and obtained 4 lbs. of amber cane seed, paying 50c per lb. for it, and 20 per cent. duty. About the 18th of May I planted about half an acre in well-manured mellow land. The rows were 3½ feet apart. I put 8 or 10 seeds in each hill, and after it came up thinned it out to 4 or 5 stalks. It looked puny and tender for a few weeks, but when the hot weather came it grew very rapidly. About 6 or 8 rods of the ground were too wet, and it rotted. It requires about the same cultivation as Indian corn, and will ripen about the same time. Mine was ripe in the middle of October. I saved considerable of the seed. The average height of the stalks was 10 feet 2 or 3 inches. Two other parties grew some near Clinton this season, and one of them having machinery for pressing and manufacturing it, I took my cane to him and had it converted into syrup, receiving half of the product. I got 35 gallons of good syrup. If the seed is good 1 lb. will plant an acre. My farm is 2½ miles from Lake Huron, where we seldom have spring frost to injure tender crops.

G. C., Goderich Township.

We append the following, from the Huron Signal:—

We have by the kindness of Mr. Cox received a sample of the above mentioned Syrup, and although made after a very crude fashion, it has the appearance of the ordinary Amber Syrup of commerce. It is quite palatable and pleasant, and seems devoid of a certain purgent acrid taste possessing much of the so called Sugar-Cane Syrup.

Mr. Cox's experiment shows a yield of 140 gallons to the acre. No doubt with a little experience in cultivation and manufacture, this could be increased; even as it is, and allowing one half for manufacture, the yield of 140 gallons per acre seem to class this as a profitable branch of Agriculture allowing 50 cents per gallon, we have a return of \$35 per acre.

The Bug in the Pea.

SIR,—The farmer has many pests to contend with, and the number is increasing annually. Foremost among them now is the pea bug, which has done great damage in past years; and with the great stock of bugs on hand we may expect great ravages another year, unless something is done to stay them. It is our duty then, ere it is too late, to consider what is best to do. If there is a remedy it is high time we knew of it, as spring will soon be here, and then there will not be time for finding out what is best to do. From what I know, and can learn from my fellow-farmers in this section, all those who had sown late in the season escaped the bugs almost entirely, and also that those who had sown the Prussian Blue Pea the last two years have been free from them. Now, if such is the case in other places, I think it would be well for all to know, as it is very easy for others to report from different sections of the country through the columns of your paper. Hoping this may cause the opinions of others to be expressed, I leave it for able pens.

J. L., Carville.

[Question—Is the Prussian Blue Pea bug proof? Who will answer?—ED.]

SIR,—Please give the enclosed space in your valuable ADVOCATE, and much oblige the members of the Farmers' Club:—The annual meeting of the Maple Leaf Farmers' Association, of Fitzroy, took place in the schoolhouse on the 22nd ult. The Auditors' report was received and approved of, showing that the society is in a progressive condition, and that the money expended during the last year was in every way satisfactory, which will result in the building up of a valuable society. The following were elected office-bearers for the present year: President, R. C. Sparrow; Lecturer, W. Wilson; Secretary, C. Murphy; Treasurer, J. Groves. C. M., Fitzroy.

SIR,—Which do you consider the best potato introduced this year? R. L., Bronte.

[There are several varieties advertised in this issue, but we are not in a position to state which is the best.]

The Grange.

SIR,—If you are not already tired of the Grange discussion I would like to add a word or two, believing that a thorough ventilation of that subject may do good to the farming community, in whose interests your able journal is conducted.

I do not feel inclined to run a tilt against the very deftly-handled lance of Mr Good, the writer of the letter in defence of the Grange in your last issue; but not agreeing with him in his views of the practical utility of the Grange, he will perhaps pardon me from publicly expressing my dissent from his views.

Let me first state that I was for a number of years connected with the Grange, and have had an opportunity of judging for myself as to the merits and demerits of that institution; and while criticising, I do not wish to be understood as being an enemy of, or prejudiced against, the order. On the contrary, I should be pleased to see the professed objects of the Grange carried into practical effect, especially one among others mentioned by Mr. Good, viz: "To give farmers a more thorough knowledge of their occupation, by meeting together and discussing subjects pertaining to their calling."

But, sir, I would ask Mr. Good if in his experience this has been the principal object, or formed the least noticeable feature in Grange meetings?

Instead of striving to acquire a more "thorough knowledge of their calling," I have seen that farmers in the Grange are more apt to interfere and meddle with the occupation of other classes of the community; are led to look on the retail merchant with a vast amount of suspicion; on the agent or middleman as their natural enemy, against whom a war of extermination should be waged, instead of acknowledging these classes their proper positions in the natural course of trade.

I have seen that farmers at Grange meetings will pay more attention to the reading of a confidential price-list, professing to give great reductions on the price of groceries to Grangers only, than they would to the most valuable essay on the best mode of feeding stock or making butter. I have seen hours of valuable time wasted over these swindling confidential circulars that should have been devoted to something more in accordance with the professed objects of the Grange. Grangers were informed that they would be furnished with goods of all kinds at prices that would open their eyes as to the enormous extent they had been victimized all their lives, by dealing in the ordinary way with retail merchants.

It was not at all difficult for business men to see the direction the Grange tide was setting—that is, instead of minding their own legitimate business, Grangers manifested a determination to be constantly dabbling in mercantile affairs, in matters of which they were utterly ignorant; and this failing was taken advantage of by many designing men, with the result that thousands of dollars were sent to distant cities in exchange for goods supposed to be cheap, and Grangers fairly hugged each other with delight at the thought of their great bargains, and the distant dealers were, no doubt, equally pleased with their share of the business.

In so far, then, as the Grange has aimed to become the great educator of the farmer, it has failed.

"But," Mr. Good asks, "has the Grange failed in enabling the farmer to buy apple trees at 10c to 12c that were formerly 20c to 25c?" Let Mr. G. examine the matter candidly and say if it requires all the cumbersome machinery of the Subordinate, Division and Dominion Grange to bring about so small results. Let him also say why, in the name of common sense, a Granger should be enabled to buy his apple trees, &c., any cheaper than any other man, or by what means such results were brought about?

My own opinion is, that the depression of trade had far more to do with the depression of prices than the Grange had.

But, sir, I must not trespass further on your valuable space. Let me first add, that when I find an association of farmers, meeting together for the purpose of discussing agricultural matters, and for mutual improvement in a literary and social way, I shall be glad to join them. But until there is a radical improvement in the working of the Grange I must stand aloof from it.

Yours, H. D., Brantford.

That Corn Duty.

SIR,—Seven cents a bushel on corn makes our beef and pork cost for feeding one cent a pound more than these cost the Western States' feeders. We lose the manure and our ships and railways the carriage. The Hoosier says:—"If you will not buy my corn to make beef and pork, John Bull will; and if he will not, I will make beef and pork of it myself to send John Bull." Our British friend buys the corn to feed and charges no duty, and no doubt gets some profit out of it; but he has to buy seven shiploads of corn as the equivalent of one cargo of meat. This gives the American feeder a big advantage, so he sends home shiploads of refrigerated meat, grateful if he can make the one cent a pound in these days of close competition, which the Canadian will not make. Does the duty on corn affect the price of oats? No. Corn is worth about the same in New York city as in Ontario, but oats are worth nearly 15 cents a bushel more there than in Ontario. It is a good thing to have a high opinion of one's country. But American farmers don't want reciprocity, especially down East. Why should they? Canadian farmers, put yourselves in their places, and say if you would. Palmerston once told his countrymen, the immortal gods can't control arithmetic. We can't disturb the arithmetic of forty-five millions of United States people, whose corn crop is worth more than the whole produce of Canada won from farms, forests, mines and fisheries. We ought to have an arithmetic of our own. The Americans may make money by shutting out our products. We may be able to make money by taking in theirs—to carry, or to manufacture. If the cotton manufacturer gets his raw material free of duty, why should not the cattle feeder get corn and oil cake, raw materials for his purpose, also free of duty? The duty on corn has helped the price of rye. Now it would be easy to put the duty on corn for distilling purposes only, by making it pay duty in the distillery in the same way that the duty is put on malt in the breweries. I would go for a higher duty on corn for distillation purposes, to encourage the manufacture of malt whiskey, which is said to be the best. If a revenue is to be made in this way, do it so as to encourage cattle feeding and discourage the use of corn whiskey. This will help the barley and rye markets as well. If our legislators knew anything about farming they would remove the duty on malt for feeding purposes, but this is a question beyond their capacity, so I will not enlarge upon it. Malt makes the best pork.

AGRICOLA, Kingston, Ont.

SIR,—I see quite a few opinions of farmers throughout the Dominion concerning the duty on corn. Now, my opinion is to leave the duty on corn, so that we may have a better price for our oats than we had before the duty was put on corn; and I think it would be better for us farmers if we tried to raise our own corn. For instance, if we take a piece of land that is overrun with Canada thistles, plant it with corn and work it well, it cleans the thistles out pretty well; but if we do not work it well we might just as well leave the corn out of such land, or we might see more thistles than corn. I think we ought to grow more corn and keep better and raise better cattle, instead of sowing so much wheat. I think we will have to go into the corn-growing and cattle-fattening business more when that great Northwest gets cleared up. I wish that the ADVOCATE would come twice a month; I can hardly wait for the next issue. If it was \$2 per year I would not do without it. It is the cheapest agricultural paper I have ever seen. It is very plain and practical. A. Y. S., Chippewa, Ont.

SIR,—I have been reading the ADVOCATE for nearly one year, and I think there has been very little as regards farming but what you have brought before your readers, with the exception of one branch—that is good ploughing. Now, sir, I consider this is the very foundation of good farming, and the best way I can see of getting it brought in is for every township to have a ploughing match. I think it is about the best way of training up the rising generation to make good farmers. I would like to see you urge it a little along about next August or September, and lay down a few rules regarding how good ploughing ought to be done, and how to conduct a match, as we purpose trying to get up one here.

R. A., Constance.
[Which of our readers will take up this question?]

Beneficial Results of Salt.

SIR,—In 1877 I tried it on a fourteen acre field of Spring Wheat. It ripened slowly, assuming a yellow hue. The quantity and quality was much better than that grown on any other part of the farm in a similar state of cultivation.

Being so well pleased with the results of salt on that year's crop, I purposed [to use it on all my wheat ground in 1878, but circumstances occurred by which I was prevented from carrying out my intention. The result was a failure of crop to a very great extent. Of course you are aware that the season of 1878 was unfavorable for spring wheat, the straw breaking down, causing the wheat to shrink. My experience, however, convinces me that a liberal application of salt, acting as it does in the way of hardening and stiffening the straw, would have added greatly to the yield of that year's crop.

In 1879 I used about three hundred pounds per acre on all my wheat ground, and while the spring wheat in this neighborhood was badly broken down, yielding from eight to twelve bushels per acre, my farrow wheat yielded about nineteen bushels per acre, of superior sample, on land that had raised wheat the previous year, and some of the ground full of thistles.

My Lost Nation wheat was the best crop I ever raised; sample good. The exact yield per acre I cannot tell, as it is unthreshed yet.

J. W. Auburn.

SIR,—You would oblige me very much by informing me, through the columns of your paper, the best kind of roots for fattening young cattle, and feeding milch cows and horses; also the best method of souring and manuring the soil. How much seed ought to be used? You can inform me by letter or in your columns; also the best method of heating and preparing manure. You will oblige me very much by so doing, as I am intending to sow a good deal. I am fattening cattle this winter, and it is a pretty dear process as I have no roots. I farmed a little in your township, but was not there long enough to learn much of your habits.

J. McC., Ormstown, P. Q.

[Without root growing you cannot carry on farming profitably. For stock feeding they are absolutely necessary. Do not confine yourself to one kind of roots. For milk cows mangels and sugar beets are very valuable, heavy croppers, good keepers, very nutritious, and do not communicate any unpleasant flavor to the milk. For fattening stock we have always found Swedish turnips to be the best roots. We have fattened prime beef on little more than hay and swedes—just a little oats and very little oil cake. Prepare the ground as you would for a potato crop, and as early as you can when the ground is dry. We have ere now given particular instructions, but our new subscribers have not had the benefit of them.]

SIR,—1st. Can you or some of your numerous correspondents inform me what would be the best thing to sow as a substitute for hay on clay soil? The seed did not take last spring, and meadows are few, and old at that. 2nd. What is good to give calves an appetite or make them drink well? I have two calves which will not drink except the milk is perfectly sweet and milk-warm. One is nearly two months old, and the other six weeks.

A. B., St. Catharines, Ont.

[As a substitute for hay, circumstanced as you are, you may sow millet or Hungarian, both much alike, requiring the same treatment and producing heavy crops. In saving for hay they must be cut when in bloom, as the seed is said to be injurious to stock. Spring rye may also be sown as a substitute; so may oats and peas mixed. For your calves a change of food might be of service. More dry food will beget a desire for drink.]

SIR,—This is a fine country for wheat-growing and stock-raising. There are some fine Shorthorn cattle, and well-bred sheep and pigs, besides some of the very best horses. If you would pay this part of Ontario a visit, as I think you should, it would be well to see the herd of Mr. Ingram, of Manitowaning, and of Mr. Johnston, near Little Current. You would, I think, be well pleased with your visit. I would be glad to see you in Algoma, as I am sure you would do the country a great deal of good. Am well pleased with the ADVOCATE; could not do without it.

R. A. J., Little Current, Manitoulin Island.

From the Bay of Quinte.

Mr. M., of East Hastings, gives a glowing report of the grain-producing capacity of that district, especially for barley growing. American vessels leave Napanee Port wholly laden with barley. The malsters of the States find it necessary to have barley from the Bay of Quinte. Spring wheat was not so good a crop last year as usual, even in that favored section of Canada, and fall wheat is not much grown there; the clearing of the forests has been too indiscriminate and fall wheat requires wind-breaks. The Quinte farmers are occasionally disappointed of the expected prices. One farmer has hoarded up the produce of his barley fields for three years. He refused to sell when offered for it \$1.15 per bushel, and now it is as low as 80 cents. He has 6,000 bushels on hand. The Grangers there resolved to be their own produce merchants, storing and shipping their own grain. They accordingly built in Napanee a grain-store capable of holding 100,000 bushels. When filled with barley the structure fell to the ground. It was badly built, though of stone, and its great height and the pressure of the stored grain brought it to the ground. The loss from the fallen building and the damaged and wasted barley was quite a serious matter.

SIR,—I may take it for granted that all who were present during the meeting of the Dairy-men's Association last week received no little pleasure and profit from the meeting, and though there was on some points a difference of opinion, this clashing of opinions will lead to a more thorough knowledge of everything connected with dairying. There was, however, one great mistake made in the introduction at the meeting of a subject so inseparable from party politics as the endorsing the supporting and operation of the Guelph college and farm. It was cunningly introduced by tacking the vote of approval to a vote that must otherwise have passed without one dissenting voice; whereas when the two were put to the meeting united as one there were unmistakable manifestations of disapproval. Still it was pressed on the meeting despite the cries of—"Why introduce this political question here?" "Separate the two subjects in the resolution." "Put each of them separately to the meeting and the first will be passed unanimously." This discordant matter was, I believe, brought up by one who should, from his profession, have used his influence to preserve peace and harmony among all present. Fortunately at the time of this occurring the great body of people had even left the hall, or were leaving, for recess. So far, the time for passing a resolution contrary to the principles of many was well chosen.

A. C., Westminster, Ont.

SIR,—It appears to me there are some reasons not yet stated in your valuable paper why the duty on corn should not be repealed. Of all grains that we raise corn is the most valuable for feeding purposes, and needs protection so that farmers may be encouraged to grow it more abundantly. There is a general opinion that but a small portion of Ontario is adapted to the growing of corn. Now, I contend that this country is as well adapted to the growth of corn as Michigan, Wisconsin, Iowa and Minnesota. Further, with protection to stimulate the culture of corn, manufacturers will be induced to make the improved two-horse cultivators and planters so common in the Western States. With improved cultivators and planters, we need not confine ourselves to the growing of the eight-rowed varieties of corn, but could branch out into the best Dent varieties of corn. By importing cultivators and planters from Illinois I have, without hoeing, raised successfully for four years the Dent varieties of corn.

A. R., Mt. Vernon, Ont.

[The same kind of cultivators are now being made in Canada. As soon as our farmers know the value of them, they will raise corn in quantities.]

SIR,—I have a piece of fall rye I want to seed down this spring. Will it do to sow the grass seed and give it a dressing of unleached ashes? Will the ashes hurt the seed? Should there be an interval between sowing the seed and the ashes?

ENQUIRER, Lakefield, Ont.

[Apply the ashes at time of sowing the rye, harrow it, then sow the grass seed and cover it lightly, not over one and a half, or, at the most, two inches, with a seed harrow. A bush harrow is sometimes used as a substitute.]

Beet Sugar.

SIR,—Some months ago I read in the FARMER'S ADVOCATE some articles on beet sugar. It was expected that if the experiment of growing the beets and manufacturing the sugar in Canada proved successful, it would be very profitable to farmers growing the beets as well as to the sugar manufacturers. Would you kindly inform us how it has succeeded where it has had a trial this past season?

J. C. P., Danville P. O.

[The results obtained last season have not been as satisfactory as was anticipated. The Maine Beet Sugar Company did not realize as great profits as they expected. There was not as large an acreage of beets sown, nor was the crop so heavy as they had calculated on. The contracts to supply beets to the company were for the crops of 1,300 acres. Some of the crops were very large—thirty-seven tons to the acre, and some unaccountably unproductive—only two tons per acre. The medium crops were best for their purposes, the very large roots being less rich in saccharine matter. It had been estimated that the average yield would be 20 tons to the acre, but it was less than half. The company will not get much over 12,000 tons of beets, and they are consuming at the rate of about 120 to 140 tons a day. The produce of sugar and molasses will be about 1,500 tons, worth eight cents per pound. Had they been able to get a larger quantity of beets the expense would have been proportionably less, and the profits consequently greater. The expected profit is less also from the farmers not purchasing the pulp for cattle food as they expected, nor the other refuse. The company are now entering on another year's operations with the experience of the past. Much of the success of the undertaking rests with the farmers. If from improvements in cultivation they raise such roots as are most suitable, one to two pounds per root, about 20 tons to the acre, they will be paid, and if they purchase the pulp, &c., as is done in Europe, they, as well as the Company, will reap increased profit. There are employed by the Company about 150 hands at a cost of about \$6,000 a month during the working season, four months. This must be a benefit to the farmers, affording them a home market for all the workmen and their families consume. The company paid for the beets delivered in 1879, \$5.75 per ton, but it is uncertain if they can afford, under all the circumstances, to pay the same high price in the future.]

To Tell the Age of Cows.

SIR,—Will you kindly give in your next paper a sure and certain rule whereby we may know a cow's age by her horns.

A. F., St. John's, P. Q.

[The ages of horned cattle may generally be known by the rings on the horns till their tenth year; but after that time they give no indication of age further than that the animal has passed its tenth year. The first ring appears on the horn after the animal is two years old—soon after, as a general rule, though sometimes before that age. During the third year the ring gradually increases, and at three years of age it is completely formed. The second ring appears during the fourth year, and at the end of the fifth year it is complete. After that period an additional ring is formed each year. This rule is sufficiently plain, and even a young farmer needs but little practice to enable him to read a cow's age on her horns. A cow with three rings is six years old; with four rings she is seven years old. No new rings are formed after the tenth year; the deeper rings, however, and the worn appearance of the horns are pretty sure indications of old age.]

SIR,—There was nothing in your last paper about joint-stock factories. I would like you to put your opinion of joint-stock dairy factories in your paper; it might do our neighborhood a little good, as they are thinking about forming one here.

W. M., Avonbank, Ont.

[In localities where farmers have not sufficient capital to put up buildings and manage a dairy individually, the joint-stock system answers well as long as you can secure honest and honorable men to direct and manage it. If you have a number of honest farmers who will take an interest in it, then go ahead.]

Apple Tree Blight.

SIR,—Would you be kind enough to inform me, through the ADVOCATE, what is the cause of the apple tree blight, and, if there is any remedy, what the remedy is? So many farmers are planting orchards in consequence of the increased demand for good fruit for shipment to England, that a failure of it from any cause would be a serious loss to the country.

F. G., Walkerton, Ont.

[The apple tree blight is attributed to several causes. By some it is said to be caused by electricity, while others assert that it is caused by excessive nitrogen in the soil. The continued application of nitrogenous manure, it is said, makes the young wood too rich in sap, too tender and unable to resist the great and often sudden changes of the temperature. This excessive abundance of sap may be a predisposing cause, and hence electricity may have a deleterious effect that it would not have on healthier and harder trees. As a remedy, it is deemed advisable to add to the mineral constituents of the soil by the application of wood ashes, salt, or superphosphates, coal ashes, &c. R. F. G., in the Country Gentleman, describes as follows his method of treatment for blight:—

"I have a little personal experience to relate in this matter. Having a small orchard of some 20 trees, planted in 1857, I had never succeeded in getting crops from them oftener than once in five or six years. During 1873, '74, '75 and '76 nearly every tree blighted badly, and fearing I should lose them I resolved to hasten or arrest their decay. In March or April, 1877, salt was sown under them till the ground was white, as far out as the limbs, and certainly not less than from three pecks to a bushel to each tree. The foliage showed less blight that summer than previously. In the fall and the following spring the trees were all trenched about, in a circle three feet inside the farther spread of limb, 16 inches deep, and the trench filled in with refuse gathered from streets and alleys, consisting of say one-fifth wood ashes, three-fifths coal ashes and one-fifth refuse matter. There was less blight in 1878 than in 1877, and a tolerably fair crop. In the fall of 1878 a team was set to work, and to each tree was applied a good three-fourths of a cord of the same substance, chiefly spread away from the trunk and over the extremities of the feeding roots. Nothing was done this spring, except to mulch the trees with the old stalks of an artichoke patch, which I suspect was a mistake. There is absolutely no blight, and darker, healthier and greener foliage I never saw. All the trees bloomed full, and all bear some fruit, and most have prodigious crops of large and fair apples, a striking feature being the scarcity of windfalls and wormy specimens. This scarcity of insects I attribute to the liberal salting. If those whose orchards are being destroyed by blight would make a test either of salt or coal and wood ashes, by covering the ground under the trees with the former as thick as a heavy hoar frost, or use pure wood ashes to the extent of three full bushels for each young tree, or three times that quantity of a mixture of both, they would soon learn how to arrest blight, bring about healthfulness and produce fruitfulness, but possibly the cost would be more than good fruit crops would justify.

SIR,—I would like your opinion, or that of some of your leading horsemen in Ontario, on the best means of improving our stock of horses in this Province. The horses of this Province are now much run down. The majority are undersized—not what is required either for the farm, road or export. Many of our men of late have been endeavoring to raise trotting horses from undersized sires. Therefore, as you may suspect, the stock are small, and not of that hardy nature, size and style which are required for home use or foreign markets. Now, which breed of horses would it be advisable for us to breed from to get size, style and action—horses fit for any work, or export?

R. F., Annapolis Co., Nova Scotia.

SIR,—I was very much pleased with the Jan'y number of the ADVOCATE. I see you make yourself many enemies in your fearless advocacy of our interests, but every man who does his duty must have enemies. It is sure to stir up envy and hatred in the minds of dishonorable men; but their opinion for or against is of no value. I never read a paper better worthy the name than the ADVOCATE. It is an out and out farmer's paper, and if we are alive to our own interests we will stand by you and help extend your circulation. I, for one, will try.

G. W. W., Darnley, P. E. I.

The Apiary.

How to Feed Bees.

BY CHAS. F. DODD, NILE, ONT.

Bees do not require much attention this month (see directions in February number). As a general rule, disturb the bees as little as possible during the winter months. See that they have sufficient stores, and that the entrance to the hives do not become filled with dead bees. If any hives are scarce of honey, and you cannot help them as directed last month, we will give directions how to make and feed a substitute for honey, called bee candy. As it is troublesome and also dangerous to feed bees liquid food in cold weather, it is for this reason we recommend the candy. It is composed of coffee-sugar, wheat flour and water, and is made thus:—Put the sugar into a thin dish, add one-fifth part flour and a little water; mix to a stiff batter, and place it on the stove to boil, and be careful that it does not burn, for burned candy will kill the bees. As it boils, stir a little in a saucer occasionally, and if it hardens when cold it is boiled enough; remove it from the stove, and stir as it cools. You can now pour it into a frame. Lay a piece of paper on a table and place your frame on it, and pour the candy into the frame. When it is cold you may hang it in the hive, or break it in pieces and lay it on the frames above the bees, and put cushions over them to confine the heat in the hives, and the bees will use the candy instead of honey, but it is always better to have some honey as well as the candy.

PREPARING FOR SPRING.

See that everything is ready for the coming season—hives, honey, bees, &c. In a short time spring will open, and a crowd of other matters will demand attention, and the bees are often neglected, which I hold, if properly managed, will give as good results as anything else kept on the farm, according to the amount of labor bestowed on them.

Farmers should never be in a hurry to purchase from travellers. It will often save them money and law costs to address a letter to advertisers of implements, trees, seeds, &c., as advertisers generally have a reputation and capital at stake. The glib talker you may never see again; but if it takes your farm that note will have to be paid, whether you get rubbish, value or nothing. Deal direct with established and responsible persons, if possible.

WHAT OUR NEIGHBORS SAY OF OUR GREAT NORTHWEST.—Those who shiver at the thought of how far north this region is should consider how far west it is also, and the wonderful difference of climate on the Atlantic and Pacific coasts in the same latitude. In fact this region is the migrating ground of immense herds of deer and buffalo, and the waters of this section are alive with wild fowl. Col. Dennis' figures show that there are 260,000,000 acres of land in the Canadian Northwest, singularly adapted to the raising of wheat, one-third of which, put under cultivation, and yielding fifteen bushels to the acre, would give 1,200,000,000 bushels, enough to feed the whole civilized world. [*Prairie Farmer.*]

EMIGRATION TO THE UNITED STATES FROM CANADA.—The great number of Canadians who annually forsake the protection and fortunes of the Dominion and seek a new home with Uncle Sam has been trumpeted abroad, times without number, throughout the breadth and length of the land. But what are the facts. The U. S. official statistics of the year 1879 tells us that in that year, of 175,587 immigrants to New York, 259 were from Canada, 163 from Nova Scotia, and 425 from the Dominion. These figures prove that the emigration from the Dominion to the States is very trifling compared to that from the States to Canada. And many of those who leave Canada do so temporarily.

Miscellaneous.

Outlay of Money in Land Reclamation in England.

Some of our readers will read with surprise the following paragraph from the Agricultural Gazette on the great outlay of money in reclaiming farms in England:—

Another result of the depression is the stoppage of land reclamation. During all these years of competition and advancing rents there was great enterprise, much outlay of money, and a strong conviction that money wisely invested in farming would repay both capital and interest. In the five years following 1870 one tenant is understood to have laid out on one large farm £20,000 of his own money, beside what was allowed by the proprietor. It is well enough known that another, who occupies a single farm of over 2,000 acres, has made enough to purchase an estate worth £50,000. On the reclamation of waste land large sums of money have been spent by skillful and industrious tenants. Money at this rate was expended on many farms, and so splendid were the results that six sheep could be kept on an acre where formerly four to five acres were required to support a sheep. In the county of Roxburgh alone it is calculated that were the whole moorland reclaimed which is susceptible of culture, there might be added to the annual produce 2,000,000 lbs. of mutton and 200,000 lbs. of wool.

What is Oleomargarine?

The following remarks are from the report of the N. W. Dairymen's Association in the "American Dairymen":

"Oleomargarine is the oil of fresh caul fat or beef suet agitated with milk and annatto in a churn." From the testimony published by the advocates of oleomargarine, it would appear that the standard of that product has deteriorated from the oil of beef to that of common fat.

A speaker stated that oleomargarine is made of the rotten fat of animals, and is unfit for food, as he knows from his own experience.

Prof. Michels, a competent microscopist of New York, says that "Germs of diseases, morbid secretions, and embryos of parasites in the animals from which the oil is obtained, and liable to be transfused in a living condition into the system of those who use this article for food."

KILLING THE PEACH BORER.—"One pint of crude carbolic acid, costing 25 cents, is sufficient for twenty gallons of soft soap, with as much hot water to thin it; then stir in the pint of carbolic acid and let stand over night or longer to combine. Now add twelve gallons rain water and stir well; then apply to the base of the tree with a short broom or old paint brush, taking pains to wet the inside of all crevices. This will prevent both peach and apple borers. It should be applied in the latter end of June in this climate, when the moth and beetles usually appear."

FREE GRANT LANDS OF ONTARIO.—There are ninety-four townships now open for location under the Free Grants and Homestead Act. During the year 1879, 1,506 locations were made on 199,500 acres of land. Six townships in the Huron and Ottawa Territory have been sub-divided into farm lots of one hundred acres each, and six townships on the north shore of Lake Huron in the District of Algoma, into lots of three hundred and twenty acres each. These lands will, it is expected, be opened for settlement in a short time. Many of the surveyed townships in the Muskoka, Parry Sound, Nipissing and Algoma districts contain a large area of lands well adapted for agricultural purposes.

MEAT OR FAT.—There is a general agitation in the live-stock papers looking to the production of beaves, sheep and hogs yielding a fine quality of marbled meat, rather than huge masses of indigestible fat. The present tendency of fat stock shows is decidedly favorable to the raising of animals of less service to the table than to the lard-rendering industry.

Always start a horse with the voice, never with the cut of the whip. In starting, turn a little to one side; in stopping, when going up a hill, do the same.

Stock Feeding in the Maritime Provinces.

Col. Lawrie, President of the Board of Agriculture in Nova Scotia, has for twelve years had great experience in stock raising in that Province. He has known all the best known breeds, Alderneys, Ayrshires, Shorthorns and Devons, and on his farm obtained the most satisfactory results from Devons. They have been "prolific, easily kept, capital butter-makers, giving rich milk and making beef very fast." They do not attain the size of the Shorthorns, but they will thrive where a Shorthorn would starve, and when treated in the same way he believes them equally profitable. Shorthorn, Devon and Hereford strains of blood are considered to make the best beef. Our agricultural exhibitions have given a great impulse to breeding good cattle. Some counties probably raise our best cattle, and while they are from their fertility and the extent of their dyke lands well adapted for cattle raising, I hardly know a county in Nova Scotia in which cattle breeding and feeding might not be carried on with advantage, as the agricultural capabilities of the Province are very great. As far as exposure to cold is concerned, cattle need not be housed until about the fifteenth of November; they remain housed until about the first of April. Cattle for beef would require to be fed from October till June, and well kept to make their growth continue.

Health of Horses.

The health and comfort of horses have of late years been greatly improved by the better construction of stables. They are made more roomy and lofty and provided with means of thorough ventilation. In many new stables lofts are done away with, or the floor of the lofts is kept well above the horses' heads and ample shafts are introduced to convey away foul air. By perforated bricks and gratings under the mangers and elsewhere round the walls, and also by windows and ventilators, abundance of pure air is secured for the horses; while, being introduced in moderate amount and from various directions, it comes in without any draught. Too much draught is almost an unknown luxury. To secure a constant supply of pure air horses require more cubic space than they generally enjoy. Even when animals are stabled only at night, a minimum of 1,200 cubic feet should be allowed. In England the newer cavalry barracks give a minimum of 1,509 feet, with a ground area of fully 90 square feet per horse, and the best hunting and carriage horse stables have more room.

The best stable floor for cows is, I think, made with concrete; or, which is simpler and cheaper, a mixture of gas-house tar and sand, with a little cement in it to harden it. This can be laid immediately on the ground. Its advantages are that it is easily kept clean, either by scraping or washing, and all the manure is saved, none of it leaking through the floor and thus being lost. This floor can be laid by anybody. Either mix the tar and the sand outside thoroughly; spread it on and roll solid with a garden roller; or spread the tar by itself in a thin layer; then sprinkle the sand on top until it absorbs all the tar, repeating the process until the required thickness is attained. Give it a top dressing of cement mixed with the sand; roll solid and leave it a week to dry out and harden. It should be made in hot weather, so that the tar will work readily. I have tried both the fence and the floor, and find them satisfactory.—[W., Pa.]

REMEDY FOR HESSIAN FLY IN WHEAT.—Sow upon the wheat one or two bushels of chafed lime per acre. Do it, in preference, on a calm evening, when a dew is likely to fall; but do it. Let the sower grease his face, nostrils and hands well and sow with the wind, so as to keep the lime out of his eyes. Let him watch his wheat in the spring and repeat the application if he has the slightest reason to suspect the presence of the fly. It is safer to repeat it anyhow. I know this remedy is efficient, both by the testimony of others and my own experience. On the worst piece of fly-struck wheat I ever had, I tried it and it made upwards of sixteen bushels to the acre.—[Agricultural Journal.]

Any kind of wheat introduced into a neighborhood from a distant place soon changes its character.



The Family Circle.

"Home, Sweet Home."

MR. POPPLESON'S WARD;
OR, "LEAST SAID, SOONEST MENDED."

BY FRANCES FRELING BRODERIP.

"They had been friends in youth,
But whispering tongues can poison truth."

COLERIDGE.

CHAPTER I.

Everybody said it would never do; and as it is to be supposed that "everybody" is always right, why, it must, then, be an accepted truth, that the totality of Chatterbury—that is to say, its better half (or halves), the *creme de la creme* of that aspiring little place—must be correct in their view of the case. It was a local event that had just occurred in the very centre of that industrious little town, and it had caused—to use the elegant metaphor of its own *literateur*, Mr. Augustus Fitzbobbin—"a perfect small earthquake—a convulsion of social nature."

Since the latest election of a member for the shire—an occasion on which Chatterbury made itself conspicuous, nay, its enemies added, *unpleasantly so*—there had been no such great excitement to trouble its stagnant waters. There had been no notable marriages—no especial love-affairs, even—to arouse its well-known talents for gossip. So that the state dinner-parties of the grandes had been more solemnly dull than usual, and the more lively "tea-parties" had been almost reduced to the course of the celebrated Kilkenny cats, for want of something to talk about. And now, just as Christmas was over, and the dulllest time came after it, the reaction from too much exertion, either mental or corporeal, just when everybody was possessed with that worst of malignant fiends, who is always painted in cerulean colors, came this *bonne bouche* at last! And, coming at such an epoch, it bid fair to be devoured, after the lively fashion in which I have seen pretty green lizards eat a large earthworm provided for them. The defenceless prey lies extended a long, helpless length, and the small, green, voracious creatures are set thickly all along on each side, eager for a bite. One, perhaps, more hungry than the rest, gives a pull on one side; and immediately ten or a dozen pair of jaws on the other side tug the precious morsel back again.

And thus the struggle is repeated, *ad infinitum*—the poor victim's contortions and writhings being fairly lost in the fight between the "two sides" of the verdant feasters. It is a disagreeable picture, but a true one, as perhaps, many frequenters of the Zoological Gardens know; and it represents a fair illustration of the way in which poor Mr. Poppleson's name and concerns were treated by the Chatterburians. I say his name, and not himself, advisedly; for he was a quiet, inoffensive man, who preferred solitude to the select parties of the scandal-loving ladies of his native town, and who would as soon have thought of venturing into a den of lions as of hearding these female coteries, although he might have said, with justice: "Ladies, I leave my character behind me." And our modern Mrs. Candors shall speak for themselves; for it was on the occasion of a small gathering at the house of the leader of the band that our story opens. It had been mischievously whispered—but only on the very faintest breeze of outside voice—that Mr. Carttar, the new surgeon, had wickedly christened this house "The Dissecting-room;" but as Mrs. Boyce, the owner of it, greatly admired the new doctor, she scouted the rumor as impossible, and was certain indeed, on the best authority—that such a low professional expression never came from Mr. Carttar's lips; it was more likely to be the vulgar speech of old Bonnie, at Dronford, whose practice was now, no doubt, curtailed!

On the evening in question, poor Mr. Poppleson and his concerns were being discussed in a very animated spirit. Yes; everybody said it was the wildest, most extravagant plan that could possibly be. What! an old bachelor of fifty, who had been used all his life to his own humdrum ways, and to doing as he liked! Here all the voices, shoulders, and the whites of everybody's eyes went up simultaneously. An old bachelor, who could know *nothing* about children—and female children, too! And here the voices went down the gamut of indignation, and mingled in a deep groan of unanimous despair, while heads were shaken, and feet tapped the floor in grievous disapproval. Having thus played the part of a chorus in the little drama before them, the solo voices were now allowed to have their own way, and communicate particular complaints.

"The idea of his taking up with a child at his time of life!" remarked Mrs. Sparks, the solicitor's "lady," who rigorously enforced her title periodically in the newspapers on certain interesting occasions. "I can't think how he came to dream of such a thing. Why, he won't know what to give her to eat or drink—and regular habits are necessary for children! I should never have brought up all my ten darlings if I had not most carefully looked after every particular of their food and clothing."

"Clothing!" said Mrs. Boyce, pathetically: "I only hope she will have clothing, and not go about half-dressed, like a young wild Arab!"

"Ah!" shrieked Miss Mortimer, a lady of the certain, or uncer-ain, age, "Don't—please don't, dearest Mrs. Boyce!—pray have a little mercy on our too-refined feelings!" "Take my word for it," said Mrs. Bond—a widow of such a tart temper that the cynic of Chatterbury had nicknamed her the "Accidulated drop," a title that unfortunately stuck to her—"take my word for it, he has been imposed on by some designing relative. He was disappointed in his youth, and has never married; and this sort of romantic old bachelors generally adopt a young relative. It looks interesting, and en-

changes horses at Brant, where he came from, and had brought their own servant, he knew nothing further about them.

And so the dames of Chatterbury were obliged to stifle or endure their curiosity as well as they could until Sunday, when they felt sure they would behold the new-comer in church. And on Sunday, accordingly, the sacred edifice was filled to such an unusual degree, that Mr. Pope, the deaf old curate, began to have a hazy notion that people had either become suddenly devout, or that his last sermon had really been more impressive than usual.

But the modern heathens had attained their object; for there, in Mr. Poppleson's modest small pew, sat, no child, but a full-grown young lady of nineteen or twenty, at least—owning no small amount of good looks, plenty of perfect self-possession, and dressed in an elegant version of the fashion that excited the envy of all the female beholders! And vain were poor Mr. Pope's laboured declamations after that, for all his eloquence fell on deaf ears, that were with the

"Well, said Mrs. Sparks; "I speak on the best authority, for I heard it from himself. I happened to meet him one day, and so I asked him if I could be of any service to him in the way of advice, or hints, for his new little visitor; and he cut me quite short in his nervous way—which I think is more than half-rudeness—and told me the 'child' was very healthy, and he really wanted no help."

"I wonder if he will require a nurse with her?" languidly remarked Miss Mortimer: "it is an interesting thing to watch a sweet young infant's mind unfold. I dare say the little darling will be taken out for exercise sometimes."

"You need not reckon on that string, my dear," sarcastically replied Mrs. Bond. "I offered to recommend him an excellent nurse for his young charge—one whose character was unexceptionable, and who had lived in Lord Booth's family!"

"And is she coming?" eagerly inquired all the ladies in one voice.

"No," said Mrs. Bond, in her sharpest voice: "for he told me old Dorothy was quite sufficient for all she would require."

"Old Dorothy!"—and again the chorus of groans and deprecations arose—"old Dorothy! A nice nurse for a child, forsooth!"

"Depend upon it," said Mrs. Sparks, in a melancholy tone, "there will be some accident there! It will either be poisoned by eating some of the unwholesome berries and flowers old Poppleson will have in his garden, or Dorothy will overlay it in her sleep."

Such were the reiterated opinions and prophecies of the ladies of Chatterbury, who, conceiving themselves invested with all the wisdom, maternal and feminine, collectively and generally, of that sagacious conduct, were much troubled in their inward minds by the strange conduct of old Poppleson.

CHAPTER II.

All Chatterbury was on the tip-toe of expectation to see Mr. Poppleson's Ward, of whom it had heard so much during the last three weeks. But its throes of curiosity did not seem likely to be appeased, for in spite of the most vigorous watch, no one had yet been able to catch a satisfactory glance of her. As for servants' gossip, The Haven, as Mr. Poppleson's pretty little detached house was called, was impervious to it. Old Dorothy, who was still young enough to be as active as two younger girls of the present day, had a convenient knack of being very suddenly deaf, and misunderstanding all that was said to her—an annoying infirmity to all the prying dames of Chatterbury, who were mostly on terms of open and mutual warfare with her. Miss Mortimer, who had for a long time secretly entertained designs on the peace of The Haven and its master, had been ingloriously routed in several conflicts by the determined Dorothy, who looked upon her—to use her own words—as a "poor mess of a thing!" Mrs. Bond was not on better terms with the trusty guardian of old Mr. Poppleson, for Dorothy's infirmity was always aggravated by that lady's sight; and all Mrs. Bond gained was utter exhaustion from bawling at the top of her voice to the perverse old servant for half an hour, being none the wiser for her pains at the end of the time. As for Mrs. Sparks, Dorothy made such searching inquiries after all her troublesome tribe, and answered her in such a *mal a propos* manner that she dared not venture near her.

Mrs. Boyce generally contented herself with being the receiver of begged and stolen news, and did not often condescend to become the seeker herself; but public curiosity had been so whetted by the mystery of the matter, that she put on her bonnet and cloak, and sallied out boldly to inquire after Mr. Poppleson's "little friend." Dorothy had a sly peep through the attic window at her, and was, therefore, able to collect her forces during her slow descent to the door, and before opening the garden gate; for no one knew better than Dorothy that the arch enemy herself had come now. So the crafty old body, muttering half audibly as she went down, tied her apron well over her head, only opening a narrow crack of the gate.

"Yes, ma'am; Mr. Poppleson is not very well, but he's away til to-night. We don't expect him home till the evening."

"Ah, indeed, Dorothy. I am sorry your master is not well; but I dare say he has been a little tired with all this new event?"

"Yes, ma'am, you're right; the east winds has been very trying, and master's rheumatism is all a-owin' to 'em. Thank you, ma'am; yes, the cold tries my hearing very much."

"Old Stupid!" muttered Mrs. Boyce. "Ah, yes, my poor dear soul, I know you are such a sufferer. But I will send you up something, Dorothy, to do you good—a nice, warm cap, lined with medicated wool, that'll keep your ears warm."

"Yes, ma'am," replied the perverse Dorothy: "I does keep wool in both my ears, for I should go mad without it, with all the noises I hears. And I'm too warm, sometimes—I wish I wasn't. I'll tell master, ma'am, you called to inquire."

"Well, I came to ask after the little one, Dorothy," replied Mrs. Boyce, quite exasperated, in her turn. "Poor little dear! is she better, after her journey? I shall be so glad to see her when she can come out."

"Le, yes, ma'am," replied old Dorothy, with her gravest face. "To be sure, the kittens are old enough to leave their mother, and I'm sure master will let you have one with pleasure!"

"It's not the kittens, but the child—Mr. Poppleson's niece!" shouted Mrs. Boyce, in a sententious voice.

"Dear me, no, ma'am?" replied old Dorothy, looking quite ruffled; "wild? No, they're gentle, little, innocent things, all on 'em, and knows manners better than Christians sometimes! Wild!—no! They're the best kittens in all Chatterbury. Good morning ma'am!"

And, with a deep curtsy, the old woman shut the door, and Mrs. Boyce departed, as wise as she came. The only news that industrious dame, Rumour, could gather, as she trotted about, like Dame Eleanor Spearing, with one trumpet in her ear, but unlike her, in having another, likewise, in her mouth, was that a strange carriage, with post-horses, had been seen to stop at the door of The Haven on Wednesday night. The postboy had been well piled with questions by the landlady at the "White Cat," the best in Chatterbury boasted of; but though the good woman imitated her betters in gossip and scandal, she could only elicit the fact that two ladies and a little girl had come in a carriage; but, as they had merely

changed horses at Brant, where he came from, and had brought their own servant, he knew nothing further about them.

And so the dames of Chatterbury were obliged to stifle or endure their curiosity as well as they could until Sunday, when they felt sure they would behold the new-comer in church. And on Sunday, accordingly, the sacred edifice was filled to such an unusual degree, that Mr. Pope, the deaf old curate, began to have a hazy notion that people had either become suddenly devout, or that his last sermon had really been more impressive than usual.

But the modern heathens had attained their object; for there, in Mr. Poppleson's modest small pew, sat, no child, but a full-grown young lady of nineteen or twenty, at least—owning no small amount of good looks, plenty of perfect self-possession, and dressed in an elegant version of the fashion that excited the envy of all the female beholders! And vain were poor Mr. Pope's laboured declamations after that, for all his eloquence fell on deaf ears, that were with the

"Absent eyes,
Though of slippers,—and the glorious skies
Clouding with satin,—till the preacher's wrath
Consumes his pity."

During the sermon, everybody was planning how to get soonest out of church, so as to waylay "old Poppleson," as he was irreverently called, and obtain an introduction to the young lady; but, as usual in such cases, they defeated their own object; for, when the rush was over, and "everybody" who was "everybody" had got out and was parading on the south side, Mr. Poppleson and his niece had quietly spoken to the old curate, and were leisurely going out with him to the north vestry door, a route nearest to their own home.

As they did not come to the second service, our gossiping dames were reduced to their last strait—the earliest call possible during the ensuing week. And plenty of food for remark they gleaned then. After penetrating into the hitherto sacred retreat of The Haven, so abundant indeed was the mental *pabulum*, that it took at least a fortnight's successive dinner and tea-parties to consume it, and as all invitations to Mr. Poppleson and his ward were politely but entirely declined, the scandal-loving ladies had their feast in good earnest.

"She's an artful young minx, take my word for it," remarked Mrs. Bond. "Those bright eyes are not put in her head for nothing; and she'll do what she likes with old Poppleson. I daresay she'll marry him, if it was not for the relationship."

"You may depend upon it," said Mrs. Sparks, "she'll make his money spin! That bonnet of hers did not cost a mere song, I know, and as for her cloak—silk velvet, too! Ah she'll cost him a pretty penny!"

"Poor foolish old bachelor!" sighed Mrs. Boyce. "After working so hard all his life at the bank, and making and saving such a lot of money, it will be very hard if it's wasted in that way."

"And on such a Dutch doll as that, with no pretensions to any feminine graces!" cried Miss Mortimer, with a spiteful vivacity very unusual to her. Meanwhile, the objects of these remarks seemed to pass their time very rapidly together. Mr. Poppleson was a most enthusiastic florist, and valued his little garden as his choicest possession, and with reason; for even Lord Belmont's beautiful grounds were not more carefully or scientifically managed. The new-comer—whom we will call by her right name at once, Alice Earle—was as fond of flowers as her uncle, and proved herself quite a skilful disciple.

She horrified the fine ladies of Chatterbury, indeed, no little by her personal industry, for a very smart group of young ladies called found her entirely covered with a large brood Holland "pinafore," with pockets in it, very busy with her roses and geraniums. It is true that, on seeing them, she drew off her gardening gauntlets, and showed her pretty hands, set off as they were by one or two handsome rings; and after escorting them in-doors, laid aside her shady-brimmed hat, and took off her garden pinafore, appearing in her pretty silk and lace as as fresh and neat as possible.

"But then, my dear," as Miss Mortimer said, shuddering, "the first *coup d'oeil* of her, the *tonic ensemble*,—I can only say she looked a perfect fright, my dear—what my brother Tom would, in his fast way, call a guy!"

But Alice cared little for what they thought of her, or called her, and went on in her own even, happy way, gardening, working, reading, and making the place a bright and cheerful as if perpetual summer reigned there. And, no doubt, it was because he was one of the modern sun-worshippers, and sought its rays every where, that Mr. Carttar, the new surgeon of Chatterbury, paid such frequent visits to The Haven. At first, the gossips set it down that through some want of care on the part of that very strange young person, his niece, old Poppleson was seriously ill; and [accordingly, Mr. Carttar had to do more in the next week than he could well get through, being assailed everywhere with inquiries on the subject, all of which he set aside by saying that Mr. Poppleson was in perfect health, and his visits were not professional.

Whereupon, everybody make up their minds that it was the young lady and old Poppleson's money he was seeking—a self-evident fact, from the manner in which he snapped people up when they mentioned Miss Earle.

Now the truth was, that Mr. Carttar's popularity and good practice depended on more things than his acknowledged skill and unusual abilities. First, that he was remarkably handsome—a great point in his favour; secondly, that he was single—a still greater, in the opinion of the ladies; and, thirdly—best of all—that he had some means of his own, which enabled him "to do everything in good style," as the Chatterburians said. Had it not been for these pre-eminent endowments Mr. Carttar's popularity would have been of short duration. For he was a bold, uncompromising man in the cause of right, and never flinched from the most disagreeable conflicts with the parish authorities in behalf of his poor patients. But a man in such an independent position had much in his power that would have been denied to a poorer man, and he made no scruple in using it to his utmost for his pauper sick people. It was in cases of sore distress that his valuable qualities shone most, and his best skill was exerted. On these occasions, his voice took that genuine, kindly tone of sympathy that went direct to the heart, and his practiced hand was as tender as a woman's. But his richer patients did not find him quite the same. Kind he could not help being to all who were sick and suffering, but the more fanciful invalids, who had every luxury on earth provided for them, and who took up delicate health as an interesting way of passing time, met with little mercy from him, and he sometimes told unpleasant truths in a quiet, gentlemanly way, that made it more annoying still. But they endured it all as quietly as they could, and compared him to Abernethy.

(To be continued.)

Minnie May's Department.

MY DEAR NIECES,—No doubt many of you have heard and perhaps seen Miss Dods, who is going about from city to city teaching cooking, and a little description of it may interest many of you. Miss Dods stands on an elevated platform, and has her little gas stove on one side and a line of cooking utensils on the other, and the cooking table in the centre, facing the class, who sit in a line before her. I should say the listeners rather than the class, for this is a practical demonstration, like a doctor's clinic. There is a certain etiquette of words to be observed, and this is not a class, because none of the observant have a finger in the pie. The observant audience sits meanwhile with a certain air of quiet expectation. There is a little rustling of papers, a little sharpening of pencils, a little decorous whispering and turning of leaves, and then the lesson commences. The preceptress gives a rule of measurements and ingredients for whatever the first dish may be on the day's list, and then proceeds to illustrate it by making it before your eyes. As each article is cooked, it is then passed around for the class to see. How many little things you notice that never would have been suggested by that very plain and easy recipe! Would that have told you thin slices mean absolute shavings, or that the yolk should be always separated from the white of eggs if required to be beaten light; or if they are the slightest degree stale, add a small pinch of salt to aid in quickly bringing to a froth; whip the whites on a dry plate with a knife—the slightest degree of moisture will prevent their coming to a froth; that the currants should be perfectly dry before using, otherwise they will cause your pudding or cakes to be heavy and sticky, and should always be kept in a close jar, or, like tea, will lose their flavor and strength; that in using baking powder, the quicker the mixture containing it is baked and the less handled the more satisfactory the result; in using soda, care should be taken to use a level spoonful if a teaspoonful is required, otherwise the preparation is turned very yellow? Would it teach you that constant watchfulness of little things is the price of success; that nothing is left to chance where perfection is aimed at? When one sits by and watches the operations of a skilful cook—her apt handling of materials, her ready way of accomplishing desired results, her avoidance of difficulties—what she does seems as though it might be easily done by anybody. So does it seem easy to an accomplished pianist to play on the piano, or a vocalist to sing, but everybody knows that this ease is the result of persistent, protracted, painstaking effort. A decided proclivity for any one of these accomplishments must be supplemented by years of industry before success is obtained, and cooking is no exception. MINNIE MAY.

Answers to inquirers.

Communications for Uncle Tom and Minnie May need but one cent postage per half-ounce if envelope is unsealed.

J. N. R.—A weak solution of oxalic acid applied with great care with a brush will remove the ink from your books.

JESSIE.—Take fine sand paper and rub your spotted or grown yellow ivory, then polish with fine powdered pumice stone.

LULU.—Wash your greasy carpet with borax and hot soap-suds—half an ounce of borax to a gallon of water. Rinse in warm water and wipe dry.

JESSIE C.—Spread moss over the earth in your flower-pots. It keeps the water from evaporating and temperature more uniform. Always use tepid water.

S. T.—Certainly it is your place to begin the correspondence.

F. A. K.—The best method for protecting woolen clothes from the moths is to expose to the sun and brush thoroughly before packing away for summer. Do this as early in the season as convenient, use stout paper wrapping, or linen, and be particular that there is no opening left for the moths to make their way through.

CARRIE.—Cut off the infected leaves. By carefully pursuing this amputation you will soon destroy all the animals. Shower your plants well once a week with luke-warm water.

Mrs. J. K.—The dark-colored goods mentioned are usually stiffened with coffee starch. To make this stir two tablespoonfuls of starch in sufficient cold water to form a smooth paste. When this is smooth and free from lumps put it into a pint of boiling hot clear coffee, stir until thoroughly mixed and then boil it slowly about ten minutes. In stirring use a wax or perm candle occasionally. Strain the starch, and allow it to partially cool before using. Hay tea is frequently used instead of this.

RECIPES.

PRIZE PLUM-PUDDING.

One pound raisins; one pound currants; one pound suet, chopped fine; three-quarters pound stale bread-crumbs; one-quarter pound flour; one-quarter pound brown sugar; rind of one lemon chopped fine; one-half nutmeg grated; five eggs; one-half pound mixed candied peel; one-half pint brandy. We'll mix all dry ingredients; beat the eggs and mix the brandy; then pour over the other things and thoroughly mix; to be boiled in a basin or mold for six hours at the time of making, and six hours more when wanted for use. (This recipe is said to have taken a prize in London, as being the best in 500 recipes.)

COURT PLASTER.

Soak isinglass in a little warm water for seventy-four hours; then evaporate nearly all the water by gentle heat; dissolve the residue in a little diluted alcohol, and strain the whole through a piece of open linen. The strained mass should be a stiff jelly when cold. Now stretch a piece of silk or sarsenet on a wooden frame, and fix it tight with tacks or pack thread. Melt the jelly, and apply it to the silk thinly and evenly with a badger hair brush. A second coating must be applied when the first has dried. When both are dry, apply over the whole surface two or three coatings of balsam of Peru. Plaster thus made is very pliable, and never breaks.

CHEESE FRITTERS.

Three ounces of flour, one egg, one gill of tepid water, one saltspoonful of salt, one-half teaspoonful of pepper, three ounces of Parmesan cheese, one-half teaspoonful of dry mustard, one-half ounce of butter; put the flour into a bowl, and, melting the butter, pour this into the centre of it; add to this, by degrees, the water, heating all together meantime; drop on the yolk of the egg, season with pepper, salt, and mustard; stir in, also, the grated cheese, and, last of all, the white of the egg, which must first be whipped to a froth; dip from the mixture tablespoonfuls, and drop them, one by one, into hot clarified fat or lard; as the fritters become firm and rise to the top, turn them over with a skewer, that they may brown evenly all around; as soon as they become brown, remove them from the fat and place them upon a sheet of kitchen paper, to drain for a moment, when they must be piled tastefully upon a hot napkin, and served garnished with sprigs of parsley.—[The Art of Cooking—Dods.

BEEF OLIVES.

One and one-half pounds of round steak, four tablespoonfuls of bread crumbs, one dessert spoonful of parsley, one egg, one ounce of butter, one dessert spoonful of mushroom catsup, one dessert spoonful of Harvey's sauce, one-half ounce of flour, six drops of caramel, one-half pint of second stock, one teaspoonful of salt, one-half teaspoonful of pepper. Put the sprigs of parsley into cold water, wash it well, picking the stalk from it, and then dry thoroughly by wrapping it in a towel and wringing the water therefrom. Place it upon a board, chop very finely, and mix with it the bread crumbs. Drop into this the egg, seasoning all with the pepper and salt, and mix the whole well together. The fat must now be trimmed from the steak and cut into little pieces, and the steak itself cut into squares, four inches in size. Into each of the pieces of steak, put an equal part of the fat

and bread crumb dressing, make them into rolls and tie around them a piece of twine. Heat the butter now in a saucepan, and brown the rolls therein. While the rolls are browning, put the flour into a bowl and make it smooth with a tablespoonful of stock, and when smooth add to it the catsup, caramel and Harvey's sauce, after which the remaining stock should be put in cold, and pour all over the browned olive-rolls, stirring until the liquid boils. When boiling, skim, and then covering the saucepan, allow the whole to simmer slowly for an hour and a half. At the end of this time take up the olives, and cutting the strings therefrom, pour over them the gravy from the pan

VENOISE PUDDING.

Five ounces of wheat bread, four ounces of sugar, three ounces of sultana raisins, two ounces of citron, one glass of sherry, one-half pint of milk, yolks of four eggs, one teaspoonful of essence of vanilla. Cut the bread into dice and place it into a large bowl with three ounces of the sugar. Cut the citron in small, thin pieces and put these also into the bowl. Place the raisins upon a towel and folding the ends of it over them rub them therein until the stems are all separated, and adhering to the cloth; then the raisins must be picked out and thrown into the bowl with the rest, and the sherry be poured over all. Put the remaining ounce of sugar into a small saucepan over the fire and let the sugar brown. Pour the milk over the sugar when brown, and drawing the saucepan aside from the fire stir the milk, until the sugar dissolves and colors it. Drop the yolks of eggs into a small bowl and over these pour the colored milk, stirring all together as the milk is poured in. Over the dry preparation in the large bowl, pour the liquid from the small bowl, grease a proper sized pudding mould and into this put the pudding, secure over the top a greased piece of kitchen paper, place the mould into a saucepan containing sufficient boiling water to reach half way up its sides and allow the pudding to boil therein for one hour and a half. When done turn the pudding out upon a hot platter and serve with a German Sweet Sauce, poured around.

Making "Hired Help" Responsible.

One of the rules at "our house" is to make the "help," both on the farm and in the house, responsible for the loss and breakage of articles confided to their care and use. The result is that the breakage of crockery is almost nothing, and other losses are in proportion. I think that "help," as a rule, like this method of management much better than the "fuss" and scolding that usually accompany breakage. They learn a double lesson in this way; to be careful, and to know the cost and value of things. Of course, the master and mistress can always make whatever allowance they think best in regard to accidents. Whenever I have occasion to introduce "new" help into my family service, I inform her at the outset that what she breaks she will have to pay for, and the announcement is always good-naturedly received. Not long ago, I overheard a new arrival in the kitchen remark to my housekeeper: "Madame's rule is a good one about breaking dishes. I was at a place two years ago, where there was the same rule, and where I broke some dishes. But mind you, I haven't broke any since. Some girls slam the dishes around and don't care whether they break 'em or not. I guess if they had 'em to pay for they would be more careful," and I was quite of the same mind. It is sometimes well to know the opinions of hired help on household management.—[M. W. F.

A Hint To Buttermakers.

After "that husband of yours" has been churning for an hour, do not be obliged to hear him say, "I told you that cream wasn't warm enough." But the next time you go to town get a "dairy thermometer;" it will not take two pounds of butter, at the present prices, to purchase one. We are all aware that cream, when it enters the churn, should be between 62° and 65° Fahrenheit. If the cream is too cold, the fat is hard, and will not coalesce; if too warm, the fat is semi-liquid, and will not unite. Can a housewife take her hands from dish-water and test the temperature of cream? No, for it will seem a number of degrees colder than it really is. Can she test it after sifting cold flour? No, for it will seem a great many degrees too warm. It does not pay to lose a churning now-a-days.

OFFICE RECEIPTS.—We have received from Oliver Ditson & Co. the American Anthem Book, which contains many well-arranged anthems.

Hints to Young Housekeepers.

DAILY HABITS.

Early rising is desirable. I do not mean getting people up before light. It is useless to begin the day by making every member of the family uncomfortable. Whatever hours are necessary for the good of all should be observed, and if the head of the household is obliged to be at his business at an early hour, it is the duty of his family to adapt themselves to this necessity. Consideration should be given to peculiarities of temperament; some nervous people sleep better in the morning; let not rules or imaginary necessities interfere with health and comfort.

A mother must rise early (I write to mothers who are in good health), to see that all goes well in the nursery, if she does not perform the duties of nurse herself. Let the nurse and her children look for her presence with impatience, and feel that they need her assistance and oversight. Let children appear fresh from their baths, neatly dressed, however plainly, and come to the breakfast table with cheerful, happy faces,—the best attention they can show to their parents, and turn up their little faces for a good-morning kiss. No child is too old for this while under the parental roof. The breakfast should be fresh, well served, and carefully prepared, whether frugal or luxurious. The mother should set the example of being neatly and appropriately dressed. She will see no one during the day before whom she should desire to appear so well, or be so attractive. A cheerful, well-surrounded breakfast-table is a pleasant remembrance for a man to take with him to his business. If there are no children, there is the greater need of everything being cheerful and tasteful.

If the children go to school (I should put in a plea for home education until a child has reached the age of twelve. No one can teach children to read, and write, and sew as well as the mother, but this rather belongs to my chapter on Children); if they go to school, their lessons must be attended to, and when they come home they must be taught to wash and dress themselves for dinner. If young enough to make it necessary to dine in the middle of the day (and this should be till after they are twelve), the mother should be present at the dinner to see that no bad habits are formed, that there is no carelessness of diet, no irregularity. The meal hours are often the most instructive and charming hours of the day. Exercise in the open air as much as possible, but this must be governed by opportunity. With children, avoid above all things exposure to the sun. Blessed are the children who live in the country, with freedom from the necessity of an attending nurse; but city or country, the sun must be avoided. I need not point out the occupations of the day. With one who is wife and mother, or either, every hour is more than full. A wife should be ready and dressed to receive her husband upon his return home at night, and if there are children, let them have the privilege of welcoming him too, before going to bed. If he is a busy man, he sees them rarely enough. Keep up as much as possible, as much as is consistent with your duties, your intercourse with society. Keep yourself instructed and interested in all that is going on in the world, and do not become a mere housekeeper and nurse, not only for your own sake, but for the sake of every one about you. In the evening, try to collect about you your husband's and your children's friends, as well as your own; but avoid all gossip, all meddling with the affairs of others. Let us be grateful that we are not responsible for the affairs of other people. Our own are always more than we can properly attend to. Repeat no scandal or disagreeable stories, and let not love of dress (the vice of the country) take hold of the thoughts and conversation. Tasteful, aesthetic, appropriate dress is characteristic, and it is the duty of every one to dress as well and to make herself look as becomingly as means and time permit; but to spend upon expensive dress money which should be given to necessary and improving expenses is both ignorant and vulgar.

Hospitality is one of the best virtues—hospitality in its best sense; not display, nor an effort to appear better than one's neighbors. Have no struggle to do what you cannot do well; but in accordance with your means of living, welcome your friends to your table and to your fireside. The better fare you can give them justly, the pleasanter for you and for them; but, above all, a warm welcome to whatever you can command! And, here, again, let me say, a cheerful fire is a welcome in itself. All sentiment apart, life becomes more easy when cheerfulness and order have sway.—[Mrs. S. W. Oakey.

Be Careful What You Say.

In speaking of a person's faults,
Pray don't forget your own;
Remember those in houses glass,
Should never throw a stone.
If we have nothing else to do,
But talk of those who sin,
'Tis better we commence at home,
And from that point begin.

We have no right to judge a man,

Being "Frank."

Whenever people boast of being "frank," we always feel inclined to shudder. We know by experience that they have taken upon themselves the privilege of saying any ill-natured thing that comes uppermost, and expecting people to swallow it like a pill, without resistance and without retort.

Really frank people do not know that they are so; at least, they never tell you about it; and pleasant speeches are as likely to be blurted, as unpleasant ones. Often they are even ashamed of their outspokenness. Your professionally "frank" creature speaks after due consideration only, and when he has thoroughly decided what will hurt your feelings most. Catch him to be "frank" about anything that will please you!

Your mental failings and personal deficiencies, what there is wrong in his estimation in your house and in your manners, these bring forth his comments. When people say anything against you, object to your size or height, your good-natured weakness, or your hot temper, he is impelled to bring you tidings of the same. His frankness overmasters him; but be assured it never will if he hears a complimentary remark concerning you.

Such speeches are locked in the recesses of his own bosom, and his frankness never pumps them up.

Never be beguiled by the pretence this frank creature makes of being the best and most genial fellow in the world. A good heart will manifest itself in some endeavour to make those around him feel happy, and howsoever true a cruel thing may be, a gentleman will not like to say it; or a gentlewoman either.

Care of the Eyes.

In order to preserve the eyesight some rules concerning light should be observed—particularly when the light is artificial. If a shade is used on the lamp or burner (it should, by preference, be of ground or "milk" glass, never of colored glass), the light may stand directly in front of the body and the work be allowed to lie in the light under the shade which will protect the eyes from the glare of the flame. If no shade is used the back should be turned to the source of light, which ought to fall over the left shoulder. The same rule applies in the management of daylight. In this case the light should come from behind and slightly above and fall directly upon the work, whence it is reflected to the eye. It should never fall directly in the face. Even during sleep this question of light is of some importance. As a rule the room during sleeping hours should be dark, and particular care should be taken to avoid sleeping opposite a window where, on opening the eyes in the morning, a flood of light will fall upon them. Even the strongest eyes are, after the repose of the night more or less sensitive to the impression of intense light. The

eyes must have time to accustom themselves to the stimulus. Particularly should this care be observed during convalescence from illness, when the eyes generally lose some of their power.

Have Confidence in Yourself.

There is no one element in a man's character that contributes more to his success in life than confidence in his own ability. A faint-hearted man is unstable, and will never excel. Faith in the endeavor to will and to execute is as important in a successful business career as is the keystone to the arch. A man possessed of a bold, daring, and resolute will may be modest in revealing his powers, but will be determined in performing what he conceives to be right. To men with this never-dying faith there is no such word as defeat, and when obstacles present themselves in their path, it only results in their putting forth a greater effort to accomplish their purpose.

"Mr. Brown, why do you wear that bad hat?"
"Because, my dear sir, Mrs. Brown vows she will not go out of the house with me until I get a new one."



CHRISTMAS (1878) SCENE IN MANITOBA.—See page 53.

Until he's fairly tried;
Should we not like his company,
We know the world is wide.
Some may have faults—and who has not?
The old as well as young;
We may perhaps for ought we know,
Have fifty to their one.

I'll tell you of a better plan,
And find it works full well;
To try my own defects to cure,
Before of others tell;
And though I sometimes hope to be
No worse than some I know,
My own shortcomings bid me let
The faults of others go.

Then let us all, when we commence
To slander friend or foe,
Think of the harm one word may do,
To those who little know;
Remember curses sometimes, like
Our chickens, "roost at home;"
Don't speak of others' faults until
We have none of our own.

Aunt Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Let us cultivate good habits early in life. The youthful mind is almost capable of receiving anything that we try and persevere at. What we learn in childhood we are not likely to forget; what we do not learn we find difficult to acquire afterwards. So whatever are our habits in early life, be they good or evil, such they will be when we are men and women engaged in the real business of life. Kind behavior, politeness and unselfishness are habits we cannot possibly learn too soon. Be careful to say nothing to hurt another's feelings, and remember that "I" is but one solitary creature in a world of millions. Let us remember to say "if you please" and "thank you" to all who wait upon or serve us. Believe that "if you please" will make you better served than all the cross or ordering words in the whole dictionary. When the Duke of Wellington was sick, the last thing he took was a cup of tea. On his servants handing it to him in a saucer, and asking him if he would have it, the Duke replied, "Yes, if you please." These were his last words. How much kindness and courtesy is expressed by them! He who commanded the greatest armies in Europe, and had long used the tone of authority, did not despise or overlook the courtesies of life. Oh, how many boys and girls do! What a rude tone of command they use to their brothers and sisters, which is ill-bred, and shows a coarse nature and hard heart.

PUZZLES.

22—EASY ENIGMA.

- I am a word of eleven letters:
- My 6, 5, 4, 1, 2, is a fruit.
- My 11, 9, 8, 2, is a deep pit.
- My 3, 4, 5, 6, 2, is big; in sickness we are often
- 3, 2, 4, 8 and 1, 4, 9, 8.
- My 11, 9, 3, 2, is a measure of a distance.
- My 6, 4, 11, 2, is sport.
- My 5, 4, 8, 6, 2, is to stroll about.
- My 8, 7, 5, 4, is a lady's name.
- My 3, 4, 11, 1, gives light.
- My 6, 7, 8, 2, is departed.
- My whole is a flower.

HENRY JARMIN.

23—DIAGONAL PUZZLE.

When the following are rightly guessed, the letters read diagonally from the top of the left to the bottom of the right hand side of the words will spell the name of a large empire:

- A division of poetry.
- A relative pronoun.
- A young person of either sex.
- A place for sports.
- A town in the north of Italy.

24—DOUBLE ACROSTIC.

The initials and finals give the names of two naval heroes:

- 1. Islands to the west of Malay peninsula.
- 2. A river in Spain.
- 3. A loch in the west of Scotland.
- 4. A mountain in the north of Wales.
- 5. Another name for Tahiti.
- 6. A province in the north of France.

T. R. Y.

25—BURIED FISHES.

Earnest, urge on the horses.
There is Flo under the table.
How hale that sailor looks.
Don't disturb others from sleeping.
He shouted out "Boat ahoy!" sternly.
I have shot a snipe, Elen.

26—BURIED BEASTS.

I shall be averse to it.
Is Charles able to do this sum?
Such a gaze Llewellyn gave me.
He came looking like a gentleman.
Mary, do get my gloves.
I wonder at that proposal.
We, as Eliza told you, are going to Bath.

27—CHARADE.

How strange to see me in the wood,
For I never leave the room,
But then I'm always out with you
Wherever you may roam.

In joy, or evil, or sorrow,
You make frequent use of me,
And hope would lose its pleasant sound
If I could not with it be.

I'm seen in Rome, the scholars say,
Perhaps in many another town,
And in any land you'll always find
I'm with the monarch and his crown.

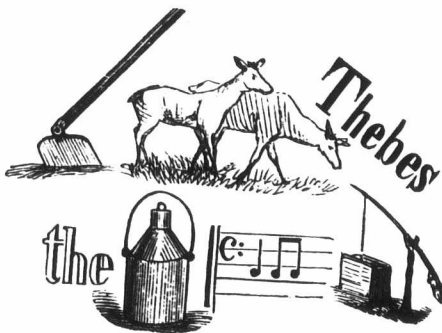
28—RIDDLE.

I'm a poor little thing, but oh! how smart;
If you do not see my head, then will your heart
Find me the greatest treasure that the world can
hold—

Far better than are houses or lands of gold.
If now my head be changed, you may declare
I am a pleasant thing for you to wear.
If to me, as at first, you add one letter,
You then would say that nothing could be better
To pass a happy life in—naught more sweet
Could ever be pressed down by weary feet.

A PUZZLE BOY.

29—PICTORIAL REBUS.



30—NOVEL PUZZLE.

- 1. To enrage; 2, a kingdom of Europe; 3, a place of sale; 4, a volcanic mountain; 5, relating to ships; 6, a vale; 7, a city of the Netherlands; 8, relating to the teeth; 9, a claw; 10, an assault; 11, a kind of seat.

A word of two syllables is required in each case. Drop the first syllable of the first word, when found, and add one to the second syllable to make the second word; then drop the first syllable of the word thus made, and add another to form the third word. Continue to do this until all the words are formed.

Answers to February Puzzles.

- 11—Tub; 2 night shade.
- 12—Cabbage.
- 13—Mandate.
- 14—Break Brake, Leaf Flea, Deer Reed, Nile Line, Sloe Sole, Lead Dale.
- 15—A Letter.
- 16—Manchester.
- 17—A Crane is a bird with a very long bill, If Reynard could catch him he'd eat him at will; An elbow is part of the humane frame, And Sara a Jewish and Christian name. Sugar is brought from climes far away, In a yard some children are oft sent to play; Initials read downward Cressey will name, And finals Prince Edward, who fought at the same.
- 18—No Thorn, no Crown.
- 19—Wardrobe, Tomhawk, JarRing, GrandDec.
- 20—"Forgive and Forget"—J, Frank; 2, Orange tree; 3, Rabbit; 4, Get; 5, Ink; 6, Verb; 7, Ell; 8, A; 9, Nap; 10, Daisy; 11, Fight; 12, Omnibus; 13, Raisin; 14, Green; 15, Eagle; 16, Trout.
- 21—Envy is a self executioner.

Names of Those Who Sent Correct Answers to February Puzzles.

Sarah J Luetz, Jas E Shook, Wm H Charlton, Minnie Hyde, Netta VanAllen, Francis Bouke, F L Cook, Thos H Good, C Kell, John Lahner, E A Boyd, George Heck, Emily Wise, Jas W Moore, Lucy North, Sam Liely, Jos Frank, Edmund Shouff, Henry Downs, J W Williamson, Carrie Kivers, John Summers, Rachael Niven, Abraham Johnson, Edwin English, T J Meekes, Robt Lothran, Eben Plummer, A E Webster, Julia Denyes, Mary Hayes, E W Forbes, Wm McKay, R Griffith, Malcolm McPherson, S Turner, Francis Beattie, A C McIntyre, Ruth Collins, A J Van Buskirk, S F Emery, John Spencer, Ida Parlee.

"SWEET SIMPLICITEE."—Dr. Squills: "You need not cry, my little man, because your sister has the measles; she will soon be better." Practical child: "Boo-hoo! I ain't crying 'cos she's got 'em; it's 'cos I might catch 'em!"—[Fun.

If your sister, while tenderly engaged in a tender conversation with her tender sweetheart, asks you to bring a glass of water from an adjoining room, you can start on the errand, but you need not return. You will not be missed, that's certain—we've seen it tried. Don't forget this, little boys.

Write Them a Letter To-Night.

Don't go to the theatre, concert or ball,
But stay in your room to-night;
Deny yourself to the friends that call,
And a good long letter write.

Write to the sad old folks at home,
Who sit when the day is done,
With folded hands and downcast eyes,
And think of the absent one.

Don't selfishly scribble, "Excuse my haste—
I've scarcely time to write,"
Lest their brooding thoughts go wandering back
To many a by-gone-night—

When they lost their needed sleep and rest,
And every breath was a prayer—
That God would leave their delicate babe
To their tender love and care.

Don't let them feel that you've no more need
Of their love or counsel wise,
For the heart grows strongly sensitive
When age has dimmed the eyes.

It might be well to let them believe
You never forget them quite;
That you deem it a pleasure when far away,
Long letters home to write.

Don't think that the young and giddy friends
Who make your pastime gay,
Have half the anxious thought for you
That the old folks have to-day.

The duty of writing do not put off;
Let sleep or pleasure wait,
Lest the letter for which they looked and longed
Be a day or an hour too late.

For the sad old folks at home,
With locks fast turning white,
Are longing to hear from the absent one—
Write them a letter to-night.

Taking Down Cleopatra's Needle.

The N. Y. Herald's correspondent at Alexandria, Egypt, writing December 12, reports the safe removal of Cleopatra's Needle from the pedestal which has supported it for nearly nineteen hundred years. This pedestal is of the same kind of granite as the obelisk itself, and must have been brought from the quarry at Syene, near the first cataract of the Nile. It is remarkable that the existence of this pedestal, measuring nine feet high and six feet square and weighing forty-three tons, was unknown previous to the present excavations. The obelisk was formally ceded to Commander Gorringer and Lieutenant Schweder by the Governor of Alexandria, on October 22. By the 10th of November the earth was removed to some twenty feet below the present level of the soil, and the base of the obelisk and the large pedestal resting on three marble slabs were made visible. The base of the Needle is rounded by age. It originally rested upon four bronze crabs, each about three feet long by one wide. One of these crabs was under each corner, firmly fixed to both obelisk and pedestal by two bronze bars an inch in diameter and over a foot in length. One of these bars, projecting perpendicularly from the back of the crab, is fitted into a hole in the base of the obelisk. The other bar, descending perpendicularly from the crab's belly, is fitted into a similar hole in the pedestal. Both of these bars were firmly soldered with lead.

Owing to the jamming of one of the claws with a projecting piece of the base of the pedestal much difficulty was experienced in lowering the shaft, but on the 6th the work was successfully accomplished. When overturned the obelisk rested on sections of a float, whence in due time the Needle would be shoved into the steamer intended to bring it to New York. The steamer purchased for this purpose was the Dessouk, of 1,600 tons register. The Dessouk was built in England and bought by the Egyptian Government while on the stocks. She is not fast, but is very strongly built.

There are some people who resemble storks. They are said to have one foot in the grave, but like the sedate bird above mentioned, they are able to stand on the other leg so long that their heirs become impatient.

Mamma—"Well, Johnny, I should forgive you this time, and its very pretty of you to write a letter to say your sorry." Johnny—"Yes, ma; don't tear it up, please." Mamma—"Why not?" Johnny—"Because it will do for the next time."

The Human Eye.

It is said that the eye is the window of the soul. Let this be as it may, we know that the eye clearly expresses the character, motives, desires and general make-up of its possessor. When we wish to read character we study the eye. It hardly, if ever, deceives. Beware of the cold calculating eye! It is full of selfishness and cares for nobody but number one. It is generally sunken under shaggy eyebrows, and is of a gray leaden color. Have no fears of the eye that laughs. It accompanies good nature and sparkles with good will. It may be blue, hazel, gray or black. We admire the commanding eye with its flash of fire. It is backed up by an earnest, determined will.

Phrenologists say that a fullness around the eye denotes language; that is, if one has a swollen appearance about the eye, it is an evidence of being an easy and graceful speaker and writer, the organ of language being located around the eye. It is also conceded that size with the eye is a measure of capacity. A large eye has a wider range of vision than a small one, but the small one pays more attention to detail.

The eye is susceptible to cultivation. An experienced sailor will notice objects far away to sea that an unpracticed eye will fail to detect. Worry, anger, revenge, hate, as well as love, joy, happiness and pleasure, together with both ignorance and culture, have each their peculiar expression in the human eye.

Punctuality.

There is no man living who might not be a punctual man.

If you desire to enjoy life, avoid unpunctual people. Make it your own rule not only to be punctual, but a little beforehand. Such a habit secures a composure which is essential to happiness; for want of it, many people live in a constant fever, and put all about them in a fever too. Let there be a time for everything, and let everything be done in its time. In all your engagements, let an hour be named, and be punctual in keeping to it. We know of nothing more commendable as a general rule, and in a general sense, than punctuality. We allude not only to important, but to trifling matters. Character, confidence, depend greatly upon the manner in which an individual keeps his engagements. One who habitually violates his word, who promises, never intending to perform, is morally deficient to a frightful extent, and deserves neither respect nor consideration. But there are others who mean well, who do not lack principle, who would blush to utter a deliberate untruth, and yet they falter and fail for want of firmness, nerve, and decision. They promise intending to perform, hoping to be able to keep the engagements, and yet without due consideration or a proper appreciation of the consequence of failure.

There are others again who are always "a little too late," always behind. They have a habit of delay, and thus they postpone and procrastinate from hour to hour, not only injuring themselves, but wasting the time of other people.

When Washington's secretary excused himself for the lateness of his attendance, and put the blame upon his watch, his master quietly said "Then you must get another watch or I another secretary."

Facts about Gold.

In a recent lecture on gold, Professor Egleston, of the School of Mines of Columbia College, remarked that it was formerly supposed that gold was to be found only in the Ozoic and Paleozoic formations. When, in California, Whitney discovered it in the Jurassic, it was a revelation. It is now found in the deposits of all ages. The rock in which it lies is generally metamorphic, and therefore it is the surroundings that indicate the period. By gold we mean a yellow substance, which contains a quantity of pure gold, mixed with other substances, of which silver is almost always one. It is common to consider the quantity of gold in the world to be large. But there is only seven thousand millions worth, which is about half pure gold and half silver. The annual production is about one hundred millions worth, and the production has decreased 44 per cent. during the past thirty years. The production of silver, however, has increased 100 per cent, and now equals that of gold. One third of the gold goes to wear and tear, one third goes into circulation, and one third into the arts and manufactures. All the gold in the world would make a pile only 25 feet wide, 45 feet long, and 25 feet high.

Commercial.

FARMER'S ADVOCATE OFFICE, }
London, Feb. 28, 1880. }

The ice harvest this winter will be a light one. In fact, ice is being conveyed from one part of the country to the other by rail. Hundreds of cars have been sent west by the Grand Trunk R. R.

WHEAT.

The markets have been closely watched with a good deal of interest for some weeks past by all who are interested in the trade. Prices have been steadily creeping up for the past two weeks, until we think they have got about as high as it is safe for them to go. As freights are now exceptionally low, it must be borne in mind that as freights are now advancing any further advance on the other side will be absorbed by the advance in freights for a time at least. From reliable estimates that have been made, the foreign wheat requirements of the United Kingdom for the season ending August next is put down at 140,872,000 bushels. Probable further requirements are put down at 60,000,000 bushels. The Continent is calculated to want 67,000,000 bushels more. This includes France, Belgium, Holland, Spain, Portugal, Italy and Switzerland. The Russian crop is reported as not at all satisfactory, and a probability of their wanting or having to import American grain during the coming spring. On the other hand it is said that these unfavorable reports have been circulated through the Russian press in the interest of American speculators and those interested in the Chicago clique.

From these figures it would seem as though all our surplus wheat will be wanted before the end of August, and such being the case everything points towards higher prices. But there are so many things to be taken into consideration on this subject, and a good many facts that it is very difficult to get at, that it is useless to undertake to tell what the future will be.

PEAS.

Peas have ruled very quiet and there is no change to note. There is considerable enquiry for choice free from bugs for seed, and those who have such are getting good prices.

BARLEY.

Has been dull and some what lower. Still those dealers who have mills for cleaning barley have kept their stocks here, and have not had much difficulty in selling as fast as they can clean it. If farmers would take more pains in cleaning their barley, and in endeavoring to get the weight as high as possible they would very much facilitate the trade in this article.

CLOVER SEED.

Is at a complete standstill, and the indications are that a large proportion of the seed now in the country will have to be carried over into another year. Farmers who keep their seed should endeavor to preserve the color as much as possible, as brown seed is very slow to sell, and very objectionable to the English seed trade.

BUTTER.

Is well cleared out, and the trade is looking about for parcels for home consumption.

CHEESE.

This article is also well cleared out, and the markets will open high in the spring. From what we can learn there will not be any very material increase in the manufacture in Canada this season, and should the season prove in any way unfavorable, the make will, in all probability, be less. It is estimated that the make in the States will be as large as last season, and possibly larger, under favorable circumstances. The increase will be in the Western States. Dairymen must not fancy that they are going to see any fancy prices, for with the heavy make, which, with favorable weather, we must have through the months of June and July, prices must come low for these heavy makes to go into consumption.

London Markets.

London, Feb. 28, 1880.

GRAIN.

Per 100 lbs		Per 100 lbs	
Deihl Wheat.....	\$2 10 to 2 17	Barley.....	80 to 1 20
Treadwell.....	2 10 to 2 17	Peas.....	80 to 1 00
Clawson.....	2 10 to 2 17	Oats.....	1 03 to 1 07
Red.....	2 10 to 2 17	Rye.....	80 to 90
Spring.....	1 50 to 2 03	Corn.....	81 to 1 10

FLOUR.

Flour, fall wht. 3 50 to	Oatmeal, coarse... 3 00 to 3 50
" mixed... 3 25 to	Cornmeal..... 1 75 to 2 00
" spring... 3 25 to	Bran, per ton..... 12 00

HAY AND STRAW.

Hay, per ton... 8 50 to 9 50	Straw, per load... 2 60 to 3 00
------------------------------	---------------------------------

PRODUCE.

Butter, crock... 15 to 23	Cheese, lb..... 11 to 12½
do roll... 23 to 27	Potatoes, bag... 55 to 65
do keg... 15 to 23	Turnips, per bu. 25 to 30
Eggs..... 12½ to 15	Mutton, lb..... 7 to 8
Carrots, per bu. 25 to 30	Lamb..... 7 to 8
Onions, bush... 65 to 1 00	Wool..... 20 to
Beef, per qr... 3 00 to 5 00	Dressed hogs,
Veal, per lb... 4 to 5	per 100 lbs. 5 10 to 6 25
Honey..... 20	Lard..... 8 to 10
Cordwood..... 3 25 to 3 75	Tallow, rendered... 4
Clover Seed... 3 00 to 3 25	Timothy..... 3 20 to 3 25
Chickens, pair.. 40 to 60	Geese, each... 45 to 60
Ducks " " 60 to 65	Turkeys " " 75 to 1 25

Liverpool Market.

Liverpool, Feb. 28.

Flour, p. c., 10s 3d to 13s. Wheat—Spring, 10s 3d to 11s 1d; red winter, 10s to 11s 9d; white, 10s 8d to 11s 4d; club, 11s 2d to 11s 8d. Corn, ctl, 5s 9d. Oats, ctl, 6s 6d. Barley, ctl, 5s 3d. Peas, ctl, 6s 9d. Pork, 57s. Lard, 39s 6d. Bacon, 36s to 38s. Beef, 79s. Tallow, 36s. Cheese, 73s.

London, Feb. 28.—Floating cargoes of wheat steady but quiet; cargoes on sale off the coast, corn nothing offering; cargoes on passage, wheat with increased arrivals, buyers hold off; Liverpool, wheat, on spot, quiet; corn, steady.

Montreal Market.

Montreal, Feb. 28.

The market quieter. The decline in the foreign markets has checked business. Flour, superior, \$6 10 to \$6 15; extra \$6; fancy, \$5 90; spring extra, \$5 85 to \$6; superfine, \$5 45 to \$5 59; strong bakers', \$6; fine, \$5 to \$5 10; middlings, \$4 15 to \$4 25. Oatmeal, \$4 50 to \$4 60. Cornmeal, \$2 90 to \$3. Spring wheat, \$1 37 to \$1 40. Corn, 65c to 75c, duty paid. Peas, 77c per 66 lbs. Oats 31c to 32c. Barley, 48c to 68c. Butter, western, 13c to 13c; eastern townships, 19c to 21c; Brockville and Morrisburg, 17c to 19c; cheese, 14c to 16c.

Toronto Market.

Toronto, Feb. 28.

Wheat—Fall, \$1 27 to \$1 35; spring, \$1 27 to \$1 30. Barley 48c to 73c. Peas, 62c to 65c. Oats, 35c to 37c. Corn, 54c to 55c. Flour, \$4 55 to \$5 75. Wheat and flour dull and easier, quotations nominal; barley, peas and oats unchanged; hogs in less demand.

New York Markets.

New York, Feb. 28.—Wheat, No. 1 March, \$1 47. Rye, 96c to 98c. Corn, 56c to 58c. Barley, two-rowed State, 65c to 75c. Oats, 46c to 48c. Pork dull, \$11 87½ to \$12. Lard, \$7 67½.

Chicago Markets.

Chicago, Feb. 28.—Wheat \$1 24. Corn, 36c to 41c. Dressed Hoge \$4 90. Pork active \$11 62½. Lard, \$7 10.

EAST ONTARIO DAIRYMEN'S ASSOCIATION.—This Association held their annual meeting in the City Hall, Kingston, Feb 24th; Mr. K. Graham, in the chair. There was a large attendance of delegates; Hon. X. A. Willard, of Little Falls, N. Y., read a paper on the "Commercial History of the Dairy." Mr. Harris Lewis, of Frankford, N. Y., and other prominent gentlemen also addressed the meeting. Having devoted so much in this issue to the dairy interest this brief reference must for the present suffice.

LANDS OPEN FOR SETTLEMENT IN THE OLDER PROVINCES OF THE DOMINION.—The New Brunswickers are bidding for their portion of the emigrants to the Dominion. The report of the Provincial Association says: "Tens of thousands of acres of fine wheat producing lands within the limits of our Province await the actual settlers. A portion of these lands which are under control of the Crown Land Department may be had under the Free Grants Act, while other portions of them owned by the N. B. R. R. can be secured for a nominal sum, and with easy payments. In the Free Grants settlements there are still vacant over 155,000 acres. In every one of the Provinces farms can be had on easy terms. Within our wide Dominion there may be had homes for millions, where the blessing may be had of living under the protection of British laws."

The Central Board of Agriculture of Nova Scotia have decided that the next Provincial Exhibition shall be held in Kentville, Kings Co.

Stock Notes.

Mr. Jas. I. Davison, of Balsam, has recently sold to Jno. Foulk, of Illinois, three Clydesdale colts for \$2,000.

Richard Gibson, Ilderton, reports the following sales:—To B. C. Ramsey, Buffalo, N. Y., the cows Ursuline 2nd, Countess of Belvoir 4th, and a Seraphina calf. To John Fathergill, Burlington, Ont., the Cambridge Rose bull, "4th Lord Red Rose." To Godfrey McGugan, Strathroy, the fine 4-year-old bull, "2nd Duke of Rutland." To E. A. M. Gibson, Delaware Ont., yearling shorthorn bull, Chaplets Gurland.

Mr. John Boulbee, Hamilton, says:—Please continue my advertisement in the *Advocate*. It has brought me any number of enquiries for Berkshires, and quite a few sales have been made at good prices; in fact, I have sold out all my young stock except about half a dozen, and I am now negotiating with a celebrated western breeder for the purchase of several more choice sows in farrow to imported boars.

The sale of Bow Park stock, held at Brantford, was a decided success. The bulls sold remarkably well, and had the supply of fair, straight young bulls been double what it was, they would all have found purchasers at paying prices, except one or two that were not desirable.

The females were a common lot. Several were in a doubtful breeding condition, and of others there could be no doubt. Some again were only just a remove from grades, and would not find a place in any herd-book but the Canadian. So taking the quality of the offering into consideration, and the prices realized at a strictly Canadian sale—no American buyers being present—it was a remarkable one.

The demand for Shorthorn bulls is very good. We have never known such a number of inquiries, particularly at this season of the year. *The supply in Ontario this year will not equal the demand.* Of course, the primary reason of this is the shipment of beef cattle to England. At last have our farmers been forced to recognize the value of Shorthorn bulls as a cross on their ordinary stock. To raise a steer profitably up to 2½ to 3 years old requires something besides a straw-stack in winter and a slashing in summer. The better they are kept while young, and the sooner they can be made to weigh 1200 lbs., the more profit to the feeder. To do this you must begin right by having well-bred calves, and feeding while young. Look at the success of Mr. Gillette, of Illinois—a man who has grown wealthy by raising and feeding steers. Did he do it by investing in full-grown steers at 4 cents per lb.? No! when he served his apprenticeship Agricultural Colleges were not much in vogue, and as he could not rely upon a "Professor," had to depend upon his own skill and observation. He early found that a Shorthorn bull must be used, and since he commenced has never been without one. Secondly he gave the calf a good start, and never let it look back until it left his hands. At eighteen months old they weigh from 1100 to 1300 lbs.—not odd solitary ones, but by the car-load.

A writer in the *Farmers' Review* says hog cholera is highly infectious, and may be carried in the clothing of men.

CAUTION.—A law suit has just been decided at Leavenworth, Kan., in which the cost amounted to \$900. The trouble was all about a calf valued at \$10.

Prickly Comfrey.

Roots per lb., by mail, \$1.00. 1 lb. will make 100 strong cuttings. Full instructions as to planting, &c., with each package sold.

Money may be sent at my risk, either by enclosing notes in a registered letter, inserted in presence of Postmaster where mailed, or by P.O. order.

Address all orders to

THOS. A. McDONALD,
Durham, Nova Scotia.

TYHURST'S CURD AGITATOR and COOLER.
Strongly recommended by scientific and practical cheese-makers. For particulars, address
171-a
E. TYHURST, Chatham, Ont.

HONEY'S
IMPROVED
FANNING MILL

MANUFACTURED SOLELY BY

W. T. Dingle, Oshawa, Ont.,

For the Dominion of Canada.

This Celebrated Mill has taken

FORTY-SIX FIRST PRIZES

Since it was patented in 1878. It also took the ONLY MEDAL awarded at the Industrial Exhibition, held at Toronto last September.

It has been selected by the Government Superintendent of Indian Agencies for Indian Farms in the Northwest.

The Mill has no Equal.

For circulars and further information apply to

W. T. DINGLE;
OSHAWA, ONT.

171-d

HURRAH FOR MANITOBA!

Excursion Trains for Manitoba

WILL START ON

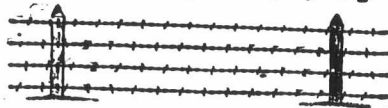
3rd, 17th & 31st March, 1880

For particulars apply, enclosing 3c. stamp, to
R. W. PRITTE, Manitoba Land Office,
64 KING STREET EAST TORONTO.

171-l

WASHBURN & MOEN MFG. CO.

55 College St., Montreal, P. Q.



Sole Manufacturers in Canada of

PATENT

STEEL BARB FENCING

THE BEST AND CHEAPEST FENCE
for Railroads, Farmers, and
Stock Raisers.

A STEEL Thorn Hedge. No other Fencing so cheap or put up so quickly. Never rusts, stains, decays, shrinks, nor warps. Unaffected by fire, wind, or flood. A complete barrier to the most unruly stock. Impassable by man or beast.

42,000 Miles of Barb Fence erected in the United States in last three Seasons.

For the Gardner, the Stock Grower, the Vineyard proprietor, BARB FENCE is the only perfect fence. SEND FOR ILLUSTRATED PAMPHLET.

CAUTION!

To all Dealers in BARBED FENCE WIRE or Barbs for Fence Wire—and to all Farmers or others who put Barbs upon wire fences making a Barbed Wire Fence.

You are hereby notified that, in putting barbs upon wire, making a barbed wire fence, or in using or dealing in barbs for wire or barbed fence wire, not made under license from us, you are infringing upon our patents, and we shall hold you strictly accountable for damages for all infringements of Canadian Letters Patent Nos. 4,916 and 7,830.

Washburn & Moen Mfg. Co.

MONTREAL, P. Q.

WOOD & LEGGAT,

AGENTS.

169-tf
Hamilton, Ont.

SEEDS

My Illustrated Catalogue for 1880 is now printed, and will be mailed free to all intending purchasers who send their name and P.O. address.

Farmers who wish a reliable change of Seed Grain, &c., will please send their orders early. Price and samples on application.

WILLIAM RENNIE,
Seedsmen, Toronto, Canada.



It is a combination of vegetable diuretics and tonics blended together, making it one of the best compounds manufactured to assist digestion.

IT REGULATES THE STOMACH,

Giving it a healthy action.

IT REMOVES ALL IMPURITIES FROM THE BLOOD,

And corrects all derangements of the digestive organs, causing animals in low condition to fatten in one-half the time they otherwise would. All kinds of stock will improve under its use, leaving them less susceptible to disease.

It Restores the Appetite

Strengthens and invigorates the whole system, and

Makes the Coarsest Proven-der Palatable.

As a diuretic it has no equal. It can be fed at any time and season, and when used according to directions will be found invaluable for horses and oxen that have been over-driven or worked; also for distemper and loss of appetite.

IT IMPROVES THE BLOOD,
REMOVING SCURVY,

ROUGHNESS OF THE HAIR,
HIDE-BOUND.

And all diseases that arise from abuse or exposure. We guarantee satisfaction or refund the money, which our agents are instructed to do.

PRICE 25c., OR 5 FOR \$1.
POUND PACKAGES for sale by all dealers, or will be sent by express on receipt of price, by

T. MILBURN, & Co.,

170-LHCW

Toronto, Ont.

GREAT WESTERN RAILWAY!

MANITOBA!

SEASON 1880.

A through Special Passenger Train for Emerson, Winnipeg and the Northwest, will leave Paris at 5 p. m. on

TUESDAY, March, 16th, 1880

and will be accompanied by Mr. Robert Patterson, Town Agent, Paris, who so successfully conducted through trains from the line of this road during the past year. Passengers from Main Line and Branches east of Paris must arrange to reach Paris before 5 p. m. Those from Loop Line and London, Huron and Bruce and Sarnia Branch, should be at London at 6:30 p. m. on that day. A Special Freight train, with settlers' effects, will leave Paris on 15th March, and one day previous to each of dates given below.

For full particulars as to fares, rates for freight, &c., apply to Robert Patterson, Town Agent, Paris, any of the City, Town or Depot Agents of the Company, or to Wm. Edgar, General Passenger Agent, and G. B. Spriggs, General Freight Agent, Hamilton.

Another special train will leave on Tuesday, April 6th, and another on April 20th and May 4th, 1880.

F. BROUGHTON,

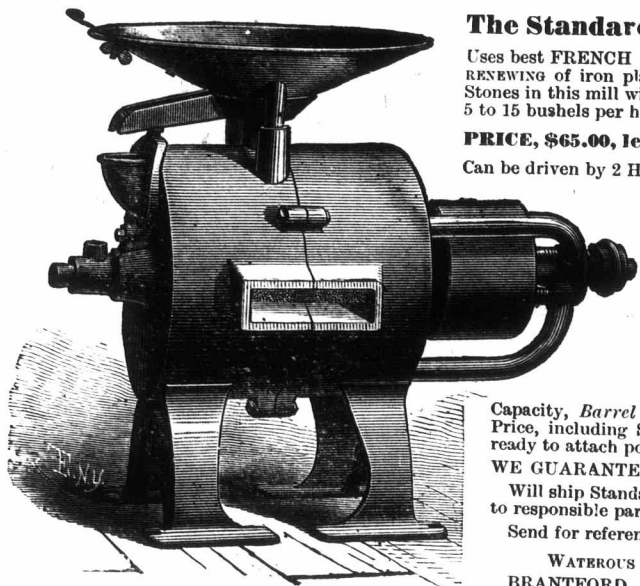
General Manager

171-B

\$55.66 Agents Profit per Week. Will prove it or forfeit \$500. \$4 Outfit free. E. G. RIDEOUT & CO., 218 Fulton St. N. Y. dj-6



PLEASE SEND FOR ILLUSTRATED CATALOGUE.



The Standard 12-inch Chopper

Uses best FRENCH BURR MILL STONES. No RENOVING of iron plates at six dollars per pair. Stones in this mill will last a life time. Capacity, 5 to 15 bushels per hour.

PRICE, \$65.00, less 10 per cent. for cash.

Can be driven by 2 H-P upwards. Will grind any kind of grain as fine as a 4 foot run of stones. Two English steel picks given with each mill.

EASILY KEPT in ORDER

Also manufacture 20-in. STANDARD CHOPPING MILL; capacity 15 to 35 bushels per hour; 6 to 10 or 12 H-P to drive it.

2 1/2-in STANDARD FLOUR MILL Capacity, Barrel and a-half flour per hour. Price, including Smut Mill, Elevators, Bolt ready to attach power, \$550.00.

WE GUARANTEE ABOVE MILLS FULLY. Will ship Standard Chopping Mills on trial to responsible parties, on certain conditions. Send for references. Address—

WATERLOO ENGINE WORKS CO., BRANTFORD, CANADA.

PIANOFORTES.

CHICKERING, SQUARES, - UPRIGHTS, STEINWAY, - GRANDS. - DUNHAM HAINES,

A complete assortment of the above makers, as well as a large variety of

SECOND-HAND PIANOS

will be offered by us on the most liberal terms.

PIANOS FOR HIRE.

BRANCHES:

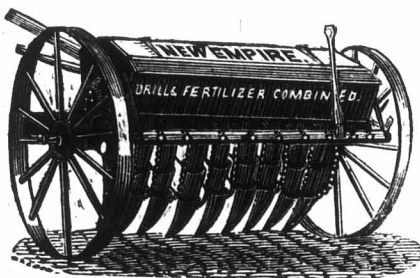
MONTREAL, OTTAWA, LONDON, KINGSTON, QUEBEC, ST. JOHN, ST. CATHARINES,

A. & S. NORDHEIMER,

15 KING STREET EAST. TORONTO, Ont.

A POSITIVE FORCE-FEED FERTILIZER DISTRIBUTOR

Something New, Accurate, Reliable and Durable.



A positive FORCE-FEED, without clogging in any kind of commercial manure, sowing the same bulk of any PHOSPHATE with the same combination of gear. Quantity sown is regulated by a change of gear, in precisely the same manner as in sowing different quantities of grain.

NO MORE GUESS WORK—BUT THE CLIMAX OF ACCURACY.

A practical tool in the hands of any farmer.

This new device is a radical change from all distributors of fertilizers ever offered on the market, and is in its operation simple, durable and reliable.

Remember, this device is the only thing of the kind manufactured in the world, and this only in the DOMINION by the undersigned, who will give any information cheerfully upon addressing

J. O. WISNER & SON, BRANTFORD, ONTARIO.

170-B-W

HEALTH, STRENGTH & ENERGY!

Mitchell's Compound Syrup of the Hypophosphites.

PLEASANT TO THE TASTE. NATURE'S BRAIN AND NERVE INVIGORATOR.

The only safe, prompt and reliable Hypophosphites for Over-worked Brain, Anxiety, Excitement, Late Hours, Business Pressure, Nervous Prostration, Wasting Diseases, Functional Derangements, Consumption, etc. It Purifies and Enriches the Blood, Clears the Skin, and Invigorates the Brain, Nerves and Muscles, Renews the Wasting Functions of Life, and Imparts Energy and Vitality to the Exhausted Forces of the Body. It cures Nervous Debility, Over-worked Brain and Heart Disease.

Prepared by **B. A. MITCHELL & SON,**

114 DUNDAS STREET WEST, North Side, LONDON, ONT.

9-47

ASK FOR MITCHELL'S HYPOPHOSPHITE.

E. P. ROES' Illustrated CATALOGUE For Spring of 1880

is now ready—sent free to all applicants. A superb stock of STRAWBERRY plants—150 kinds—Currant, Gooseberry, Blackberry and Raspberry plants. The largest and best stock of the celebrated

CUTHBERT RASPBERRY.

now acknowledged to be the best in the country. First class GRAPE VINES in great abundance. All at very reasonable rates. Address

E. P. ROE, CORNWALL-ON-HUDSON, N. Y.

170-A

THE "BELL" ORGAN

The following is what MR. HAGUE says about the "BELL" ORGAN:

To J. Hecher, Esq., Agent for Bell's Celebrated Organs at Montreal.

Dear Sir,—In handing your cheque in payment for the Bell Cabinet Organ I purchased from you, I cannot but say that the instrument is of a style and quality which I did not suppose capable of being produced in Canada, the tone is pure, rich and deep, and the effects that can be produced by combination of the stops are charming.

Messrs. Bell & Co are to be congratulated on their success in developing the manufacture to such an extent as is manifest in the instrument you have sent me.

Wishing them large and remunerative sales, I remain yours truly,

Signed, **G. HAGUE.**

General Manager Merchant's Bank of Canada. Montreal, January 24th, 1879.

- Received Silver Medal and Diploma at Provincial Exhibition..... 1871
- Received Silver Medal and Diploma at Centennial..... 1876
- Received International Medal and Diploma at Sydney, Australia..... 1877
- Received only Medal for Parlor Organs at Provincial Exhibition..... 1878
- Received only Medal for Parlor Organs at Industrial Exhibition, Toronto..... 1876

W. BELL & CO.

41-47 E. MARKET-SQ., GUELPH, ONT.

171-U.

SPECIAL OFFER!

During months of March and April we will sell our

Tracts, Small Books & Bibles

—AT—

GREAT REDUCTIONS

Circulars giving particulars sent free on application.

S. R. BRIGGS.

Willard Tract Depository and Bible House, TORONTO, ONTARIO.

171-C

BEE KEEPERS.

My circular and price-list of pure Italian Queens, Bees, Apianian Supplies, with much valuable information, will be sent free to all. Samples of Bee Journals free. Address

CHAS. F. DODD, Nile P. O., Ont.

171-U.

POTATOES. TEN NEW VARIETIES

raised from seed balls. Catalogue free if you mention this paper. Address

J. H. ANDRE, Bingham's, Tioga Co., New York.

171-a

D. M. FERRY & CO'S SEED ANNUAL FOR 1880

Will be mailed FREE to all applicants, and to customers without ordering it. It contains four colored plates, 600 engravings, about 200 pages, and full descriptions, prices and directions for planting 1500 varieties of Vegetable and Flower Seeds, Plants, Roses, etc. Invaluable to all. Send for it. Address

D. M. FERRY & CO., Detroit, Mich. 169-D

1880! Seeds! Seeds!

FREE by MAIL.

Our handsomely "Illustrated Seed Catalogue & Gardeners' Guide" for 1880, IS NOW READY.

Send your address on a post-card at once and a copy will be mailed you FREE.

It contains 70 pages, is full of information, and is indispensable to the FARMER, GARDENER, HORTICULTURIST and AGRICULTURIST.

Our Seeds are all tested by our STEAM TESTING APPARATUS (the only one of the kind in Canada, and erected to protect the interests of our army of customers.)

Seeds (with few exceptions) sent free of postage to any part of Canada.

McBroom & Woodward, PRIZE-MEDAL SEEDSMEN, 171-U LONDON, CANADA.

The Dominion Prize Card Cutter

Is now offered the Factorymen of Canada, with the confidence that it is just what they want to prepare the Card for salting. As it was thoroughly tested the past season by Prof. Arnold, and pronounced by him to be the best mill ever used for that purpose. It will cut 400 lbs. of Card in five minutes with half the labor of any other mill now in use.

The cheese that took the First Prize and Gold Medal at Toronto, last September, also the cheese that took the First Prize and Sweepstakes at the International Fair, held in New York, last December, was made with this mill, and is highly recommended by the following gentlemen:

Cheese Buyers and Factorymen.

THOS. BALMISTYNE, M. P. P., Stratford; THOMAS WATKINS, Belleville; W. T. CRANDALL, Picton; E. CASSWELL, Ingersoll; JAS. RUSSELL, Napanee; WM. WATSON, Wingham; JOHN ANDERSON, Belleville; LEVI BOWERMAN, Picton; R. J. DRUMMOND, Ingersoll; H. ASHLEY, Belleville; P. PLATT, Adolphistown; S. B. WILLIAMS, Farmersville; HENRY LEE, Brockville.

PATENTED IN CANADA, JULY 21st, 1879.

J. B. HARRIS, Patentee and Assignee, Stratford, Ont.

171-c

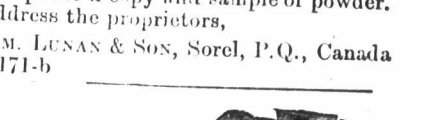
PRINCESS BAKING POWDER.

Absolutely Pure and Full Weight.

The best and most economical. Is double the strength of the ordinary adulterated powders. Patronized by H. R. H. Princess Louise and Earl Dufferin, and pronounced absolutely pure and wholesome by the most eminent analytical chemists in Canada. Read their reports in "Princess Baker," which contains recipes, &c., and letters from above distinguished persons. Send 6c postage stamps for a copy and sample of powder. Address the proprietors,

WM. LUNAN & SON, Sorel, P. Q., Canada

171-b



FIRST PRIZE BRICK MACHINE

TORONTO AND LONDON, 1879.

FIRST PRIZE TILE MACHINE

OHIO STATE FAIR, 1879.

Over five Competitors. See Jan. No. page 8. SEND FOR CIRCULAR.

GEO. S. TIFFANY,

463 DUNDAS-ST., LONDON, ONT.

171-U.

1880. 1880.
SEEDS!

A large stock of choice Farm, Garden and Flower Seeds, Horticultural Requisites, &c. Having greatly enlarged my Greenhouses, I can offer a very choice collection of Bedding and Decorative Plants, Funeral and Wedding Bouquets and Floral Decorations of every description made on short notice. Send for price list.
Seed Store and Greenhouses, opposite Market Square.

JAMES B. HAY, Proprietor,
Brantford, Ont. 171-b

J. A. SIMMERS'
RELIABLE
SEEDS

It will pay purchasers of Seeds to get a copy of the Twenty-fifth issue of my large ILLUSTRATED DESCRIPTIVE CATALOGUE, or "CULTIVATOR'S GUIDE" for 1880. Sent Mailed free to any address.

J. A. SIMMERS,
SEEDSMAN,
TORONTO, - ONT.

147 King St. East, nearly opp. Cathedral. 170-L

J. M. COUSINS
WIND ENGINE
For Pumping Water.



The cheapest power in use for Farms, Dairies, Gardens, Lawns, Railways, Brickyards, and all places where large quantities of water is used.

Also all kinds of Pumps—wood and iron, force and lift.

Wells dug, Cisterns built and Curbs made.

Water Pipes and Fanning Mills. Strawcutters made and repaired.

J. M. COUSINS,
Bathurst-St.,
LONDON.

FRUIT AND ORNAMENTAL TREES
LARGE STOCK. LOW RATES.

STANDARD PEAR TREES A SPECIALTY.
Send Stamp for Trade List. AGENTS WANTED.
E. MOODY & SONS, Lockport, N. Y.
NIAGARA NURSERY. Established 1839. 170-B

PLANTS CROWN
for transplanting, and Fruit for the market.
100 Acres planted with Berries 100
Varieties of Selected Fruits 100
See New Catalogue for what sorts to plant. Sent free.
JOHN S. COLLINS, Moorestown, N. Jersey.
170-6

HENDERSON'S
Combined Catalogue of
SEEDS AND PLANTS
Sent free to all who apply by letter.
Peter Henderson & Co.,
35 Cortlandt Street, New York.

TREES
The largest and most complete stock of Fruit and Ornamental Trees in the U. S. Priced Catalogues sent as follows: No. 1, Fruits, (new ed.) with plate, 15 cts.; plain, 10 cts. No. 2, Ornamental Trees, etc., (new ed.) with plate, 25 cts.; plain, 15 cts. No. 3, Greenhouse, Free. No. 4, Wholesale, Free, and No. 5, Catalogue of Roses, with beautiful plate of New and Rare Roses, 10 cts.; plain, Free. No. 7, Catalogue of Strawberries, with plate, Free. Address,
ELLWANGER & BARRY, Rochester, N. Y.

Garden,
Field
—AND—
Flower
Seeds.



UNIQUE PEA.

Seed
Grain,
Grass
Seeds,
Implements,
Fertilizers.

We will send by mail, post-paid, to any address any one number of the following Seeds, on receipt of price.

No. 1, 25 papers choice annual flower seeds.....\$1 00	No. 12, 1 lb Potatoes, St Patrick..... 50
" 2, 25 papers assorted garden seeds..... 1 00	" 13, 1 lb " Goble's Seedling..... 50
" 3, 1 pint Unique pea (see cut)..... 30	" 14, 1 lb Emporium Swede..... 50
" 4, 1 quart Compton early field corn..... 25	" 15, 1 lb Vilmorin's imp. Sugar Beet..... 50
" 5, 4 new varieties beet, Crown Prince, Non Plus Ultra, Eclipse and Erfurt..... 40	" 16, 1 lb Champlain Spring Wheat..... 40
" 6, 1 lb Burnell's Giant White Carrot..... 75	" 17, 1 lb Defiance Spring Wheat..... 40
" 7, 1 lb Webb's Kniver Yellow Globe Mangel..... 75	" 18, 1 lb Oats, imported Black Tartar..... 20
" 8, 1 lb Webb's Col North Yellow Globe..... 75	" 19, 1 lb " imported Swiss..... 25
" 9, 1 lb Beck's Champion Prize Winner..... 50	" 20, 1 lb " imported Sandy..... 20
" 10, 1 lb Potatoes, Bliss' Triumph..... 30	" 21, 1 lb " Longfellow..... 20
" 11, 1 lb " Beauty of Hebron..... 30	" 22, 1 lb Prickly Comfrey..... 75
	" 23, 1 lb Silver Hull Buckwheat..... 20
	" 24, 1 pkt Reana Luxurians..... 15

Illustrated and Descriptive Catalogue now ready and will be mailed on application. Address—
THE CANADIAN AGRICULTURAL EMPORIUM,
360 Richmond Street, LONDON, ONT.

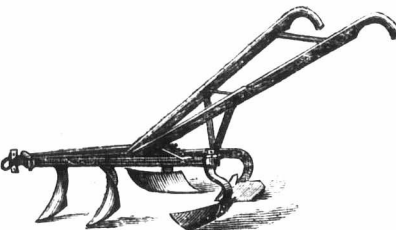
NOTE—We buy for cash, sell for cash, and can afford to give the best seeds at the lowest price. Cash by Registered Letter or P. O. Money Order may be sent at our risk.

Plows! Plows! Plows!

We are making and selling more and better general purpose, either all Steel, Chilled Iron or genuine Chilled Plows, for the season of 1880 than ever, because we use only the very best material, and finish them right.

TWO-HORSE CULTIVATORS,

Perfect thistle cutters; makes the very best seed bed on fall ploughed land of any other implement the fastest working, the easiest on team, and cheapest in Ontario.



Champion Horse Hoe
And Cultivator Combined.

The most perfect implement for cultivating or hoeing root crops, corn, shrubs, strawberries, and all weeding purposes; complete with side moulds or shares and wheels.

REAPERS & MOWERS.

VICTOR HARVESTER, Bronze Medal at Toronto Industrial Exhibition, 1879. Light, strong, easily handled, light draft, best tilt in use, lifts easily, and are warranted.

CANADIAN NEW MODEL MOWER.

The most popular in Ontario; neat, reliable and cheap; shafting all steel; lightest draft, most durable, and warranted.

B. BELL & SON,

ST. GEORGE P. O., ONT.

171-1w



My Annual Catalogue of Vegetable and Flower Seed for 1880, rich in engravings from photographs of the originals, will be sent FREE to all who apply. My old customers need not write for it. I offer one of the largest collections of vegetable seed ever sent out by any House in America, a large portion of which were grown on my six seed farms. Full directions for cultivation on each package. All seed warranted to be both fresh and true to name; so far, that should it prove otherwise, I will refill the order gratis. The original introducer of the Hubbard Squash, Phinney's Melon, Marblehead Cabbages, Mexican Corn, and scores of other vegetables, I invite the patronage of all who are anxious to have their seed directly from the grower, fresh, true, and of the very best strain.

NEW VEGETABLES A SPECIALTY.
JAMES J. H. GREGORY, Marblehead, Mass.
dl-6

SEND TO
ROBT. EVANS & CO.
HAMILTON, ONT.,

—FOR THEIR—
Descriptive Catalogue
—OF—
GARDEN, FLOWER & FARM SEEDS

—ALSO OF—
Green-house & Bedding Plants
Mailed FREE to all Applicants.

NEW COLEUS PLANTS!
On receipt of ONE DOLLAR we will send by mail to any address ONE DOZEN Coleus Plants, including our choice new sets, GEORGE BANYARD, EQUISITE, KENTISH FIRE, FASCINATION, GARNET, SOUVENIR DE LERVAL.

ROBERT EVANS & CO.,
Seed Merchants and Florists, HAMILTON, Ont.
170-C

Seed Potatoes!

Having hybridized this variety from a seed ball of the Early Rose fertilized with the White Peachblow, I now offer a few to the public, giving them the name of

GOBLE'S SEEDLING.

These potatoes are of better quality than the Early Rose, being a better cropper, and has never shown any signs of disease and matures a little earlier. I feel satisfied by experience that they are destined to be one of the most valuable varieties for the market. Stock limited.
Price, 50c per lb, post-paid.

Address—**WM. GOBLE,**
Thamesford P. O., Ont.

CHAMPION GRAPE.

The earliest good market Grape cultivated. Large bearer; no mid'ew; very hardy. Send for free descriptive circular to
J. S. STONE,
171-B
Charlotte, Monroe Co., N. Y.

Seeds, Reliable Seeds!

BRUCE'S FARM, VEGETABLE AND FLOWER SEEDS have been before the Canadian public for twenty-nine years, and we claim that they are unsurpassed in quality.

Our **DESCRIPTIVE PRICED CATALOGUE**, beautifully illustrated, containing all necessary information for the successful cultivation of Vegetables, Flowers, Field Roots, Potatoes, &c., is now published, and will be mailed FREE to all applicants.

JOHN A. BRUCE & CO.,
Seed Growers, Hamilton, Canada.
170-B

AGENTS WANTED

(Farmers' sons preferred) in every county, to sell "VETERINARY ADVISER," by Prof. LAW. Dr. A. Smith says:—"This book will prove of immense benefit to the farmers of Canada." Agents now taking 50 to 60 orders per week.
Address—**A. H. HOVEY & Co., Publishers**
TORONTO. 170-4