

FARMER'S ADVOCATE

AND HOME MAGAZINE

FOUNDED, 1866.

VOL. XX.

LONDON, ONT., APRIL, 1885.

Whole No. 232.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

The Late George Buckland.

Probably no man in Canada was as widely known to the old pioneers of Canada as the late Professor Buckland; probably no one living in Canada in 1884 had done more good for the agriculturists. Possibly he was the last living founder of the Provincial Exhibition, and was one of the main movers in getting up the first agricultural exhibition ever held in Canada. He gave his time and his money to the cause, and always aided the Provincial Fair until it attained its zenith of prosperity, and continued to aid it as much as he could until circumstances prevented him. He was instrumental in advancing the interest by the establishment of the Township and County Societies, and by encouraging farmers to improve their stock and drain their land, and encourage improved systems of agriculture. He was also a very useful member of society, kind, honest and pious, and always wishing to do good to all and injure none.

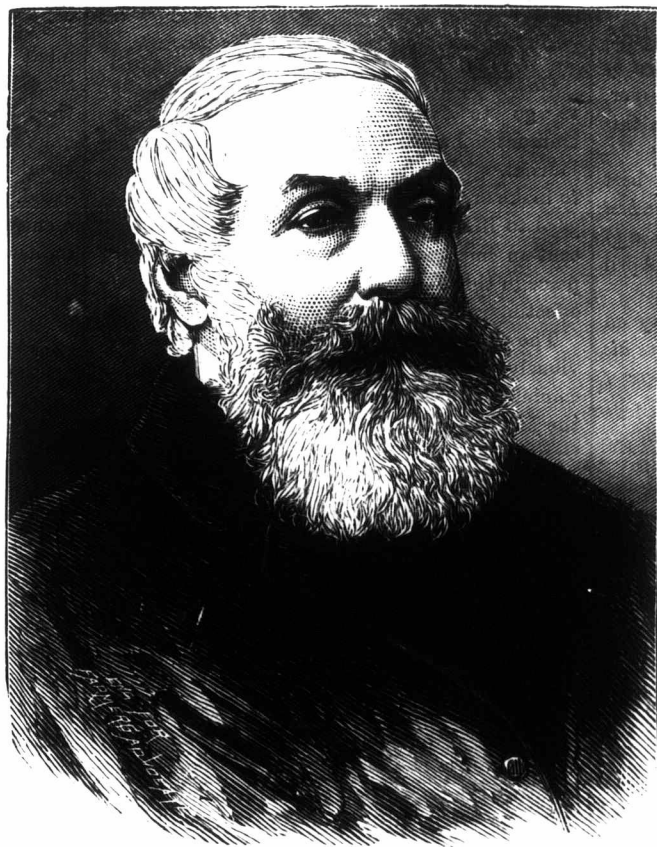
He died very suddenly in Toronto in the latter part of February, at the age of 80 years. Although he had always been economical and industrious, his pecuniary circumstances were not as easy for him as they should have been, considering the real good he had done and the time he served the agricultural interests. All interested in Canadian agriculture should know something about the deceased. We believe that all the old settlers that knew him regarded him as a most meritorious person in every respect, and all should regret that public agricultural servants who really have done good service to agriculture should not be better remunerated.

The farmers of the State of Maine use 10,000 tons of concentrated fertilizers every year on their farms.

Prof. Henry, of the Wisconsin Agricultural Experiment Station, after a number of careful experiments in regard to the best way of planting seed potatoes, says the best yields are obtained from whole potatoes of "good size."

Wait a Little Longer.

In our correspondence columns will be found a communication from a New Brunswick subscriber, giving his success in the feeding of ensilage. This question has been written to death in the American and British papers, and our silence on all such questions may be interpreted to mean, Wait a little longer. The experience of many practical farmers convinces



THE LATE GEORGE BUCKLAND, PROFESSOR OF AGRICULTURE.

them that there is more profit in ensilage than in any other food; but if such farmers were to weigh all the conditions and results, they would often be led to a different conclusion. If ensilage can be preserved in its grassy state, nobody can speak too highly in its praise; but even under the new process of preservation, its success may still be doubted. The fact that it produces a larger yield of dairy products is not all the evidence required. Let us first suppose that the ensilage is quite sour; then it is well

known that, like "slump" and other sour by-products, it will produce a watery milk of inferior quality, taking all the constituents into consideration, although of greater quantity; the cows lose in weight, and give out in a few years. Let us again suppose that the ensilage is preserved in the best possible manner, viz., placed loosely and slowly into the silo, and allowed to heat to 120° or 130° in order to kill the "bacteria." The food is then pronounced to be sweet, palatable and nutritious. This heat can only be developed at the expense of nutriment, producing the first stage of decay, which, although making the food more digestible, it becomes less wholesome, and tends to weaken the constitution of the animal. Even the most ardent admirers thereof do not advocate the feeding of ensilage as a complete ration, proving that "sweet" ensilage is not grass or green fodder, and the difference between it and "slump" is only in degree. It is over-stimulating, and the less stimulating the ration, the better for the animal and its products. If England has adopted ensilage as a necessity owing to adverse weather during the harvesting season, this is no proof of its utility in our more favorable climate. That there is more direct money in it we do not dispute, but we make these observations for the benefit of those who have adopted a higher standard. We do not want feeders to consider the ensilage question already solved; we want experimenters to continue the work just as enthusiastically as ever, and solve the problem if possible on a higher standard; and if this can be accomplished, nobody will be better pleased than ourselves.

In answer to many inquirers as to the establishing of creameries, we also say, Wait a little longer before you erect expensive buildings, and read the dairy columns of the ADVOCATE, which will keep you posted in the revolutions which are likely to take place in butter farming. A superior quality will drive butterine and other obnoxious stuff out of the market, and then butter making will be a most important industry. Meanwhile think, unite, and discuss,

FOUNDED 1866

The FARMER'S ADVOCATE and HOME MAGAZINE

Is published on or about the 1st of each month, is handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for dairymen, or farmers, gardeners and stockmen, of any publication in Canada.

TERMS:—\$1.00 per year, *in advance*, postpaid; \$1.25 in arrears. Single copies, 10 cents each, postage prepaid; sample copies free. Subscriptions may commence with any month. Remittances at the risk of the subscriber unless made by registered letter or money order. Subscribers who desire to change their P. O. address must send both *old* and *new* address. Remember that the law requires the subscriber to notify the publisher whenever the former wants the paper stopped, and all arrearages must be paid. The date on the address label shows when the subscription expires.

Address—
THE FARMER'S ADVOCATE,
LONDON, ONT., CANADA.

Examine your address label, and if
YOUR SUBSCRIPTION HAS EXPIRED,
or is about to expire, please
RENEW AT ONCE

The date on your label shows the time your subscription expires. Please remit direct to us, and see that the date is changed; if not, notify us at once. Try and avoid sending postage stamps. Five cents extra should be sent, when stamps are remitted.

Our Monthly Prize Essays.

Our prize of \$5.00 for the best original essay on *How Best to Raise the Standard of Our Butter*, has been awarded to M. Moyer, Walkerton, Ont. The essay appears in this issue.

A prize of \$5.00 will be given for the best essay on *"How can Greater Confidence be best Secured amongst Dairymen, Patrons, and Dealers?"* Essays to be in not later than April 15th.

A prize of \$5.00 for the best original essay on *How Should the Farmer Proceed to Improve his Dairy Herd (1) for Butter; (2) for Cheese?* Essays to be in not later than 15th May.

Choice Premiums.

Our subscribers should secure some of the choice plants and seeds offered as premiums in another column. These premiums will be sent out as soon as the weather will permit. When sending in your new names, select your premium at the time.

Bound volumes of the FARMER'S ADVOCATE for 1884 are now for sale. Price, \$1.60, postpaid.

Grease—The corn-fed hog.

No spores, no rust; no seeds, no weeds.

Use your harrow freely; it has a refining influence on the soil.

If you can't control yourself, don't attempt to control your dumb brutes.

It is said that "corporations have no souls," but they have rapacious maws and prodigious stomachs.

SIR.—In 1883 I took the ADVOCATE. In 1884 the editor of our local paper induced me to take an American paper, much more pretentious than yours, but after getting it I was sorry for the change, and I made him send for the ADVOCATE this year again.

JAMES O'REILLY.

HASTINGS, ONT.

Editorial.**Agricultural Progress.**

A few years ago the inhabitants in the vicinity of Sherbrooke, in the Eastern Townships, got up a small plowing match, and after the plowing match a dinner was served up; speeches on agricultural subjects were made, thus giving a great interest to the undertaking. At the last meeting 36 competing plowmen were at work; at the dinner 200 farmers and others were present. Another enterprise was advanced, namely, the establishment of an independent agricultural exhibition, and a company was suggested to carry out the plan. The company intends to purchase land and erect buildings near Sherbrooke. The stock of the company is placed at \$25,000, of which \$10,000 has already been subscribed. The shares are placed at \$10 each, thus enabling all desirous of favoring the undertaking to aid it and have a voice in its management.

In another part of the Province of Quebec, the farmers united and held a separate agricultural exhibition last year. These evidences of independent enterprises should meet with the approbation of all who are really interested in improving the standard of farming, as they must tend to increase the value of the land and the exports of the country.

On the Wing.

On the 12th ult. we left our office, intending to go to Montreal and New York to transact business connected with your journal. We stopped over in Toronto to make arrangements with our artist with regard to illustrations. While there we heard that an important debate was about to take place in the Assembly on a subject directly effecting your interests.

The debate was occasioned by a motion previously made by the Opposition asking for a commission of investigation into the affairs of the Model Farm. In defence of the motion the Opposition made statements relating to the accounts and other forms of mismanagement which must astonish you, and proved the necessity for an inquiry or reforms of some nature. This is what we have been advocating for years, and a year ago we asked the Commissioner of Agriculture to inquire into the state of affairs, which he refused to do.

The course which the Government speakers pursued was to laud up the institution, making it appear that the Opposition was an enemy of the farmers and of agricultural progress, and creating the impression that additional expenditures for agricultural purposes were justifiable.

The motion was defeated by a majority of ten votes, and we personally know that seven of those who voted with the Government were personally dissatisfied with the management of the Farm; but as it was a party question, they voted to save the Government. The motion would therefore have been carried had it not been a party question, proving that public opinion is in favor of the course we have been pursuing with reference to the Model Farm. The Government have attempted to draw your attention away from the true state of affairs by sending out their professors to lec-

ture amongst you; but it is still a political institution and will remain so as long as it is under the control of the politicians.

We have been accused of party motives from time to time when we exposed the abuses of the institution; but we condemned it just as emphatically under Sandfield Macdonald's Conservative Government, believing that it would, in many features, prove injurious to the progress of private enterprise. We still retain this conviction, and are also convinced that under its existing management it will never be conducive to true agricultural progress. We have never been able to get information sufficiently reliable to venture the best suggestions for reforms in your interests. We don't know to whose charge the chief blame should be laid, and this will never be known without a searching inquiry.

Agricultural and Arts Association.

We have from time to time received a great deal of abuse on account of our criticisms on this institution. In connection therewith it would be well for you to consider that a member of Parliament, one of the strongest supporters of the Government, introduced a motion for abolishing the grant. He also suggested the expending of the agricultural grant in the publication and distribution of more Government literature at your expense.

The expenditure for maintaining the Government herd book for the registration of Shorthorns we now consider useless, for the breeders have established a more reliable one for themselves. Herd books for other breeds should also be maintained by farmers interested. The numerous changes in the management of the Government herd book have caused immense loss to many breeders.

How to Save the Manure.

VIII.

In our previous articles on this subject we explained the mysteries of the manure heap, and of those concentrated fertilizers which are a source of plant food. All sorts of high-sounding names are given to fertilizers for the purpose of making them appear more attractive; but as all are valued according to the quantity of nitrogen, phosphoric acid, or potash they contain, you will now want to see an analysis of them before you risk the making of any purchases. You will no doubt wonder why we have excluded plaster, lime, and salt, which you have been using on your land so liberally. It does not always follow that a compound is useless because it is not needed in the soil for plant food. The elements of plaster, lime, and salt are found in every plant; but these applications should not be regarded as fertilizers, because they are usually abundant in every soil, and the quantities found in plants are very small. A few soils, however, are constitutionally deficient in one or more of them, in which case they are as much of a fertilizer as nitrogen, phosphoric acid, or potash. Let us now suppose that an application of plaster, lime, or salt has increased the yield of a crop; it is then evident that it could not have produced this effect by acting directly as a plant food, the composition of the crop being almost identically the same under every system of manuring. All such applications must, therefore, prove bene-

ficial by virtue of their physical action, and so must be regarded in the light of a medicine rather than a food. How these applications "enrich the father and impoverish the son" is now apparent, but this proverb is only superficially true, for riches consist of the wealth stored up in the soil as well as the money hoarded up in banks, mortgages, or other securities; so that the father is in reality not enriching himself by impoverishing his son. The fertility of a soil can only be maintained or increased by means of those applications which are deficient in the soil and are essential to the growth of plants. It must be borne in mind that a soil may be deficient in a constituent for one plant, but may contain abundance of it for other plants.

In making experiments, if you have suspicion that the soil is deficient in more than one constituent of plant food, you should use a mixed fertilizer,—that is, nitrogen with phosphoric acid or potash, as the case may be.

1. *The Uses of Lime.*—We shall first consider its action on soils that contain an excess of vegetable matter. In a previous article on this subject we stated that organic matter was the natural source of nitrogen for the plant; and was converted into plant food by a ferment (bacteria), and that warmth, moisture and a certain degree of porosity were required to effect this end. Now it is evident that in a cool, moist climate, such as Great Britain, this fermentive process must take place slowly, and it is aided by the action of lime. Some soils which contain an excess of organic matter are too acid or "sour," and this acidity is corrected by the use of lime. On the inorganic portions of the soil lime has a different action. It makes heavy clays more friable and porous, and so aids it in absorbing and retaining the soluble portions of plant food. It also assists in decomposing or unlocking insoluble plant food, making it available for the plant. Figuratively speaking, you will now see that lime is a medicine which aids digestion, and your object should be to bring about those conditions by which the use of lime may be avoided. The natural way of liberating plant food from insoluble combinations, and of making the soil more retentive and friable, is by means of tillage and drainage; and in our warm climate lime is of little or no use on vegetable soils, except, perhaps, when the organic matter is greatly in excess. Besides, your object should be rather to conserve than to unlock plant food, merely unlocking as much as is required for the crop, or even less, making up the deficiency by manures or fertilizers. By tillage, drainage, and the action of rain and frost, the insoluble constituents will become available soon enough. When the plant food is unlocked too rapidly, the day of concentrated fertilizers will draw near. In some sandy soils lime may be applied to test if it is deficient. Leached ashes contain a large percentage of lime, and in the most available form. Pulverized limestone, or carbonate of lime, is another form, but is the least active.

2. *Plaster and its Uses.*—This is the substance which is known under the names of land plaster, gypsum, and sulphate of lime. It is composed of lime and sulphuric acid, and is the cheapest means of supplying sulphuric acid to the soil, but there is rarely a deficiency of these

compounds. When bones are dissolved by sulphuric acid a large percentage of gypsum is formed, and goes into the soil with the superphosphate. Some plants take up gypsum very readily, and in this way it has often proved beneficial, but its chief value is due to its action in fixing the ammonia which would otherwise escape from the soil. On grains it has been found to increase the growth of leaf and fibre, but it has had little or no effect on the grain itself. It has been used beneficially on leguminous crops, such as the clovers, but has had little influence on the grasses. The best effects are usually produced on those rare soils which are deficient in sulphuric acid or lime; but as to the fixing of the escaping ammonia, it may be useful on most any soil, especially in a hot season, and thus increase the yield. However, humus has a great absorbent power for ammonia, and if the soil is kept in a proper mechanical condition there is little danger of loss through volatilization. By good farming the necessity for plaster can in most instances be obviated.

3. *Uses of Salt.*—Let us consider separately the virtues which have been attributed to salt. 1. It attracts moisture. The question now to be considered is, what are the causes of defective moisture in the soil? If the surface soil has not the proper mechanical texture,—if it is too porous to admit of moisture rising from below, then the restoration of moisture by artificial means may produce temporary benefits. The lack of drainage may also cause deficient moisture. A dry season, within ordinary limits, has not so much to do with deficient moisture as bad texture and imperfect drainage. Improper texture is frequently caused by too coarse manures. 2. It aids the decomposition of organic matter in the soil. In this action lime may be substituted, and the same objections will apply. 3. It unlocks plant food from insoluble combinations. In this you may also refer to our remarks on lime. All these virtues of salt prove that salt and bad farming go together; for it is an artificial way of doing what should be done by natural means. Although plants will flourish without its use, yet it is an important constituent of plants, and when it is deficient in the soil, which is rarely the case, it will sweeten the vegetation, making the food more palatable and nutritious for man or beast. It checks vegetable growth, but where is the profit in producing a rank growth by means of valuable manures or fertilizers, and then checking it by means of salt? It is also said to stiffen and brighten the straw and produce an earlier growth, but we leave to yourselves the discussion of this virtue of salt.

If you have now diligently perused all these articles, you must have observed that there is something outside of the mere practical rut of farming. There is something in the manure heap which is beyond the scope of ordinary observation, and all the tests which have brought all this knowledge to light have been conducted in the most practical manner, although with regard to those so-called fertilizers which are effective by means of their mechanical action in the soil, scientists are still comparatively ignorant. We have not indulged in any speculative questions which have not yet been settled by investigators. Some experiments have to be repeated thousands of times and under different circum-

stances before reliable results can be obtained. You have possibly entertained the idea that so long as you obtained good crops, it makes no difference whence the yield springs; but you will now perceive that there is a great difference between getting good crops by exhausting the soil, and getting good crops by maintaining its fertility. So long as you draw more than the interest from your soil, you or your posterity will become bankrupt sooner or later.

(Concluded.)

Seeds and Seeding.

There is no branch of farming in which deception is so easily practiced as in purchases and sales of seeds. They may be old seeds with new names and new prices, and the fraud cannot easily be detected. They may have travelled all over the continent before they reached you. It would pay you to organize farmers' clubs all over the Dominion, if for no other purpose than to know where to purchase honest seeds. The tendency to change seeds is yearly becoming greater, and the swindling keeps pace with it. But the blame for alleged bad seeds should not always be laid to the charge of the seedsmen.

Let us examine what some farmers do. They buy cheap seeds on grounds of economy. No investment can be more ruinous; it is equivalent to a loss of half the crop at least. There would be more money in cultivating half the land by using good seeds, and the labor would be much less. Others buy good enough seeds, but plant too deep or too shallow, or use straw, which they call manure. Others plant at unreasonable times, or on worn out soils, expecting that expensive seeds will make amends for defective or improper cultivation, and exhaustive systems of rotation. By purchasing expensive seeds we do not mean the paying of fancy prices for boomed up varieties.

You cannot understand how to plant intelligently without first comprehending the principles of germination. A seed cannot sprout unless it has moisture, air, and warmth. The young shoot is nourished by the nutriment contained in the seed, and when this is exhausted, no further growth can take place until the leaf comes to the light. If now the seed lies too near the surface, it will likely have deficient moisture, and if too deep, the air may be deficient, and the leaf will not be near enough to the surface, especially if the surface soil is firm. As a rule, large seeds should be planted deeper than small ones.

A great deal of experimenting has been done at the Stations with regard to the germinating powers of the various grains and other seeds at different depths, and it has been ascertained that the largest percentage germinated when planted between one-half and one inch deep, the former depth giving better results than the latter. After one inch the percentage decreases in proportion to the depth. These have been made on soils that were in good mechanical condition, so that if the soil is too rough, too firm, or too porous, those figures should not be regarded as very reliable. These conditions make a wider difference than the size of the seeds.

We have heard enough about beef, fat and tender. Now let us hear something about less waste, and about beef, lean and tender.

The Agricultural Elephant in New Brunswick.

The all absorbing question in the New Brunswick Legislature this season is the Stock Farm established by the Government of that Province about three years ago. Complaints are lodged against the management; an inquiry is asked for; the Farm is not adapted to stock raising; the running expenses are too great, and many other forms of abuse are said to have crept in. Some members are in favor of abolishing the Farm altogether; some want a change of location, and others are in favor of squandering immense sums of additional money for the purpose of popularizing the institution in the minds of the farmers.

A change of location has been decided upon, and a fresh impetus to stock breeding is anticipated. The loss sustained by the Government in its support amounts to about \$3,000 a year, after crediting the services and stock sales, and the managers are attempting to cast the blame on the unsuitability of the present site known as the Otty Farm. The question was not made a party one, but the sectional jealousies have been so strong that bitter animosities were aroused.

If the most suitable farm in the Province be selected, the Government will have the advantage of other breeders, and in this manner may partially make up the losses already sustained; but as the existing lease is held for a term of years at a very high rental, a considerable loss must be sustained by the transfer, especially when the improvements, for which nothing may be realized, are added. Prof. Shelden, who visited the Otty Farm, asserted that it was neither fit for the raising of sheep nor Short-horns. The Government itself, as well as the other members of the House, were divided on the issue, some realizing that the institution must be conducted at a sacrifice to the Province, others seeing the same necessity, but on the grounds that it is under political control.

We do not wish to dampen the ardor of our Maritime friends in their ambition to improve the stock of the country, but merely to sound the note of warning within the hearing of other Provinces of the Dominion, which may be contemplating similar sacrifices. The breeders in the Maritime Provinces have been doing a brave work, and Government interference with their liberties deserves the suicide which has terminated its career, and will be resurrected only to meet the same fate. New Brunswick fell into the same error as Ontario; she mistook fancy stock for agriculture and agricultural interests. Farmers have not been too slow in realizing the advantages of well-bred stock, and are justified in rejecting the speculator's price for the pedigrees. They have been decried for their delinquency in recognizing their own interests, and Government means of persuasion have had to be resorted to. Farmers are just as capable of attending to their live stock interests as to their other affairs. It has been said that the owner will turn the waste places of his land into a garden, while the tenant will turn a garden into a waste.

More time and money have been squandered in debating Stock Farm topics in the New Brunswick Legislature than would be necessary to meet the present live stock requirements of the whole Province.

Special Contributors.

A Chatty Letter from the States.

[FROM OUR CHICAGO CORRESPONDENT.]

It has taken some time to bring it about, and the end may not yet have been accomplished, but it seems that makers of fat cattle are coming to realize the fact, that their work of the past winter cannot be remunerated as highly as they had hoped and expected. If they are not becoming reconciled, they are no longer hoping against hope, for the time of high prices has come without the high prices. A great many of the cattle now selling at \$4.75 to \$5.50 cost more in Chicago as feeding cattle, and it is no wonder that the farmers and feeders feel a little unwilling to accept prices that have lately been ruling; but they of course must accept the inevitable.

The young cattle which cost more last year as young cattle than they are now selling for per cwt., of course have been growing and fattening, and many may not lose any money for the feeders, but as a rule it is not considered a very safe thing to pay more for feeders than it is likely can be had for fat cattle. But right in the face of such low prices for fat cattle, buyers of stock and feeding cattle have been paying as much for them as if they fully expected not less than a six cent basis for fat cattle next fall. It is true that no man can surely tell what prices will be at the end of the year by what they are at the opening of spring, but it is the general opinion among conservative cattle men of experience that prices are too high for young stock.

All kinds of live stock have been selling comparatively very low, and not only fat stock, but breeding animals have suffered a reduction of prices. A well known firm of Norman horse breeders in Illinois lately sold some fair to extra stallions at \$1,000 to \$2,400 per head, making averages of about \$1,400 to \$1,700. The firm has only sold about half as many stallions as at the corresponding time last year, and reports prices considerably lower, perhaps 20 per cent. It is the same story among the breeders of fine cattle, though it must be said that there is nothing very serious to complain of in the reduction of prices, because it is not great as compared with the reduction in values in other lines. It is natural enough that men should complain and put on long faces, but prices have not yet got below a paying basis, if the management is fairly judicious.

Fashions are changing. Live stock monstrosities are no longer in fashion. Not long since a young man arrived at Chicago with a 725 lb. hog of the Poland China breed, which he seemed to regard a marvel of fine breeding. His father had kept the hog on the place as a show animal to help sell the young stock, and evidently took great pride in the massive brute; but the animal did not stand the practical test of the market. On a day when the best hogs were selling at about \$5.00, this fellow sold at \$4.00 per cwt.

The feeders of distillery cattle are feeling a little sore over their prospects this spring; and one or two of the prominent ones have declared that they will not make anything on this year's venture. They undoubtedly mean that they will make comparatively nothing, for even at

present prices slop feeders will make fair profits. Prices are \$10 to \$15 per head lower than last spring, but it must be remembered that the market last year and the year before was exceptionally high, and that this year is more nearly a proper average.

It is understood that the Marquis DeMores, of the Northern Pacific Refrigerator Co., who has a large slaughter house in Medora, Dakota, has contracted to take a great many fat cattle during the spring and summer months. He has a large cooling house at Duluth, and it is said that he and Moreton Frewen are interested in a scheme to extensively ship cattle and beef to the East by way of the lakes. By the way, there are a great many schemes of large proportion being worked out on paper these days, and something ought to come of the large variety.

The preparations in Liverpool for receiving and handling frozen mutton from South America are rather extensive, and will probably add another complication to the question of what to do with all of the mutton that is being thrown upon the markets of the world. Mr. James Pritchard, of London, who lately came through Canada, and also Mr. Pool, of London, say that the outlook for English flockmasters is very bad, on account of the great floods of good to prime mutton being sent from the colonies. So great is the competition in the British markets that Canadian sheep bought at \$3.00 per cwt., could not be shipped to England at low rates and sold with profit. And of course the state of affairs is worse concerning American sheep. The opinion is expressed that the sheep markets of England are absolutely taken possession of by the antipodean supplies.

The quality of the sheep sent from New Zealand is said to be remarkably fine, the animals all being wethers, and averaging about 75 lbs. dressed. They are worth fully a penny a pound more than the Australian offerings, because the latter are not so well bred, and are not in as good condition for mutton.

Cattle feeding during the first two months of this year was exceedingly unprofitable, and a great many feeders are now saying that during more than sixty days they almost threw away their corn. This fact, no doubt, had much to do with overstocking the market with half fat cattle. Owners concluded that they might as well sacrifice their cattle, as prices did not promise very well, as to sacrifice so much corn. It seems to be a lamentable fact that producers as a rule are only cautious and judicious when stock is advancing in value and is promising a boom. Then they hang on to it and take care of it, and deal it out in small parcels; but when values are on the downgrade and a little caution and management would be at a high premium, they all become reckless and let go all holds.

Last fall the people of the western country were considerably exercised over the prospect of a national cattle trail to extend from the line of old Mexico to British Columbia. The people of the Southwest wanted it, and the people of the Northwest who were engaged in cattle raising did not want it, because they were afraid that their country would be continually flooded with the young cattle from Texas, and that their ranges would be overstocked. But now the States and Territories of the Northwest are all contemplating quarantine laws against Texas

cattle, on the ground of the much mooted fever. It seems that the best ranges in Texas have been overstocked, and unless the ranchmen can find some outlet for their young cattle, they will be put to great inconvenience and perhaps loss. Last year there were some 500,000 young Texas cattle driven into the northern country, and yet the State is too full of cattle. So the ranchmen below are feeling rather blue just now, since there is a strong probability that instead of having a national trail, they will have to provide some other way than driving, as an outlet for their surplus stock.

In Texas the cattle are very prolific, and the warm climate and usually favorable springs enable owners to save a very large percentage of the calves. Owing to the character of the grass and scarcity of natural water, it usually takes about ten acres of grass to keep one animal. Heretofore the ranchmen have been in the habit of driving northward a large share of their young cattle each year, as the raisers in Wyoming, Colorado, Nebraska, Montana and Kansas have been glad to get the cheap young cattle to turn out on their ranges, and they have never before been troubled with any thought of how to take care of the surplus. The only idea has been to produce as many calves as possible, and depend on other people with more grass taking them to fatten. But now the northern country is being well filled with cattle, and the Texas cattle which have made the ranchmen so much money in former years are not now wanted.

So the Texas ranchmen will have to provide some way to take care of what they raise. They will have to sink artesian wells, so as to utilize the millions of acres of grass now idle on account of no water; they will have to erect and maintain refrigerator establishments, spay their surplus heifers, and find some kind of grass that will support more than one steer to every ten acres.

PRIZE ESSAY.

How Best to Raise the Standard of our Butter.

BY M. MOYER, WALKERTON, ONT.

It is understood and acknowledged by everybody in the land, who has taken the least interest in dairying, that butter-making has been sadly and shamefully neglected, and the question which forms the subject of my article is frequently discussed, but principally through selfish motives, which can result in no good.

We have made progress and kept pace with the world in perhaps everything we produce except in butter. In this particular and very important branch we have fallen behind all other countries, and the question naturally arises, Why is this so? The answer is simple and plain, and is this: Because we have deviated from the natural principles of business. The demand regulates the quality of the article produced. We produce better cheese because the demand wants a better article. We produce better beef because the demand is for a better quality, and is willing to pay us for it. The reason, therefore, that we make improvements in our various industries is because the demand requires it, and pays according to the superiority of the article produced. This principle is the stimulus to all improvements.

Any one, therefore, being acquainted with the custom among storekeepers, who handle the bulk of our butter, of paying the same price for all qualities, can easily understand the unsatisfactory condition of our butter trade. Sheet after sheet have been written to educate the farmers' wives and daughters to make better butter, but scarcely an attempt is made to open a way to secure better prices. They understand theory better than they have means to put into practice, and what they want is better prices for superior goods, and they will learn to make the article to be good value for the prices they receive. It is really wonderful what good prices will do. It makes the cows give more milk. It makes the hens lay more eggs, and I am inclined to think that if prices were paid according to quality, the butter would be better, and even the eggs larger. Give, therefore, our farmers reasonable inducements, based on pay according to value, and bring within their reach the best and most practicable appliances to treat their milk, and their part of the butter business will naturally improve itself. What we want, then, in order to raise the standard of our butter, is a better system of marketing.

Until within a few years, proper facilities for shipping butter during the hot season were unavailable, and in consequence butter had to be shipped at very great risk of getting spoiled from the heat on the way, or else had to be kept over till fall. This shows plainly that our butter either reaches the English markets in a spoiled condition from the heat, or from having been kept too long and become stale. From the fact that our butter never reached in good shape, some got the erroneous idea that the voyage across the ocean was doing all the mischief. I remember some immigrants bringing their old "duds" across the ocean, and when they went to fragments shortly after they were here, would put all the blame on some influence of the sea—still we bring our new goods across without any injury. The effects of the sea on bad butter and old worn out clothes are something similar. Good butter and new goods pass safely. Not being able to get our butter into the market during the summer in good condition, the markets in England entirely neglected it, until the supply from the continent ceased, which was in the fall. This custom is now of such long standing that in order to effect a change, which is essentially necessary in order to raise the standard of our butter, united effort, with the best of management, is required. Having shipped inferior butter to England so long, they, in their cautious and conservative ideas peculiar to their race, will not take our words when we tell them that we will sin no more, but will only believe us when we keep a good, fresh butter constantly in the market.

This can only be accomplished by the introduction of the creamery system. It was the factory system which developed the cheese interest to its present high position, and the creamery will on the same principle develop the butter interests. The creamery will always have a uniform quality of butter, and in sufficient quantities to make itself felt in the market. If the butter which is shipped from the creamery gives satisfaction, an order for more can be repeated, and in that way build up a

reputation on the same principle as flouring mills work up reputations for their flour.

Butter should be sold as soon as possible after it is ready for the market. Holding butter for higher prices has more frequently resulted in loss than gain, and it has also a bad effect on the reputation of our butter. Good, sweet, fresh butter is always worth more in a low market than spoiled butter in a high market.

As it will be some time before the creamery will reach every one, there will still be a great deal of butter made in private dairies, and in order to raise the standard of our butter, some plan must be adopted to bring the butter thus made into the market without letting it go through the hands of a merchant who dares not say anything about the quality for fear of losing a sale in his store.

Let there be monthly butter markets established in the different towns and villages, where suitable cellars are provided, in which farmers can offer their butter without exposing it to the heat, and where they can store it, in case they do not sell, for the next market. Each package would require to be stamped with the date when the butter was made. If any butter was kept over for higher prices, it would not come in competition with fresh goods, but only with butter made in the same month. The idea of this is to encourage the sale of butter when in its best shape. In selling our butter as soon as possible after it is made, it will not only raise the standard of our butter, but would also give us the use of the money.

Buyers would then examine the butter and buy it at different prices according to the quality. If all our butter were sold according to this plan, and storekeepers not take it at all, the low prices which some would get for their butter, and the high prices others would get, would do more to teach them the proper science of butter making in two months than all the teachings and writings would in twenty years.

Nearly 75 per cent. of some of the dressed beef at the Chicago Fat Stock Show was fat.

Rotation—More grass, more stock; more stock, more manure; more manure, more grass.

Hybrid trees, such as the Lombard, Early Orleans, and Purple Gage, are most subject to black knot.

Dr. Caldwell, in the New York Tribune, estimates that the needless waste of barnyard manure is sufficient to pay for all the concentrated fertilizers used in the United States.

Recent experiments have proven that 100 lbs. of corn will produce over 20 lbs. of pig carcass, while the same food will only produce 10 lbs. of dressed steer. Even when it is considered that the beef carcass has more bone and water in its composition than the hog, the fact still remains that the steer probably has the greater nutritive value, although its flesh, pound for pound, will not bring so much money. If massive fat is a luxury, this is all that can be claimed for it, and let it be produced for those who live luxuriously.

DEAR SIR,—I am much pleased with the many improvements and the independent spirit in which you advocate the farmer's rights, and though I have quit farming I cannot give up the *ADVOCATE*.

CLARKSON, ONT.

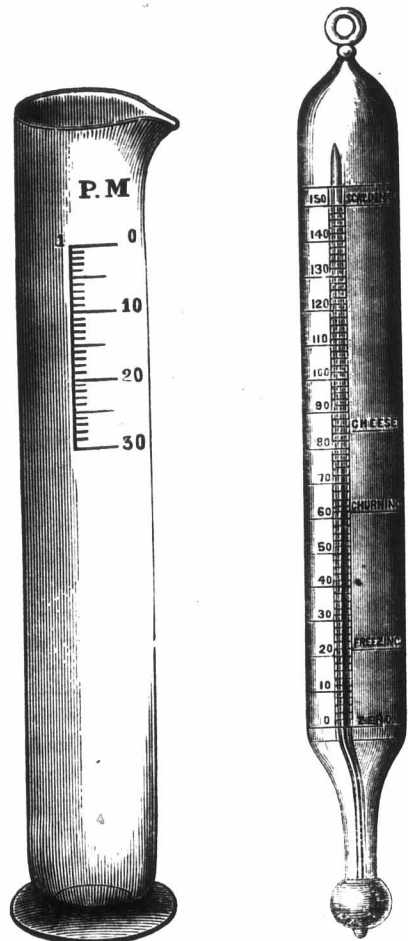
ROBERT SLOAN.

The Dairy.

Dairy Instruments.

There are a few cheap instruments which every farmer should keep, if he wants to make progress in his dairy business, or in the improvement of his herd. The chief of these are given in the accompanying illustrations.

By filling the cream gauge with milk up to the mark indicated by 0, the percentage of cream by measure will be indicated by the other figures or marks. The percentage by measure is only an approximate guide to the percentage by weight, or the quantity of butter obtainable. For greater accuracy of results, the cream from the different cows should be churned in the different seasons, and the products weighed separately. The milk should



CREAM GAUGE.

FLOAT THERMOMETER.

always be set and raised as near the same temperature as possible, and observations should be taken at different intervals during the rising of the cream, say after 12, 24 and 36 hours in order to ascertain which cows produce the quickest-rising cream, bearing in mind that the cream which rises the quickest makes the best butter. These experiments will make very little labor, and by this method you can weed out more inferior cows in one season than you can in 20 years by guess work.

The float thermometer explains itself. It can be used for plunging into the milk or cream, or for ascertaining the temperature of milk room, like the ordinary thermometer.

If you want to know where to get these instruments, consult our Premium List.

Canadian Butter for Export.

Editor Farmer's Advocate:

SIR,—I have always read Prof. Arnold's productions on dairy questions with great interest and profit, but his article in your last month's issue on the above subject is a little too cheesy to do justice to the farmers. As long as no effort was made to improve our butter interests, but was allowed to move on in its old channel, and the country losing millions, very little was said about the impropriety of making butter; but now when an effort is made with very fair prospects of making our butter interests fully as remunerative as cheese, there is an evident feeling on the part of some to discourage the enterprise. As long as these attacks are made openly, and we are able to hold the fort, no means could be devised to do us more good.

When the cheese factory system was introduced there was no direct opposition, and yet it took over twenty years of hard work, and with considerable aid from the government, to raise it to its present position. The creamery is only a few years old, and is laboring under the great disadvantage of having the cheese influence in opposition, and yet she is already able to put as much value into the farmers' pockets as the cheese factory.

In every effort made to show the superiority of the cheese factory over the creamery, I see a want of sound argument, which more firmly convinces me that the creamery will take the stand which the demands of the country require. Some will say that our pastures are not suitable to make good butter; others, that it can't be shipped without getting spoiled; others, that the very air in the ocean has a very injurious effect on the butter; and others are holding up the danger of overstocking the market; and Prof. Arnold, in sincere sympathy, thinks that it may be harder to work up the butter trade than we imagine.

In reply, I would say that our pastures and waters are excellent; that we can ship with perfect safety during any time of the year; that there is no more danger of overstocking the market with good butter than with cheese; and to Prof. Arnold I would say, that with our true Canadianism, we are not afraid of hard work, as long as we can accomplish so good a work that will save the country from the yearly loss of millions of dollars.

Such statements are generally made by interested cheesemen, and not argued from a farmer's standpoint. As the dairy industry belongs to the farmers, the great question is, Which pays the farmers the best, the cheese factory or the creamery, taking not only the cash they get for the cream or milk into consideration, but also the value of the milk in stock, and the returns to the soil? Prof. Arnold stated before the "Committee on Immigration and Colonization," that the best part of the milk, or the nitrogenous portion, that which builds up the bone and other structures of the body, is left after the butter is out; and also that all the elements of nutrition and fertility were in the skim milk. He now not only repeats this more emphatically, but goes further and says that butter is a mere luxury which chemists can restore for 10 cents a pound. Now what better profit can the farmer reasonably wish for than to receive from 18 to 25 cents for what is intrinsically

worth only 10 cents? The constant aim of the farmer should be to get as much money as possible for the removal of the smallest amount of fertility from his soil.

Prof. Arnold is arguing the questions entirely from a speculator's point of view when he says that it only pays to export the poorer qualities of our butter. According to his idea, if a dealer could buy inferior butter at 5 cents a pound and sell it for 15 cents, he would consider the dairy business a profitable one. The whole drift of his article is to make a big margin for the shipper, without taking the real business into consideration. Now if Prof. Arnold had the experience of a good many of our butter men, he would say that money is never lost on good, sweet, butter, but always on the poor qualities. I have now a letter in my pocket from England, in which the writer says that on account of the large supply of butterine which takes the place of poor butter, nothing in the shape of butter is wanted except choice qualities, which are always in demand, and for which good prices will be paid. Has the Professor an interest in a butterine factory?

He also says that butter depreciates in value by keeping. So does cheese if it is kept over its time. Butter is ready to go into consumption as soon as it is made, and then it is at its best value, and should be sold and can always be sold for a good fair price. Cheese must be held at least 4 weeks before it is fit to go on the table, and therefore the creamery has a march of just 4 weeks on the cheese factory on the use of the money for that time.

The speculator's business of buying up the butter through the summer and holding it for higher prices in the fall has nothing to do with the manufacturers. These are two distinct lines of business, and it is perhaps in every instance acting unwisely for the manufacturer to hold his goods after they are ready for the market, and this is particularly so with butter. Butter being at its highest value immediately after it is made, and cheese not until it is from 4 to 8 weeks old, it may perhaps after that time depreciate as rapidly as butter, which will be seen from the following quotations from a Montreal circular which came to my hands the other day:

"Western factory cheese, Sept. make, 11 to 11½ cents. Do., earlier makes, 8 to 9 cents."

This does not show that cheese is exactly the jewel to keep. After Prof. Arnold has given us, as above stated, the value of skim milk, he says in his article on "Canadian Butter for Export," that the by-products of butter are a little more than those of cheese; but aside from this 1-i-t-t-l-e difference, 1 lb. of butter should sell for as much as 2½ lbs. of cheese. He further says that now 22 cents was an outside price for butter, while the cheese from the same milk would bring 30 cents. Now is this a fair statement? Creamery butter for the whole season has averaged 22 cents, but surely the cheese has not averaged 12 cents per pound, or equal to 30 cents for 2½ lbs. for the season. The fact of the matter is this, the farmers who patronized the creamery got about 7 cents for the cream contained in a gallon of milk and had the skim milk besides, which is 3 cents per gallon in the market (but is worth far more nutritively according to the Professor's own calculations), so that the creamery gave the farmers in cash, in stock and fertility to the soil, 10 cents for every gallon of

milk, which is more than any cheese factory has done, at least in this part of the country, where they have to run under similar circumstances. It must also be remembered that the creamery can be run all the year round.

If the two branches of dairying are fairly and impartially represented, I am satisfied, and the country will soon be, too, that butter has quite as good a show as cheese.

Co. BRUCE, ONT.

M. MOYER.

Principles of Butter-Making.

Butter-making, so far as a knowledge of its principles is concerned, is still in its infancy; and there is no field of agricultural investigation which offers a wider scope for the ambitious experimenter. However, many important questions have recently been settled, a knowledge of which is required before you can intelligibly comprehend the answers to the numerous questions which we are almost daily receiving. By an understanding of the right basis or starting-point, our interrogators can easily reason out for themselves many problems which are constantly perplexing them.

Until recently many theories were indulged in concerning the fat globule, and each butter expert followed the system which most harmonized with his theories. Late microscopic investigations have settled many disputed points, and are destined to revolutionize the existing methods of manufacture. These discoveries are more or less in harmony with the numerous experiments which have been conducted in different countries.

It has long been known that the fat globule is encased in an albuminous envelope, and the theory was that this covering should be ruptured by violently churning and working, the broken membrane being severed from the globule and removed from the butter by washing. The apparatuses and temperatures employed were such as would best effect this result. It is now known that the membranous sac which encases the fat-layers of the globule can and should be preserved intact, and if broken the flavor and the keeping qualities of the butter are impaired. In fact a majority of the globules are not broken by working. This rupture may also cause the butter to turn white by exposing the innermost layer of the globule, which, being composed of stearine,—the same composition as beef tallow—is nauseous and white; but whiteness may also be caused by churning at too high a temperature, whereby the white caseinous substance in the cream adheres to the globules. The outer layers are composed of oils which give the butter its delicious flavor; but when the membrane is broken, and these oils become mixed with the hard, tallowy substance, the butter is then "grease." This condition being caused by violent churning and working, the latest practice is to churn gently, using a churn which will do the least violence to the globules, and to avoid working as much as possible.

EFFECTS OF TEMPERATURE.

It is also a pretty generally recognized fact amongst some of the highest dairy authorities that sudden and extreme changes of temperature injuriously affect the milk, cream and butter, as they favor the development of organic germs from contact with the atmosphere; so that ice in the dairy "must go," if the flavor

and keeping qualities of the butter are to be retained. There is, however, still a good deal of dispute about the keeping qualities of butter made by the different systems.

SEPARATING THE CREAM.

The understanding of this question also depends upon a knowledge of the fat globule. Of course the globules must be lighter than the milk, else they cannot rise. All other conditions being equal, the largest globules rise first, and some do not rise at all. Hence the larger the globules the better the cow as a butter producer. The Shorthorn and the Jersey give the largest globules; the Hereford and the Ayrshire the smallest, the other breeds being intermediate. The globules that rise last make the worst butter. The principle of separation by centrifugal force will now be readily understood. When milk is made to revolve rapidly in a cylindrical vessel, the globules, being specifically lighter than the milk, must move towards the centre; and the percentage of cream removed from the milk depends upon the speed of the separator. It has not been found profitable to make the velocity so great as to separate mostly all the globules from the milk; but considerably more can be profitably separated than by the setting systems.

The question of deep vs. shallow setting being dependent upon temperature, is more complicated. If two vessels, a deep and a shallow, are filled with milk, the temperature of both being the same, the globules will reach their journey's end sooner in the shallow vessel. But now let us consider the effect of temperature. When heat is applied to milk, the fats of the globules expand and become lighter more rapidly than the water and the other constituents of the milk, and the cream rises more slowly, the specific gravities being nearer alike, when the temperature is not changing. Water being a better conductor of heat than fats, the cream is somewhat behind the water of the milk in expanding or contracting, so that the specific gravity is less under a rising temperature, and greater under a falling temperature, there being little difference in the gravities of the milk and cream under the same temperature, and the rising of the cream then becomes very sluggish. From these facts it appears that the higher the temperature at which the milk is set, the less should be the depth; and the lower the temperature, the greater the depth.

Many facts have been ascertained by analysis and microscopic observations; but investigators, as a rule, are not satisfied with such tests—they must double the value and weight of the evidence by practical tests. When the practice corroborates the other evidences, the knowledge thus acquired is termed science; otherwise the term theory is used. The first experiments or observations may decide that a certain thing is so; but it usually requires the scrutiny of practice to obtain accurate figures with regard to it. By a proper understanding of the foregoing principles, you will readily be able to give a reason for most of the following

RULES FOR BUTTER-MAKING:

1. The best churn is the one that will agitate most without pounding, at the same time creating a free current of air in the churn.

2. The cream should not be churned into a mass of butter, but the churning should cease when the butter gathers into small particles, say the size of apple-seed, so that the buttermilk can easily be separated from the fats by washing.

3. The butter should be thoroughly washed, and pure water or brine should be used. Working lowers the flavor and injures the keeping qualities.

4. Where cream is setting, the surface should not be exposed to an atmosphere much warmer than the cream.

5. The greatest percentage of cream can be got from milk that undergoes the greatest variation of temperature. Milk set at 90° and lowered to 60° will produce about the same quantity of cream as milk set at 70° and lowered to 40°, the variation in both cases being the same; but the former will produce better flavored butter. Farmers should therefore set their milk as warm as possible and let it cool to 50° or 55°, afterwards not allowing the temperature of the cream or butter to vary much from these figures.

6. When farmers use the skim-milk for feeding stock, the advantage of the system of separating the highest possible percentage of cream from the milk is greatly over-estimated.

7. More butter can be obtained from churning the milk than from any other system except the centrifugal.

8. A much larger percentage of cream can be obtained from newly calved than from old calved cows.

9. The number of pounds of milk required for a pound of butter varies from 20 to 30 according to the richness of the milk and the system of separation of the cream.

10. "Heavy milk" is a term applied to milk the cream of which rises slowly, leaving no distinct line of demarcation between the milk and the cream. Such cream is very thin. Heavy milk is produced by one or more of the following three causes: (1.) In some breeds, such as the Ayrshire, the fat globules are small and specifically heavy, so that they either rise slowly or not at all, and many rise only partially; (2.) In all breeds the milk becomes heavier as the milking period is prolonged, especially when the cow is in calf; (3.) All milks tend to become heavy when allowed to cool before setting.

11. If set at the same temperature, say 80° to 85°, milk set in ice will produce 10 to 15 per cent. more butter than when cooled with water to 50° Fahrenheit.

12. By centrifugal separation about 12 per cent. more butter can be produced than by cooling to near freezing point by ice, and about 30 per cent. more than by cooling to 50° with water.

13. Butter, if removed from the churn, without working while in small granules, can be preserved fresh and sweet in brine almost indefinitely.

The three requisites of Dairying—A dairy man, a dairy farm, and a dairy herd.

A dairyman in New York State feeds his skim and buttermilk to his cows, and declares that the same quantity of milk that it requires to make a pound of pork will make a pound of butter. Surely pigs in the dairy must now go.

Stock.

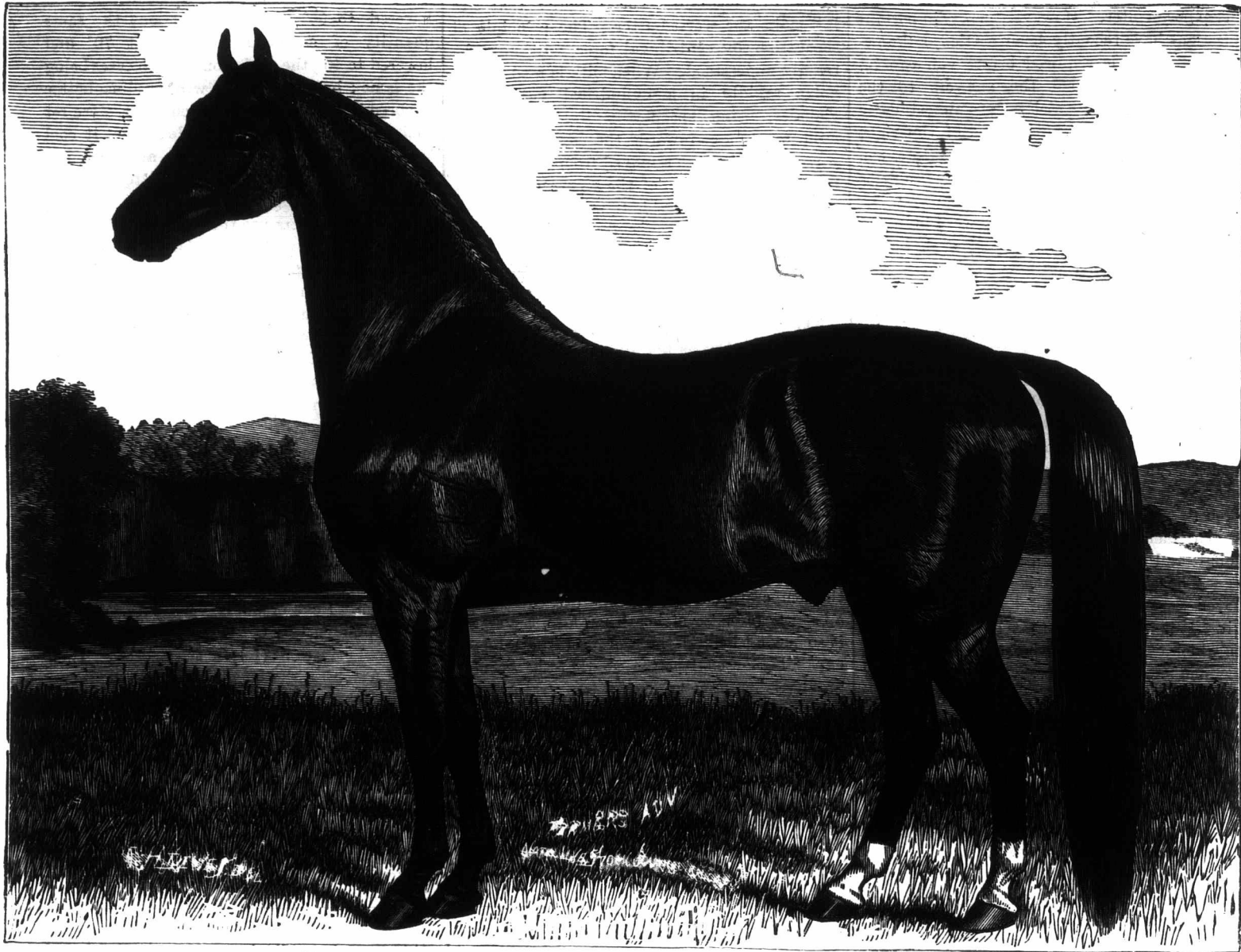
A Road and Carriage Stallion.

The stallion in the accompanying illustration is sired by "One-Eyed Lapidist," he by imported "Lapidist;" 1st dam Harp's "Durock," 2nd dam by "One-Eyed Messenger." The subject of the sketch carried off 12 first prizes and 7 diplomas as a carriage horse, also first prize at Western Fair last year in three year-old roadster class. His sister won first prize and diploma at this Fair. These horses attracted a great deal of attention from farmers and breeders, as they were considered to be

Don't Neglect the Breeding Sow.

A great many of the ailments of pigs arise from improper attention and management while young. Two or three weeks before the sow farrows, put her in a quiet pen by night, letting her run during the day, if the weather is warm. She should be well accustomed to the place where she is to drop her young, and should be fed separately and left unmolested in every possible manner. Leave the pen door open, giving her free scope in the yard. Treat her in such a manner that she will always welcome your approach, and make her feel that the pen is her home. Feed her liberally, but

does not crush the litter. Give little or no grain the first week or ten days; but change her food frequently, giving skim milk, not sour, with other wholesome slops, and scalded middlings. When the little ones are two weeks old, fix a shallow trough in some corner where the sow cannot get at it, feeding them sweet milk at first, and after a day or two add about three tablespoonfuls of oatmeal to a pint of milk, increasing the quantity daily. Feed regularly to prevent scouring. After 10 or 12 days add oat or pea meal, or boiled barley, to sow's ration. Wean in six weeks; alter shortly after, and spay in a week or ten days after weaning. Don't remove all



The Thoroughbred Stallion "LAPIDIST DUROCK."

amongst the best models in the show ring. He stands over sixteen hands high, and weighs 1200 pounds. This is the stamp of horse which farmers should cross with their larger mares to secure good saleable horses, as this breed will add spirit and stamina to the offspring. The stallion is owned by Messrs. Van Patter & Locker, Aylmer, Ont.

It is said that the reason why Kentucky has produced faster trotters than any other State in the Union is because this is the famous region of blue-grass.

don't pamper her, giving her plenty of succulent food, if she has not the run of a good clover pasture. When the farrowing time arrives, see that her bed is clean, dry and soft. Arrange the corner of the pen where she lies in such a manner that the little ones can escape under a railing or other aperture so as to evade crushing. Don't disturb her until all is over, and afterwards don't feed her hurriedly, but when she gets up to walk about, give her all the slop and milk she will drink, pouring in at a time no more than she will drink up clean. Feed well evenings to make her rest quietly nights. Watch how she lies down, and see that she

the litter at once, but let the weaker ones suck a while after the rest are weaned. Regular feeding, plenty of exercise, pure water, and clean, ventilated quarters, are necessary to health and growth.

The champion bullock at the recent Norwich (England) Fat Stock Show was a cross bred from a Shorthorn dam by Hereford sire, and is pronounced by the English Live Stock Journal "the heaviest animal of its age ever known." Its age was 1,279 days and weight 2,588 lbs., showing almost exactly a gain of two pounds per day from birth.

Holsteins vs. Jerseys as Milk and Butter Producers.

It has been said that the best way to treat a boom is to puncture it. This loathsome exuberance on the social body then gets cured by collapse. Well, the "Record" boom appears to have been punctured, and Common Sense, with Moderation as his adviser, is king again.

For several years reports have been resounding through the agricultural press as to the quantities of milk produced by famous cows. We objected to the fairness of these competitive tests, knowing that every sensible and honest farmer demanded a record of the quantities of food consumed, or the cost of production. The cow which can stand the highest pressure of stimulating food for a few weeks is not necessarily the most profitable animal, or the most desirable basis upon which a herd should be built. These boomed up "records" were evidently calculated to mislead; and it is surprising that no attempt has been made to establish a relation between the quantity of milk produced and the length of the pedigree. These revelations are interesting and profitable for speculators; but what the farmer wants to know is the relation between the food consumed and the dairy products, as well as accurate information with regard to climatic influences and other circumstances.

In some recent reports we see a movement in the right direction, notably a practical experiment conducted in England with regard to the respective merits of the Holsteins and Jerseys. We do not present the results for the purpose of creating the impression that a few tests will be of any great service, but of showing that they were conducted on correct principles, and are valuable so far as they go. The *Advocate* will not be behind any of its contemporaries in publishing or supporting any records or other experiments so long as they are conducted on sound principles; but it shall never stoop to countenance any tests which are conceived for speculative or fraudulent purposes.

Two Dutch and two Jersey cows, of the same age and the same time after calving, were fed on correct rations for fourteen days. The former gave 962 pounds of milk and consumed 1,140 pounds of food, being one pound of milk from 1.17 pounds of food, the yield of butter being 23 lbs. 13 oz., or one pound from 47.8 pounds of food. The Jersey cows gave 542 pounds of milk, and consumed 766.5 pounds of food, being one pound of milk from 1.41 pounds of food, the yield of butter being 23 lbs. 3 oz., or one pound from 24 pounds of food. This test was made in July, but it was repeated in November with similar results. The cows were not stuffed for "records," but were rationally fed.

An experiment of this kind, in order to be complete, should extend through a whole season, and the milk at various intervals should be analyzed for the purpose of ascertaining its cheese making properties. We hope the system will be continued and improved by all practical feeders and dairymen. So long as the experiments are only influenced by honest motives and a desire to investigate and publish the truth, we will be willing to support any breed or kind that can be proved to be the best to meet our requirements.

The Farm.

Tricks with Potatoes.

Certain advertised alleged enormous yields of potatoes from single pounds of seed, in competition for prizes offered by a commercial manure company, are credited in the circular of the firm to "careful cultivation and liberal use of a high grade fertilizer," says the *N. Y. Tribune*. A sample statement is that "one bushel of seed at this rate would produce 2,558 bushels; and eight bushels—the amount of seed commonly used per acre—would produce 20,464 bushels." This showing is characterized by Mr. Stewart as "an attempt to extort money by false pretences"; and he criticises "those agricultural journals which mislead readers by commenting favorably upon such fraudulent facts?" He reminds the unsophisticated that by "tricks of the trade known to gardeners and florists" one tuber may be multiplied almost indefinitely. "A potato is cut into single eyes and planted in a hot-bed. As the sprouts appear they are slipped off and transferred to pots and cut into slips, which are rooted in other pots, and these are planted out in the beds. In this way many hundreds of plants are procured, which in the aggregate yield the enormous quantities reported. To claim this result as being due to any special variety or to any special fertilizer is a gross fraud which should be severely rebuked."

When one form of fraud is suppressed, usually makes room for another, and this is a fair example. Analyses of fertilizers have exposed the vendors of adulterated stuffs, but such people are only driven into other avenues of vice. Potato fertilizers, as well as fertilizers for every other kind of agricultural plant, are still sold, and will continue to be so long as farmers remain ignorant of the fact that it is the character of the soil that decides the fertilizer to be used, the kind of crop being a matter of inferior importance. Canadian farmers should endeavor to check the importation of these frauds.

Permanent Pasture.

No. III.

How the soil should be prepared is what is left to be considered. Many farmers have had "poor catches," and they blamed the seeds or the seedsmen, if not the unsuitability of the country for permanent pastures. It cannot be expected that an undertaking which pays such large dividends on the original investment, and which costs so little effort after the second or third season, can be engaged in without an expenditure of thought, labor, and money. However, it does not follow that you should wait till you have all the conditions favorable before you establish your permanent pastures; but the more favorable the conditions the more profitable the investment.

In order to obtain the best results the land should be thoroughly drained, naturally or artificially. The selecting of a rich clean soil, and the putting of it in a proper mechanical condition, embrace the chief requisites. In many cases a last year's summer fallow will be most suitable; but land on which roots or potatoes have been harvested will do as well, if

the soil is clear of weeds. The land should not be plowed in the spring, for a firm soil is required; but the surface should be lightly cultivated and thoroughly harrowed. These operations should not be performed until the land is dry, and if there are many clods or lumps it should be harrowed and rolled alternately until the soil is thoroughly pulverized.

The reasons why these conditions are necessary are obvious. The clovers being deep rooted, require a deep soil and free from stagnant water; and many of the shallower roots of the grasses being microscopic, require a fine, compact surface soil, so that the fibres will come into contact with the particles of earth. It is also important that the land should be well levelled before sowing, for then the harrow will not cover some of the seeds too deeply, preventing their growth, and leaving the higher places partially bare, with the seeds imperfectly covered. The seeds should not be covered deeper than one-fourth to one-half of an inch; when deeper very few will germinate, as has been proved by direct experiments. Another reason why the soil should be firm is because of the immense quantities of moisture which are evaporated from the leaves, and the supply has to be furnished chiefly from below. Moisture will not ascend if the soil is too loose; but if too firm, for want of drainage, the ascent of moisture will then also be too scanty. As a rule, however, permanent pastures will flourish on any soil which will produce a good yield of fall wheat.

A great deal has been said and written about "foster" crops. We always thought that the office of a foster parent was to supply nourishment, not to abstract it. If the soil is very rich, it is possible that it will contain nutriment enough for both grasses and foster crop. In some seasons, however, you will find an advantage, especially to the tender plants, in sowing three or four pecks per acre of barley or oats with the permanent pasture seeds. If the weather turns hot and dry while the plants are young and tender, they will be benefited by a foster crop, which will afford them shade and shelter; but if the land and weather will permit you to sow early, so that there will be little chance of early heat and drought, then a foster crop may prove more injurious than beneficial.

One of the great sources of disappointment has been the difficulty in getting the seeds evenly distributed when sowing, owing to the great difference in weight of the several varieties. If mixed, the heavier seeds will fall near the feet of the sower, and the light will be scattered in different directions by the least puff of wind. Then there is the difficulty of keeping the seeds well mixed, for the lighter ones will keep working to the top with every shake of the vessel from which the seeds are sown. For these reasons the heavier seeds, such as the clovers, should be sown separately, or, if all the seeds are already mixed, divide them into three parts, sowing each part separately—lengthwise in the field, crosswise, and then angularwise. A skillful sower is necessary, and if you can hit upon a dry day before rain you are a lucky fellow.

Before establishing permanent pastures on a large scale, you should commence moderately, and then you will be able to ascertain for yourself to what extent you can make it a paying

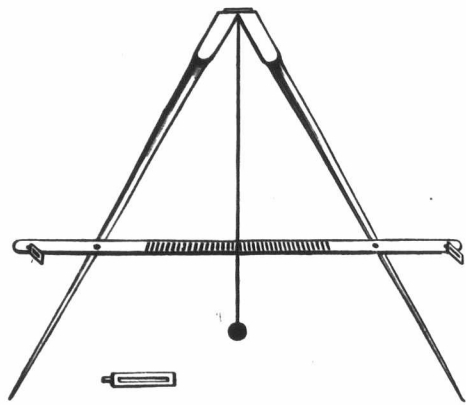
enterprise. It would be well to select and prepare your soil two or three years before you seed down; but meanwhile you should sow a plot, embracing a few acres, convenient to the stables, which you will find useful for calves, or for turning the horses into during nights. If you have a piece of land which is too hilly or heavy, or otherwise unsuited for cultivation, you will find it profitable to turn it into permanent pasture. A location well defended by belts of trees is preferable.

No return should be expected from the permanent pasture the first season, for the grasses will not be sufficiently grown to be used for soiling, and it should be pastured as little as possible in the fall, as the tramping of the stock might injure the tender grasses; and if the grasses are eaten off too closely the roots will not have sufficient protection against the inclemencies of the winter.

Cheap Drainage Level.

The accompanying cut illustrates a drainage level, or a level that may be used for any purpose whatever. You can easily make this instrument yourself, and if well made, it will be as accurate as it is simple.

Our artist has drawn it with a hinge on the top and bolts in the cross piece; but these are



only necessary when you wish to take it apart for convenience in carrying or storing. You will not even require a spirit level to adjust the parts when you are making it, but such a level would be convenient to test its accuracy.

Let the string hang from the exact centre, and make the distance from that point to each of the bolts the same. Place the instrument in such a manner as will let the string fall exactly in the centre between the two bolts, and for greater accuracy, see that the distance between each of the bolts and the point where the string joins the weight, is the same; then mark the centre on the cross piece which will be under the string, and you may graduate the scale to suit your purpose. Arrange the cross piece in such a manner that the part at the bolts will not project from the legs, causing the cross-piece to interfere with the free action of the string.

The sights at the extremities of the cross-piece explain themselves, being used for taking the level of the field. The small cut represents one of them more accurately. The slits through the sights may be say one-eighth of an inch wide and two inches long. The ends of the legs are made sharp so that they can be firmly planted in the ground while you are levelling, but when you are digging the ditch, you may use the instrument, as a means of getting the

proper fall, by fixing the legs into a straight-edge ten or twelve foot pole, using it along the bottom of the ditch. This will give you the fall with greater accuracy than by using thick extremities without a pole. A convenient distance between the extremities of the legs would be about 3½ feet.

Mr. H. S. Losee's System of Farming

Mr. H. S. Losee, of Norwich, an illustration of whose dairy barn appeared in our last issue, is one of the most successful farmers and dairymen in the Province. His success is almost entirely to be attributed to his own exertions and forethought, and his advanced system of farming is the offspring of his own experience, aided largely by what most farmers decry as "book-farming."

His parents emigrated from Dutchess Co., N. Y., on the Hudson River, in 1811. They, with their family, were the earliest settlers, and had to undergo the privations incident to backwoods life. The portion of the extensive possessions which fell into the hands of the subject of this sketch consists of 105 acres, the soil being a clay loam with a subsoil of heavy clay; but about 14 acres of the farm is a vegetable soil.

"Is it not usual," inquired we, "for the big farmers in this section of the country to have over 100 acres of land?"

"Yes," said he, "but I don't measure my land by acres. Fifty acres of my farm is thoroughly underdrained, and I wouldn't plug up those drains for the best 100 acres in the county of Oxford. There may be more renown in broad acres, but I want deep acres, because there is more money in them. I can't afford to spread my operations over two acres when I can make more money out of one with less labor.

DRAINAGE.

He then went on to say that his drains were four rods apart and three feet deep, with 6-inch tile for the mains, and 3 and 4-inch tiles for the laterals. He asserts that some of the drains paid the cost of construction the first year, and at the end of the second year none of them failed to return all the money expended. On his vegetable soil, which was wet, waste land previous to drainage, the drains were dug two rods apart and 2½ feet deep, and now he regards this the most productive portion of his farm, maturing two crops of timothy and clover each season, and yielding over four tons per acre. This was lately broken up and seeded to orchard grass, sweet vernal, creeping bent, timothy, and alsike, which he intends to use entirely for soiling.

PASTURING AND SOILING.

He pastures 15 cows and 12 young cattle on 8 acres, making up the deficiency of grass with soiling crops. Rye is sown in the fall, and is used for soiling in April, and usually the first week in May. He commences cutting as soon as he can get a swarth, and the rye season lasts 8 to 10 days. His orchard grass comes in almost as early as the rye, and lasts about three weeks, and then the red clover takes their place into the first week of July. He sows a mixture of peas and oats at three different intervals between the last week in April and May 20th, which furnishes soiling food until the corn comes in, thus having abundance of

green fodder until the arrival of frosty weather. After this the succulent foods are continued in the shape of mangels.

WINTER FEEDING.

His fodder is all cut, the corn stocks, hay and straw all being mixed in equal proportions before being fed to the cows. The other parts of the rations consist of mangels, bran, and pea and oat meal. The meal and bran are moistened and mixed with the cut stuff. He finds no money in low feeding.

RAISING CALVES.

He feeds new milk for 10 days, changing to skim milk or to whey. As he feeds scientifically—that is, supplying the constituents taken from the milk, the rules we gave in our last issue may be followed. He uses ground flaxseed and oatmeal cooked. He never lets his calves suck. He keeps them in the stable during fly times and soils them.

HIS SYSTEM OF ROTATION.

Commencing with the meadows, broken after the second year's crop, he sows corn, followed by oats or barley, and finally fall wheat, which he seeds with timothy in fall, and clover in spring, mixing a little timothy with the spring sowing, and harrowing it in.

HIS DAIRY.

In addition to our last month's remarks about Mr. Losee's dairy, we may add that he keeps 103 hogs, which feed on the whey from his factory. He turns them into a field of red clover, keeping them on one patch at a time, by means of hurdles, and moving the whey trough from place to place. In this manner he enriches and cleans 6 to 8 acres of his farm every year, and prepares the land for an enormous crop of corn. Hereafter he intends to put rings in the hogs' noses to keep them from rooting up the clover.

Mr. Losee has also a fine fruit orchard and sugar bush, the former being protected by wind breaks of spruce and pine. The proprietor of "Prospect Farm" is an advanced thinker on the science of agriculture and dairy, and he persistently goes against the advice of his neighbors in his enterprises. This is likely the reason why he gets so far ahead of them.

Twenty-five distinct species of grasses, counting upwards of 1,000 separate plants, have been found on a square foot of turf, and yet many farmers are afraid to sow half a dozen varieties.

It is almost appalling, says the English Live Stock Journal, to note the extraordinary magnitude the American agricultural imports have attained. Ten years ago we were paying over £63,000,000 to the U. S. for the produce of their farms, and in 1881 the sum was not far short of £100,000,000 sterling. There was a slight downward tendency in 1882, but still in that year our bill to America exceeded £81,000,000. For the past ten years the average has been about £75,000,000. This is a vast sum, certainly, and its magnitude becomes all the more fraught with significance when it is observed that it is more than double the amount we obtain from America for goods exported to that country. The annual value of our exports to the U. S. does not much exceed £32,000,000, so that the Americans have the best of the exchange to the extent of about £33,000,000 a year.

The Apiary.

Spring Management.

BY G. B. JONES.

Having placed our bees upon their summer stands, and so arranged that each colony has a good laying queen, we should proceed to stimulate brood rearing to the highest possible degree, to build up our colonies to great strength in time for the early harvest. Spring feeding stimulates the bees to breed faster than they would if left without fresh stores till the flowers open, and thus more bees are ready to forage when the flow begins.

For stimulative purposes candy should be used until the honey flow is near, and the weather warm enough for the bees to fly without being chilled. Place the candy outside the division board, or upon the cushion, whose corner have pressed in so as to give the bees a passage way to and from the feed. Later, a syrup of two lbs. of water to one of sugar may be safely fed; or, if the honey gathered be sufficient to sustain the bees, or nearly so, water merely sweetened will suffice. I advise granulated sugar at all times for making syrup, though some authorities recommend the cheaper grades on the score of economy. The quantity fed should depend upon the honey flow; care being taken that the bees are constantly well supplied with stores in their combs, and that they be not allowed sufficient to crowd the brood chamber. Feeding should be continued till the bees can gather enough honey to sustain breeding, and have a little to spare. The syrup should be given in feeders; during the day, when robbing is likely to be induced, they should be placed inside, and out of the reach of stranger bees, unless they be robber proof, in which case they may be used at the entrance. The evenings, when sufficiently warm, afford the best opportunities to feed. After the bees have ceased to fly place a feeder at the entrance of each hive and fill it. If one filling is not enough it may be re-filled before dark.

Having established fast brooding, let us take advantage of it, and force "building up." After each strong colony has been fed about ten days, and the weak ones fifteen, place the combs containing the most brood on each side of the brood nest, and those with least, in the centre. Repeat this a week later; and if the colony be crowded for room, place an empty comb, or one with a little honey at the top, in the centre of the cluster. Repeat this every three days when the bees can stand it, till the colonies are upon the full number of brood frames. After some are built up, take cards of hatching brood from them, and give to the weak ones, and so help them along; put these cards in the centre of the weak cluster, but see that neither the queen nor any old bees accompany it. Supply its place by an empty comb or sheet of foundation. Continue shifting the combs till every cell in the brood chamber is occupied.

Take special care that the cushions are well tucked down, and that the entrances are contracted, except during warm spells; that the smoker be sparingly used, and that no pieces of comb or traces of honey or syrup be left within reach of the bees, lest robbing be induced.

ROBBING.—Should this once become fairly started, contract the entrance so that but one bee can pass at a time, and sprinkle the bees thoroughly with water by a fountain pump or a watering can; or place a bunch of loose hay the size of a bushel basket over the entrance, and saturate it well with water. If the trouble does not cease in half an hour, interchange, if possible, the position of the robbing colony with that of the robbed one.

BUYING BEES.—The best time to buy bees is during the first fortnight in May; or, if the spring be unusually early, the last week in April will not be too soon. By this time all fear of spring dwindling will be over.

If at all possible, buy your bees in the frame you intend to use; they will be worth two dollars more to you than in any other, and two and a half if in the same hive. Next to this try some other movable frame and transfer, and, if necessary, pay one dollar more than for the same bees in box hives. In buying bees it is better to choose medium sized colonies with good, straight worker combs, than strong ones on old, dirty or uneven combs. The value of the queen is best determined by the amount of brood present in proportion to the size of her colony; that of the bees by the quantity of honey present in proportion to their strength. But remember that much honey and much brood cannot exist in the same colony prior to the clover harvest. Better to have much brood and little honey.

The best general purpose bee for the beginner is the Italian.

MOVING BEES.—Prepare the box hives by raising them from their bottom boards; lay a factory cotton cloth under each, set the hive down again and secure the edges of the cloth to its sides. Of the frame hive remove the cover and place the cloth over the frames and fasten to the sides of the hive; fasten the frames securely to their places. Load the hives upon a spring wagon or lumber wagon with hay rack, and four feet of hay or straw on it: Have the cloth side of hive up, and no cover on, and combs running lengthwise of wagon. Pack the bees at night, and let them fly as soon as convenient after they are on their new stands, but never before. Before opening the entrances place a conspicuous object before each, as directed last month for "carrying out," to cause the bees to locate themselves.

Transferring, swarming and dividing next month.

Concentrated fertilizers are extensively used in the United States so far west as Ohio, and are rapidly pushing their way westward. It is surprising that these fertilizers are gaining ground so rapidly amongst the farmers, when it is considered that so many of them are adulterated and are applied without system and with little knowledge of their composition and the special requirements of the different kinds of soil. Surely it would be cheaper to "go west" than to cultivate such soil and study its requirements. Canadian farmers should profit by these movements.

"I have taken the *ADVOCATE* for the last eight years, and intend to continue it so long as I can see to read it."

AMHERST, N. S.

SUBSCRIBER.

Garden and Orchard.

Small Fruits.

BY W. W. HILBORN.

There is so much difference in soils that it is impossible to give any one plan for working and preparing for planting that will do in every case. Sand or gravel loam may be ploughed in spring, and if manure can be had that is fine enough to work in nicely with the soil, it should be spread on after ploughing and well harrowed in. Clay loam should always be ploughed in the fall, and in spring it should be well cultivated with a two horse cultivator. As soon as it is dry enough not to bake, spread on manure and give thorough harrowing.

If it has not been already underdrained, do not fail to have it well drained before planting.

Any soil that is rich enough to grow good corn or potatoes will grow good small fruits.

Success does not depend so much on having the soil made very rich, as it does on giving good care and thorough cultivation after planting. Many people are afraid to plant until they have worked the land enough to germinate all foul seeds, but it is not necessary. If it has been worked enough to kill all seeds before planting, your plants will not get worked as much as they require. All who have grown small fruits or vegetables know how apt we are to leave cultivating and hoeing until the weeds begin to grow.

The constant stirring of the soil is what is required to give the best results; hence I regard weeds as friends to some fruit growers, instead of enemies.

Any soil that is rich enough to send up weeds very fast is rich enough to grow first class small fruits; and if cultivating and hoeing is done often enough to keep them down, your plants will grow very rapidly; while if there were no weeds to fight, they would not be apt to get the cultivation often enough, and so would not do so well were the land ever so rich. Remember that it will not take as much time to cultivate and hoe the land twice before weeds get up, as it will to clean them out once, if you allow the weeds to get up several inches high before working.

In planting all small fruits, shrubs or trees, be careful never to allow manure to come in contact with the roots. There have been many failures from this cause alone, and the blame has been thrown on the nurseryman who supplied the plants. It is poor economy to buy cheap plants, as first class plants cannot be furnished at the low rates quoted by some nurseries, no more than a first class cow can be bought for twenty dollars. If you have good plants of your own, plant them; if not, and you know where you can get first class plants, do not send your order to some other man because he offers them at a lower price, because your labor and money will all be lost if your plants are not good and true to name. Competition in the trade has been so great that many have been induced to offer plants at a price that will not pay to furnish first class plants. They are grown too closely together, and the nurseryman cannot afford to take sufficient care in packing them so as to insure their arrival in first class condition. They will not sell at a loss, so that if you pay a very small price, do

not feel disappointed if you get very small plants, and cheaply packed.

There are but few places in the Dominion where small fruits of some kind cannot be grown, and by planting some of the most hardy, leading varieties, any man can soon learn how to grow them.

Currants and gooseberries may be propagated by making cuttings six to eight inches long of last year's growth. Plant in rows, leaving two buds above ground. Pack the soil very firm around the cuttings. Grapes can also be propagated in the same way, but the cuttings should be made in the fall, and buried in sand and kept from frost.

Early fall is the best time to make and plant cuttings of currants and gooseberries. I will give you my mode of growing from cuttings in time to try next fall.

How and When to Graft.

BY HORTUS.

Considering the great number of trees to be met with in our orchards, bearing comparatively worthless fruit, it seems strange that they should be tolerated any longer than an opportunity for grafting should occur. A visit to the markets in the fall of the year when apples are being gathered, reveals the fact that thousands of barrels are forced on the market of poor, short keeping apples, whereas the very trees which bore this fruit might, by grafting, yield the valuable winter varieties which always command at least a price that will pay the grower. Where trees have become old and stunted it would not be wisdom to bother with them. The younger the trees the greater are the chances of success, besides being more convenient to graft, and still a person may graft with advantage trees planted twenty-five years. Again we say there is no excuse for the quantity of worthless fruit annually foisted on an ignorant public (for the public is generally ignorant and unsuspecting). No tree that requires grafting should be allowed to stand a single day longer than necessary. Every farmer and fruit-grower should understand the art and practice it, and make it a point to teach their children.

There are several methods practiced, varying according to the condition and size of the tree. All styles agree in the one main point, the essential element of success, which is to fit evenly the bark edges of cion and stock.

Tongue or *splice* grafting is the mode most applicable to small stocks, or the branches of young trees from $\frac{1}{2}$ inch to an inch in diameter, or succeeding best when cion and stock are of corresponding size. Select those branches that divide the tree evenly from the centre, choosing say four or five main branches, or else leaving half to carry on the growth of the tree, removing them after the grafts have one year's growth. In placing the cion in position, choose such portions of the branches that when the graft grows it will take such a direction as may tend to best form a nice head for the tree, as well as to carry up its form in a uniform manner, as also to leave in time a spreading head that will make it convenient to gather the fruit. It is difficult to say, here, where you should place the grafts in the tree, as judgment and observation must guide the grafter. It

will generally be found right to graft the most convenient place. A little experience soon decides this.

For large branches from one to three inches in diameter, *cleft* or *wedge* grafting is successfully practiced. This simply consists in cutting the cion in a wedge form, splitting the sawed off stump and inserting a cion neatly on each side.

Rind grafting is a very successful method with large branches. This consists in splitting the bark on the side of the branches, raising it at the corner and pushing the cion made with sloping cut neatly under both edges against the bared wood of branches. When the cut is nicely made to fit the rounding stem, this is the safest mode of grafting, as it exposes the whole bark edges of cion to the branch.

For tying the grafts anything may be used that is strong enough to bind the cions and bark firmly. A useful wax cloth may be made by tearing old cotton shirting in strips a full inch, or rolling all up neatly and dipping in a mixture of melted resin, 3 parts; beeswax, 1 part, and tallow, or fish oil, 1 part. Saturate the cloth thoroughly, then squeeze the cloth well so as to remove superfluous wax, then pull apart and the strips all out singly, so that they may be easily used by tearing in pieces for wrapping around the grafts.

This briefly is the method used for making waxed cloth. But here we may remark that any mixture will serve to go around the grafts that excludes the air. Clay and cow dung evenly mixed answer capitally.

The time for grafting commences with the first of April, and may be practiced successfully all through the month, and, so long as cions are kept dormant, may be prosecuted successfully till the first week in June. I have often grafted pear trees when in full bloom and been successful. The cions should be kept in good order by being covered over with damp sawdust. It is the duty of every fruit grower to himself and to the country at large, that as soon as he finds a tree not bearing a good variety, to set at once about grafting it. Assuming that the grafts grow the first year they are put in, they will be in bearing condition in about three years; this would also depend on the variety, as some of course bear sooner than others. Grafting, however, has the effect of hastening the bearing season.

Promising *seedlings* may be early tested as to the quality of fruit they would bear by grafting their cions on bearing trees, and quality of fruit itself would be improved by further grafting. There is no doubt but the cion influences the stock and the stock the cions, but to what degree I have never been able to determine, but enough has been said to show the importance of the art of grafting, and the advantages to be gained by its immediate practice.

A correspondent of the *Country Gentleman* says that plenty of sawdust put around currant bushes saves them from the worms, and makes them bear larger fruit, as it keeps the ground moist and rich.

The Ohio Agricultural Experiment Station calls attention to the fact that in its experiments, potatoes raised from large, whole seed ripened nine days earlier than those from seed cut single.

Spring Gardening.

In laying out your garden, the first important point to be considered is whether it would be more profitable to cultivate a small area well, manuring it thoroughly, and taking two crops per season, or to embrace a large area, tilling it with horse and cultivator, and using less manure. In discussing this question it would be well to consider what course market gardeners pursue. In the vicinity of large cities, where rent amounts to about \$100 per acre, and the clear profits are not less than \$300, the system of thorough tillage, with the application of 75 to 100 tons of farmyard manure per acre, or equivalent in concentrated fertilizers, is adopted, and it is known that the business will not pay under methods of management inferior to this. This quantity of manure is more than many farmers raise for 100 acres of land, so that this method cannot be practically carried out, even if the garden consists of so small an area as one-fifth or one-quarter of an acre of land. The field method of gardening is the other extreme. We think that the average farmer's best plan is to make a compromise. Let the finer growths of vegetables be planted in a small garden, and the coarser kinds, such as potatoes, corn, cabbage, etc., in a select portion of the field.

A quarter of an acre will contain sufficient small fruits and small vegetables for quite a large family. This should be thoroughly tilled, well manured, and protected by trees. This can easily be tilled with spade and hoe, which implements possess many advantages over plow and cultivator, and the labor expended will not be greater. It is well known that the cultivator is a fruit pruner, as well as a weeder, and experiments made with pruning the roots of different varieties of vegetables, have shown that the growth has been stunted thereby. With the hoe this difficulty can be avoided. Another great advantage with the small garden is that after a crop of one class of vegetables matures, another class can often be raised on the same soil. In this case the land should be thoroughly drained, and some varieties grown as early as possible. When the land is once put into proper till it is easily kept clean, the vegetable season is greatly lengthened, and the quality of the productions materially improved.

The best soil for gardening is a sandy loam with a loose or gravelly subsoil, giving natural drainage. Black vegetable soils are well adapted to the growth of celery, cabbage, cauliflower, and carrots. Black soils are naturally the warmest, hence well adapted for early and rapid growth, but as such soils generally lie low, and cannot usually be so readily drained as sandy loams, the heat attracting power of the vegetable soils can seldom be utilized in practice. The farmer who brings his garden into the highest state of cultivation will decrease his labor in production as he increases the productions; and this discovery will be the greatest stimulus to him in the tillage operations of his farm. Before the dawn of science in agriculture it was said that the professional man needed his head, the farmer his hands, and the gardener his head, hands and feet. According to this you cannot be a well balanced man unless you do a good deal of gardening. In the modes of planting vegetables given below, we

go on the presumption that your garden is a small one which you cultivate with spade and hoe; in field cultivation the distances apart are regulated to suit your cultivator.

BEANS AND PEAS.—Plant in rows 18 inches apart, dropping the beans 2 or 3 inches apart in the row, and the peas 1 or 2 inches. Flat cultivation is best, marking the drills out with the hoe, and covering the seeds with an inch or two of soil. Tramp the soil moderately firm with the foot.

BEETS, CARROTS, AND PARSNIPS.—Flat cultivation is usually best, as with peas and beans. Plant in rows 15 to 18 inches apart, and thin out to 4 or 5 inches apart.

ONIONS.—Plant in beds, each bed containing 4 rows, 15 inches apart, and 12 inches apart in the row.

CUCUMBERS.—The best way to cultivate this vegetable is to work the land into ridges 6 to 8 feet apart, mixing the manure thoroughly with the soil 2 or 3 feet on each side of the centre of the ridge. The ridge may be 12 to 15 inches higher than the level of the ground. Sow the seed 4 or 5 feet apart, putting half a dozen seeds in each hill, and thinning out to 2 or 3 plants.

LETTUCE.—This will make a nice border around part of your walks. For early use plant the seeds in a box this month, keeping it in a warm place in the house, and transplant next month when the plants are an inch or two high. Place the plants in rows 15 to 18 inches each way.

Some gardeners recommend special classes of soil for almost every variety of vegetable, but this is not so important as the same soil finely pulverized, well drained, and generously supplied with well rotted manure, thoroughly mixed with the soil.

POTATO CULTIVATION.

There has been more money spent in experimenting with potatoes and in writing them up than with all other garden crops put together. The theory was advanced that money could be saved by cutting seed potatoes to one eye, and various other theories followed. Prof. Saa- born, whose experiments have won the confidence of the best and most practical farmers, has conducted a series of experiments extending over nine years, and the average for seven years is embodied in the following table:

PRODUCT PER ACRE.	
From seed of whole potatoes, large.....	221.1 bushels
From seed of whole potatoes, small.....	177.0 "
From seed of stem end of potato.....	148.0 "
From seed of seed end of potato.....	143.0 "
From one eye to hill.....	81.0 "
From two eyes to the hill.....	104.0 "
From three eyes to the hill.....	160.0 "
VALUE PER ACRE AT FIFTY CENTS PER BUSHEL.	
From large potatoes.....	\$113 50
From small potatoes.....	83 50
From stem end.....	74 00
From seed end.....	84 00
From one eye.....	40 50
From two eyes.....	52 00
From three eyes.....	80 00

This table agrees pretty closely with experiments at other stations, although there have been wide extremes in some instances, owing to the differences in the seasons, and the conditions of the soils. In a good season, and in a well prepared soil, the results have been relatively better from light seeding. Being guided by all the experiments which we have read, we would advise you to select your seed potatoes when you are harvesting the crop, choosing those hills which yield a fair quantity of large medium potatoes, and rejecting those which produce extremes in size.

Poultry.

Notes for Beginners.

BY L. G. JARVIS.

The first consideration in poultry keeping is the necessary house accommodation. In selecting the house the requisites are perfect shelter from wind and weather, sufficient ventilation with plenty pure air. Cleanliness and dryness are imperative. It is not necessary to build large and expensive houses. Poultry can be kept profitably in a small house, if it has the requisites above mentioned. A southern or eastern aspect is the most desirable, with plenty of glass to admit of sunlight. The roosts should be low, and placed so as to be perfectly free from drafts. The floor should be covered with dry earth, dust or coal ashes. The droppings should be removed often; a box containing dust or ashes should be placed so that the fowls can have access to it at all times for a dust bath.

The feeding of poultry is a very important matter. If kept in a small run they ought to be given soft feed, consisting of chopped corn, barley or oats, mixed with shorts and bran for their morning meal, and at night feed wheat screenings, barley, buckwheat, corn or oats. Do not feed more than they will eat up clean. All poultry should have a regular supply of pure water, and if kept in confinement a diet of meat twice or three times a week becomes indispensable. If the flock is small, the scraps from the kitchen will probably be sufficient, but if not, liver chopped fine will be found the cheapest and best. Fowls with a large range will need no animal food during the summer, as they will get plenty of worms and insects, and in winter a regular supply of green vegetable food, such as cabbage, is necessary.

The nests for laying fowls must be kept clean, and placed in a secluded position in the poultry house. Where hens are not allowed free range, the temptation to the vice of egg-eating is greatly enhanced. To keep them from contracting this vice, provide plenty of nests in order that they may not be obliged to crowd each other and thus bring about the breaking of the eggs. This is just where the egg-eating habit has its origin in nine out of ten cases. An egg is accidentally broken and the hens rush in to get a taste, and thus others may be broken. The chances are that every hen engaged in the raid will learn that shells can be easily broken, and the evil will be spread through the entire flock. Furnish plenty of artificial nest eggs; those made of wood and painted white are cheapest, and answer the purpose very well. It is well known that hens desire seclusion in time of laying. Give them this as far as possible, and gather the eggs often that your fowls may not be led into temptation.

It is indisputable that the more ample the range that the fowls have to run over at their leisure, the healthier, the thriftier and happier they are. A close, pent-up fowl-yard is not the place in which to grow fine birds, as a rule, though very many persons are obliged to keep their choice small flocks thus stinted as to space, and with the special care such owners are pleased to give their pets, they do passably well. But to rear chickens on the larger scale we must afford them room to run and grow in.

They should be provided in hot weather with plenty of shade to which they will resort during the heat of the day. If there are no trees or shrubs that will afford this shelter from the heat, a rough lean-to or open shed, boarded tight at the side facing the south and west, will be a good protection from the burning sun's rays, and prove a grateful spot for them during the "heated term."

Whatever else we do to render our birds comfortable and thrifty, we should not forget that vermin must be kept away from them, and there is no surer way to encourage the breeding of this pest of the hen-house, than by crowding all in a heap within the confines of a contracted, unclean building in winter.

SULPHUR IN THE NESTS.

The way sulphur operates in the nests of sitting hens is this: It is warmed by the heat of their bodies, and then gives out fumes something similar to what is produced by matches, and this odor is destructive to vermin in the nests; you need not be afraid of its injuring the young chickens; if you manage rightly, you should give the nest a sprinkling the first week of incubation, and repeat the dose during the second week; by the time the chicks are ready to come forth the sulphur will have rattled down to the bottom of the nest, and will not get into their eyes.

The hatching of ducks' eggs under the duck or hen is a matter governed by the kind of poultry one wishes to raise. If ducks rather than chickens are wanted, we should keep the former laying and set their eggs under hens. The hen, though a foster mother, is more careful of the young than their true mother; keep them from the water, which they are inclined to visit too soon and too long, for if they become wet from protracted playing in the pond or stream, by unguarded exposure to rain, or by wandering into the dewy grass after food, many will die.

It is no unusual thing to have fleas in a poultry house. Ordinary dust will not provide against them; it must be wood ashes or limestone gravel, better mixed; also mix with it flour of sulphur, and put under shelter where it cannot get wet. You will see your fowls burying themselves in it, raising their wings and throwing this dust into their feathers. This is a cure. It is supposed that the exertion of moving over and among the particles of grit is no more comfortable to the parasites than used to be a pilgrimage to a distant shrine with a half a pint of peas in the boots, and they give in. Thoroughly cleanse your house, then whitewash it thoroughly.

TURKEYS.

It is hardly necessary to say to the experienced that turkeys are exceedingly delicate during the first two or three months of their lives, and require very careful attention and management at this time; but after they are two or three months old they gradually become hardy, and will soon need less care than other poultry. For the first week after they are hatched there is no better food for them than a mixture of bread crumbs and hard boiled eggs chopped fine and moistened with milk. A small amount will answer the first week, and, besides, eggs are cheap in the spring. After the first week more bread crumbs should be used, and you may add a little cornmeal. Milk is very valuable and is generally plentiful during the grass months of spring and summer. It can be given as a drink. Turkey chicks are very liable to diarrhoea, which in many cases proves fatal, and the common feed of cornmeal entirely only serves to increase that tendency; a little barley or oatmeal mixed with the cornmeal after the second or third week, will obviate this difficulty. When young and tender they should have a good shelter to use when necessary, and should, as far as possible, be kept on dry ground. They are not ducks; water is fatal to them. A sprinkling of straw as chaff about their yards will be found beneficial until after they are five or six weeks old.

Veterinary.

Lameness in Horses.

No. III.

In our last issue we pointed out the nature of the different kinds of lameness which are liable to occur in the knee joints; we shall now show you how to detect lameness in the hock.

1. BOG SPAVIN.

There are two kinds of bog spavin, one being regarded as an unsoundness and the other not. When caused by an inflammation of the hock joint, a hard, fluctuating swelling, with heat and pain, is cognizable, in which case it is regarded as an unsoundness. This condition may be produced by overwork, sprains, fractures, bruises, rheumatism, or punctured wounds. That form of bog spavin which consists merely of a dropsy of the articulation is not usually regarded as an unsoundness in the coarser breeds. If the horse has a very upright or a very crooked hock, or if the hock is constitutionally weak, it is liable to spavin, for then concussion and over-exertion are more severely felt. In its acute form, the puffy swelling of the front and inside of the hock at the upper joint produces lameness with fever and loss of condition. In the chronic form these symptoms are less severe. In the acute form the inflammation may be reduced by water fomentations. The patient should rest as easy as possible, and the use of a high heeled shoe will be useful. Continued pressure of the swollen part by means of a truss should be avoided. In severe cases, when the extreme heat and tenderness have subsided, a blister may be applied. Also give a purgative, and put the patient in a box stall.

2. CURB

Is a swelling in the centre of and just behind the lowest portion of the hoof, about 4 or 5 inches below the point. At first the swelling is soft and doughy. If the os calcis, or point of the hock, is long, the animal is subject to curb. Curby hocks are sometimes hereditary, but they may be caused by a blow or sprain of the tendon. This form of lameness is treated by giving rest and applying fomentations or cold water bandages, and after the inflammation has subsided apply a blister of biniodide of mercury. If any swelling remains apply iodine, and in severe cases of lameness it may be necessary to fire.

3. BONE SPAVIN.

This is a very common source of unsoundness. It is a bony enlargement, usually situated on the internal and lower part of the hock, caused by inflammation of the cuneiform and metatarsal bones. This exostosis is rarely found on the outside of the hock joint. It generally terminates in a union of one or more of the gliding joints. When no enlargement is observable it is called occult spavin. This affection is hereditary in some horses, there being a tendency to osseous deposits, but it may also be caused by strains from hard or fast work, especially amongst young animals. Sometimes the enlargement is hard to detect, in which case both hind legs should be compared and viewed from front and behind, and examined with the fingers of the same hand. When made to move over in the stall, the animal will step on the toe. When taken out he will go lame for some

distance, and when warmed up will go apparently sound until he stands again. The inflammation may be reduced by fomentations, and then blister, or in severe cases it will be necessary to use the firing irons.

4. THOROUGH PIN.

This is a bursal enlargement, situated behind the hock on the upper portion, arising from a disease of the flexor tendon, or from dropsy of the sheath without the tendon being effected. The fluid can be pressed from one side of the hock to the other. Short, upright hocks are most subject to this condition. It is treated by fomentations, a high heeled shoe, and a spring truss, as in bog spavin.

5. CAPPED HOCK.

Another form of fluctuating swelling, situated on both sides of the point of the hock, is called capped hock. One form is called serus capped hock, which causes lameness, and sometimes abscesses are formed on the point of the os calcis. Another form, serus capped hock, is caused by pressure or violence, and is not regarded as an unsoundness. It is frequently caused by kicking in the stall or in the shafts of a vehicle. Treat as in bog spavin.

How to Buy a Horse.

An old horseman says:—If you want to buy a horse, don't believe your own brother; take no man's word for it; your eye is your market. Don't buy a horse in harness. Unhitch him and take everything off but his halter, and lead him around. If he has a corn, or is stiff, or has any other failing, you can see it. Let him go by himself always, and if he staves right into anything you know he is blind. No matter how clear and bright his eyes are, he can't see any more than a bat. Back him, too. Some horses show their weakness at tricks in that way when they don't in any other; but be as smart as you can, you'll get caught sometimes. Even an expert gets stuck. A horse may look ever so nice and go a great pace, and yet have fits. There isn't a man could tell it till something happens; or he may have a weak back. Give him the whip and off he goes for a mile or two, then all of a sudden he stops in the road. After a rest he starts again, but he soon stops for good, and nothing but a derrick can move him. The weak points of a horse can be better discovered while standing than while moving. If he is sound he will stand firmly and squarely on his limbs without moving them, feet flatly upon the ground, with legs plump and naturally poised, or if the foot is lifted from the ground and the weight taken from it, disease may be suspected, or at least tenderness, which is a precursor of disease. If the horse stands with his feet spread apart, or straddles with his hind legs, there is a weakness in the loins and the kidneys are disordered. Heavy pulling bends the knees. Bluish, milky, cast eyes in horses indicate moon blindness or something else. A bad tempered one keeps his ears thrown back; a kicking horse is apt to have scarred legs; a stumbling horse has blemished knees. When the skin is rough and harsh and does not move easily to the touch, the horse is a heavy eater and digestion is bad. Never buy a horse whose breathing organs are at all impaired. Place your ear at the heart, and if a wheezing sound is heard it is an indication of trouble.

Correspondence.

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. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the ADVOCATE, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c. per 4 ounces. 5. Non-subscribers should not expect their communications to be noticed. 6. No questions will be answered except those pertaining purely to agriculture or agricultural matters.

Voluntary correspondence containing useful and seasonable information solicited, and if suitable, will be liberally paid for. No notice taken of anonymous correspondence. We do not return rejected communications.

Correspondents wanting reliable information relating to diseases of stock must not only give the symptoms as fully as possible, but also how the animal has been fed and otherwise treated or managed. In case of suspicion of hereditary diseases, it is necessary also to state whether or not the ancestors of the affected animal have had the disease or any predisposition to it.

In asking questions relating to manures, it is necessary to describe the nature of the soil on which the intended manures are to be applied; also the nature of the crop.

We do not hold ourselves responsible for the views of correspondents.

SIR,—As you asked me last fall to give you an account of my feeding operations, I will now do so. I am feeding 20 steers and 20 sheep (wethers) on clover and timothy ensilage, cotton seed meal, and some cheap molasses (a pint a day to each ox, and the same divided between 5 sheep). They are doing well. The only trouble I find with my ensilage is that I have not enough of it, and I am obliged to find some hay. Just to give you an instance of the change in the yield of butter, when we substituted 2 feeds of hay for the same number of feeds of ensilage, we lost 5½ lbs. of butter in one week, the cows getting just the same amount of C. S. meal as before. I am more than ever convinced that ensilage is the thing for Canadian farmers; it is no doubt better than roots, and far cheaper. The ensilage, however, wants to be cut up fine; it packs better, and is much more easily handled. I have raised my last root for cattle, and shall stick to ensilage from this time forth. G. E. S.
FREDERICTON, N. B.

SIR,—About ten days ago, while driving a three-year-old colt at about six miles an hour gait, it struck the toe of its near hind foot against a lump in the road, and I think slipped or strained the coffin joint. Had some trouble to get it home. It would walk quite well for 50 or 100 yards, and then be very lame again. I turned it into a large box stall loose, and for the three first days it improved very much, and I thought got almost well, but since then has got very lame, and at present puts very little weight on the foot, and that altogether on the toe. Very little swelling or heat. What do you think is the trouble, and what is the best treatment. J. W. C.
AMHERST, N. S.

[The symptoms you give are not those of coffin joint lameness. It is likely a bruise somewhere in the foot. Poulitice the foot with hot bran or boiled turnips, and it will likely suppurate or discharge puss in a few days, after which the lameness will be removed.]

SIR,—Which is the cheapest for me to purchase, flaxseed at \$1 per bushel (56 lbs.) or oil cake meal at \$1.60 per hundred pounds, for feeding fattening cattle? I mix with chopped oats and barley, and can grind the flaxseed on my farm. A. K.
WILTON GROVE, Ont.

[Flaxseed at \$1 a bushel amounts to \$1.50 per hundred pounds, and is placed against oil-cake meal at \$1.60 per hundred. The question now to be decided is, Which of these foods has the highest feeding value? When sold weight for weight every pound of oil which is pressed out of the flaxseed is replaced by a pound of nitrogenous or flesh-forming material, as well as other substances containing properties of equal nutritive value. Now these flesh-forming substances, better defined by the name of albuminoids, have a higher feeding value in most all foods than the fats and oils; but in the case of linseed an exception may be taken, the oil being very digestible and palatable, and when fed to calves is the best substitute for the cream removed from the milk. If fed alone, flaxseed has too high a percentage of oil for feeding purposes; also when fed in too large quantities with other foods. When correct rations are fed, we attach the highest feeding value to the oil-cake, or oil-cake meal, in which a fair percentage of oil is left. Flaxseed has about

37 per cent. of oil, and under the old process of manufacture the percentage left in the cake is 8 to 10, while in the new process not more than 2 or 3 per cent. is retained. If you feed hay and good straw with the oats and barley, we think that oil-cake is much better and cheaper than flax-seed for fattening purposes, even if both foods sold at the same price. It is difficult to make a well-balanced ration with flaxseed, for it must either be fed in very small quantities, or with foods which are deficient in fats, whereas oil-cake can be fed in larger quantities with coarse foods which have the least marketable value.]

SIR,—Can you give a cure for hens eating eggs? My hens are brown Leghorns. They get plenty of wheat cleanings and meat to eat, and some corn. J. L. S. BLLENHEIM.

[If your hens are not very valuable your best plan is to prepare them for the market as quickly as possible. Otherwise perhaps you can devise a scheme for letting the eggs fall through the nest into a soft receptacle below, so that the hens cannot gain access to them. The best cure is to remove the cause. Hens are usually taught to eat eggs by throwing shells to them. Egg-shells should be heated brown and broken fine before being fed. One egg-eater may teach the practice to the whole flock. No medicine or mode of management can cure an egg-eater.]

SIR,—Please tell me where I can get the milk substitutes for calves mentioned in your last issue? E. R. CHEERYWOOD, Ont.

[Write to Pearce, Weld & Co., London, Ont.]

SIR,—Will you be so good as to answer the following questions through the Advocate. 1.—The symptoms of chicken cholera and the cure. 2.—Roup and cure. 3.—Gapes. 4.—Lice exterminator. J. D. C. PALMERSTON, Ont.

[1.—The symptoms of cholera are: Sudden and extreme thirst accompanied by diarrhoea; greenish evacuations, soon changing to a whitish color; cramps, followed by tottering, falling, and often sudden death. The following dose, administered every three hours until relief is obtained, has proved effective: Rhubarb, 5 grains; cayenne pepper, 2 grains; laudanum, 10 drops. This is a dose for large fowls; half that quantity will be sufficient for chickens two months old. Between doses a teaspoonful of brandy and water, equal parts of each, will be beneficial. 2.—Roup is first observed by the presence of severe catarrh, first of a watery, transparent nature; then it gets opaque and gives off an offensive odor. The patient froths at the inner corner of the eye, the lids swell, adhere, and then close up completely. The nostrils plug up in the same manner; the sides of the face swell, and the patient usually dies. This condition is caused by a disease of the lining membrane of the nasal chambers. A cure may be effected by providing a warm, well-ventilated, dry place, and giving from a tea to a tablespoonful of castor oil, according to the size of the fowl; syringe the nostrils well with chloride of soda, two parts water to one of the chloride. This may be injected by introducing the syringe into the slit at the roof of the mouth. Three or four hours after administering the oil, give the following mixture: Half oz. balsam copaiba; ½ oz. liquorice powder; ¼ drachm piperine. This may be divided into 30 doses, inclosing each in an envelope of gelatine, and giving a dose twice a day. Separate the affected fowls from the rest. 3.—Gapes are parasitic worms in the windpipe, found in chickens up to three months old. Separate the affected chickens from the others; then take a small feather, stripping it to within half an inch of the point; dip it in spirits of turpentine; pass it down the small opening of the windpipe at the base of the tongue; turn it round two or three times, and then draw out. If this does not afford relief, repeat the operation next day. See that the patient has a comfortable place, with plenty of wholesome food, and give it milk sprinkled with black pepper for a drink. It being supposed that these worms come from ticks found on the head, the following ointment, applied to the head warm, will be a good preventative: One oz. mercurial ointment; one oz. lard oil; ½ oz. flowers of sulphur; ¼ oz. crude petroleum. These ticks cannot be seen with the naked eye. 4.—To rid the hen house of the lice, take out all the movables and wash thoroughly with carbolic acid. A cheaper substitute will be the ammoniacal water of gas works. Also wash the house all over therewith. These remedies will kill all the lice in the house, and those which will fall off the hens. By putting slaked lime and sulphur on the floor the hens will dust it into their skin and the lice will be killed. The best preventative is to keep the hen house clean.]

SIR,—Can you inform me what is the cause of my hens falling off the roosts in the night, and they are not able to get up or put a foot under them? They look to be in good health, and will eat and look quite bright in the eyes. Sometimes it occurs in the middle of the day. What is the cure for them, if any? I fetch them into the house and oil their feet with goose oil, and in an hour or two they are all right again. It occurred last winter as well as this. They are laying, and do not stop if I get them in time before they get chilled. The oiling is only a chance job with me; it may be the cure and it may not. Last week they were all right in three hours after treating them as above. J. D. C. PALMERSTON, Ont.

[We know of no cause of this disorder except over-feeding, especially with much cooked foods and deficient exercise. We can't see how treating with goose oil can effect a cure.]

SIR,—A number of farmers of Plympton and neighborhood assembled at the post office and resolved to form themselves into a farmers' club. The following were elected officers: Thomas Leurs, President; Charles Heslop, Vice-President; Edward Hudson, Secretary-Treasurer. After holding two or three preliminary meetings, a regular meeting was held at the post office, on the 14th of February, when the President gave his opening address. He took for his subject "farmer's clubs," and, after showing the benefits to be derived from such organizations, he went on to show that all other classes of people had organizations of one kind or another, and he did not see why farmers should not have the same. He thought that farmers had need of such organizations as this, for, from the nature of their calling, seldom seeing one another, it was necessary to do something to bring them together for the interchange of opinion, and to discuss questions in connection with agriculture. It is expected to hold a meeting every two weeks, for which some of the members will prepare papers for discussion on subjects relating to farming. SUBSCRIBER.

SIR,—Thanks for your editorial on "Make Drainage Observations." It is the best thing I have seen on drainage for some time; it will be of use to me, and may be of use to many others. Now for the chess. I have farmed in Canada for more than twenty years, and have never grown chess but twice. Once I rented a farm for eight years; it had been badly run down; no barn yard, but barn open to the fields all round; no manure had been taken away from the barn for some years. I was glad that, as it covered an eight-acre fallow for me nicely. I was careful about my seed wheat, but in harvest I had fully one-half chess; then was the opportunity for one of my neighbors, who was a live chess man, to crow over me unmercifully. I let him crow for a time, and then I showed him that close to the barn where no wheat had been sown the chess was as high as his shoulder and as thick as it could stand. Undoubtedly the seed had been dormant in the rubbish around the old barn. The next seven years no man could point to a head of chess on that farm. Five years since, when I bought the farm on which I reside, there were two fields of wheat growing; they were badly winter killed, and in harvest they were ½ chess, which was rather ripe when cutting, and shelled out plentifully on the field. I complained of this to a neighbor, but he assured me that I would see no more of the chess, as it never came again unless wheat was winter killed. I had seeded the land in the spring, but the catch was poor, and I re-seeded in the fall, using a sharp drag to cover. The dung made that winter and what was around the barn, I cleaned up carefully and put on a pasture field, fearing there was chess in it. Had I put it under my wheat I would have had another fine crop of chess, but my fight with the irrepressible stuff was not yet over, for my hay was at least one-half chess, and to make matters worse the timothy from fall sowing was late, and the chess was ahead, but the first day I saw a blossom on the chess, the mower went through that hay lively. Had I let it stand as long as that, chess would have been in the milk, and I think I would had enough of chess to seed both woods and fields for years. That summer I turned down an old sod and got perfectly clean seed wheat from Pearce, Weld & Co., London, and had a fine crop next season, although wheat in this neighborhood was badly winter killed. Had I been inclined to bet I could have got many dollars covered that I would have chess in harvest, but when that time came I could not get one of these chess men to walk ½ mile to see my wheat without a spear of chess in it, and on one farm close to me these were over 50 bushels of chess threshed. I think your "Nortolk" correspondent is open to the same charge he makes against the Michigan authorities. He says, "if you sow these particular grains of chess and they produce chess, it is double proof that wheat turns to chess." I would think just the contrary, that it would be single proof that chess will produce chess, and nothing else; but if the grains of wheat on that head were sown and they produced chess, the Dr. might have a case. I think your "Newry" correspondent is not a very close observer. When the pea bag was bad I often sowed oats on sod followed by wheat, but never saw chess among my wheat, only in the two instances I have related. Respecting the chess in his new fallow, is he sure the oxen did not get hay to eat that was half chess, or were they fed tailings from a fattening mill, as I have seen oxen fed, or if the oxen had no part in the chess, there might have been a colony of hogs in those woods for generations, coming home occasionally to get a feed of tailings, and returning to deposit the proceeds, where they would flourish abundantly on the first favorable opportunity. Now, sir, it amounts to this: Farmers who for a long life time have been close observers of cause and effect, will not give up the knowledge thus gained for all the botanists under the sun, and if I and many others can farm without growing chess, why cannot able farmers do the same; then, what will become of the chess men? If I ever trouble you again, it will be about something of more importance to progressive farmers than this chess business, which I think is the most absurd of all absurdities. BELMONT, Ont. "Hod."

SIR,—My sheep are affected by a malady which begin with blindness, then loss of appetite, and they finally pine away. T. F. SOUTH DUMMER, Ont.

[The few symptoms you give somewhat resemble those of a disease called "turnside," in which the sheep become convulsed, grate their teeth, and when raised on their feet, turn round and constantly roll their eyes. The disease is caused by larvae of tapeworm in the brain, which form watery bladders, the pressure of which interferes with the free action of the brain, causing death. The sheep turn their heads on the side on which these bladders are found. There is no safe remedy. The first sheep that dies you should dissect it, and examine the intestines for tape worms and the liver for fluke, as the symptoms in such affections are also somewhat similar to those you mention.]

SIR,—I permit me to enquire the best method of procuring hay by spring sowing when natural grass is not plentiful. Whether is Hungarian or Millet the best and strongest hay for cattle and horses, and how many pounds of either should be sown on good, strong land, in order to attain a thick, fine growth? When is the proper time to sow? Will they yield a heavier crop by being sown thick or medium thickness? 2. How do rye, oats and barley, respectively, compare with timothy hay for feed, providing all are cut green? 3. I have an ox that is strained through some means I do not understand, at times he strains till his gut sticks out and passes small pieces of slimy manure, very often only thick slime. I have worked him for a year, and he never shows more sign of a strain than an occasional sucking and rejecting of wind, in fact, never till quite recently did he have such violent straining. E. H. M. STRATHBURN, MAN.

[1.—Millet and Hungarian grass belong to the same family of plants, and make good fodder. It may be sown any time between the opening of spring to the first or second week in June. Medium thickness is best, about three pecks per acre. 2.—There is little difference in the nutritive values of these fodders. 3.—We are of the opinion that your ox is troubled with gravel or stone in the bladder, or in the passage from the bladder to the penis. Treatment:—Give a tablespoonful of hydro-chloric acid every day in a pall of water that he drinks. If that does not relieve him, then an operation by a skillful veterinary surgeon will be needed. A quart of raw linseed once a week would be beneficial.]

SIR,—I have some young pigs that were taken from their mother at 5 weeks old; they were fed at first on boiled wheat, flax-seed and milk, afterwards chopped wheat, flax-seed and milk; they were fed three times a day, and got about a cupful of boiled flax-seed at each meal, among the four. The pigs grew and thrived apparently till nearly 4 months old, when suddenly they lost the use of their limbs, at least, their knees gave way, and they can't walk. When they move they drag themselves along on their knees, and appear to be in pain while doing so. What is the trouble and its cause, and what can be done to cure them? Some neighboring settlers say that flax-seed has loosened their joints, so I stopped giving it, and now feed them chopped wheat and milk, and twice a week a teaspoonful of sulphur, but they do not seem to mend, but get worse. Can you also tell me what will cure warts on the teats of a cow? GREENFELL, N. W. T. A CONSTANT READER.

[1.—Feeding so much flax-seed has no doubt had a great deal to do with the complaint, as it contains too much oil for feeding in large quantities. Too much boiled, sloppy foods may have contributed to the affection, also keeping them in close pens without exercise. Pigs require succulent foods as part of their diet, such as grass in summer and roots in winter. We have seen many cases like yours, and the only cure consists in removing the cause, which, however, may not completely restore those already affected. Medicines will be of no use. 2.—Cut off the warts with a knife or a pair of scissors, and if much bleeding follows, touch the part with a hot iron. Afterwards apply Fowler's solution or other caustic twice a day, if the warts are large; otherwise they will disappear without such application.]

SIR,—In an article in the February number, on "Are the market prices an index to the nutritive value of foods?" you, I think, draw some wrong conclusions as to the heat producing properties of certain grains. You write: "Foods that have a heating tendency are those which have an excess of fats and carbohydrates," and the cooling property of foods is dependent upon the percentage of minerals they contain." You place these constituents as follows:—

	Carbo-hydrates.	Fat.	Minerals.
Peas	54.4	1.7	2.4
Barley	60.	1.7	2.3
Corn	60.6	4.8	1.5

Thus, barley and corn are both higher in carbohydrates and fat, and lower in minerals, than peas, consequently, peas should be the least heating of these grains. Now, I contend that such is not the case, but quite the contrary. I remember feeding a sow in an old-fashioned, open floored pen, on corn, until she was very

fat, and, yet, when the nights got cold in the fall, she would shake as though she had the ague, while hogs fed on peas, and no better protected, and not as fat, did not seem to mind the cold. In the winter I can find nothing to take the place of peas for hogs, and I have frequently fed barley. And further, barley ground makes an excellent food for horses, at any time of the year; but peas, though good in cold weather, are not so good in the warm season, as the horses cannot stand the heat when fed thereon. On these grounds I would say that peas are the most heat-producing of any grain we have, and I think the experience of most farmers will bear me out in the statement.

HASTINGS, Ont.

[Thanks for your criticism. With regard to your sow experiment you draw a false conclusion. The heating or cooling effects of the food consumed bears no relation to the amount of heat or cold which animals can stand. A fair amount of fat under the skin has a tendency to ward off the cold, but when the fat is in excess, the circulation of the blood becomes impeded, causing a tendency to a lower temperature and shivering, especially when the fat is so excessive that it becomes a diseased condition. Most practical farmers regard corn as a very heating food, especially in the U. S., where large quantities are fed, and this view is corroborated by experiments; but, of course, when fed with flesh-forming foods, its heating tendency becomes neutralized. It is by the combustion of the fats and carbo-hydrates that heat is produced. The albuminoids or flesh-formers will produce the same results, but to a less degree. Too much grain of any kind is too heating for horses in warm weather. Bran has a cooling tendency, and it is largely composed of minerals. Apples, and many other fruits, though containing large quantities of heat-producing substances, are cooling in their effects, owing to the large percentage of minerals they contain.]

SIR.—I. Would you kindly let me know through the columns of your valuable paper, what record, if any, the stallion Albion has, and how far east of London he comes. 2. Will a spavin hurt a mare for breeding purposes, the spavin being sprung through her leg becoming entangled in a runaway. Otherwise she is a good and extra well built mare.

HAMILTON.

[—Mr. T. D. Hodgins, London, who owns the Albion, has not laid out his circuit yet. By writing to him you will get all the information you want. 2.—A spavin brought on by a sprain or hurt will not injure a mare as a breeder.]

SIR.—I. I have a mare that had a foal last spring, having foaled in stall. It being her first foal she would not allow it near her. I fed it five days and it died. I wish information through your valuable paper how to manage her if she acts in the same way this spring. 2. How shall I feed the foal if she will not suckle it?

P. E. ISLAND.

[—Put the mare loose into the box-stall, or, if the pasturing season has arrived, turn her into a small pasture by herself, and trouble her as little as possible. If stall fed, don't feed high, but give easily digested food. 2.—If you can't milk the mare, the foal can be raised on cow's milk; but as this is richer in casein, fat and sugar than mare's milk, it must be modified so as to come nearer to the composition of the milk of the dam. Dilute the cow's milk with warm water, using about one part water to two parts milk, and making the temperature about blood heat (100° Fahr). Then put sugar into the mixture, about a tablespoonful to each quart, or a little less if the cow's milk is unusually rich in cream. Feed at the temperature above stated. Very good foals have been raised in this manner.]

SIR.—I have a young mare which has a hard, bony splint on her fore-leg. It has been there about seven months. I have tried several remedies, but to no purpose. Could you inform me through your valuable paper how to remove it?

BLANDFORD, Ont.

[Apply a blister to it once every two weeks, and grease it the third day after each blistering with a little hog's lard. We would recommend a blister made of cantharides, one part; biniodide of mercury, one part; lard, eight parts.]

SIR.—Would you be kind enough to answer, through the columns of the ADVOCATE, what garget is, the cause and effects of it on a cow's udder, and if there is any cure for it?

COTTAM.

[Garget is an inflammation of the udder, generally caused by cold, bruises, wounds or injuries, sometimes caused by not milking thoroughly. The udder is hot, swollen and tender, and the cow falls off in milk. Give a purgative drench; foment well with hot water; apply a stimulating liniment, and afterwards apply some oil, such as goose oil. Milk often and clean.]

SIR.—I have a 4-year-old wether sheep that had quite a bad cough last winter, and he has the same this winter. What do you think is the matter, and how can it be cured?

A. B.

CORNHILL N. B.

[Give your sheep sulphur and salt regularly; perhaps it would be better to keep them in a trough in the pen where he could take it at any time. A little pine tar is also good.]

SIR.—I. I have a horse that seems weak in his fore feet, or rather in the joints between the ankle and the hoof. If he is hurried over a soft snow road where he will slump occasionally, or over a rough summer's road, where he is liable to strike his toes, he will limp and seem sore for a day or two after. Can you tell me through your valuable paper what is the matter and what to do for it? 2. I have half an acre of good garden ground which I want to plant with fodder corn for feeding my cows during the dry season. Please inform me how it should be planted, how much to the acre, and what the seed ought to cost me? Our seedsmen say they can get it for me.

ROSEDALE, N. B.

[—We are of opinion that your horse is troubled with Navicularitis or coffin joint lameness. Treatment—Give rest; pare the foot down well, and apply a blister around the coronet once every two weeks. It would be well to poultice with hot bran or boiled turnips for three or four nights before blistering. 2.—Write to the seedsmen whose advertisements you will see in the ADVOCATE.]

SIR.—Will you please answer the following questions: 1.—Does permanent pasture give a crop the first year to be cut? 2.—Do permanent pasture seeds grow the first year without some other grain being sown along with them? If so, will millet seed do to sow with them?

SWAN LAKE, Ont.

[Read our article on "Permanent Pastures" in this issue.]

SIR.—Could you give me any information with respect to the ashes of the coals called chestnuts? Are they good for the garden the same as the Sunderland coals are in England? They differ so in appearance and color, I fear to use them, and no one here seems to know.

CARLETON CO.

[The action of all kinds of coal ashes in the soil is the same, being inert or possessing no manurial value, but there may be a difference in the physical properties. This, however, is not dependent upon the class of coal, but upon the fineness or coarseness of the ashes. The action of coal ashes is to give porosity to stiff soils, and they are therefore useless, if not injurious, on light, porous soils. The finer the ashes the better.]

SIR.—Farming operations are not begun; it is too wet. The weather is warm; the garden flowers were in bloom in the open air two weeks ago. I will write again when I see the crops growing. In the meantime, if you see or hear of any person coming here, advise them not to come without a fair share of money, say three or four thousand dollars. Land is far dearer than in the county of Kent, Ontario, and living far, far dearer. Land is very limited in quantity west of the Cascade Mountains, and little or none on Vancouver Island.

SALT SPRING ISLAND, B. C., March 5th, 1885.

SIR.—In the March number of the ADVOCATE I see an article about smut in wheat. Now, sir, I would like to know both the cause and cure for smut or black heads among oats and barley, that we sometimes see at the time of heading out. I also observed the same thing among a new kind of spring wheat that I sowed last spring. I also see that "T. K." complains of his barley not yielding so good nor weighing so heavy as it did some 8 or 10 years ago. I must say my experience is somewhat different. I have raised barley for many years, and had the best crop of six-rowed barley last season that I ever harvested. I bought the seed from Pearce, Weld & Co. last winter, which had been raised near Kingston, and I sold back to them all the proceeds of it that I had to spare this winter, and when they tested its weight it went 60 lbs. per bushel measure. If it had been closely bearded it would have went more, but barley too closely bearded is injured for seed, as many of the grains are broken, neither do malsters like it so well. I am an advocate of making a change of seed grain every few years, when it can be got pure and free from foul seeds; not so much from great distances as from a different kind of soil. For instance, my barley grown on gravelly loam would be a good change for heavy soil. Land intended for barley should be plowed in the fall, and at seed time should be clean, fine and fertile. I prefer sowing with the broadcast or seeder (about 2 bushels per acre), as it does not bury the grain so deep as with the drill tubes, and therefore has a better chance to come up before the ground gets hardened and crusted, should a heavy rain follow. A barrel of salt per acre sown on barley will amply repay the cost and labor, especially on light or loamy land; it helps to keep moisture, the straw stiffer and brighter, the ear heads out earlier, makes the ripening season longer, which gives the grain a better chance to fill. I prefer sowing the salt on before the last harrowing. I make it a rule to roll all my spring grain as soon after finishing harrowing as possible, if the ground be dry enough to not stick to the roller. It helps to keep moisture and puts stones down better than after heavy rains settle and harden the surface.

INGERSOLL, Ont.

[The smut in barley and oats has the same origin as that in wheat, as described in the article you refer to, and the cure is also the same.]

Sheaves from Our Gleaner.

Mensury barley appears as a new six-rowed variety of great promise in productiveness. The heads are very long. Canadian seedsmen are introducing it this year.

Professor H. Munk, a worker of some eminence in agricultural chemistry, says that moderate muscular exercise on the part of cows increases the yield of milk, but that violent motion hinders the process of milk secretion. Dairy farmers may turn his remarks to profit.

When a horse refuses to eat, he should not be made to do any service that day, for it may be known that he is tired out or sick. It is barbarous to compel a horse to perform labor, when in such a condition that he refuses grain, yet it is often done, and by men, too, who think they are merciful.

Spring wheat has succeeded better in this western section of Ontario during the past two years than it had done for fifteen years previous. We know of no new varieties, or old varieties rejuvenated, this season. Procure the cleanest and best of each variety that you find succeeds best in your locality.

OATS—CAUTION.—There has been an attempt made by some seedsmen across the border to boom the old Black Poland oat under a new name. The oat is an excellent one for feed, and the blackest one we know. It has less tail to it than the Tartar, and will carry off prizes at exhibitions. The objectionable side is not shown. It is a very late oat. We have seen it stand two weeks longer than other oats sown at the same time before it was ripe. The late maturity of it is the greatest objection. Black Tartars are preferred by the farmers that have tried them.

An analysis of hen manure lately made at the Connecticut Experiment Station, shows it to be worth \$15.51 per ton, calculating its different constituents at the market prices of fertilizers. According to the same method of valuation, good hard wood ashes was found to be worth \$9 a ton. This station makes a specialty of analyzing fertilizers, and the effect has been to drive inferior stuff out of the market, and expose the vendors. Some of the fertilizers proved to be of no more value than the barrels in which they were kept, and were sold at exorbitant figures. Forty-five samples of seed were tested, both in the chemical laboratory and in the garden, fifteen of which were very inferior, and three utterly worthless.

Those who make a profession of obtaining fancy records by feeding stimulating or sour foods should read the following paragraph from the pen of Prof. Arnold: "The quality and wholesomeness of milk varies with the character of the food from which it is made. To produce the best milk for infants, the animals should neither be over nor under fed. One extreme is as unfortunate as the other. Milk becomes vitiated when its secretion is over stimulated. In part at least, milk is derived from decomposition of tissue, and when this goes on to activity, fragments of tissue break away without being perfectly dissolved, and may be seen suspended in the milk. The fragments that are small enough to pass through an ordinary strainer remain in the milk, and by their rapid decomposition, affect its flavor and quality."

The Household.

A Word with the Convalescent.

BY A FAMILY DOCTOR.

Well, I have a word of hope to give to begin with: long though the winter lasted, hard and severe although it was, especially upon the aged, the young, and the infirm, I am very much mistaken if there be not a long, glad summer before us, with plenty of sunshine and ozone in the air, and that means health and a better chance of life for us all.

The diseases that have been more especially prevalent during the last few months are chest affections, sore throats, bronchitis, chronic and acute, inflammation of the lungs, rheumatism, &c.

Now, I shall not at present occupy my own valuable space by describing the symptoms and treatment of the acute stages of any of those ailments. By doing so I should be guilty of a breach of medical etiquette. Your own physician is the proper person to guide you through actual disease. Be it mine for the nonce to address myself to the convalescent.

You have been suffering from bronchitis, perhaps you have been almost at death's door owing to that painful ailment; but thanks to professional skill, aided by a good constitution, you have now got round the corner, though still weak and far from well. You can do much then yourself to re-obtain sound health and strength, but you must not on the one hand put your trust in medicines alone, nor on the other attempt to hurry a cure. Bronchitis is so very apt to end in the chronic stage, usually called "winter cough," and I would have you so order your convalescence that this should not occur, and that no thickening of the mucous membrane should remain to form a hotbed for the seeds of future illness. To obviate the chance of any such result, your motto must be "Gang warily," for remember that every fresh attack of cold—and to such attacks you will be for some time peculiarly liable—aggravates and increases the morbid condition of the mucous membrane. Remember, too, that this should give you hope, that if you can prevent the recurrence of colds for a certain time, the mucous will of its own accord resume its normal and healthy condition.

What are you to avoid? 1. Getting wet. The evil effect of wet and damp are patent to everybody. Out of a hundred cases of colds and coughs, probably over thirty are due to exposure to wet, or to sitting with cold or damp feet.

2. Next you are to take precautions against draughts. Wrap the neck well up when you go out, if the day be the least cold. I don't care how much you expose the face and mouth, if the chest is well protected by nice, soft, porous flannel, breathing cold air will not hurt; in some cases it will act as a tonic to the capillaries. 3. But avoid in any case riding or driving against the wind, if you would avoid death itself. Walking exercise is very good, but remember, while moving quickly enough to keep yourself warm, never to allow yourself to perspire. The spring sunshine and gentle southerly breezes possess remarkably healing and balsamic properties. You may remain out in the open air—keeping moving about, of course—so long as you feel a dreamy, half-

drowsy sense of pleasure, but not to the verge of fatigue or the slightest of chills; the latter especially should warn you in-doors at once. Avoid night air, and fogs, and damp, and all sudden changes of temperature.

3. Remember that everything that strengthens the digestive powers is a step towards the resumption of perfect health. The diet should be light and nutritious, the appetite and taste should be the chief guides to the kind of food to be taken. If you are weak, little and often is the rule; as you get stronger you can afford to wait till you are hungry, and to take more food at a time, but never over-eat. As a dinner pill, you may take half a grain of quinine, a grain each of rhubarb and ginger, and three of extract of dandelion. * Pills of camomile are of great service in regulating the digestive organs.

You can hardly expect to get well without some drawbacks, and these are generally caused by the accession of fresh colds. Never, then, be without these two little bottles in your room:—Bottle No. 1 contains one drachm of carbonate of ammonia, one drachm of solution of the muriate of morphia, and six ounces of camphor-water. Bottle No. 2 contains ten ounces of the liquor of the acetate of ammonia. Have also a box of the aperient pills that happen to suit you best. On catching cold, take a tablespoonful of bottle No. 1 every four hours until bed time, when you must take three tablespoonfuls of No. 2 in half a tumblerful of cold spring water. Cover yourself well up in bed, and drink plenty of water if thirsty; continue bottle No. 1 next day, take your food and exercise as usual, and a dose of your favorite pills at bed-time. Next day you ought to be well, but if after a day or two the cold seems returning, then meet it half way again, by two days more of the same treatment.

With regard to other medicines—except tonics—I would prefer leaving you to your physician, for some expectorants depress, others impoverish the blood; some stop secretion, others increase it; so that each case requires special treatment. However, a course of tonics always does good if there be no irritation of the stomach or bowels.

Not only should the delicate and the convalescent get all the sunshine and fresh air possible, but all the daylight as well; eight hours sleep will be enough, with forty winks during the day, so long as the latter does not interfere with the night's rest proper. In any case, early to bed and early to rise should be the rule.

Those who have suffered during the winter from sore throat or swollen tonsils, ought, during the months of April and May, to take especial care of themselves, as these complaints are extremely liable to relapse, and the second state of the case is often worse than the first. There sometimes remains, after all pain and inflammation have subsided, considerable enlargement and swelling of the tonsils. Painful and trying operations are sometimes necessary for the removal of this state of the tonsils, but I think that in all cases before the patient submits himself to the knife or escharotic, he ought to try the effects of constitutional remedies.

I think if the farmers would read the ADVOCATE more and digest well what they read, we would be the most prosperous, as well as the happiest people, of any occupation. I could not think of doing without it.

WARASH, ONT.

L. SHARROW.

Minnie May's Department.

MY DEAR NIECES,—Transformations are in order at this time of the year, and it is only now that we are becoming fully conscious of the nearness of spring, or feel any compelling instinct that we must immediately array ourselves in honor of Nature's awakening. There is a large assortment of novelties in the way of dress, some of which are elaborate and others elegantly simple.

Combinations of materials and colors will be as popular as heretofore, which arrangement will afford satisfaction to the lady whose ideas are both thrifty and artistic.

Velvet in all the fancied shades of green—mignonette, cresson, and the deep hunter's green—will be used in the early springs for entire costumes, to be worn with fur collars or capes. Later on, velvet in these shades will be combined with pongee silk in its natural color.

Shades of brown, crimson, claret or dark blue velvet will be in good taste for combination with this natural pongee.

For walking costumes, no matter whether the trimming be much or little, apply it so neatly that its addition will not be noted. The new skirt patterns have front and side gores and a gathered back-breadth; the gores have short darts in them, in order to fit smoothly over the hips. A simple finish—sometimes an entirely plain completion—characterizes the lower edges of street costumes, elaborate decorations being reserved for the house. Velvet will, without doubt, be very liberally used with other materials contrasting in color.

Dress bodies unlike the skirts are again in favor, thus permitting of a new basque with a re-made skirt. Basques pointed both back and front are in vogue this season, especially for evening dresses. Draperies, front and side-fronts, vests, skirt trimmings, etc., may fashionably differ from the remainder of the costume. Plain and mixed cloths will be more for street costumes, the trimmings for such being braids of various kinds and widths, wool or Angora lace, and velvet ribbon of different widths. The stiff, high military collar is on almost all dresses; it is lined with buckram, has square or sloped corners instead of curves, and may be edged with braid set in as a piping, or it may be covered entirely with rows of braid. Coat sleeves still prevail and are cut to conform more closely to the arm at the top than they were last season. The cuffs are exceedingly simple, as nothing detracts more from style than a bunchy trimming about the wrists. Some of the prettiest cuffs are made by cutting the sleeves an inch and a half too long, then ripping the inside seam, turning the extra length backward and facing it with velvet, thus giving pretty revers, which can be made very dressy by gathering lace inside. The new way of putting lace in sleeves is to have two frills, each containing seven-eighths of a yard of lace, not quite three inches deep; these are gathered to lap, the upper frill nearly covering the lower, and most of the fullness being massed at the outside seam of the sleeve.

Long pleated draperies, quite straight or in curves that drop from the belt down and return, are in great favor for all kinds of materials.

Short jackets will be the favorite street wrap for young ladies, and these will be trimmed principally with flat and soutach braid.

For grand occasions the train is indispensable. It is always graceful and adds dignity to the appearance of a bride or matron, but few young ladies have assumed them. On an evening or house costume the lace should be arranged to fall easily, and ribbons to drop prettily, giving the entire costume an air of gracefulness. Heavy satin surah and foulards, noticeably in black, are again creeping into general favor; they make quiet, refined costumes, yet a very rich effect is gained. Spanish, escurial, guipure and thread laces, as well as jetted lace flounces and fronts, are greatly used on all silk fabrics.

Hats and bonnets are endless in shapes as well as in materials. For early spring bonnets of felt, material matching the costume, and of wool lace, will be worn; the latter are decidedly pretty, and have an air of being in harmony with cloth costumes that is much to be commended. Sometimes the lace is laid on in frills, slightly full, and again in positive plaitings, one over the other, so that the entire frame is covered with the rows of lace. Colored crepe is going to be worn again for summer bonnets, and another old but pretty fashion revived is the bridle, instead of strings. A very pretty crepe bonnet for half mourning is made of grey crepe which is laid in loose folds over the crown, and has its puffed brim held up by steel pins. On one side is a cluster of mignonette, the bridle being made of the crepe.

It seems almost a certainty that narrow brimmed, rather high crowned hats will continue in vogue.

Let me here say that our prize offer for crochet patterns has been largely responded to, there being a great number of very nice ones, both in design and workmanship, and it was difficult to decide upon the prettiest and most useful; and then perhaps a beautiful pattern would be so badly described that no one could make any sense out of it. The prize of a beautiful Lady's Companion has been awarded to Miss Lizzie McDonald, of Monkton, Ont. Her work is very even, and her pattern pretty, and I am sure would be very durable. Our space being limited, we shall have to defer general criticism until next month. We shall offer this month a prize of a handsome leather writing case for the best story of Rural Life. Conditions:—

1. All communications must be received by May 15th. 2. No story must exceed four and a half columns long, FARMER'S ADVOCATE length. 3. The story must be the original work of the competitor. 4. It is understood that we have the right to use any of the stories sent in, whether awarded a prize or not. 5. For reasons covered in condition 4, no stories will be returned. Every competitor whose story we publish (excepting the prize winner's) will be placed on the subscription list of the FARMER'S ADVOCATE AND HOME MAGAZINE for one year.

MINNIE MAY.

Queries.

IDA.—Would be glad if any reader of the ADVOCATE would send her the words of the song entitled "If Papa Were Only Ready;" also the composer's name.

Prize Pattern for Crochet Lace Edging.

BY MISS LIZZIE McDONALD, MONKTON, ONT.

Make a foundation of 18 stitches for first row, 2 treble, 2 chain, 2 treble in 14th stitch; 7 ch., 2 treble, 2 ch., 2 treble in 7th stitch; 1 ch., 1 treble, 3 ch., 1 treble in 4th stitch; 1 treble, 2 ch., 1 treble in 2nd stitch; 4 ch., in 1st stitch. Second row.—Six treble in 4 ch., 1 slip stitch in last treble of preceding row; 6 treble in 3 ch., 1 slip stitch between two treble of last row, repeat in next 3 ch., 1 ch., 2 treble, 2 ch., 2 treble, in 2 ch., 7 ch., 2 treble, 2 ch., 2 treble in 2 ch. Third row.—Three ch., 2 treble, 2 ch., 2 treble in 2 ch., 3 ch., pass needle through centre of two 7 ch., and join with slip stitch; 3 ch., 2 treble, 2 ch., 2 treble in 2 ch., 1 ch., 1 treble, 3 ch., 1 treble in 1 ch.; 1 treble, 3 ch., 1 treble in first stitch of last 6 treble of last row, repeat 4 ch. in first treble. Fourth row.—Six treble, 1 slip stitch, repeat three times; 1 ch., 2 treble, 2 ch., 2 treble in 2 ch., 7 ch., 2 treble, 2 ch., 2 treble in 2 ch. Fifth row.—Three ch., 2 treble, 2 ch., 2 treble, in 2 ch., 7 ch., 2 treble, 2 ch., 2 treble in 2 ch., 1 ch., 1 treble, 3 ch., 1 treble in 1 ch.; repeat three times 4 ch. in first treble. Sixth row.—Six treble, 1 slip stitch, repeat four times; 1 ch., 2 treble, 2 ch., 2 treble, in 2 ch., 3 ch.; join to 7 ch. as before; 3 ch., 2 treble, 2 ch., 2 treble in 2 ch. Seventh row.—Three ch., 2 treble, 2 ch., 2 treble, 7 ch., 2 treble, 2 ch., 2 treble in 2 ch., 1 ch., 1 treble, 3 ch., 1 treble in 1 ch., repeat four times; 4 ch. in first stitch. Eighth row.—Six treble, 1 slip stitch, repeat five times; 1 ch., 2 treble, 2 ch., 2 treble in 2 ch.; 7 ch., 2 treble, 2 ch., 2 treble. This forms one scallop. Second scallop.—Three ch., 2 treble, 2 ch., 2 treble, 3 ch., join to 7 ch., as before; 3 ch., 2 treble, 2 ch., 2 treble, 1 ch., 1 treble, 2 ch., 1 treble in 1 ch., 2 treble, 2 ch., 2 treble in first stitch of last 6 treble of last row 4 ch. is same stitch; repeat from second row of first scallop.

Kingston, March 10th.

MY DEAR AUNT MINNIE.—As I can crochet pretty well, I have been tempted to try for the prize, and have made it long enough for an apron for you. So, prize or no prize, I hope you will wear it, for I have watched all the efforts you have made to make us better and wiser women and girls. Yours sincerely,

FANNIE A. FERGUSON.

DEAR NIECE FANNIE.—Your kindness is greatly appreciated, especially by your auntie, who will indeed be very proud to wear your gift. I am sorry you did not win the prize, but trust you will be more successful another time.

MINNIE MAY.

Work Basket.

WASHSTAND COVER.—Take fine Russia crash the width of the stand and long enough to hang over each end about an eighth of a yard; then work with red marking cotton, a pretty pattern in outline across the ends. Finish the front and ends with a crochet edging an inch and a half wide, made of grey linen thread, edged with red.

Fancy aprons are coming into favor again, of which there are many and varied styles. One pretty way is to make the foundation of white

lace, such as is used for the yoke and sleeves of white dresses; then sew three pieces of torchon insertion from the belt down, allowing the centre one the longest; under this insertion run ribbon, and finish each with a bow of ribbon. Trim the apron across the bottom with a ruffle of the lace edged with torchon, and at the head of the ruffle put the torchon insertion and ribbon. Make the belt of the ribbon and fasten at the side with long bows and ends.

Plain scrim or cheese cloth is another favorite material. These may be made rather long and full, no goring, and finished by drawing out threads above the wide hem to allow a colored ribbon one and a half inches wide to be run in three rows, all different colors, viz.: red, gold and blue being the most effective. Make a hem at the top of the apron wide enough to run in the ribbon, gathering up to suit the figure; allow ribbon enough to tie in long bows and ends at the side. Or above the wide hem apply a pretty pattern of Spanish lace with colored embroidery silk, and then embroider some butterflies in one corner.

A friend produced a very pretty effect in one corner of her parlor by the following device: She secured two oval mirrors a little larger than a dinner plate, had them framed in dull gold an inch in width, hung each flat against the wall either side of the corner and on a level with the top of a small, round table. Upon the table in summer she keeps a low bouquet of beautiful flowers and ferns, and in winter a bouquet of pressed ferns and autumn leaves.

Answers to Inquirers.

I. A. Z.—Brush your hair well with a wire or an electric hair brush, rubbing the scalp well with cold water to prevent its falling out. There is an excellent balm prepared for falling hair, color, &c.

AMATEUR.—1. Yes, cocoa has less effect upon the nerves than tea or coffee. 2. The seams of dress sleeves are not pressed, but are cut as closely as is deemed proper, and then carefully overcast to keep them from fraying.

CINDERELLA.—1. Kid rollers are excellent for curling the front hair. 2. The wearing of hoop-skirts is at present entirely a matter of individual taste. Some wear them to retain in proper position the round, full skirts now so fashionable.

MARGERY.—The Mausoleum is a most magnificent tomb erected to the memory of Mausolus, King of Caria, by his loving widow, Queen Artemisia. It was so gorgeous in size, and artistic in detail, that it became one of the seven wonders of the world. Historians state that at first it glittered with precious jewels and metals of all kinds, of which it was afterwards robbed.

CONSTANT READER.—This is a very nice chocolate custard and can be used instead of fruit for tea. Three ounces of baker's chocolate, three pints of milk, four tablespoons of white sugar, two tablespoons of brown sugar. Prepare a soft custard of the milk and the yolks of five eggs and the white of one; dissolve the chocolate in a cup of warm milk and heat it to a boiling point, then cool, sweeten it with brown sugar, and flavor with the extract of vanilla. Pour the whole into a dish and cover with the whites of the five eggs beaten stiff with a little sugar; brown slightly and serve cold.

ANXIOUS MOTHER.—1. The most suitable shoes for a baby just beginning to walk, are of soft French kid with heels. Doctors advise that children should not wear heeled shoes until they attain the age of four years at least. 2. Plain red satine or farmer's satin make beautiful comforters and are very much used.

S. C. T.—1. The stains made on carpets by the iron casters of furniture may be removed with oxalic acid in a strong solution. A thin coating of wax over the casters will prevent them from rusting. 2. A teaspoonful of borax or gum put into the starch will give a gloss to the linen when ironed.

Recipes.

TART SHELLS.—Roll out thin a nice puff-paste, cut out with a biscuit cutter, and with a smaller cutter, cut out the centre of two and of three of these, lay the rings thus made on the third and bake immediately.

MARBLE CAKE.—Five eggs, whites only. 2 cups sugar, $\frac{1}{2}$ cup butter, 1 cup milk, 3 cups flour, 1 cup corn starch, 4 teaspoons baking powder. Powder a little cochineal or confectioner's pink sugar or chocolate and mix with two-thirds of the batter and place in the centre.

ORANGE PIE.—Grated rind and juice of two oranges, four eggs, four tablespoons sugar and one of butter; cream the butter and sugar, add the beaten egg, then the rind and juice of the oranges, and lastly the whites beaten to a froth and mixed in lightly. Bake with an under crust.

PRESSED VEAL.—To 3 lbs. of veal take 1 lb. of salt pork; remove all lean parts and the rind from pork, and chop both veal and pork together very fine, season with pepper and teaspoon of chopped onion or summer savory; press firmly into a deep baking-dish and bake two hours; serve cold.

VEAL SOUP.—To about 3 lbs. of a well-broken joint of veal, add 4 qts. water, and set it over the fire to boil; prepare $\frac{1}{2}$ lb. macaroni by boiling it in a dish by itself with enough water to cover it; add a little butter when the macaroni is tender, strain the soup and season to taste with salt and pepper; then add the macaroni with the water in which it was boiled; onions or celery may be added for flavoring.

PRUNE PICKLE.—Take 5 lbs. of dried prunes, wash through several waters to cleanse, then put them in a broad-mouthed stone jar, pour over them boiling water and let them steep until they are plump like fresh plums, but be sure not to let the skins be broken. Now put on to boil in a preserving kettle 1 qt. of vinegar, $1\frac{1}{2}$ lbs. sugar, 1 teaspoonful ground cloves, same of cinnamon; as soon as the vinegar boils pour it hot over the prunes, from which every particle of water has been drained.

POTTED FRESH FISH.—Let the fish lie in salt water for several hours, then for 5 lbs. of fish take 3 oz. salt, 2 of ground black pepper, 2 of cinnamon, 1 of allspice and $\frac{1}{2}$ oz. cloves; cut the fish in slices, and place in the jar in which it is to be cooked, first a layer of fish, then the spices, flour and bits of butter sprinkled on, repeating till done. Fill the jar with equal parts vinegar and water, cover closely with a cloth well floured on top so that no steam can escape, and bake six hours. Let it remain in jar until cold, cut in slices and serve for tea.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES.—At last it is beginning to feel something like the joyous spring time, and soon the sweet twitterings of our birds will replace the rude whistling winds, and the snow drops, violets and hyacinths will spring up to gladden our hearts. I can fancy, too, the delighted faces of some of my nephews and nieces with the thoughts of their sugar and taffy making; while others will be preparing for gardening and cleaning away all the rubbish which has accumulated during the winter. I hope all my young readers will cultivate the taste for flowers and gardening; it improves the mind, and is a healthy exercise, and when you have beautiful flowers to enjoy, what a pleasure it will be to share them with your friends. Begin now and make a little garden of your own, and later on you can write and tell your old Uncle Tom (who is shut up in an office most of the year) all about your plants and flowers. I am very proud of you all, my dear children. I merely hinted last month that the puzzles might be better, when immediately comes in dozens of splendid new puzzles, and I think I have given you a good assortment to make out. You will understand No. 12 puzzle I hope; take three white buttons and three black ones, and work it out, never leaving more negroes than white men on one side of the river. **UNCLE TOM.**

Puzzles.

1—SQUARE WORD.

A sea in Asia; comfort; a body of water; beloved. **WM. A. LAIDMAN.**

2—METAGRAM.

Whole I am plain and poor; change my head and get successively; caution; to venture; food; an animal; to trim; scarce; a weed. **ADA ARMAND.**

3—POSITIVE AND COMPARATIVE.

New puzzle by Annie M. Scott.

EXAMPLE.—Command, a governor; ruler, ruler; level, to praise. **ANS.**—Flat, flatter.

Amount, a season.

To exist, a liquor.

A morsel, severe.

A wager, more good.

A dwelling house, a poet.

A scripture name, a tool.

Part of a ship, a teacher.

4—NUMERICAL ENIGMA.

I am composed of eight letters.

My 4, 3, 5, is a small animal.

My 8, 6, 3, 5, is a deep ditch.

My 3, 4, 1, a large vessel.

My 2, 7, 4, a poor cottage.

My whole will be a place of strife. **WILL THIRLWALL.**

5—RIDDLE.

Edmund Pepper gives us this riddle: What is it goes up the hill and down the hill and in spite of all it stands still.

6—DOUBLE DIAMOND.

A consonant, an adjective, a flame, a man's name, a dance, to look, a consonant.

A consonant, a metal, ran, an author, a subject, a number, a consonant. My whole is an author's name. **THOS. J. LINDSAY.**

7—TRANSPOSITION.

My whole are useful household articles.

Transpose and I am trees.

Behead and I am charity.

Transpose again and I mean to slam hard.

Behead and curtail and I am an interjection. **ROBERT J. RISK.**

8—DOUBLE ACROSTIC.

Words of five letters.

1 comes from wood; 2, to confirm; 3, to

build. Initials, a kind of monkey. Finals, to place. Centrals, an implement used in the garden. **HENRY RENVE.**

9—TRANSPOSITION.

Het udons ttha llfa no mahun res
Sa weddspro rupe ta veen
Tha oosteh eth reastb ro tsart het erat
Aer tomreh meoh dna veaneh. **GEO. F. BALLAN.**

No. 10.

My first is frolicsome, nimble and sly,
My second makes music in spring,
My first and second is seldom dry;
My third made fun for the king;
Be vigilant, lest my whole you'll hear
Shouted exultantly in your ear.

No. 11.

There once lived a man whose mamma called him *****
Who would fain be a poet like Phoebeus *****
He thought out his rhymes as he lay on the *****

His father looked on and dubbed him a loafer,
Such works from his father like sting of an *****
His temper did roughen as if with *****
Now passion and poetry never can *****
Except when foul weather can also be *****
And his poem intended for sweet cousin Dora,
With the title,—"What Zephyrus whispered to *****"

And which he was anxious should please with-out *****
Was nipped like a bud which the frost doth as *****

As when some proud eagle to heaven would *****
But struck by a bullet he falls to the *****
So this embryo poet fell much below *****
While pausing in wrath with his parent to *****
For wrath changes quickly a boy to a boor,
And the poem he is writing will surely prove *****

Such boys when in spring time they glance into *****
Perchance may see visions of true ***** *****.

No. 12.

Three white men and three negroes wish to cross a river. There is only one boat, and only two can cross at once. At no time are there to be left together more negroes than white men, although there may be more white men than negroes. How can this be accomplished? **13—ILLUSTRATED REBUS.**



Answers to March Puzzles.

1—The quality of mercy is not strained,
It droppeth as the gentle dew from heaven
Upon the earth beneath; it is twice blessed,
It blesses him who gives and him who takes. **—Shak.**

2—Naples, Lyons, Rome, Paris, Athens.

3—Whip—ship; dawn—fawn; coon—soon;
beat—peat; wilt—quilt; price—rice.

4—
M E A T
E T N A
A N A P
T A P E

5— H O R S E
O H I O
R I P
S O
E

6— A L M A
L E A D
M A K E
A D E N

7— E
A N N
B A G G A G E
P A L O S
F L O A T E D
E N D
D

8—Death takes us by surprise,
And stays our hurrying feet,
The great design unfinished lies,
Our lives are incomplete.

9—FARMER'S ADVOCATE.

10—General Brackenbury.

11—Our deeds are fetters that we forge ourselves.

Names of Those Who have Sent Correct Answers to March Puzzles.

Joseph Ally, Emma Dennee, Stella Louisa Pepler, Minnie Stafford, Georgia Smith, Wm. Webster, Alice Mackie, Will Thirwall, Robert Wilson, Louisa M. Berg, Willie B. Bell, Henry Reeve, Jane L. Martin, Robert J. Risk, Nettie Ryckman, J. Elmer S. Inson, Lottie A. Sewell, Ellen D. Tupper, Frank L. Milner, Ada Manning, Clara McLean, Belle Richardson, Minnie Stevens, Sophia H. Fox, Edna F. Benson, Wm. Jackson, Wm. A. Laidman, Thos. J. Lindsay, Chas. H. Foster, Edmund Pepper, E. W. Hutcheson, J. W. Danbrook, Libbie White, Joseph W. Edwards, Ada Armand, Sarah E. Fuller, Becca Lowry, Walter A. Inglehart, F. J. Rutherford, Minnie Colpitts, Albert R. Robinson, Annie M. Scott, May G. Monk, Mary Morrison, Maggie Baltzer, George F. Ballah, Annie Lampman, Aggie E. Wilson, Peter G. Mode, Edmund Pepper, Nellie Warren, Eddie A. Defoe.

Give the Boys a Chance.

The writer knows of a case where a farmer gave his boy the use of a quarter of an acre. The boy was wide awake and set it to strawberries; in two years he owned two acres, and now, three years from the beginning, he owns five acres of land, and last season he cleared \$500 above all expenses, on strawberries alone. It is a pity that more farmers do not give their boys a chance to follow their bent in farm management. If he likes stock raising give him a few sheep or cattle; if gardening or grain raising suits him, let him have a piece of land for his own use, and don't, for pity's sake, after he has got his produce ready for market, sell it for him and pocket the money, for if you do, ten chances to one, your boy will be filled with an ambition to figure behind a counter or study law or medicine, or go into some other business where a dozen are waiting for every opening, while millions of acres are being slowly but surely robbed of their fertility for want of just such men as these bright young boys will make handle them skillfully. They will make men who will be an honor to a nation whose farmers are destined to feed a world.

Little Gues' Column.

Tommie, a Pet Prairie-Dog.

When I first saw Tommie, his little round head was sticking out of a gentleman's coat pocket.

"Here, Miss Jean," said the gentleman, "I have bought a little prairie-dog for you to tame and pet."

I was glad, and thanked my friend very kindly. Tommie's home was a hole in the ground, and there he lived with an owl and a rattlesnake. The gentleman had caught him by pouring water in the hole. Tommy ran out to keep from being drowned.

I tied him to a little stake in the yard and carried him some bread and water. In a few days he knew me well. He could stand on his hind feet and bark whenever I came near.

He was a very active little fellow, and was never still except when asleep or when I scratched his head. Often when sleepy he would dart up my sleeve, nestle on my shoulder and sleep there for an hour. When he became very tame I untied the string and let him go where he pleased. The house was on a farm, and sometimes he would wander a quarter of a mile away. I would stand on the porch and call "Tommie," and he would return, jumping and barking all the way.

One day he ate too much squash and it made him sick. I found him standing on his hind feet, with his hand on his fat little stomach and the other on his head. He looked like a dejected little old gentleman. He never ate squash again.

When it was cool he would stand by the fire and warm his hand like a little boy. When I left my former home I brought him with me; but he soon died. I was very sorry and missed him very much.—[Central Christian Advocate.]

Lame and Lazy—A Fable.

Two beggars, Lame and Lazy, were in want of bread. One leaned on his crutch, the other sat rubbing his red eyes and staring in the gutter.

Lame called on Charity, who was standing at her door, and humbly asked for a crust. Instead of this he received a loaf.

Lazy, seeing the gift of Charity, exclaimed, "What, ask for a crust and receive a loaf! Well, I shall ask the old lady for a loaf; perhaps I shall get a cake."

Lazy now applied to Charity, and loudly called for a loaf of bread.

"Your 'demanding a loaf,'" said Dame Charity, "proves that you are of that class and character who ask and receive not; so be off directly, and get some work to do."

Lazy, who always found fault, and had rather whine than work, complained of ill-treatment, and even accused Charity of a breach of an exceeding great and precious promise, "Ask, and you shall receive."

Charity pointed to a painting in her room which represented three beautiful figures—Faith, Hope and Charity. Charity appeared larger and fairer than her sisters. He noticed that her right hand held a dot of honey, which fed a bee disabled, having lost its wings. Her left hand was armed with a whip to keep off the drones.

"Don't understand it," said Lazy, yawning and stretching his arms.

Charity replied, "It means that Charity feeds the lame and flogs the lazy."

Lazy gathered up his rags, and turned to go shambling off.

"Stop!" said Charity, "instead of coin I will give you counsel. Do not go and live on your poor mother, for I will send you to a rich aunt."

"Rich aunt?" echoed Lazybones. "Where shall I find her, I'd like to know?"

"You will find her in Proverbs, 5th chapter, 6th verse." But that is where Lazybones did not look; so he sat down by the gutter again, and rubbed his eyes and grumbled.

"Bulls" of Diverse Nationalities.

It was a Scotch woman who said that a butcher of her own town only killed half a beast at a time. It was a Dutchman who said that a pig had no marks on his ears except a short tail. It was a British magistrate who, being told by a vagabond that he was not married, responded, "That's a good thing for your wife." It was an English reporter who stated at a meeting of the Ethnological Society that "there were casts of the skull of an individual at different periods of adult life, to show the changes produced in ten years;" though Dean Swift certainly mentions two skulls preserved in Ireland, one of a person when he was a boy, and the other the same person when he grew to be a man. It was a Portuguese mayor who enumerated among the marks by which the body of a drowned man might be identified when found, "a marked impediment in his speech." It was a Frenchman, the famous Carliano, who, contentedly laying his head upon a large stone jar for a pillow, replied to one who inquired if it was not rather hard, "Not at all, for I have stuffed it with hay." It was an American lecturer who solemnly said one evening, "Parents, you may have children; or, if not, your daughters may have."

"Well, Father Brown, how did you like the sermon yesterday?" asked a young preacher. "Ye see, parson," was the reply, "I haven't a fair chance at them sermons of yours. I'm an old man now and have to set pretty well back by the stove; and there's old Miss Smithie, Widdow Taff 'n Rylan's darter 'n Nabby Birt 'n all the rest setting in front of me with their mouths wide open a swallerin' down all the best of the sermon, 'n what gets down to me is putty poor stuff, parson, putty poor stuff."

A German newspaper lately printed the following advertisement: "Wanted, by a lady of quality, for adequate remuneration, a few well-behaved and respectably dressed children to amuse a cat in delicate health two or three hours a day."

When are old stockings like dead men? When they are men-ded; or, perhaps, when their soles are departed; or again, when they are in holes; or, when they are in toe-toe; or, when they are past heeling; or, when they are no longer on their last legs.

What a world this is for looking down upon one another! The dry goods clerk looks down upon the waiter, the banking-house clerk looks down upon the dry goods clerk, the officers of the bank look down upon the underlings, the professional man looks down upon the bank officers, and the capitalists looks down upon each and all.

PREMIUMS FOR APRIL.

For One New Subscriber:

YOUR CHOICE OF THE FOLLOWING

- Raspberries.—Turner.—A very hardy variety; bright red color; excellent berry for home market. Three plants.
Tyler.—Black variety, very prolific. Three plants.
Blackberries.—Kittatinny.—This is one of the best varieties for the farmer's use. Deep glossy black; sweet; very productive. Three plants.
Gooseberries.—Smith's Improved.—Fruit large, pale yellow; one of the best for family use. Three plants.
Currants.—Victoria.—Red variety; one of the best cultivated. Three plants.
White Grapes.—An excellent white. Three plants.
Lee's Prolific.—A choice black. Three plants.

SEEDS.

A useful collection of Vegetable Seeds, ten varieties, and one packet novelties for 1885.
A choice collection of Flower Seeds, ten varieties.

STRAWBERRY PLANTS.

Two plants, Prince of Berries, said to be the latest and best of the many excellent varieties, and is of the finest flavor lately introduced.
Two plants, Daniel Boone.—This plant has grown in favor greatly during the past season, and bids fair to be in great demand, both as to flavor, productiveness and keeping qualities.

Three plants of James Vick Strawberry.—In addition to the already favorable opinions expressed about this berry, it has this season averaged fully as large berries as the Wilson, and produced more fruit. One large grower states that he could fill a basket sooner from the James Vick than from any other strawberry.

GRAPES.

One plant of the Brighton Grape. Claimed to be the best dark red grape known for general cultivation in Canada.
Or one plant of the Delaware, a delicious hardy grape.
Or one plant of the Clinton. This is the most hardy of all cultivated varieties; will grow in any part of the country where wild grapes ripen. No grape we have ever yet tried has given us so much satisfaction as the Clinton. We should be pleased to hear that every one of our subscribers had one of these vines planted where the more delicate varieties will not thrive.

For Two New Subscribers:

Float Thermometer.—This is one of the most accurate thermometers in the market. Every farmer should have it. See page 102 of this issue.

For Three New Subscribers:

Cream Gauge.—Every farmer and Dairyman should have this instrument to test the quality of each cow's milk. See page 102 of this issue.

For Four New Subscribers:

One plant of the New White Grape, Niagara, claimed to be the hardest, best and most profitable white grape known for general cultivation in Canada.
Send for sample and commence your canvas at once. Sample copies sent free.
Address:
The FARMER'S ADVOCATE, London, Ont.

In a paper read by J. D. Lewis on dairy education among farmers at a recent meeting of the Wisconsin Dairymen's Association, the writer spoke of the importance of a knowledge of grass growing as the starting point in the production of good dairy products. This proves that he is a long way ahead of his contemporaries in the treatment of the subject, and we hope he will live to see the day when a greater authority will arise and ask, How are you going to get your grass? Certainly not by the present system of running the land.

Dr. Voelcker found that the clover roots in an acre of soil weighed about three tons and contained almost exactly 100 pounds of nitrogen. This is almost twice the amount of nitrogen present in the average product of an acre of wheat.

The milk comes from your farm, not in your cows

NEW ADVERTISEMENTS.

ADVERTISING RATES.

The regular rate for ordinary advertisements is 25c. per line, or \$3 per inch, nonpariel, and special contracts for definite time and space made on application

Advertisements unaccompanied by specific instruction inserted until ordered out, and charged at regular rates.

The FARMER'S ADVOCATE is the unrivalled advertising medium to reach the farmers of Canada, exceeding in circulation the combined issues of all the other agricultural publications in the Dominion. Send for advertising circular and an estimate.

SPECIAL NOTICE.

THE FARMER'S ADVOCATE refuses hundreds of dollars offered for advertisements suspected of being of a swindling character. Nevertheless we cannot undertake to relieve our readers from the need of exercising common prudence on their own behalf. They must judge for themselves whether the goods advertised can in the nature of things be furnished for the price asked. They will find it a poor rule to be careful about extraordinary bargains, and they can always find safety in doubtful cases by paying for goods only upon their delivery.

GRAND'S REPOSITORY, ADELAIDE ST., TORONTO



THE GREAT ANNUAL SPRING SALE WILL COMMENCE

Monday, April 13th, and Continue for Two Weeks.

All the leading agricultural, sporting, daily and weekly journals throughout Canada, Manitoba, and the United States contain notices of the sale. Thousands of posters and circulars are being distributed, in fact no expense is being spared and nothing left undone that will bring the sale under the notice of buyers in all parts, who will gladly respond and avail themselves of such an opportunity to purchase stock by the car load.

Not a single animal of any description will be offered for sale on our own account. We depend entirely upon the farmers, breeders, and others having stock to dispose of (to whose interests we shall devote our whole energies), to supply the great demand.
Intending shippers should communicate with us at the earliest possible moment, and enable us to allot stable accommodation, which will prevent an endless amount of trouble and confusion that must necessarily occur if entries are received at the last moment. Besides, we are daily receiving communications, both by letter and telegram, from buyers in all parts, asking for information, which we can give them with better satisfaction as soon as all entries are in.

Sale at 10 a. m. sharp, each day.
GRAND & WALSH.
When writing mention FARMER'S ADVOCATE. 232-a

HEREFORD BULLS FOR SALE!

E. W. Judah,

Lowlands Stock Farm, HILLHURST, P. Q., CANADA.

Importer and Breeder of

HEREFORD CATTLE, WELSH AND SHETLAND PONIES.

Bulls of different ages for sale at prices to suit the times. Also ponies of both sexes. 231-f

NOTICE TO FARMERS.—Wanted at once, active pushing men, to wholesale my famous teas to consumers. A good man wanted in every township. No peddling, no license to pay, no capital required. Commission or salary. To good men we pay salaries of from \$600 to \$2,000 per year. Write for particulars. JAMES LAUT, importer and jobber in pure teas. Head office 281 Yonge St., Toronto. 231-y

THE UNDERSIGNED, BEING ABOUT TO RETURN to Scotland, is obliged to dispose of

300 High Grade Shropshire and Lincoln Sheep, some Imported Clydesdale Horses and Short-horn Cattle.

Address W. GIBB, LAKE PARK, Becker Co., Minn., U. S. A.

FOR SALE

TEN SHORTHORN YOUNG BULLS

and a few Heifers. Pure Bates blood. Send for Catalogues.

JAMES COWAN & SONS, 231-b Cloohmor, Galt, P. O.

For Sale.

THREE ONE-YEAR-OLD JERSEY BULLS,

Fine, large animals, very handsome, from good milking cows. All registered in the A. J. C. O. H. R. For particulars apply to

231-b SAMUEL SMOKE, Canning, Ont.

FOR SALE—SIX THOROUGHBRED DURHAM BULLS

1 three years, 2 two years, 2 eleven months and 1 ten months old. All registered in B. A. S. H. H. B. The above stock will be sold at very low prices.

232-c JOHN CAMPBELL, Penetanguishene.

BELLS

For Farmers' Use

—ALSO—

FACTORY & SCHOOL HOUSE BELLS.

Ask your hardware dealer for our bells, now so well known for their clearness of tone and durability. Catalogue furnished free on application.

J. B. ARMSTRONG Mfg. Co.,

232-f Guelph, Canada.



ALMA LADIES' COLLEGE ST. THOMAS, ONTARIO,

has the finest buildings and furnishings for the purpose in Canada; a Faculty of Sixteen professors and teachers (8 gentlemen and 10 ladies); an enrolment of 125 students last term (90 of whom were residents in the College); Course of study in Literature, Languages, Fine Arts, Music and Commercial Training.

Re-opens after Easter Holidays on Tuesday, April 7th, when (owing to the intended departure of a few pupils) 6 more resident students can be received.

For announcement address 232-a PRINCIPAL AUSTIN, B. D.

A New Portable Saw Mill for sale or exchange for pine lumber, including a 25 horse-power locomotive boiler, an engine and a direct action saw mill to cut any length desired. Also a 40 horse power second-hand Saw Mill complete for \$1,000, or will take lumber. 232-c C. NORBORTHY & CO., St. Thomas, Ont.

ONTARIO PUMP CO.
(Limited.)
TORONTO, ONT.



Seventeen Sizes GEARED WINDMILLS from 1 to 40 h. p., for Pumping Water, running Grain Crushers, Straw Cutters, Root Pulpers, or any other machinery up to a 40 h. p. grist mill.



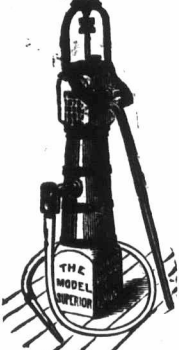
I X L FEED MILL guaranteed to grind from 10 to 20 bushels per hour according to size. These Mills are the most durable, perfect and cheapest Iron Feed Mill yet invented.



TANKS from the smallest up to 3,855 bbls.

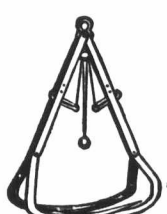


PUMPING WINDMILLS from 8 to 30 feet diameter.



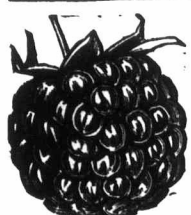
PUMPS. Iron and Wood, Force or Lift. Deep Well Pumps a Specialty.

Send us your address on a post card and we will send you 104 page illustrated catalogue free. 231-y



HAYING TOOLS. A full line of the Best

PIPE & PIPE FITTINGS In fact a full line of Water Supply Material.



I will send, post-paid, nicely packed, 1 Niagara Grape Vine, 2 years, with Co.'s seal, for \$2; 4 Concord and 2 Brighton Grape Vines for \$1; 3 Marlboro, new, and 3 Hansell, true, Raspberries, for \$1; 12 Souhegan and 12 Gregg Raspberries for \$1; 10 Manchester, 10 Jas. Wick and 10 Old Iron Clad Strawberries for \$1; 2 Fay's Prolific and 2 Lee's Black Currant for \$1.

For variety of stock see my new Catalogue, sent free to all. **A. G. HULL**, Central Fruit Gardens, St. Catharines, Ont. 232



GUIDE TO FRUIT CULTURE

Is a sumptuously illustrated book of over 70 pages. It tells how to grow fruits of all kinds, gives honest descriptions of all worthy Small Fruits and others; representing the largest stock in the U. S. It contains full instructions for planting, pruning and obtaining Fruit Trees and plants. Price, with plates 10c.; without plates 5c. Price 10c. free. We pay half the duty on goods going to Canada.

J. T. LOVETT, Little Silver, New Jersey. 232-a

LEARN to make RUBBER STAMPS. Outfits \$6.50 to \$75.00. FREE instructions with each outfit. **W. H. STEEL**, Manufacturer of Rubber Stamps, Seals, &c., BELMONT, IOWA. 232-a

THE NEW BOOM!

EMIGRATION MADE EASY

TO—
BRITISH COLUMBIA, MANITOBA, OREGON,
IDAHO, DAKOTA, MONTANA,
WYOMING, MINNESOTA.

And all points on the Pacific Coast and in the Western States. An Excursion will be run via the GRAND TRUNK RAILWAY, leaving Montreal **On Wednesday, April 15th, 1885.**

DEPART—Montreal 9.00 p. m.; Toronto 1.00 p. m.; Goderich 12.20 p. m.; Stratford 4.30 p. m.; St. Mary's 4.50 p. m. ARRIVE—Point Edward 7.00 p. m.

DEPART—Toronto 12.20 p. m.; Hamilton 3.05 p. m.; Galt 3.10 p. m.; Brantford 3.05 p. m.; Harrisburg 3.49 p. m.; Woodstock 4.45 p. m.; Ingersoll 5.03 p. m.; London 6.00 p. m. ARRIVE—Point Edward 8.20 p. m.

The Company's Splendid New **COLONIST SLEEPING CARS** Will be attached to these Excursion Trains at Montreal, and run through to St. Paul, Minn., where passengers will transfer to the Sleeping Cars of connecting lines, rendering necessary **Only One Change of Cars.**

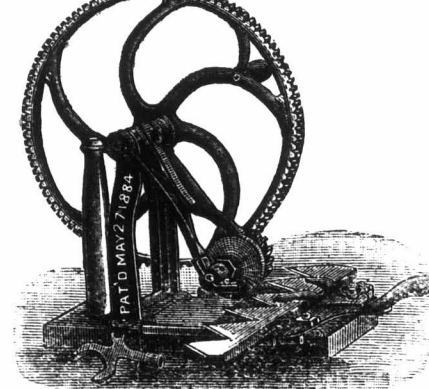
NO EXTRA CHARGE will be made for the superior accommodation afforded in the Colonist Cars. Early application for Berths should be made to the Company's Agents, so as to secure choice of location. The Sleeping Cars on the First and Third Excursion Trains will be sent via Guelph and Stratford, and on the Second, via Hamilton and London. Passengers from any Station not named above should consult the Company's Time Bills and arrange to join the Excursion Trains at the most convenient point.

FARES ARE LOWER than EVER To all points in MANITOBA, and baggage will be checked through. A Special Agent will also assist in passing the usual Customs examinations, and everything possible will be done to increase the comfort of our patrons. Further information will be cheerfully furnished upon application to any of the Company's Agents. A series of Settlers' Mixed Trains will shortly be announced.

Wm. Edgar, L. J. Seargeant, Jos. Hickson,
Gen. Pas. Agt. Traffic Man. Genl. Man.
232-a

TO FARMERS!

The Latest and Most Useful Invention of the Day is the



COMMON SENSE SICKLE GRINDER

Awarded Diploma at Canada's Great Fair, in Toronto; Western Fair, London, and Central Exhibition, Guelph. **It is Simple, Cheap, Durable, Labor-Saving and Easily Operated.** See it and judge for yourselves. No matter what your prejudice may be, one trial of this Grinder will convince you that it is the only one ever invented that answers the purpose in every particular. Manufactured by

WM. RUSSELL, Guelph, Ont. 232-c
Good Reliable Agents Wanted.

C. P. MILLS, ST. CATHARINES, ONT.,

Manufacturer of **Iron and Brass Lift and Force Pumps**, for dug and drilled Wells, Cisterns, Tanks and Fire purposes; **Wooden Pumps** with porcelain lined iron cylinders; **Rubber Bucket Chain Pumps**; **Corn Shellers**, and **Self-Sharpening Feed Cutters**, which will cut as fast as two men with the most rapid of other kinds. Send for descriptive illustrated catalogue. Responsible agents wanted to whom we will consign our goods to sell on a liberal commission. Our works have been in constant operation since 1834.



TO BRICK and TILE MAKERS

If you want the Latest Improved **BRICK MACHINES or TILE AND BRICK MACHINES COMBINED**, for Steam and Horse-power; **CLAY CRUSHERS AND STONE SEPARATORS**, the most complete in the market; Also **ENGINES AND BOILERS** adapted to machines; **COMPLETE OUTFITS & CO.**, on short notice
Address **M. C. FREEE**, or **C. NORSWORTHY & CO.**
232-c Builders, ST. THOMAS.

The FLEMING [or Eclipse] POST HOLE DIGGER



The Greatest Labour Saving tool ever invented for digging holes in the ground. This Digger works on a new principle, and is unlike anything in the market. It is neither an auger nor a plunger, but is driven in the ground by a movable bar, which works in a cylinder. We claim for this tool

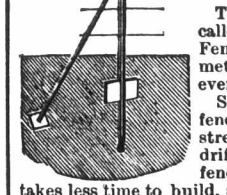
- 1st.—That one man can dig from one hundred and fifty to three hundred holes 2 ft. 6 in. deep in any ordinary ground in one day
- 2nd.—That it will dig holes any size or depth required.
- 3rd.—That it will work successfully in very hard or rough ground, where other diggers and augers will not work at all.
- 4th.—You can stand straight while using it, consequently no back-breaking work is required.

Send for descriptive circular to **THE FLEMING MFG. CO.**
Expositor Building, Brantford, Ont.
P. O. Box 400
232-a

FENCING

Cheap and Durable.

E. C. JONES' Patent Iron Fence Post.



(Patented Oct. 29th, 1884.)

The attention of the public is called to E. C. Jones' Patent Iron Fence Post and Gates, they having met with universal approval wherever tried. Some of the advantages of this fence are its great durability and strength; it will not cause snow to drift; it is much cheaper than wooden fences; fire and wind proof; proof takes less time to build, and gives thorough satisfaction when done.

SEE TESTIMONIALS:
JOHN GAGE, Esq., 200 rods of this fencing; has ordered 400 more for this spring. THOMAS BARNES, Esq., 150 rods last season; 50 more ordered for this spring. Mr. E. C. JONES: Bartonville, Dec. 1, 1884.
Dear Sir,—I am pleased to be able to state that I like your Patent Iron Fence Post very much, and think it just what we require, and much cheaper than wooden fence, or any other fence that I know anything about.
Yours etc., (Signed) JOHN GAGE.
Hamilton, Ont., Dec. 20, 1884.

This is to certify that I have used Mr. Jones' Iron Post in about one hundred and fifty rods of fencing built this season, and am well pleased with the appearance; I think it the post for time to come. (Signed) THOS. BARNES.
Mr. E. C. JONES: Hamilton, February 4, 1885.
Dear Sir,—In answer to your inquiry, I like the fence you built for me very much; it has a great many advantages, and is a very neat and durable fence.
(Signed) THOS. RAMSAY.

The Cost is from 50c. to \$1 per Rod, according to the number of Wires and Posts. For further particulars and testimonials apply to the patentee, E. C. JONES, 79 Catharine Street, Hamilton. Orders for fencing should be in as soon as possible to insure it being up in good time. Territory for sale at reasonable rates. 232-b

A PRESENT \$4 ENGRAVING. 22 x 28 inches, of all **OUR PRESIDENTS** (including 13 Cleveland). Free to any one sending us names of 25 Book Agents, and 12c. in stamps for wrapping and postage. Agents Wanted for "The Lives and Graves of Our Presidents." Address: ELDER Pub. Co., Chicago, Ill.

MAKERS

DRICK

NE SEP-

market;

adapted to

short notice

CO.,

THOMAS.

LE DIGGER

Labour Sav-

invented for

in the ground.

works on a new

is unlike any-

market. It is

ger nor a

driven in the

movable bar,

in a cylinder.

is tool.

one man can

hundred and

hundred holes

in any ordi-

one day

will dig holes

h required.

it will work

very hard or

where other

ers will not

can stand

using it, con-

ack-breaking

d.

descriptive cir-

SPRING PLANTING

Gold Medal Nursery Stock

100,000 Apple Trees.
 Grape Vines, Pear,
 Plum and Cherry Trees,
 Small Fruits,
 Ornamental Trees, for Lawn,
 Street Planting and Shelter;
 Flowering Shrubs, Roses,
 Dahlias, &c., &c.
BEST NEW AND OLD VARIETIES.

Descriptive Priced Catalogue (illustrated) free to all applicants.
 We advise EARLY placing of orders, as the supply of Nursery Stock throughout the continent will not meet the demand the ensuing season.
GEO. LESLIE & SON,
 Toronto Nurseries, LESLIE P. O., Ont.
 ESTABLISHED OVER 40 YEARS. 232-a

-FOR-
Fruit Packages
 -AND-
BASKETS

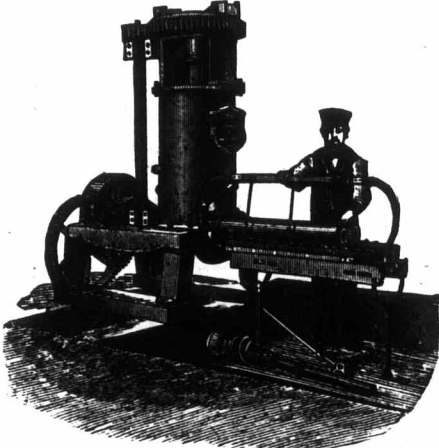
Of every description and of the best quality, send to THE

OAKVILLE BASKET FACTORY!

Strawberry and Raspberry Baskets.
 Cherry, Peach, Plum and Grape Baskets.
 Clothes Baskets. Butcher's Baskets.
 1, 2 and 3 Bushel Baskets.
 Satchel and Market Baskets.
 Gardeners' Plant Boxes.
 Grocers' Butter Dishes, &c., &c., &c.

W. B. CHISHOLM, - Oakville.
 231-d

DARVILL & CO'S

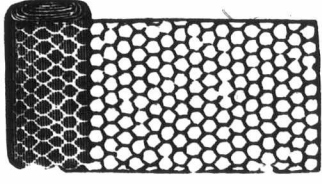


BRICK and TILE MACHINE.

This is the most perfect Machine manufactured in Canada; manufactured with or without brick attachment. Highly recommended by all who have used them.
 You will please refer to the following parties who are using it and purchased last season:—Chas. Pratt, London; Peter McIntosh, London; H. C. Rider, Nilestown; Robert Myers, Stratford; James Kerr, Ailsa Craig; R. D. McCormack, Watford; W. M. Dobby, Glencoe; John H. Strathburn; Alex. Stewart; James Nicholas, Frome.
 Send for Descriptive Circular. Address—
 231-b D. DARVILL & CO., London, Ont.

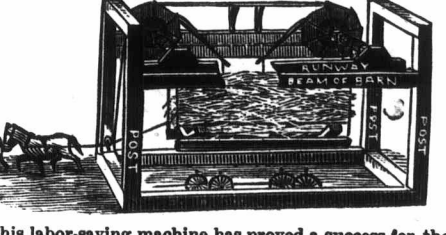
25 YEARS IN THE POULTRY YARD.
 18th Edition. 108 Pages, explaining the entire business. Gives symptoms and best remedies for all diseases. A 50-page illustrated Catalogue. All for 25c. in stamps.
A. M. LANG,
 Cove Dale, Lewis Co. Ky.

POULTRY NETTING



Galvanized Wire Poultry Netting, meshes from half inch to two inch, widths 30 inch to 72 inch, in stock. Ask your hardware dealer for Greening's Poultry Netting.

B. GREENING & CO.,
 Hamilton, Ont.
 232-c



This labor-saving machine has proved a success for the past three years. The load with the rack can be elevated to any height required. Thousands are in use in various places. This machine has been awarded all first prizes and diplomas. Beware of infringement. The rack can be raised by a man as well as by horse-power. Any party wishing a load-lifter from different parts, who do not know the agent for that district, or any person wishing to buy a "right," will apply to the patentee,
WM. SARGENT,
 Berkeley P. O., Ont.
 232-b

HENRY SLIGHT NURSERYMAN.

407 Yonge Street (near Gerrard), TORONTO, ONT
 MY SPECIALTIES—Select Stock of Fruit Trees, Grapevines, Spruce, Hedge Plants, Ornamental Trees, Choiceest New Roses, Bulbs and Seeds, Decorative Plants.
 Cut Flowers, Wedding Bouquets in superior quality on shortest notice. 231-c

WARNING TO THE PUBLIC

The public are hereby warned against purchasing any imitation or copy of the machine made by the
ROSS NOVELTY RUG EMBROIDERING MACHINE MANUFACTURING COMPANY,
 covered by their patent No. 14334, and dated March 6th, 1882. The Company are following up and prosecuting infringers as rapidly as they can be found.
R. W. ROSS, of Guelph, Ont.,
 is the sole manufacturer for the Dominion.
 232-y

GRAPEVINES of over 100 kinds. Nursery established 28 years. Delaware, Concord, Lady, Empire State, Niagara, Vergennes, Hayes, Early Victor, Lady, and all the best new and old varieties. Splendid stock. Prices low. Catalogues FREE.
 231-b **GEO. W. CAMPBELL, Delaware, Ohio.**

CATARRH

CONSTITUTIONAL CATARRH REMEDY CURES CATARRH. Hear what a Reverend Gentleman says of the Constitutional Remedy.
 To T. J. B. HARDING, Esq., Brockville, Ont.
 DEAR SIR.—I was afflicted in my head for years before I suspected it to be Catarrh. When your Agent came to Walkerton in August, 1876, I secured three bottles. Before I had used quarter of the contents of one bottle, I found decided relief, and when I had used two bottles and a third, I quit taking it, feeling quite cured.
 Yours truly, W. TINDALL, Methodist Minister, Port Elgin, Ont., Aug. 24, 1878.
 Ask for Littlefield's Constitutional Catarrh Remedy and take no other.
T. J. B. HARDING,
 Dominion Agent, Brockville, Ontario.
 For Sale by all Druggists at only one Dollar per Bottle.
BUY IT! TRY IT! 232-b

NEW Raspberry Marlboro, Circulars giving full description and prices together with a colored plate of the Gooseberry free.
ELLWANGER & BARRY,
 Mt. Hope Nurseries, Rochester, N. Y.

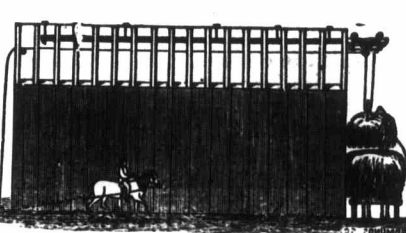
The REVOLVING BARREL CHURN



This is the most popular Churn manufactured in the United States, and is fast growing in favor in Canada. Be sure and try one before purchasing elsewhere.

MANUFACTURED BY
WORTMAN & WARD,
 LONDON, - ONTARIO.
 232-a Cor. York and William Streets.
 MENTION FARMER'S ADVOCATE.

BUCHANAN'S Improved, Double-Acting



PITCHING MACHINE

FOR UNLOADING HAY AND ALL KINDS OF LOOSE GRAIN.
 This machine can be used in barns, sheds or on stacks. It can be used to unload to either side of the barn floor without being turned around on the track, thus saving the trouble and annoyance experienced in climbing to the top of the barn to make the change. This is a special feature in my double-acting carrier, for which I hold letters patent for the Dominion, and hereby caution the public against buying from any others than me or my authorized agents, any infringement, as I will hold all persons using imitations liable for damages. This machine has never been beaten, either on a fair ground or in the barn, although it has been submitted to any test that the opposing makers could suggest, and proved to be a much better machine in the barn at work than on the fair ground empty. We will send this machine to any responsible farmer on trial, and guarantee satisfaction or no sale. Agents wanted in a great many parts of the Dominion, where I still have no agents established. Liberal discount to good agents, no others need apply, as we will not deal with any but good responsible men. Send for circulars and prices to
M. T. BUCHANAN,
 Manufacturer, Ingersoll.
 231-d

Our FAMILY KNITTING MACHINE

Under Shirts, Drawers, Scarfs, Children's Wear, Hosiery, Caps, Gloves, Mitts, &c. All sizes can be made on **Our Family Machine.** Our Book of Instructions will teach you all. It is so simple six undershirts can be made in one day, giving a profit of 75 cents each. Blind girls an knit and finish one dozen pairs of socks per day, and \$2, \$3 and \$4 per day can be easily made on our "Great Family Canadian Ribbing Machine."
 Send for descriptive Catalogue and Testimonials from the blind.
CREELMAN BROS.,
 Georgetown, Ont.
 232-comy

232-comy

Commercial.

THE FARMER'S ADVOCATE OFFICE,
London, Ont., April 1, 1885.

Wintry weather still continues, and we are doomed to have the latest spring known to the oldest inhabitants of the Dominion. Business prospects are growing brighter, and it is confidently expected that the opening of spring will be marked by a healthy revival of trade.

WHEAT

Has been firm with slight variations in price, in sympathy with the reports of the prospects of an Anglo-Russian war. In case of a European clash of arms, farmers should not expect the advance occasioned by the last Russian war, for transportation facilities have become greater, and the wheat fields are not limited to so few areas and countries. Reports from the Southern and Western States contain unfavorable tidings of the wheat crop; the area sown in the wheat belt is reduced 12 to 15 per cent., and it is estimated that a reduction of 75,000,000 to 100,000,000 bushels, in comparison with last year's crop, is not improbable. However, a favorable April may go a long way towards mitigating these prospects.

BUTTER.

The market is still depressed, owing mainly to the immense quantities of inferior grades offered, which are rapidly deteriorating. The following are Montreal quotations:

Creamery, good to choice.....	18@21
Township, choice.....	00@17
" fair to good.....	14@16
" medium.....	11@13
Morrisburg, choice.....	00@15
" medium to good.....	11@14
Brockville.....	10@15
Western.....	8@14

CHEESE.

Trade very dull, and restricted to jobbing lots. Fine to finest is quoted in Montreal at 10c. to 11c.

(Continued on page 123.)

WILLIAM EVANS,

Seedman to the Council of Agriculture for the Province of Quebec. Importer of

FIELD, GARDEN AND FLOWER SEEDS

Clover and Timothy Seed, Pasture and Lawn Grasses, Seed Wheat, Barley, Oats, Peas, Tares, etc. Send for Catalogue.

Corner of McGill and Foundling Streets, MONTREAL. 230-c

ISLAND HOME STOCK FARM, Grosse Ile, Mich.

IMPORTED PERCHERON HORSES
All stock selected from the get of sires and dams of established reputation and registered in the French and American Stud Books. We have a very large number of imported and grade Stallions and brood mares on hand. Prices reasonable. Correspondence solicited. Send for illustrated catalogue, free by mail. Address SAVAGE & FARNUM, Detroit, Mich.



THE AYR AMERICAN PLOW CO. (LIMITED.)

DIRECTORS--JOHN WATSON, President; DAVID GOLDIE, Vice-President. THE HON. JAMES YOUNG, JOHN D. MOORE, AND ALEXANDER BARRIE. MANUFACTURERS OF

PLOWS, HARROWS AND CULTIVATORS

OUR BUFORD SULKY PLOW, improved, is lighter in draft than any Hand Plow cutting a similar width of furrow. Any boy who can drive horses can handle it. It is made with steel or chilled mouldboards, and in 12, 14, and 16-inch sizes.

OUR No. 23 PLOW, CHILLED JOINTER, has no equal for all the lighter soils. OUR ADVANCE PLOW, STEEL JOINTER, is guaranteed to run steady in the hardest clay, and to clean in any soil.

OUR SIDE HILL PLOW will save its cost every year on a hilly farm. OUR WHIPPLE SPRING HARROW will do more and better work than two spring-tooth harrows, old-fashioned field cultivators, or gang plows.

OUR BETTSCHEN CORN AND ROOT CULTIVATOR is the best. It is large enough to run steady on the ground.

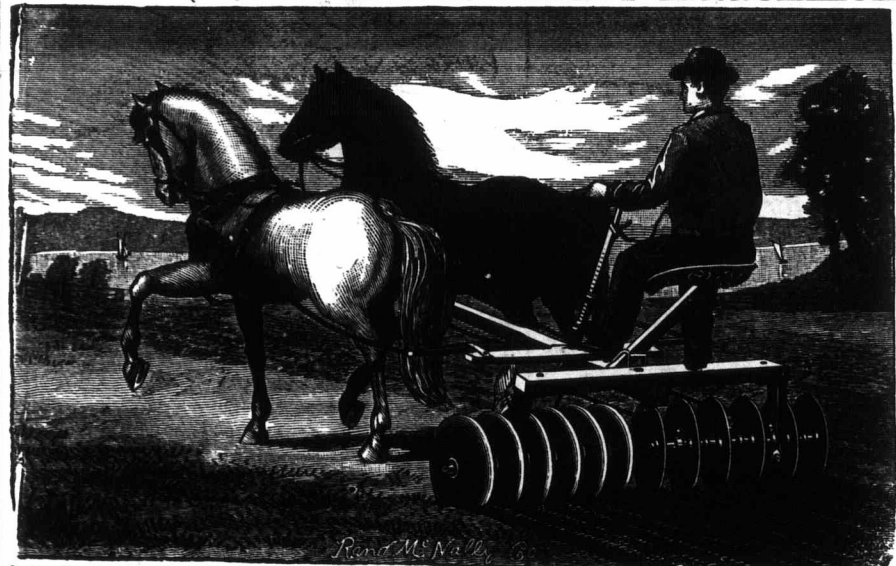
At the Provincial Exhibition held at Ottawa in September last, our No. 23 PLOW was awarded the FIRST PRIZE.

At the Provincial Plowing Match, open to the Province, held near Woodstock in October last, our Sulky Plows carried off all the prizes in that class; and our Jointer Plows, competing with ten different makes, carried off all the prizes in their class except the fifth.

These First Prize Plows do not cost more than the price asked for inferior plows. Dealers find them the best selling line of plows in Canada. Send for Circulars and Catalogues.

THE AYR AMERICAN PLOW CO. (Limited.)
231-1 AYR, ONT. CANADA.

The CORBIN DISK HARROW With or Without Seeder Attachment.



It mellows hard ground that no other Harrow or Cultivator can. It covers grain better than a drill, and skips no hollow spots. It sows evenly and saves grain, because every seed is covered. Its Seed Box can be removed in ten seconds. None other in the world has this feature. It pulverizes three times more in once going over than any spring-tooth harrow.

Spike-Tooth, or Shovel-Tooth Harrow or Cultivator. Thousands of Testimonials from all parts of the United States and Canada. Send for Circulars. PRICE, with Seeder, \$50; without Seeder, \$35.

ST. LAWRENCE MFG. CO., (Lim.) PRESCOTT, ONT.
(See FARMER'S ADVOCATE for March for picture of Seeder.)

BROWN'S PATENT HAY LOADER.



Since the first introduction of the Hay Loader, each succeeding year has added every evidence of its practicability, and it is now considered one of the greatest labor-saving machines of the age. It requires no extra men or horses, being attached to the rear of the wagon and operated by the same team that draws the load, adding to the draft the power of one man. It will load a ton of hay in five minutes, taking it up as clean as can be done with a fork. Although originally intended to run on hay raked in wind rows, it may be used in heavy unranked hay, and will work equally as well in all kinds of loose grain, especially barley. Also manufacturers of Hay Tedders, Reapers and Mowers, Pitt's Horse Powers, Field and Corn Cultivators, Straw Cutters, Grain Crushers, Sawing Machines, &c. For price, testimonials, and all particulars, address JOHN RUSSELL & CO., INGERSOLL, ONT.

SEEDS

RENNIE'S SEEDS are THE BEST
Illustrated Catalogue for 1885
Containing description and prices of the choicest FIELD, GARDEN & FLOWER SEEDS
Mailed free. Every Farmer and Gardener should have a copy before ordering seeds for the coming season. Handsomest catalogue published in Canada
WM. RENNIE, TORONTO.

SEEDS!

Illustrated Catalogue mailed free to all applicants. Send for sample of the

"NEW EARLY SCOTCH BEARDED SPRING WHEAT,"
Very early, heavy cropper and hard.

William Ewing & Co.,

231-b Seed Merchants, Montreal.

EGGS From all varieties of Poultry. Send 10c for Poultry Guide. Circulars free. SMITH & CO., Stony Brook, N. Y. 231-y

LANGSHANS in Trice a \$5.00.
Also **LANGSHAN** and **BROWN**
LEGHORN EGGS at \$1.00 per sitting.
232-b MRS. WM. MASSON, Cherry Grove, Ont.

Choice Strawberry Plants
232-c \$3 PER THOUSAND.
Address THOS. STEPHENSON, Appleby, Ont.

IF YOU WANT TO GET
A REAL GOOD
Two-Year-Old SHORTHORN BULL
red, a good animal, good pedigree and good getter,
write to
WILLIAM LINTON,
232-a AURORA, ONT.

SEED POTATOES FOR 1885!

Early Ohio,	\$1.60 per Bbl.
Early Beauty of Hebron,	1.75 "
Burbanks Seedling,	1.75 "
White Star,	2.00 "
Jumbo,	2.25 "
White Elephant,	2.00 "
Early Rose,	1.50 "
St. Patrick,	1.75 "

The above are fine, clean Potatoes, large, thoroughly matured, and true to name. All grown from imported seed, and yielded from 450 to 488 bushels to the acre this season. No charge for barrels, and free on car or boat here. Address—

D. E. HOWATT,
231-b Bay View Farm, Deseronto, Ont.
N. B.—Detailed particulars by mail when requested.

\$25 to \$50 PER DAY!

Can easily be made using the OLD RELIABLE

VICTOR

WELL BORING, ROCK DRILLING AND ARTESIAN WELL MACHINERY

We mean it and are prepared to demonstrate the fact. The WELL-MERITED SUCCESS which has crowned our efforts during the past fifteen years, and with EXCELSIOR for our MOTTO, we are MONARCH OF ALL in every country in the world. Our Machinery is operated by either Man, Horse or Steam and works very rapidly. They range in sizes from

3 inch to 4½ Feet in Diameter

and will bore and drill to ANY REQUIRED DEPTH. They will bore successfully and satisfactorily in all kinds of Earth, Soft Sand and Limestone, Bituminous Stone Coal, Slate, Hard Pan Gravel, Lava, Boulders, Serpentine and Conglomerate Rock, and guaranteed to make the very best of Wells in Quick Sand. They are light running, simple in construction, easily operated, durable and acknowledged as the best and most practical Machine extant. They are endorsed by some of the highest State Officials. They are also used extensively in

Prospecting for Coal, Gold, Silver, Coal Oil and all kinds of Minerals.

And for sinking Artesian Wells and Coal Shafts, &c. they are unexcelled. We also furnish Engines, Boilers, Wind Mills, Hydraulic Rams, Horse Powers, Brick Machines, Mining Tools, Portable Forges, Rock Drills and Machinery of all kinds.

Good Active Agents wanted in every Country in the World.

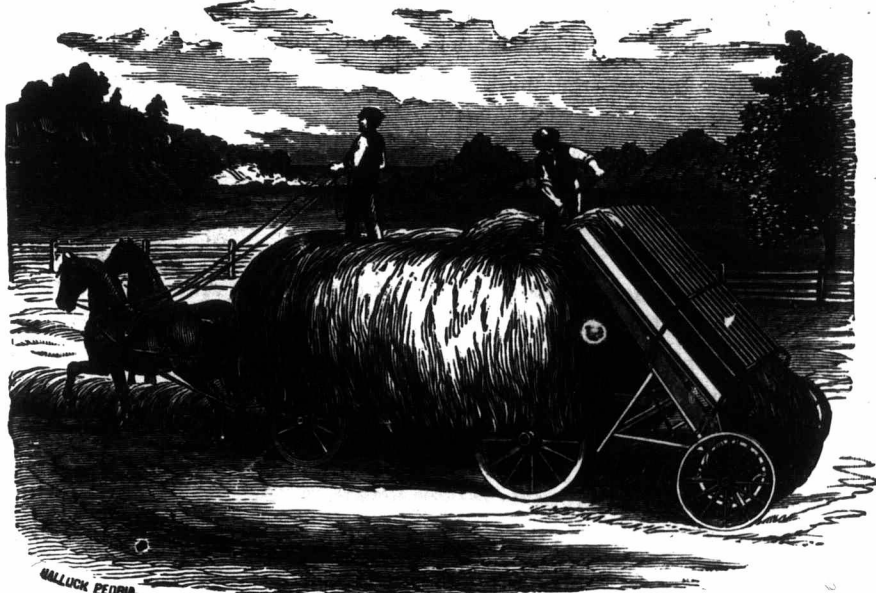
Send for Illustrated Catalogue and Price List. ADDRESS,

VICTOR WELL AUGER AND MACHINE CO.,
904 Olive Street, ST. LOUIS, Missouri, U. S. A.
State in what paper you saw this. 232-c

FOUST'S PATENT HAY LOADER.

The Foust, from its good working qualities, is pronounced by competent judges to be one of the greatest labor-saving machines of the day, and its superiority is proved by the fact that ten times more Fousts are annually sold than all other makes combined.

Received the Highest and Only Award at the Centennial Exhibition.



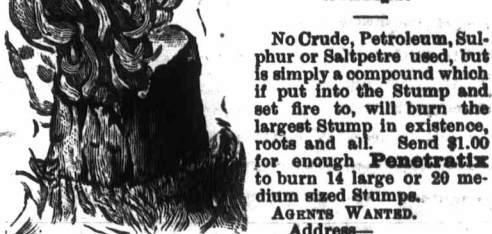
Manufactured by **MATHEW WILSON & CO.,** Hamilton, manufacturers of Hay Loaders and Hay Tedders.

This machine has been in successful use in the East for several years, and has lately been introduced with great success in Ontario. Each succeeding year has added new evidence of the practicability of the Loader, and shows conclusively the necessity for pitching hay on the wagon in the field by Machinery.

All other work in hay-making has been done by machinery for a long time, leaving the pitching on the wagon the only part accomplished in the same manner and with no greater speed than during the earlier period of hay-making. With the use of the Loader as much time is saved in pitching as is saved by the Mower, Horse-Rake, Horse-Fork, or Hay-Carrier, thereby making it safe for the farmer to cut at least double the amount of grass daily, knowing that he has the facilities for securing it.

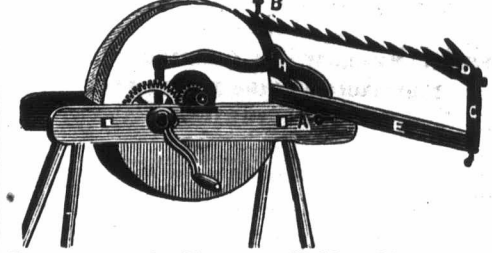
For descriptive catalogues, etc., send to
M. WILSON & CO., MANUFACTURERS OF HAY TOOLS,
Cor. Barton and Caroline Sts., HAMILTON. 232-c

THE GREAT ACME PENETRATIX!



Positively Burns Stumps.
No Crude, Petroleum, Sulphur or Saltpetre used, but is simply a compound which if put into the Stump and set fire to, will burn the largest Stump in existence, roots and all. Send \$1.00 for enough Penetratix to burn 14 large or 20 medium sized Stumps.
AGENTS WANTED.
Address—
231-c F. E. FROSS, Lock Box 100, Springfield, O., U.S.A.

P. STRAITH'S



Reaper and Mower Knife Sharpener

Manufactured at Toronto and Clinton, Canada, and Chicago in United States, and Exhibited at all the Principal Shows both in Canada and United States.

Verdict of all who have used it, the only effective Section Knife Grindstone we have seen. It is not an emery wheel, but the best grit grindstone, with self adjusting attachments, and so arranged that one boy can grind knife perfectly in ten minutes, at the same time keeping the knife in perfect shape. The reputation of the above machine is now well established throughout the Dominion by farmers who have had them in use for the last three years.

By enclosing \$8.00 in registered letter with the order the freight on the machine, will be paid to any railway station in Ontario. Special terms to wholesale Dealers. Catalogues sent free. Address all communications to
PETER STRAITH,
231-d Box 80, CLINTON, ONT.

LAST CHANCE

To obtain Government Lands free—that are suitable for general farming and stock raising purposes—before change of laws as per bills now pending in Congress.

320 IN THE DEVILS LAKE, TURTLE MOUNTAIN, And Mouse River Country. NORTH DAKOTA ACRES
Tributary to U. S. Land Office at Devils Lake, Dakota.
Over 2,000,000 Acres of R. R. Lands in Minnesota at the low price of \$3.00 per acre and upwards. Sectional Map and full particulars mailed free to any address by C. H. WARREN, Gen'l Pass. Agent, St. Paul, Minn. and Manitoba R. R., ST. PAUL, MINN. **FREE**

231-c

PRICES AT FARMERS' WAGONS, TORONTO.

	April 1st, 1885	
Wheat, fall, per bushel	\$0 80	to 0 82
Wheat, spring, do.	0 80	0 82
Wheat, goose, do.	0 67	0 68
Barley, do.	0 60	0 65
Oats, do.	0 38	0 39
Peas, do.	0 57	0 59
Rye, do.	0 59	0 60
Beans, do.	1 00	1 25
Dressed hogs, per 100 lbs.	5 75	6 00
Beef, forequarters	4 50	5 00
Beef, hindquarters	6 50	8 00
Mutton, carcass	6 00	7 25
Lamb	7 00	8 50
Hay, Clover, per ton	10 00	12 00
Timothy	13 00	18 00
Straw, do.	9 00	10 00

PRICES AT ST. LAWRENCE MARKET, TORONTO.

	April 1st, 1885.	
Chickens, per pair	\$0 60	0 70
Ducks, do.	0 80	1 00
Butter, pound rolls	0 20	0 23
Butter, large rolls	0 15	0 17
Turkeys	1 00	2 00
Geese	0 85	1 00
Cheese	0 14	0 15
Eggs, fresh, per dozen	0 17	0 20
Potatoes, per bag	0 40	0 45
Apples, per bbl.	1 50	2 25
Cabbage, per dozen	0 40	0 50
Turnips, per bag	0 25	0 30
Carrots, per bag	0 30	0 35
Beets, per bag	0 50	0 55
Paranips, per peck	0 15	0 20
Onions, per bushel	75	80

(See Notices, page 124.)

THE LAND GRANT
—OF THE—
Canadian Pacific Railway

CONSISTS OF THE FINEST
WHEAT MEADOW and GRAZING LANDS in
MANITOBA and the NORTHWEST
TERRITORIES.

Lands at very low prices within easy distances of the Railway, particularly adapted for MIXED FARMING—Stock raising, dry produce &c. Land can be purchased WITH OR WITHOUT CULTIVATION CONDITIONS.

At the option of the purchaser. Prices range from \$2.50 per acre upwards with conditions requiring cultivation, and without cultivation or settlement conditions, at liberal figures, based upon careful inspection by the Company's Land Examiners.

When the land is made subject to cultivation a **REBATE** of one-half of the purchase price is allowed on the quantity cultivated.

TERMS OF PAYMENT:

Payments may be made in full at time of purchase, or in six annual instalments, with interest. Land Grant Bonds can be had from the Bank of Montreal, or any of Agencies, and will be accepted at 10 per cent. premium on their par value, and accrued interest, in payment for lands.

Pamphlets, Maps, Guide Books, &c., can be obtained from the undersigned, and also from JOHN H. McTAVISH, Land Commissioner, Winnipeg, to whom all applications as to prices, conditions of sale, description of lands, &c., should be addressed.

By order of the Board,
CHARLES DRINKWATER,

232-d SECRETARY

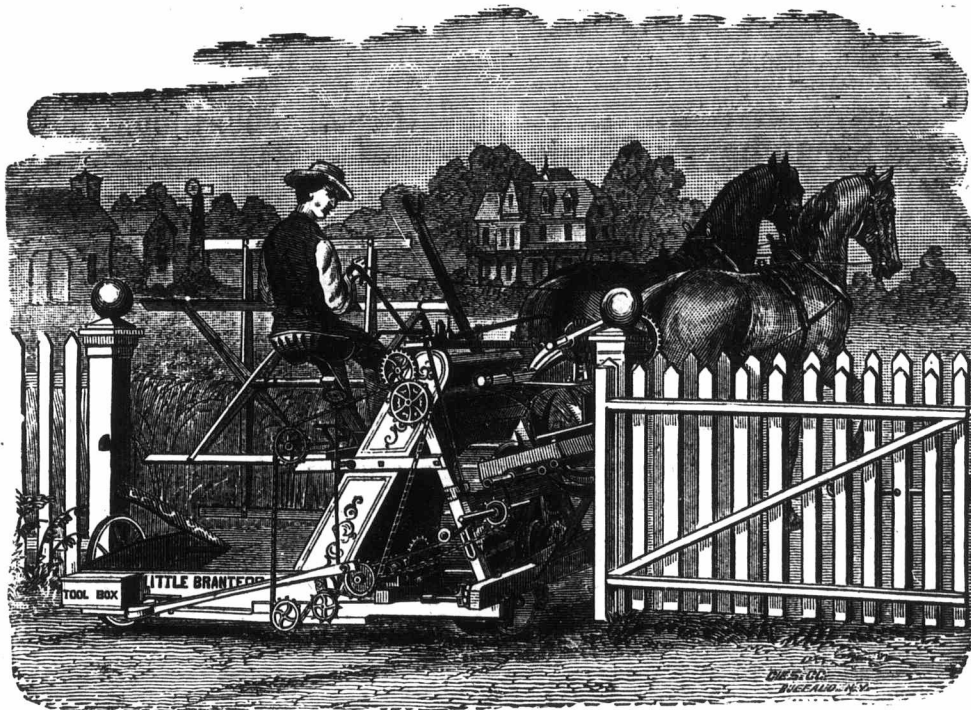
Gurney & Ware's Standard Scales



Have taken first Prize at 22 Provincial Exhibitions; first Prize at Provincial Exhibition, London, 1881. Prizes taken in England and Provinces of Quebec and Nova Scotia. Hay, Cattle, Coal, Stock, Mill, Grain, Dairy, Railroad & Grocer Scales. None genuine without name on. All makes of scales promptly repaired.

Send for catalogue to 201-1 0001

GURNEY & WARE, Hamilton, Ont.



— THE —

LITTLE BRANTFORD BINDER
FOLDED TO PASS THROUGH A GATE.

TWELVE

SOLID REASONS WHY BRANTFORD MACHINES ARE THE BEST

- 1—Because competent judges always pronounce them so. See record at Fairs.
- 2—Because they are used on all the largest and leading farms in Canada. See testimony in our pamphlet.
- 3—Because there are more Brantford machines in use in Canada than of any other kind.
- 4—Because in construction, material, finish and improvements they stand away in advance of all others.
- 5—Because they cost the farmer no more than others, although they are vastly superior and of far greater intrinsic worth to the purchaser.
- 6—Because they lead the van in every improvement, and are the lightest running, simplest and most convenient in use.
- 7—Because we have Repair Agencies at all convenient centres, and always consult the interest and convenience of our customers.
- 8—Because the Brantford Binder has **steel** Breastplate, **steel** Knotter Pinion, **malleable** iron Deck Plate, and **zinc** covered Deck.
- 9—Because the Brantford Binder has the **newest Reel** out, of great range and capacity.
- 10—Because the Brantford Binder has [the new **double angle** Finger Bar, new Finger Bar **Extension** and **iron-capped** Elevator Rollers.
- 11—Because the Brantford Binder has the neatest **Bundle Carrier** ever seen, and the only **Self-dumping** Carrier in the market.
- 12—Because the Brantford Binder is sure to do its work right from the start without trouble or hitch of any kind.

MANUFACTURED ONLY BY

A. HARRIS, SON & CO., Limited,
BRANTFORD, CAN.

For Sale by Reliable and Courteous Agents Everywhere.

CREAM BY MACHINERY.

DeLaval's Cream Separator

3,000 IN USE IN EUROPE AND AMERICA.

Ameliaburg, O.,
May 29th, 1884.

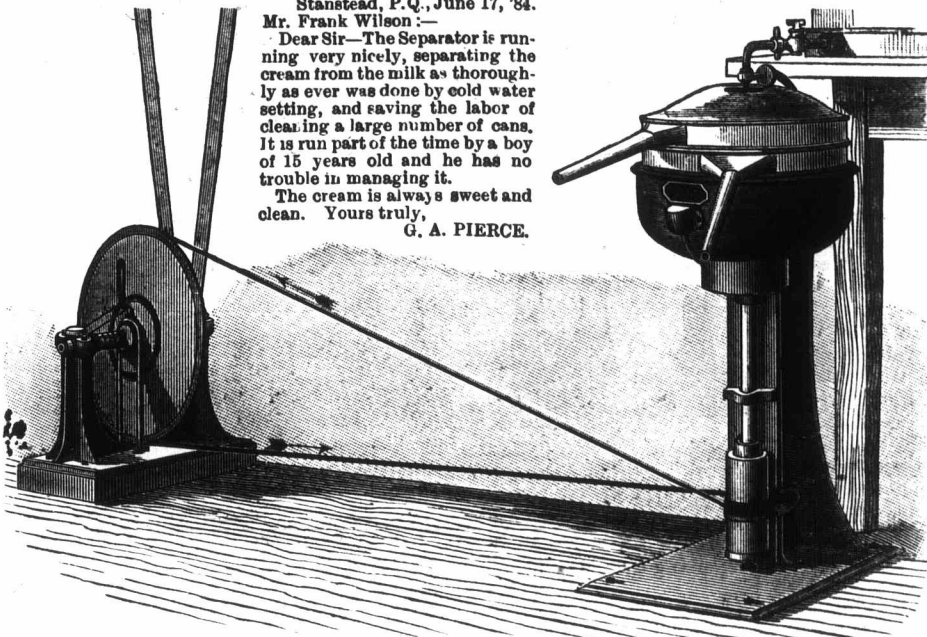
Mr. Frank Wilson :-
Dear Sir—We got the Laval Separator ready on Saturday, and used it that evening. We have run it every morning this week. We run thro' ten to twelve hundred pounds of milk in about one hour and twenty minutes to one hour and thirty minutes.

We are pleased with it; it more than meets our expectations. We can discount any record you have given in any of your descriptive catalogues or circulars—do more milk per hour and get more butter from same quantity of cream. We are sure that we are taking over 25 per cent. more butter from the milk than we ever get by setting Cookey process. There is no use talking about the old slow and uncertain process, this is a sure thing and it is only a matter of short time when setting milk for cream will be looked upon as out of the question.

Will send you actual record of this week's work as soon as possible. Yours truly,
JOHN SPRAGUE.

Sunny Side Stook Farm,
Stanstead, P.Q., June 17, '84.

Mr. Frank Wilson :-
Dear Sir—The Separator is running very nicely, separating the cream from the milk as thoroughly as ever was done by cold water setting, and saving the labor of clearing a large number of cans. It is run part of the time by a boy of 15 years old and he has no trouble in managing it. The cream is always sweet and clean. Yours truly,
G. A. PIERCE.



Bloomfield, Ont.,
Sept. 3rd, 1884.

Mr. Frank Wilson :-
Dear Sir,—I am running the two DeLaval Cream Separators purchased from you with perfect satisfaction, one has been in operation fifty and the other thirty days. The Separators set as close together as the bottoms will let them and one driving belt runs both machines. One hand can attend them both and the engine easily. I would not attempt to make butter without them. The quality is pronounced by all to be the best butter they ever used. Yours truly,
L. V. BOWERMAN.

Stockwell, Canada,
October 14th 1884.

Frank Wilson, Gen. Man. :-
Dear Sir—After a thorough test of the De Laval Cream Separator, I have no hesitation in saying it will do all you claim for it, and have much pleasure in recommending it to the dairymen of Canada. Yours very truly,
WM. SAUNDERS

The Judges of the great English Dairy Fair, just held in London, have made a report of an exhaustive comparative test between the DE LAVAL and DANISH machines resulting in favor of the DE LAVAL on every point covered by a Cream Separator. They give it the highest recommendation for superiority in construction, operation and results that any implement has ever received, and their endorsement clinches the evidence of the great merits and advantages of this most useful of all dairy appliances. They state that no butter-maker can afford to be without one. They say, also: "In regard to the essential points of construction, separation, temperature and quality of cream, and analysis of cream, the De Laval was far ahead of its opponents, and quite deserved the GOLD MEDAL given by the Council. The power of raising the skim milk after separation to a lighter level seemed to entitle the large A Danish to a second prize, but the failure to separate the milk satisfactorily debarred the other Danish machine from any further recognition."

DE LAVAL CREAM SEPARATOR CO.

FRANK WILSON,

General Manager for Canada,
19 St. Peter Street, MONTREAL, Quebec.

JOS. H. REALL, President,

32 Park Row,
NEW YORK.

SMALL FRUITS

Cornella, Daniel Boone, Prince of Berries, Atlantic, Connecticut Queen, James Vick, and other new and old Strawberries.

Marlboro, Beebe's, Golden Prolific, Souhegan, Tyler, Hopkins, Shaffers, Hansell and other leading Raspberries.

Early Cluster Blackberry.

Fay's Prolific Currant.

Gooseberries, Grapes, and other Small Fruits.

FIRST-CLASS PLANTS—LOW PRICES

Send for Illustrated Catalogue with Colored Plates free to any address.

W. W. HILLBORN,
ARKONA, ONT., CANADA.

AGENTS WANTED for best Family Bible published, containing 2,500 engravings, &c.; also Prof. Fowler's Science of Life, Moody's Sermons, Story of the Bible, Our Department (new edition), Home Cook Book. No publishers offer such terms. Send for circulars. Address J. S. BROWN & SONS, Box 55, Paris, Ont. 225-y

Miller's Tick Destroyer FOR SHEEP



Effectually kills the Ticks, improves the lustre and growth of the wool and prevents it from coating. In boxes at 35c., 70c. and \$1.00. Thirty-five cent box sufficient for 20 sheep. 221-y

HUGH MILLE & CO., Toronto.

NEW SEEDS, 1885!

Purest and Best at Moderate Prices.

Agricultural Seeds a Specialty.

A fine strain of ONION Seed. Greenhouse and Bedding Plants in great variety. Orders for cut flowers and floral designs promptly attended to. Catalogues free. Seed store and conservatories Colborne St. opposite the market, Brantford. 231-c

JAMES B. HAY, Proprietor.

SEEDS ALL TESTED! TRUE TO NAME

IMMENSE STOCK CATALOGUE (1885) telling all about NEW and profusely illustrated, much valuable information. Sent to all applying FREE

LARGE STOCK FRUIT TREES, SMALL FRUITS and VINES

J. C. EVERETT,

LIMA, INDIANA

ROCK SALT!

Lump Rock Salt—For Horses and Cattle. A natural salt far superior to common sack salt. Can be placed in manger or in the pasture. It will not waste, is an excellent tonic, and animals having access to it will relish it and keep in good condition.

PRICE—In bulk, \$10 per ton; in barrels or sacks 30c. per lb.

J. R. WALKER,

30 Foundling St., Montreal. 231-c

OUR ILLUSTRATED CATALOGUE FOR 1885, OF "EVERYTHING FOR THE GARDEN," full of valuable cultural directions, containing three colored plates, and embracing everything new and rare in Seeds and Plants, will be mailed on receipt of stamps to cover postage (6 cents). To customers of last season sent free without application.

SEEDS PETER HENDERSON & CO., PLANTS
35 & 37 CORTLANDT STREET, NEW YORK.

Notices.

The Spring Show of London Township Agricultural Society will be held at Ilderton, April 24th.

If you want to procure a good churn for either your farm or factory, send to Wortman & Ward, London, Ont., or to the Brandon Manufacturing Co., of Toronto. Be very cautious if purchasing churns from agents, as some churns will spoil good cream by too rapid motion.

Grand & Walsh's (of Toronto) periodical sale of horses has now become a permanent institution. The stables are large and spacious. We have seen no place in Canada where so many horses are sold. Mr. Grand conducts the business in a more gentlemanly, and we believe more honorable manner, than the horse sales have been conducted in some parts of Canada. Their spring sale commences on the 13th day of April, and lasts for two weeks.

The Chatham Wagon Company have lately manufactured several wagons for Messrs. Hiram Walker & Sons, of Walkerville, Ont. They are constructed to carry five tons. The Messrs. Walker have 20 miles to draw their hay, of which they require a vast quantity, there being very few in Canada who raise as much. Two teams are attached to each wagon. This company apparently have every facility for turning out a first-class article, and in any quantity. They own a saw mill, and are situated in the best hard wood district of Canada.

As seed time is now approaching, and improvements in seed drills are continually being made, it is not necessary for our subscribers to place the most implicit confidence in all they are told by agents. We would recommend them to examine the drill manufactured by Messrs. J. O. Wisner & Co., of Brantford, who inform us that several American firms have obtained permission to apply some of their late improvements to their own seeders. One of their latest patents is a spring hoe made of tempered steel, which is claimed to be an excellent pulverizer. They are a reliable firm to deal with, and their illustrated catalogue is well worth sending for.

(See Stock Notes, page 126.)

BARB WIRE FENCING.

First Prize awarded over all competitors at the last Exhibition held in Montreal, and Silver Medal and diploma for the machine used in the manufacture of Barb Wire Fencing.

THE MANITOBA LOCKED**FOUR-POINT BARB GALV. STEEL WIRE FENCING.**

Ordinary Fencing Barb, 7 inches apart; Hog Wire Fencing Barb, 4 inches apart; Plain Twisted Wire Fencing, without barb, at reduced prices.

For circulars and price lists address

The CANADA WIRE Co.,

H. R. IVES, President and Manager,

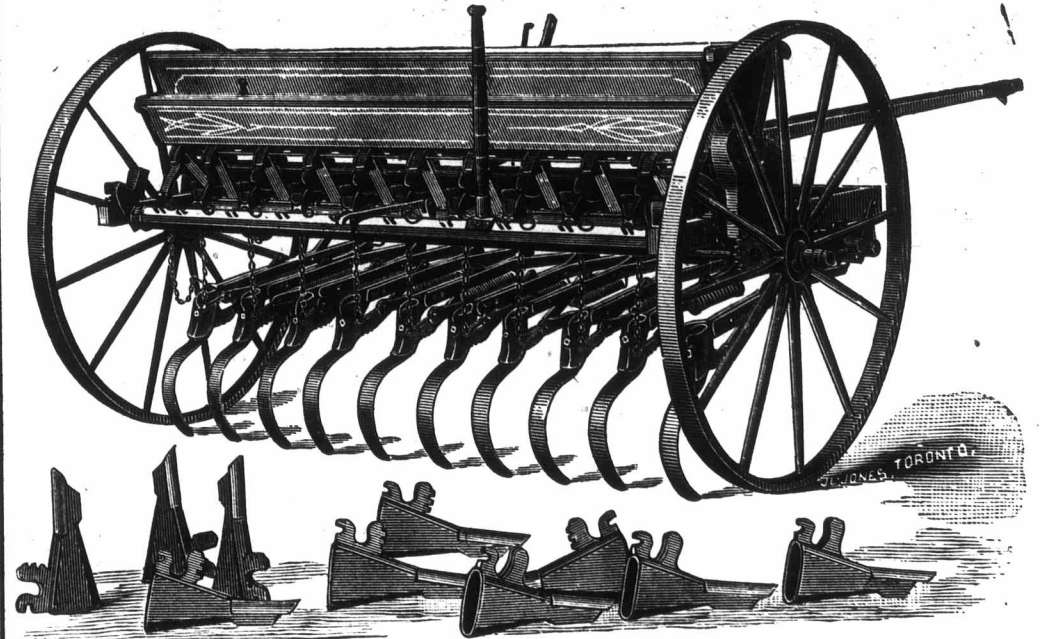
230-11 Queen Street, MONTREAL.

50 Perfumed, Embossed, Hidden Name, &c., Cards, 51 Scrap Pictures and Agent's Sample Book, 10c., 15 packs cards and agent's large Album of samples, \$1. Best inducements ever offered to agents. Send 5c. for pocket sample book and special terms, Stevens Bros. & Co., Northford, Ct. 231-a

J. M'PHERSON ROSS, PORTRAIT PAINTER

Equity Chambers, Toronto.

Satisfactory and beautiful portraits painted from small photographs. Write for sizes and prices of pictures. Reference FARMER'S ADVOCATE. 227-11

WISNER COMBINED DRILL and SEEDER
With Patent Spring Steel Seeder Teeth.

In addition to many other advantages, it is furnished with THE WISNER NEW SPRING HOE, which is the greatest invention yet made in this line. We have licensed several of the largest American firms to build it in the United States. With it the angle of Hoe or Tooth can be instantly adjusted, or Seeder Teeth exchanged for Drill Hoes as quickly, without removing a nut or bolt.

J. O. WISNER, SON & Co., Brantford, Ont.,

Patentees and Sole Manufacturers, also Manufacturers of

Grain Drills with Fertilizer Sower, Broadcast Seeders, Horse Rakes, Spring Tooth Harrows, and Cultivators.

(Name this Paper.)

232-c

G. H. PUGSLEY,

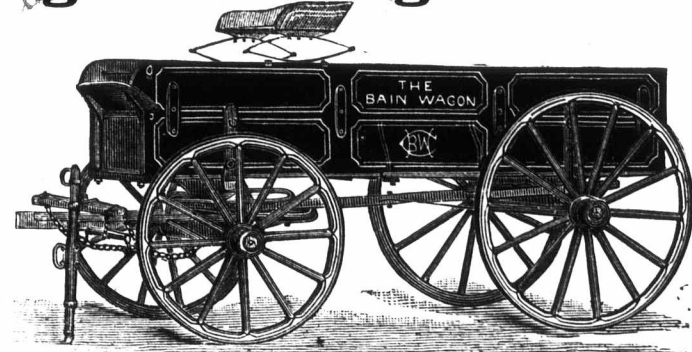
IMPORTER AND BREEDER OF

Fancy Poultry, Pheasants, Italian Bees, Fine Bred Dogs, Shetland, Wild and Fancy Ponies, Jersey and Kerry Cattle, Dealer in Fine Carriage and Roadster Horses.
ROSE HILL FARM, BRANTFORD, CANADA.

Unrivalled Success at Exhibitions! Thousands of Prizes awarded my Birds! I have bred and sold more Prize Winners the past four years than all breeders in Canada combined, at all the largest shows on the continent, both in Europe and America! Send 25 cents for Illustrated Catalogue, worth hundreds of dollars to every one, with large illustrations of all the varieties of Poultry, with a general description of Poultry, Dogs, etc. Price List of eggs free. Brahmas, Cochins, and all varieties of Hamburgs and Leghorns, Langshans, Black and Mottled Javas, Black Sumatras, Golden, Silver and White Crested Black Polish, Plymouth Rock, Games, English Malays, Sultans, Silver, Grey and White Dorkins, Lafleche, Creveceurs, Houdans, Andalusians, Japanese, Pekin, Golden and Silver Sebright, Black and White Rose Comb Bantams, Pekin, Aylesbury, Rouen, Cayuga, Call, Wood or Carolina, and Mandarin Ducks, Bronze and Wild Turkeys, Toulouse, Bremen, Sebastopol and Wild Geese. Golden Silver, Lady Amherst and English Pheasants, Red Birds, Parrots and Canaries. English Lop Eared and Angora Rabbits. White Angora Goats, silk fleeco 12 inches long. Dogs—St. Bernards, English Mastiffs, English Bulls, Bull Terriers, Scotch Collies, Beagles, Cocker Spaniels, Blenheim Spaniels, King Charles Spaniels, English and Italian Greyhounds, Fox Hounds, Fox Terriers, Maltese Toys, Pugs and Scotch Terriers all colors. Trained and White Italian Ferrets. Postal cards not noticed.

230-y

G. H. PUGSLEY Mount Pleasant Poultry Yards, Brantford, Can.

The Light Running Bain Wagon

MANUFACTURERS OF

FARM, SPRING AND FREIGHT WAGONS

Best Team and Freight Wagons are made with Steel Skeins when wanted.

Send for Circular and Prices to
BAIN WAGON COMPANY, WOODSTOCK, ONT.

N.B.—Every Wagon Warranted

231-1

OUR \$ COLLECTION

ONE FULL-SIZED PACKET of each of the following varieties of Select Seeds sent post-paid on Receipt of One Dollar—P. W. & Co.'s Long Blood Beet, P. W. & Co.'s Drumhead Cabbage, Estampe's Cabbage, Danver's Carrot, Lenormand Cauliflower, Crawford's Half-dwarf Celery, P. W. & Co.'s Long Green Cucumber, P. W. & Co.'s Golden Drumhead

Pearce, Weld & Co.
SEED MERCHANTS,
LONDON, ONT.

Lettuce, Montreal Market Musk Melon Cuban Queen Water Melon, Yellow Danver's Onion, Hollow Crown Parsnip, Long Scarlet Radish, Hubbard Squash, Mayflower Tomato, P. W. & Co.'s Swede Turnip, and one packet each of Asters, Balsams, Stocks, Zinnia, Mignonette, Sweet Peas and Phlox.
Address—PEARCE, WELD & CO., LONDON, ONT.

ONE POUND OF OUR PERMANENT PASTURE MIXTURE

Containing fifteen varieties of Grasses and Clovers, mailed, postpaid,
FOR 30 CENTS
Every Farmer should Try an Acre.

FERTILIZERS
BEST QUALITY. LOWEST PRICE.

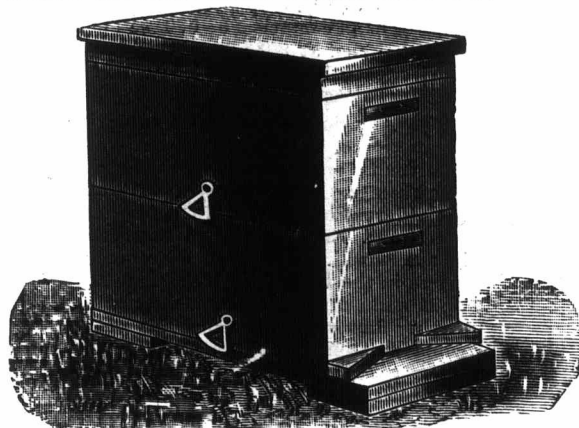
Send for Pamphlet and Samples.
231-4f
THOS. ASPDEN & SON,
Phosphate Works, LONDON, ONT.

HAMILTON COMMERCIAL COLLEGE
Cor. King and James Sts. (Opposite the Gore)
HAMILTON, ONT

A FIRST CLASS BUSINESS TRAINING COLLEGE
Practical in every department, well qualified and energetic Teachers, system new, unsurpassed by that of any other College of the kind, and endorsed by the leading business men of the city.

SHORTHAND AND TELEGRAPHY BY SKILLED INSTRUCTORS
Ladies admitted to full course. Terms reasonable. For further particulars address
E. A. GEIGER, M. L. RATTRAY,
Secretary. Principal.
Mention FARMER'S ADVOCATE. 230-y

CORRESPONDENCE BUSINESS SCHOOL
451 MAIN ST., BUFFALO, N. Y.
A new and special Department of the Bryant & Stratton Business College. Thorough and practical instruction given to young and middle-aged men and ladies at home by means of personal correspondence.
BOOK-KEEPING, BUSINESS FORMS, PENMANSHIP, ARITHMETIC, COMMERCIAL LAW, LETTER WRITING AND SHORTHAND
successfully taught. Distance no objection. Terms moderate. Circulars free by mentioning FARMER'S ADVOCATE.
Address—
C. L. BRYANT, Secretary,
Buffalo, N. Y. 231-y



BEEKEEPERS
SEND TO
GOULD & CO., Brantford, Ont
for their 40-page Catalogue of
Bee Hives, Extractors, Comb Foundations, and Everything that is needed.

Their new Patent Hive for Langstroth's Frame is without doubt superior to all others.
Foundations Supplied Promptly. 232-a

A PRIZE Send six cents for postage, and receive free, a costly box of goods which will help you to more money right away than anything else in this world. All, of either sex, succeed from first hour. The broad road to fortune opens before the workers, absolutely sure. At once address, TRUZ & Co., Augusta, Maine. 231-f

PATENTS! Thomas P. Simpson, Washington, D. C. No pay asked for patent until obtained. Write for inventor's guide. 231-o
YOUNG MEN—Learn Telegraphy or Short Hand. Situations furnished. Send for terms. Com. and R. R. Tel. College, Ann Arbor, Mich. 231-o

COGENT REASONS WHY



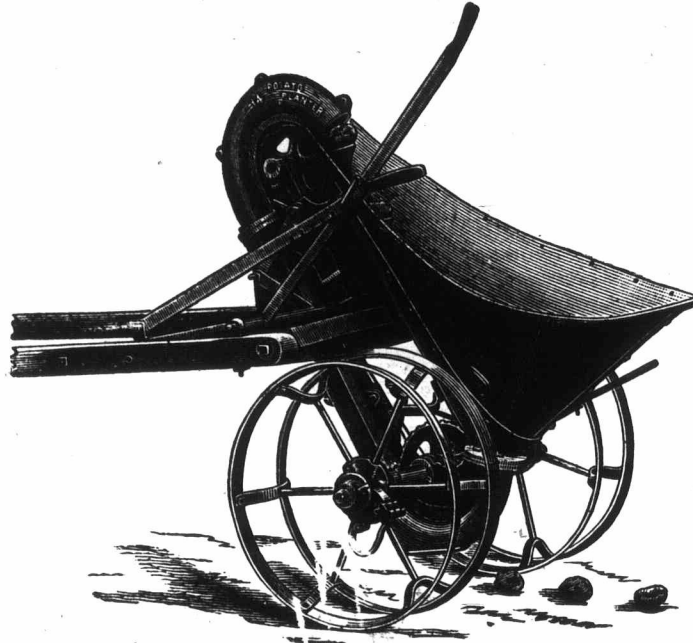
THE CHATHAM WAGON

Adopted by the Government of the Dominion of Canada as the **STANDARD WAGON**, should command your preference:—

The intrinsic cost and value of it is at least \$10 more than any other wagon made in Canada, and any unprejudiced practical man will tell you so, and the thousands who now have them in use say so, because it is not only made from the best, carefully selected and thoroughly seasoned timber and best of iron, but the **skeins** used, made only by us, are superior to any skein made or used in Canada, and are constructed specially to receive our **Climax Truss Rod**, which doubles the strength of the axle; the boxing of the hubs are **pressed**, not wedged in; a guarantee for a year accompanies each wagon, and notwithstanding this additional cost and superiority the **Chatham Wagon** can be purchased at no greater price than is charged for inferior wagons. **Bear in mind**, it is the running gear that carries your load, and no amount of fancy painting on the box will make an easy running and great carrier of a poorly constructed wagon.

Liberal Terms to Parties Buying in Carload Lots. Correspondence Solicited.
CHATHAM MANUFACTURING CO., Limited.

POTATO PLANTER



This new and useful implement has within the last four years been introduced into Canada, and has given entire satisfaction, having received the highest honors wherever exhibited and good results wherever used. It plants one drill at a time, and as many acres as the horse will walk over (from 5 to 8 acres a day). Three speeds, 6, 9 and 12 inches apart, and can be made to plant any distance required. Where one has been placed this year next season the demand is twenty-fold. If ordinary care is used in sorting the seed so as to have them nearly one size and not too small, the machine will plant them almost perfect.

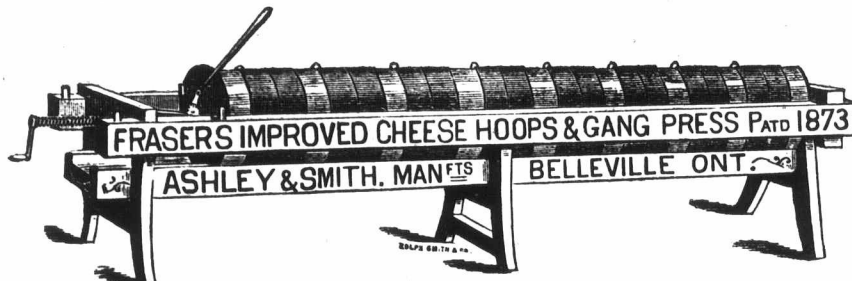
We also manufacture
Dry Paris Green Sprinklers, 2 or 4 drills at a time.
Drill Ploughs, iron and wood
Drill Harrows.
Potato Diggers, steel moulds and wrought iron Socks.
Horse Hoes.
Field Cultivators.
Large Iron and Wood Rollers.
Wagons, Carts and Sleighs made to order.

Parties requiring any of the above would do well to make enquiries from us before purchasing elsewhere.

where. We have one of the oldest established businesses in the Dominion: Orders solicited.

231-b

JEFFERY BROS., Petite Cote, Montreal. P. Q.



Warranted Capacity of Resisting from 40 to 60 Tons Pressure. Highly Recommended by all Cheese Makers. Prices Reduced for 1885.

Price of Hoops, exclusive of Press:—14½ or 15 inches diameter, to press cheese 8½ to 10½ inches in height, weighing from 45 to 60 pounds, \$5.50 each.

Full directions accompanying each Press, so that the most inexperienced person may easily put it in operation. Send for descriptive circular. Address

231-d

HARFORD ASHLEY, Belleville, Ont.

NIAGARA GRAPE VINES

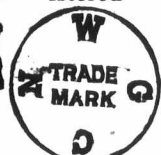
have been planted in all parts of the country, have proved a success everywhere and to be the most valuable variety in cultivation. 2 year old vines of this wonderfully productive, hardy, delicious WHITE

GRAPE are now offered for the first time at the low price of \$2.00 each by mail post paid. We hold the entire stock of this grape; none having ever before been sold with the privilege of propagation therefrom.

VINES can now be obtained only directly from US or our authorized agents. Order your vines NOW before stock is exhausted. Circulars free. Address the Sole Owners, NIAGARA WHITE GRAPE CO., Lockport, N. Y.



EVERY "NIAGARA" VINE Has this Registered



TRADE MARK Stamped on a Lead Seal Attached.

Vines supplied for Vineyard Planting, payment from Crops of Fruit

We supply Canadian Customers from a large stock of vines Grown in the Dominion. Read the following carefully.

To the Editor Canadian Horticulturist.

By same mail I send you a cluster of the Niagara Grape so that you may see what this vine is capable of producing under adverse circumstances.

You will no doubt remember that during the last few days of May a severe frost prevailed generally throughout Ontario. On the night of the 30th the thermometer registered 27.4° here, and in a place much less exposed to the bleak north-west wind than that where my vines were growing. This frost destroyed nearly every bud on my vines, and the few that were left were so much injured that nearly two weeks elapsed before they commenced to push again. The cluster I send—I have only a few hundred-weight of them—shows what the vine is capable of producing three months and fifteen days from the night of that frost.

As many of the readers of the Canadian Horticulturist will be glad to get reliable information respecting the suitability of the Niagara Grape to the peculiarities of the climate and soil of this Province, I shall be much pleased if you will tell them whether in your opinion, judging from the sample of the fruit now before you, and knowing the difficulties contended with during the past season, the Niagara grape-vine is suitable for cultivation throughout Ontario or not. Perhaps it may assist you in coming to a decision to know that the Champion grown by many persons in this vicinity, is not nearly ripe yet. I think the Delaware is ripening about equal to the Niagara. Brighton, growing on the same trellis with Niagara, has less than one-half of its berries coloured. There are but few coloured berries to be seen in Concord yet. More's Early is a few days ahead of this variety; Salom, growing in a much more favorable locality, is several days behind it; Chippawa is nearer ripe than any other I have.

Lindsay, 16th Sept., 1884.

232-a

Yours truly

THOS. BEALL.

Stock Notes.

The 40th Annual Provincial Exhibition will be held in London between the 7th and 12th of September, both dates inclusive, and the third Annual Provincial Fat Stock show will be held at Woodstock in December.

We have received a copy of the third volume of the National Register of Norman Horses, embracing entries from No. 1,864 to No. 3,000, with index of all the volumes. The work also contains proceedings of meetings, incorporation, by-laws, rules, etc. Mr. T. Butterworth, of Quincy, Illinois, is Secretary of the Association.

The annual statement of the Cochrane Rancho Company in the Northwest is published in Montreal. The sales for the twelve months realized \$154,000, paying a dividend of 10 per cent., \$88,000, to the stockholders, and carrying forward \$ 0,000 to profit and loss. The live stock on hand comprises 37,000 head of cattle and horses, valued at \$936,000. One hundred miles of wire fence has been erected and paid for during the past year.

The Americans give more attention to the production of wool than mutton, while in England the reverse is the case, says the Stockman and Farmer. This is only a natural result of the different conditions of the markets and surroundings. England is the best mutton market in the world, while wool commands the best prices in the United States. That these conditions will change is not a matter of very much doubt; but still the time has not come yet when mutton sheep are as profitable in this country as in England. The American demand now seems to be for a sheep which grows the finest fleece on a medium carcass. Wool must be, for some time to come, of at least equal importance with mutton; and in many portions of the country, from necessity, the wool must be the main object.

"Honesty is the best policy," no matter what the conditions are. In times not very far past there has been a species of dishonesty practiced by many of our reputable fine stock dealers in by bidding and buying and selling among themselves at very high prices, just to catch "greenies." There has been a good deal of this ring bidding, or in-and-in-buying, as it might be called. Doubtless, in most cases, no dishonest purpose was intended, but the movements were stratagems to inflate values and bolster up declining booms. But the laws of compensation are universal and inexorable, and such work is certain to react upon the would be manipulator. There are numerous instances, not to mention names, where men have paid outrageous prices for certain strains of stock at their brother breeders' sales, have seen their folly and realized it most bitterly, too.—[Drover's Journal.

Mr. Commissioner Loring, the head of the American Department of Agriculture, recently published an important address at the National Convention of Cattle Breeders, held at Chicago. The cows in all the States and Territories number 13,501,206, and other cattle 29,046,101. The average value of the cows is \$31.37, and that of other cattle is \$23.52. New York has \$54,891,142 in cows, and \$33,084,771 in all other cattle. Wyoming has \$149,589 in cows, and \$23,456,550 in other cattle. To show the extent to which improvement by superior blood has been carried, attention is called to the large percentage of high-grade cattle now found in the States and Territories. While in some of the States the amount of high-grade and pure-bred cattle is only 8 or 9 per cent., in Kentucky it is 40 per cent., in Ohio 40, in Indiana 33, Illinois 35, and Massachusetts 32 per cent. The total number of horned cattle west of the Mississippi River is estimated at 21,913,574 with a money value amounting to \$533,650,871. Arizona, with 216,057 horned cattle, valued at \$4,484,352, stands lowest on the list; while Texas represents the largest number, 4,945,201, valued at \$91,256,301. Iowa comes next with 8,040,887 cattle at \$85,302,255; Missouri, 2,009,617, at \$49,087,375; then Kansas and Nebraska.

SEEDS

SIMMERS' SEEDS Are the **BEST SEEDS** Are entirely the product of Reliable Growers, and are unsurpassed by any in world for purity and reliability. **Simmers' Cultivator's Guide**, containing 150 pages useful information, with prices, mailed on receipt of address.

230-c

J. A. SIMMERS, Seed Merchant and Grower, TORONTO, ONT.

Feed the Land and it will Feed You!

LAMB'S SUPERPHOSPHATE OF LIME.
LAMB'S FINE BONE DUST.

Send for Circular and Price List.

DEPARTMENT OF AGRICULTURE AND ARTS, ONTARIO.

Toronto, Jan. 21st, 1882.

PETER R. LAMB & CO., Toronto.

GENTLEMEN,—Having requested Prof. Panton, of the Ontario School of Agriculture, to estimate the commercial value of a specimen of your Superphosphate of Lime, based on an analysis made by Prof. Hays, I have the satisfaction of informing you that Prof. Panton reports that he substantially agrees with Prof. Hays' estimation of the commercial value of your Superphosphate.

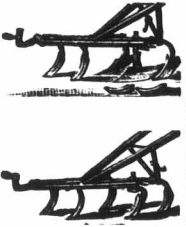
S. C. WOOD, Treas. of Ontario.

PETER R. LAMB & CO., Manufacturers,

Established 1834.

230-c

TORONTO, ONT.

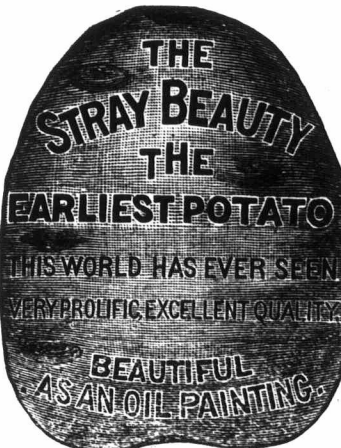
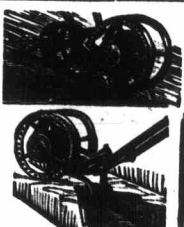


THE "PLANET JR" HOLLOW STEEL STANDARD HORSE HOE

As lately introduced, has no equal in the world. Its excellent work in the field has distanced that of all competitors. It is, in some sections, doing in one passage, the work of four or five old-style implements, and in others surpassing the cumbersome and expensive two-horse tools. The "PLANET JR" HAND SEED-DRILLS AND WHEEL HOES are the newest and best, lightest and strongest known. There are 7 distinct tools, each with special merits, no two alike or the same price; all practical and labor-saving. Let no Farmer or Gardener fail to study up during the winter evenings our 1885 CATALOGUE, which gives reduced prices, careful and exact engravings of these different machines, and such descriptions as will enable the reader to judge correctly of their merits. Thirty pages and forty engravings. Free to all. Correspondence solicited.

S. L. Allen & Co., Mfrs., 127 & 129 Catharine St., Phila., Pa.

229-f



230-c

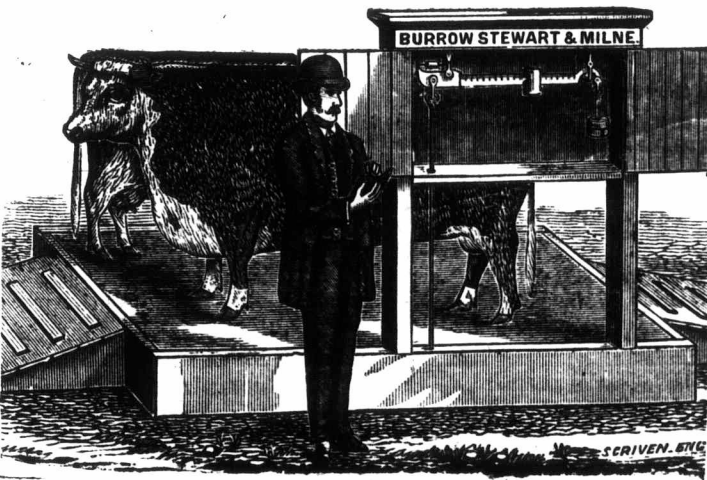
SUCCESS TO OUR DEPARTURE IN THE SEED TRADE. Relief for the people.

Seeds at **AT WHOLESALE PRICES.** In order to introduce into 50,000 homes free of cost, we make the following unprecedented offer: **FOR 60 CTS.** in postage stamps or money, we will send by mail a box new, highly-improved, and guaranteed seeds—Wilson's Improved Blood Turnip Beet, best and earliest for table use; Wilson's Highly Improved Warrington Cabbage, best and earliest; good for late. New Golden Self-Branching Celery, excellent quality, easily grown; needs no banking up. Early Green Profile Cucumber, best as cucumbers or pickles. No Plus Ultra Sugar Corn, productive, early, tender, and sweet. New Golden heading; good all summer.

THE GREAT IRON GLAD WATERMELON, largest, finest, sweetest, best-keeping watermelon in the world. Orange Cream Muskmelon, sweet, spicy, and delicious. New Silver Ball Onion, beautiful, large, mild; grows 8-pound onions from seed. Ruby Flag Pepper, largest, finest, sweetest pepper ever seen. Abbott's Sugar Parsnip, greatly improved variety. Ohio Sweet Potato Pumpkin, enormously productive, excellent quality; keeps all winter. French Breakfast Radish, best of all early radishes. White Pineapple Squash, extra quality, good for summer or winter. New Cardinal Tomato, largest and smoothest of any. White Munching Turnip, best for table use. **SAMPLE PACKET OF GOLDEN BAITTY CORN**, best, earliest and most productive of any in the country. Second, **THE STRAY BEAUTY, POTATO** every yet seen; very productive, excellent quality, beautiful in all painting.

17 packets of seed and 60 cts. **TWO** collections for \$1.10, **FOUR** for \$2.10. **OUR PROPOSITION** is to do this for the first time in the history of the world. This is a case never made before. That we mean it with a more tempting offer, and here let us say we grow these seeds by the pound, by the bushel, and by the acre. **13 PACKETS OF LARGEST FLOWER SEEDS FOR 80 CENTS**, one each of Aster, Balsam, Petunia, Fuchsia, Geranium, Marigold, Verbena—all finest strains and most beautiful colors. **Large Double English Holly**, best. **One fine ornamental grass**. **One splendid flowering plant**. **One beautiful Everlasting Flower**. **13 pkts for 80 cts.** **TWO** collections for 80 cts. **SEEDS** are regular size, with directions for cultivation. Our beautifully illustrated and descriptive Catalogue accompanies each order. Address all **SEED** orders and names to: **SAMUEL WILSON, GROWER, MECHANICSVILLE, PENNSYLVANIA**

SCALES! SCALES!



The Platform of this Scale is 6 feet by 4 feet. No Farmer, Stock Raiser or Produce Dealer should be without one. It weighs Accurately from half pound to 4,000 pounds.

DAIRY SCALES, SPECIAL FAMILY SCALES, COUNTER SCALES, PLATFORM SCALES, HAY SCALES, & C., & C.

Quality, Accuracy and Beauty of Workmanship Unsurpassed. **BURROW, STEWART & MILNE** HAMILTON, ONT.

BARLEY

MENSURY, The most productive six-rowed Barley in cultivation. Yields 10 to 20 bush. per acre more than ordinary varieties. Will malt with common six-rowed. Price only \$1 per bushel, bags extra. Send for Price List of Seed, Grain, Clover and Grass Seeds and Seed Catalogue.

232-a WM. RENNIE, TORONTO, CAN.

CORN PLANTERS!



THE BEST HAND CORN PLANTER MADE.

Agents wanted in every Township.

Otterville Manufacturing Co.,

232

Otterville, Ont.

THE FARMERS WANTS SUPPLIED.

We are agents for the following implements, which are the best in the market:—

A. Harris, Son & Co., Brantford; Binders, Reapers, Mowers, etc.
J. O. Wisner, Son & Co., Brantford; Drills, Seeders, Rakes, Cultivators, etc.
Syracuse Plow Co., N. Y.; Sulky Plow, Handle Plows, both one and two horse, also Side Hill Plows.
J. Russell & Co., Ingersoll; Hay Loaders, Tedders, Horse Powers, Straw Cutters, and Crushers.
Nash Brothers, New Jersey; Acme Pulverizing Harrow, Clod Crusher and Leveller.
Ficury, Aurora; Root Cutter and Pulper.
Strath, Clinton; Machine Knife Grinder.

SHOWERS & PLUMMER,

230-c

13 Masonic Temple, London.

TELL IT OUT AMONG THE PEOPLE!

THAT ALL OUGHT TO GO TO THE

World's Exposition
—AT—
NEW ORLEANS

A POINTER!

THE MICHIGAN CENTRAL

Illinois Central Railways

Are the best lines to take. Only one change of cars, and that at the same station. **Rates Low as any.** For further particulars apply to the Ticket Agent,

THOS. R. PARKER,

230-c

Office, 402 Richmond St., London.

WRINGERS MANGLES. WASHING MACHINES. HAMILTON INDUSTRIAL WORKS CO. HAMILTON ONT.

DEDERICK'S HAY PRESSES. are sent anywhere on trial to operate against all other presses. the customer keeping the one that suits best.



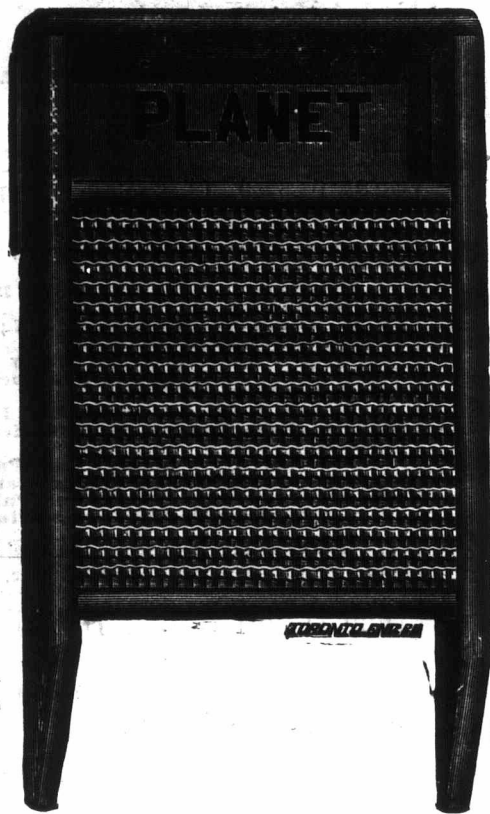
Manufactory at 90 College Street, Montreal, P. Q.
Address for circular P. K. DEDERICK & CO., Albany, N. Y.

227-1 **FAY CURRANT HEAD-QUARTERS CRAPES** BEST STOCK IN THE WORLD
SMALL FRUITS AND TREES. LOW TO DEALERS AND PLANTERS. EVERYTHING FIRST-CLASS. FREE CATALOGUES. GEO. S. JOSSELYN, FREDONIA, N. Y.

WASHBOARDS

THE BEST IS THE CHEAPEST.

P
L
A
N
E
T



PLANET

IS THE BEST.

ASK FOR IT AND TAKE NO OTHER!

SATISFACTION GUARANTEED!

Saves Time, Labor and Soap

E. B. EDDY,
HULL, P. Q.

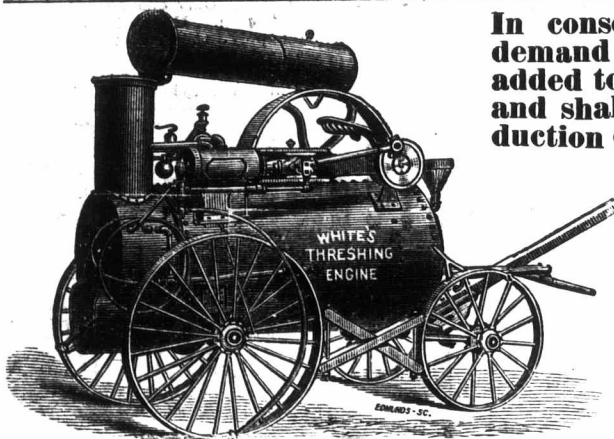
Manufacturer of

PAILS, TUBS, WASHBOARDS and MATCHES

All goods manufactured by me bear my name and are guaranteed to be the best in the market.
E. B. EDDY

WHOLESALE AGENTS:

H. A. NELSON & SONS, TORONTO and MONTREAL.



In consequence of the increased demand for my ENGINES, I have added to my shops and machinery, and shall largely increase the production of engines for 1885.

It is licensed by all Insurance Co's and has proved itself to be the most durable.

The Engine for the Northwest is made to burn either coal, wood or straw. Farmers, procure a Genuine White Threshing Engine at the Forest City Machine Works, London, Ont., Can.

GEORGE WHITE, Proprietor and Manager
 H. B. WHITE, Supt. of Machinist Dept.
 A. W. WHITE, Supt. of Erecting Dept.
 HUB. J. WHITE, Secretary-Treasurer.
 F. J. WHITE, Assistant-Secretary.
 The engines may be seen at Van Tassal's foot bridge warehouse, Belleville.

As a proof of the popularity of my Threshing Engines, I may state that three or four other firms have commenced to imitate them, but sensible Farmers will see that they get a genuine WHITE ENGINE.

I am now making a larger number than ever before for the coming season.

FIRST-CLASS ENGRAVING
 DESIGNS SUPPLIED IN WOOD
TORONTO ENGRAVING CO.
BRIDGEN & BEALE

Ontario Veterinary College

TEMPEANCE STREET, TORONTO.

The most successful Veterinary Institution in America. All experienced Teachers. Fees, Fifty Dollars per Session. Session 1882-3 begins Oct 25th. Apply to the Principal, PROF. SMITH, V. S., Edin., TORONTO, CANADA.

NOW READY!

BOUND VOLUMES OF

FARMER'S ADVOCATE FOR 1884

Every Agriculturist should have it for reference on Stock, Dairy, Garden and Orchard, Poultry, Bee-keeping, Veterinary, Entomology, Underdraining, &c., &c.

PRICE \$1.60.

ADDRESS—

FARMER'S ADVOCATE,
London, Ont.

\$5.00 FOR 35c.

A VOLUME OF UNIVERSAL REFERENCE.

THE R. M. & CO. STANDARD CYCLOPEDIA.

This Cyclopaedia is a new and valuable book for popular use, compiled by competent editors, after consultation of the best authorities, printed from new, large, clear type, and handsomely bound in leatherette in imitation of crocodile skin. It contains information on every conceivable subject, and its reliability has been assured by the most careful preparation. It is of the greatest use in answering the 10,000 questions that constantly arise in regard to dates, places, persons, incidents, statistics, etc. Complete in one volume. Finely illustrated. We want agents and canvassers, and in order that you may have a copy to exhibit and canvas with, we make this **SPECIAL OFFER**. To any one who will agree to show this book to their friends and assist us in making sales, we will, upon receipt of 35 one-cent stamps, to prepay postage expense, packing, etc., forward one copy by return of mail.

FARMS FOR SALE

In Western Ontario a number of choice Farms. Full description list sent on application. Correspondence invited, full information given, and on personal application at my office, plans of the townships shown, enabling strangers to see the position of properties and their proximity to towns, railway stations, &c. Farms with acreage to suit every one. Send to

CHARLES E. BRYDGES,

Real Estate Agent.

Land office, 98 Dundas street west, London, opposite to the City Hotel, for list of farms for sale.

W. & F. P. CURRIE & CO.

100 Grey Nun St., Montreal,

MANUFACTURERS OF

SOFA, CHAIR AND BED SPRINGS.

A LARGE STOCK ALWAYS ON HAND

IMPORTERS OF

Drain Pipes, Vent Linings, Flue Covers, Fire Bricks, Fire Clay, Portland Cement, Roman Cement, Water Lime, Plaster of Paris, Borax, Whiting, China, Clay, etc.

Agricultural Savings & Loan Company

LONDON, ONTARIO.

President—WM. GLASS, Sheriff Co. Middlesex.
 Vice-President—ADAM MURRAY, Co. Treasurer

Subscribed Capital, - - \$600,000
 Paid Up do. - - - 575,000
 Reserve Fund, - - - 61,000
 Total Assets, - - - 1,339,000

The Company issues debentures for two or more years in sums of \$100 and upwards, bearing interest at highest current rates, payable half-yearly by coupons.

Executors and Trustees are authorized by law to invest in debentures of this Company.
 For information apply to
JOHN A. ROE, Manager.

DR. W. E. WAUGH—Office, The late Dr. Anderson's, Bridout Street, LONDON ONT.