

The FARMER'S ADVOCATE

AND HOME MAGAZINE

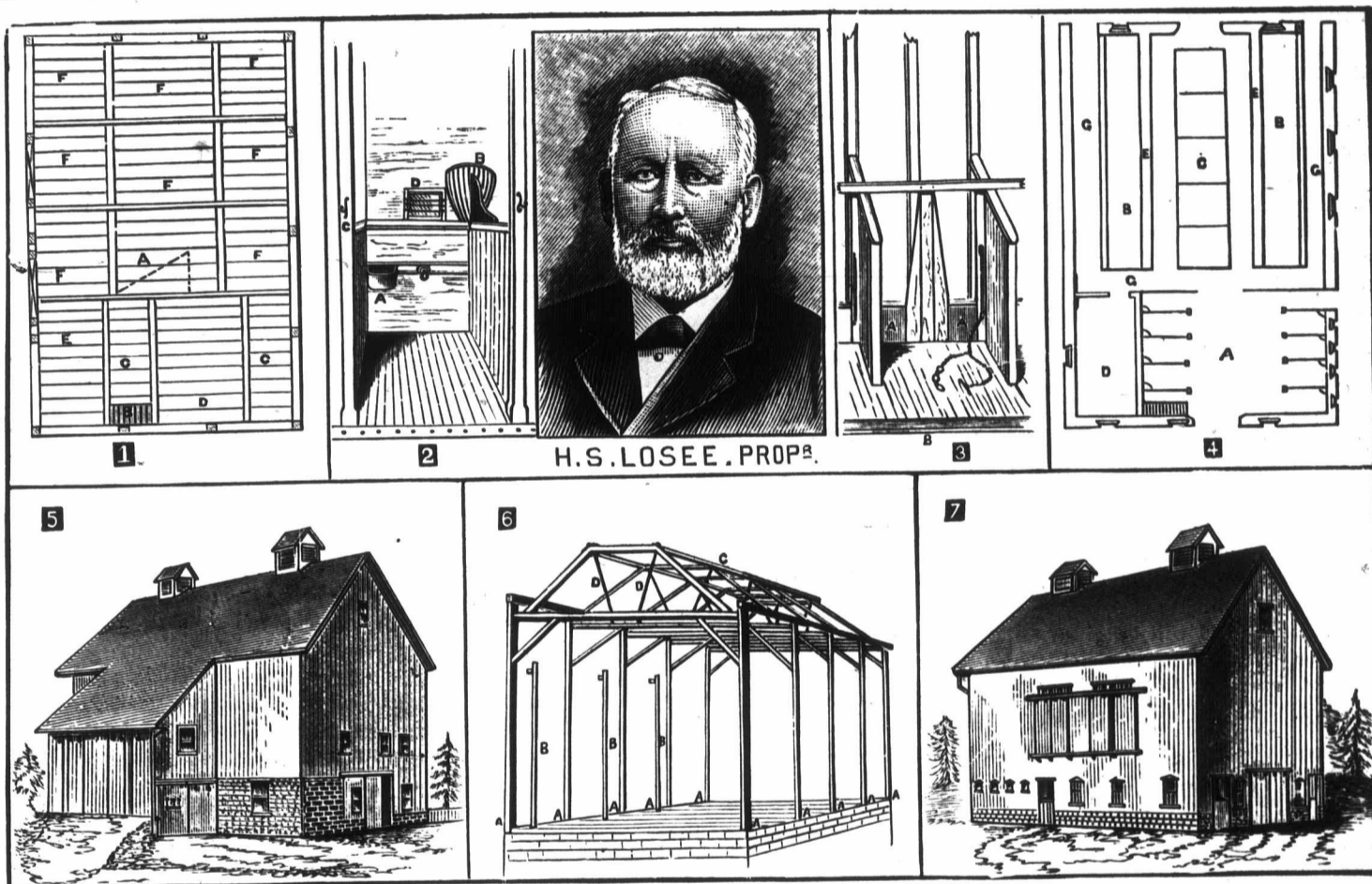
FOUNDED, 1866.

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H. S. LOSEE, PROP^r.

"Prospect Farm," Dairy Barn—the Property of Mr. H. S. Losee, Norwich, Oxford Co., Ont. (See page 71.)

Explanation.

1.—Timber plan of drive floor: A, weigh-scales; B, stairway from horse stable; C, C, passages; D, granary; E, root cellar. These portions, E excepted, cover the horse stable; and the remaining portion of the floor, represented by A and the F's, covers the cattle stable.

2.—Horse stall (single). 5 x 10 feet: A, the feed box; B, the hay rack; C, harness hook; D, window.

3.—Cow stall (double): A, A, the mangers; B, the gutter. In winter the cows are tied with a chain, but in summer stanchions are fitted in, which are not represented in the cut. The bottom of the manger is on a level with the floor, and as the fodder is all cut, the manger has very little depth.

4.—Ground plan: A, horse stable; B, cow stalls; C, box-stalls; D, root cellar, 23x11½ feet; E, E, mangers; G, G, G, passages. There is a pump located in the horse stable, near the passage into the cow stable. The passage between horse and cattle stables is 4 feet, the others 4 feet 10 inches.

5.—Front view of barn.

6.—The frame: A, the bents, five in number; B, ventilators, there being three on each side of barn; D, iron rods supporting roof; C, purline plate.

7.—Back view.

GENERAL REMARKS.—It will be observed that there are no posts or bays on the drive floor, the whole interior being clear except the

space occupied by the granary and adjacent passages. The foddors and sheaves are stowed away in such a manner as to leave a circular space in front large enough to turn a wagon. The annex, as shown in No. 5, is a most excellent and economical contrivance. Its basement is divided into a calf stable with a wide passage in front of the stalls, which may be used for stowing away implements during the summer months. This attached building covers the entrance into the barn, and on its floor there is a trapway for depositing fodder into the passage below. The cut fodder may be dropped into any of the box stalls. The plans are drawn on the scale of one thirty-sixth of an inch to the foot, the size of the building being 70 x 50 feet.

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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, for farmers, gardeners and stockmen, of any publication in Canada.

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Our Monthly Prize Essays.

Our prize of \$5 for the best essay on *How can the FARMER'S ADVOCATE Best Expend \$100 Annually in the Farmers' Interest*, has been awarded to Jas. Shannon, Wolverson, Ont. The essay appears in this issue.

A prize of \$5.00 will be given for the best original essay on *How Best to Raise the Standard of Our Butter*. Essays to be in not later than March 15th.

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.

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.

How to get a large crop of roots—Have a small crop of weeds.

The four requisites—Good land, good seed, good tillage, good manure.

Learn how to keep one cow before you undertake the responsibilities of a whole herd.

Don't imagine that a rainy day is intended as a day of rest. You will find plenty of indoor jobs in preparing for the spring work. Bear also in mind that genuine rest consists in a change of employment, especially from physical to mental pursuits; so alternate your planning with the labor of your hands.

Editorial.**On the Wing.****EASTERN DAIRYMEN'S MEETING.**

We were present a short time at the Eastern Dairymen's Meeting, which was held in Morrisburg. The first days of the meeting the attendance was large, but it gradually decreased, and to us it appears that there exists too strong a partizan feeling in the management of both the Eastern and Western Dairymen's Associations, to allow as much good being done to the dairy interest as there would be if this partizan spirit could be avoided. Partizan speeches are too apt to be favored, and many a weary, tedious address is imposed on the farmers by some axe-grinder who ought to know that he is only wasting the time of farmers who come to gain information, and have not the time to spare to listen for days to hear mere orations of some who like to hear their own voice. While one orator was delivering one of these long addresses, half the farmers left the room. There is more good done by the judicious answering of questions from the plain practical operators, and answered by such men as L. B. Arnold, Harris Lewis, or T. D. Curtis. This we believe to be the opinion of the real dairymen. There was some valuable information imparted, however. The meeting was a good one, but the principal interest appeared to us to be more directed to and for the interest of dealers and factorymen than to the patrons. The patrons are the most numerous, but have not so much money or influence at their command, and have not the time to attend these meetings for days together. We believe that meetings of patrons held in different localities, with capable persons to respond to questions, would be a great advantage. We do not recommend an increased grant for such a purpose, but some of the existing expenditures might with advantage be changed to encourage the object.

Probably the most important remark we heard at the meeting was dropped from the lips of Mr. Harris, an American gentleman who had been engaged to instruct Canadians, and also to instruct some of the dairymen of Scotland, on the American mode of cheese making. In speaking of the Scotch system of marketing, he said that there existed a confidence between the buyer and the seller that was not known on this side of the Atlantic, or words to that effect; but he refused to allow us to copy the exact words from his address. This we believe to be a very important fact, and one that every Canadian and American dairyman and dealer should enquire into, and if possible ascertain the cause and endeavor to devise a remedy.

Although our dairy products have gained the highest honors at Vienna, our cheese now stands higher on the market than that of our cousins across the line. Let us all strive to gain the confidence of foreigners; without that we are sure, sooner or later, to meet with serious loss, embarrassments, and a wreck, both financially and morally. Confidence implies honor and truth and justice, and Mr. Harris has ascertained and acknowledged that on this side of the Atlantic there exists a lack of confidence. Mr. Harris has been a long time in the employ of our Government and has had an opportunity of ascertaining the facts.

As will be seen by our prize essay column, we offer a prize for the best essay on the best plan of establishing confidence amongst dairymen, patrons and dealers.

Morrisburg is situated on the banks of the St. Lawrence, about 90 miles west of Montreal. It has a neat, thrifty, substantial appearance; it has gained a high reputation for the quality and quantity of butter exported from it. The quantity of eggs and poultry is enormous that is shipped from this locality, and the appearance of the country indicates a great amount of contentment, happiness and thrift, so wonderfully contrasting with the appearance of the towns or villages that we have yet seen in the sunny South, that the sight or thought of such places as Morrisburg awakens in us greater patriotism; and with care and judicious caution not to increase our debts, we have in Canada just as good a place to build our little paradises, as in any other land.

THE WORLD'S EXHIBITION.

This is the name given to the great Exhibition now being held in New Orleans. We left Toronto on Tuesday, the 10th of February, in company with members of the Press Association, via the G. T. R. to Fort Gratiot, then through Michigan to Chicago, thence by Illinois Central to New Orleans, arriving there on Sunday afternoon, having been storm-stayed for two days by the greatest fall of snow that has been known in Illinois for twenty-five years.

We passed through the ice and snow region to the clime of the sunny South. What a wonderful change we found! In a 50-hours' ride from Canada, ripe oranges are hanging on the trees, even over-hanging the sidewalks in some places; trees are nearly as heavily laden as apple trees were with us. Large branching and beautiful palms and ferns are seen, and the trees are festooned with long, drooping moss, giving everything the appearance of novelty. The air is balmy and pleasant, like May weather with us; tulips and crocuses are just beginning to open.

The great exhibition building is a monstrous affair, covering 33 acres of ground, and excepting the galleries, the space is well filled with interesting exhibits from the workshops of art and science. Another large building contains representations of products of different States and Territories, most elaborately and tastefully arranged. This we consider the crowning feature of this exhibition, as it was of most interest to us, and we think it would be to all interested in agriculture. The horticultural building is spacious, but disappointing, as we really expected to have seen plants and flowers in this balmy clime in excess of what we had previously seen. But so meagre and poor is the display in this building that we would much rather see the contents of many of our Canadian conservatories, as in them we can see more flowers and more pleasing specimens of plants than at this exhibition. The ferns, palms, orange trees, magnolias, etc., etc., were to be seen to much better advantage in private gardens in New Orleans than at this exhibition. This is a very sad defect, and one which, if it had been properly attended to, would, we believe, have done more good to New Orleans than all the sums they have or ever will expend in their Mardi Gras. The grounds outside the horticultural hall are most defective and de-

ficient in vegetation in comparison with what we should expect. But time may improve them a little.

The machinery is not all yet in its place, and the art department not yet opened.

The stock sheds are a pattern for space and convenience, but have been and will be almost vacant.

The display of cotton, cotton machinery and cotton goods, is probably the largest ever exhibited.

Foreign nations are not as well represented as they were at Philadelphia. Canada is scarcely represented; in the horticultural department our apples, we think, compare favorably with any. Most all the apples were rotting badly. The following were the varieties that appeared to us to be the soundest and best keepers, that we noticed among our Canadian exhibit: Russet, Wagner, Penock, Baldwin, Red Canada, Cooper's Seedling and King of Tompkins. The display of oranges, lemons, citrons, etc., etc., was very fine. Some magnificent live oak trees, festooned with the waving moss, are quite an exhibit of themselves.

Mr. Marsh, of Richmond Hill, will bring several prizes to Canada for his Southdowns, Lincolns and Shropshires. Mr. Featherstone will gain honors for his swine exhibit. There was a very fine display of Merino sheep and Angora goats, but the display of horned and polled cattle was most meagre.

New Orleans and the exhibition must be seen to be appreciated, and those who can afford to expend \$100, either for health or profit, would, we have no doubt, be as well pleased with the expenditure as we have been. We should like to have been able to spend more time to have gone to Mexico, California, etc. The Illinois Central offers conveniences and very cheap rates at the present time to all parts.

On our return trip we met Mr. S. White and several Chatham farmers, who had been at the exhibition and had been on the farms in Louisiana. Mr. White said he would not give one of his Chatham farms for a township of such land as he had seen. We passed through part of Kentucky, Tennessee and Louisiana, and our conclusion was that the deeper the snow the better the stock, the farm and the farmer. We do not know how to appreciate the value of our snow so well as to go and see those poor, miserable looking cattle trying to pick a living along the line of route through which we passed in Kentucky, Tennessee and Louisiana, to see the poor soil, the poor houses, the lack of thrift or comfort. When we return to the snow region, the orchards, buildings and farmers' sleighing, and densely settled lands, are indications that should be considered by all visitors to the verdant land of the beautiful magnolias, ferns, palms and oranges, and after seeing the beauties of other lands return to our firesides and sing "Home, Sweet Home."

New Orleans is in the State of Louisiana, on the banks of the Mississippi, 100 miles from the mouth of the river. It has a population of over 200,000. The land is low and wet. It is the principal export point of the Southern States. It is the great cotton market, and immense quantities of other products are shipped from here. The debt of the city is very great, and we heard of municipalities borrowing

money in Louisiana at 20 per cent. Despite this, reports reached our ears that this great Mardi Gras cost the sum of \$280,000. This is a wonderful demonstration, of which we in Ontario know but little. New Orleans is 913 miles from Chicago.

How to Save the Manure.

VII.

3. *The Supply of Potash.*—Like nitrogen, there are indications by which the presence of potash in the soil can usually be ascertained. It is generally abundant in clay soils; for the rock from which clay has been formed was rich in potash. In our soils a bountiful supply has also been derived from the ashes of the timber on our previously wooded lands, and as potash is readily retained by most soils, the supply from this source lasts for many years. But a great waste has also been taking place; for a very small portion of the quantity removed from the soil has been returned. Farnyard manure, in its fresh state, contains considerable quantities of soluble potash, most of which has been wasted by the exposed method of treatment.

We have now pointed out the methods by which the presence of nitrogen and potash may be ascertained; as to phosphoric acid no safe guide can be given to determine its presence or absence. The farmer will now readily see that his first experiment in fertilizers should be with phosphoric acid, providing he has previously ascertained the soil to contain a sufficiency of vegetable matter and potash. Unleached ashes are the most available potash fertilizer for the farmer; but they are not good as an experiment for ascertaining if the land is deficient in this substance, for they contain other valuable salts besides potash, especially appreciable quantities of phosphoric acid, and the experimenter cannot know whether to attribute most of the beneficial results to the potash or the other salts contained in the ashes.

In our markets potash fertilizers are obtained in the form of chloride of potassium, also called muriate of potash; and kainit is also sold as a potash fertilizer, but this contains chloride of potassium, sulphate of magnesium, and chloride of magnesium, there being only 13 or 14 per cent. of potash in kainit. Wood ashes contain about 10 to 12 per cent. of potash. Experiments with potash should be made on light soils, and chloride of potassium should be used. Sulphate of potash is also kept by our dealers.

Most farmers think that experimenting with fertilizers is attended with a considerable amount of extra labor. They imagine that they must divide their land into plots, and thresh the different yields separately. Such labor is entirely uncalled for. The farmer who cannot go into his field blindfolded, sow say a square rod with fertilizers, and readily pick out the spot a few weeks afterwards, has his soil in a much more fertile condition than a large majority of our farmers. The quantity applied varies with the class of fertilizer and the productive capacity of the soil. The nitrogen compounds which we mentioned (nitrate of soda and sulphate of ammonia) may be applied at the rate of about 400 lbs. per acre, and about the same quantity of any of the phosphates which we mentioned (superphos-

phate, precipitated phosphate, ground bone, or mineral phosphate); but the muriate of potash should be applied in less quantities, say about 150 lbs. per acre. These should be applied to soils which have the proper mechanical condition, viz., neither too compact nor too porous. A square rod will be large enough for an experiment, so that two or three pounds of a fertilizer, costing no more than 20 to 30 cents, may prove the commencement of a successful era to mostly every farmer in the Dominion.

These fertilizers should be sown at the same time as the grain and the ground thoroughly harrowed. With regard to the soluble fertilizers, however, especially if the quantity applied is large, part should be sown after the grain is up, making two or three different applications altogether. If the nitrogen fertilizers are all sown at once, a heavy shower of rain would wash them out of the soil into the drainage water.

In our next issue we shall close these articles on manures by treating on those compounds which farmers use as fertilizers, but do not fertilize, their beneficial action being attributed to their physical action in the soil, by which the land becomes more or less rapidly impoverished.

Disbelieving Facts and Figures.

If one statement is more plausible than another, farmers must be pretty thoroughly convinced that their system of husbandry must undergo a rapid change within the coming few years. They must study a system of rotation which they have not yet thought of. Wheat growing must largely be left to those newer countries with which we are no longer able to compete; and while they are exhausting their soil, we must be recuperating ours, so that in a few decades hence, when their soil becomes as uncertain for wheat as ours is now, we may then return to wheat growing again. A large majority of our farmers know little or nothing about the agricultural tendency of the times, and will therefore likely persevere in the ruinous old rut for many years to come. They are convinced that they thoroughly understand grain growing, and are unwilling to undergo the effort of studying other branches of husbandry.

Amongst the probable changes that will take place are: Greater attention devoted to the raising of beef and dairy products, the establishment of orchards, and the cultivation of small fruits. These questions are all involved in one another, and include first of all an accurate knowledge of pastures, fodder crops and trees, the nature and condition of the soils best adapted therefor, methods of preparation, etc.

If great ends must have small beginnings the farmer can have no doubt as to how he should commence. Let him first take what he considers his best cow, keep a record of her yield and thereby ascertain the profits for one season. Let him then compare this gain with the loss sustained from his worst cow, comparing both results with the profit or loss of an acre of wheat. Make the same calculations with an apple tree, a raspberry bush, or a patch of strawberries, figuring the profits of an acre from the basis of a tree, or a bush, or a

patch, taking an average yield in each case. It will be found that in some instances the income will amount to thousands of dollars per acre; if he disbelieves these facts or figures, then let him be guided by half the sums, and still he will find a profit of five to ten hundred per cent. above that of wheat growing. The figures thus obtained will be very hard to believe, but then facts and figures are proverbially the farmer's hobby, and we give him credit for his prejudice against theory. Now is the time for him to take these matters into consideration.

Make Drainage Observations.

Every farmer should make observations in each field as to drainage requirements several years before he lays a tile. Just as in the erection of buildings, he cannot lay his plans too soon. It usually requires but little observation to ascertain the direction of the water flow; but the location of the damp spots, the duration of the periods of stagnant water in the wet seasons, the depth of the water line, and many other observations, should be taken long before drainage operations begin. The more these suggestions are regarded, the greater the economy in the performance of the work and the greater the accuracy in calculating beforehand the profits of drainage.

The condition of the surface soil is not always a reliable guide; the character of subsoil must not be overlooked, and those spots which are sufficiently drained by nature should be marked out. First of all, let it be laid down as a rule that the soil to the depth to which the roots of the crop penetrate should be free from stagnant water,—that is, in such a condition in which the pores in the particles of soil are saturated with moisture, but the space between the particles filled with air. These are the best conditions for germination and growth, and spring is the best time to make observations.

In looking over your fields in spring, you will observe that some portions usually dry in patches, others in streaks; and if a crop covers the ground, the land which contains stagnant water for too long a period will produce a growth with a yellowish tinge, instead of a deep green color, as is the case with soils drained artificially or naturally. Clay soils, when the drainage is insufficient, will be observed to crack, more or less, according to the rapidity of the evaporation. In all fields saturated with excessive moisture, there is a tendency to the growth of such weeds as usually flourish in damp places, the development of which are checked by drainage. In cases of suspicion as to the efficiency of the natural drainage, holes should be sunk here and there to the depth of about four feet in order to ascertain the length of time in which water will stagnate therein; and if you are in doubt, when digging drains, how far they should be apart, a similar test may be adopted, making the holes at varied distances on each side of the drain, and observing, after rains, how long it will take for the water to find its way into the drain.

See that you do not sow grain that contains smut. For precautions and treatment read our correspondence columns.

Special Contributors.

A Chatty Letter from the States.

[FROM OUR CHICAGO CORRESPONDENT.]

Prices for farm products are low, and we hear a good deal of complaint about it amongst farmers. Those who have large stores of grain contend that the corn crop has been too large, and think they will pay more attention the coming year to stock growing. On the other hand, those who have put most of their efforts into making fat stock, are persuaded that the thing has been over done, and that they had better take up some other department of farm work this year. So it goes. Each one is too much dissatisfied with his own particular lot.

There is no question but what live stock and agricultural products are selling comparatively low. But a glance at every branch of manufacture will show that grain and live stock are not selling any lower, relatively, than other products. The fact of the matter is, we have been fairly on the verge of a disastrous panic, caused by the wild speculation and extravagance of the past few years. And right here it may be well to observe that the large production of grain and stock all over the country during the past year, which has been charged with being the cause of low prices for the same, has been the very means of averting a general crash. During this long winter if meat and bread were not abundant and rather cheap, the times would indeed be hard.

There is a large school of chronic complainers, who would have something to find fault with under any circumstances. There is at the present time certainly no very good cause for feeling dissatisfied with the profits of farm work. At any rate there is nothing which pays a larger legitimate profit.

It is coming to be a pretty generally recognized fact that the most profitable manner of marketing grain is through the medium of good beef, pork, and mutton. The farmers of the States are a great deal more dependent upon corn in fattening their animals than are the farmers of Canada and Great Britain. In fact, corn is the one article of food which the western feeders regard as all essential. This makes them too dependent upon one crop. When that fails, then the meat supply is liable to fail also.

Speaking of crops, the unusually cold weather that has prevailed throughout the corn belt of the States has had the effect of rapidly reducing the surplus (?) corn crop. It has required more corn to merely keep up the animal heat, to keep the animals from drifting in flesh, than would be required in summer time to make them fatten rapidly. Thus the severe winter is proving a leveller to the abundant corn crop, and the outcome will probably show, that while it is the largest the country has ever known, it is not larger than the demand. However it may seem, it is better for the greatest number to have good full crops. Even if the farmer gets no more money for a large crop than a small one, and has to work harder, he can usually, under such circumstances, get more of everything else for his money, besides being a benefactor to the multitudes in the consuming world who must buy their provisions in a hand-to-mouth way. Of course it is not well to have overproduction, but let us ever hope for good full crops, and reasonable prices.

They are more desirable than scant crops and extremely long prices. When we have large crops, the small and middle class people of all kinds are prosperous, but when there are small productions and exorbitant prices, only the wealthier classes can reap the rich harvests.

The severity of the winter has given rise to the opinion that the losses among range cattle will prove at the spring round ups to have been very heavy. Reports have been widely circulated in the east to this effect; but from the very best information at hand, it appears that there have as yet been no unusual losses, except in isolated spots, where the range was burned last fall either by fire or by the scorching sun's rays, as in some parts of the southwest. These reports are at hand, and take in the country from the Northwest Territory to the line of Mexico. The "tenderfeet" who make generalizations from isolated sections, and along the railroads, where many cattle are always killed in the winter time, are unusually plentiful this winter, and have been making so very exaggerated reports to the credulous eastern press.

Moreton Frewen, the Englishman who has large cattle interests in the west, is intent upon making his proposed Canadian cattle route to England a success. He is certainly working diligently, and seems to have no lack of faith in the project. By the way, Mr. Frewen is the one to whom is given the credit of originating the scheme, but the fact is that Mr. Fred. R. Lingham, the old time exporter, was the one who suggested the idea to Frewen.

The winter weather has been the severest since Chicago that has been known in a long time. During a period of thirty-six hours there was not a car of stock moved in or out of the Union Stock Yards, on account of the snow blockade and the intense cold. The like of this has never before happened since the founding of the yards, twenty years ago.

The advance in the rates for carrying dressed mutton had a tendency, for a time, to throw a stumbling-block in the way of that important branch of the trade, but it seems to have survived the shock of the unjust discrimination, and the dressed mutton trade is being successfully, and rather extensively carried forward. There is one argument in favor of paying particular attention to the mutton qualities of sheep. In this day of adulterations, wool has to suffer about as much as dairy products, but as yet there has been no way found by which mutton can be counterfeited.

Speaking of adulterations, reminds me that a London genius has invented an apparatus by which he can make artificial eggs. He does not claim that they would hatch if put under even the most faithful hens, but he declares that a chemical analysis will show that they contain all of the chemical properties of the natural egg. So the good hens will please take warning and be on their best behavior, for they may have a formidable competition in their business. Man is truly a schemer.

The cattle trade has lately been fairly satisfactory. Prices are about \$1 per cwt. lower than one year ago, but good beeves are not very cheap in comparison with everything else. The export demand is not very strong. Somehow the British markets do not seem to gather much strength. The supplies of stock going

to England from Germany, Sweden, Denmark, Spain and other countries, is large. The volume of the antipodean dead meat trade is assuming formidable proportions. This fact is especially recognized by the mutton men, who have larger competition than those who are interested in cattle. What will be the result of the Australian frozen meat trade? It is steadily growing in volume, and there is almost no limit to the proportions it may assume.

The hogs that have been marketed this year are heavier in weight and better in quality than those of one year ago, but prices have been \$2 to \$2.50 per cwt. lower. Still, the hogs have not sold this year for unremunerative rates.

Agricultural Education.

BY MARSHFIELD.

This question embraces two divisions: (1.) The education of our farmers, and (2) agriculture in our Public Schools. Farmers receive their agricultural knowledge (1) through the agricultural press, and (2) by the distribution of Government literature, or by means of Government lecturers sent out amongst them. I shall not have space in this article to discuss agricultural exhibitions, farmers' clubs, or agricultural colleges.

Educationally, farmers may be divided into three classes: (1.) Those who keep posted on the agricultural literature of the day and make practical use of such experience of others as they deem to be profitable to them; (2.) Those who read such literature for criticism or pleasure, but entirely ignore "book farming," and (3) Those who neither take nor read an agricultural paper. Questions.—1. Does the Government now undertake the agricultural education of our farmers because it neglected to do so when they were pupils in our Public Schools? 2.—Which of the above three classes does the Government intend to reach, or does it intend to school all the classes with the same lectures or text books? 3.—Does it intend to make up for the imperfections of the agricultural press? Our farmers should obtain an answer to those questions, and demand from what standpoint the Government proposes to act.

In reference to question No. 1, the Government must either affirm that it does not intend to commence the agricultural education of farmers until their school days are over, or explain its delinquency with regard to agriculture in schools. As to question No. 2, the Government should be asked to show what special facilities it has for reaching each of the classes mentioned, and the nature and extent of the instruction to be imparted to each class. If, as in question No. 3, the agricultural press, (as well as other private enterprises by means of catalogues, etc.) is at fault in any particular, the Government should then be called upon to show cause why it does not undertake the education and licensing of agricultural editors.

Is it just to tax class No. 1 for literature which it does not require, for a supposed benefit to their business rivals in classes numbered 2 or 3? Can the Government give us any guarantee that free literature will be more eagerly perused and more wisely acted upon than that which costs a dollar a year? My observation testifies that the reverse is the case. It is not

what the farmer reads, but what he acts upon, that tells. Before submitting to further taxation, I would advise every farmer to ascertain the quantity of Government literature that has already been distributed in his neighborhood, make diligent research as to the reliability of the information it contains, and the amount of practical good it has accomplished. Based upon observation, my impression is that should the Government employ agents to attempt to educate the farmer, they will either be incompetent partizans or high-salaried professors who will soar so high above his comprehension that their labors will only begin to be appreciated by generations yet unborn.

I have no special objection to urge against a Government as a controller of schoolmasters. A minister of education is a man of learning, and is perfectly competent to deal with all the educational matters at present under his control; but it is more the fault of our circumstances than of the man that he is incapable of grappling with agricultural questions. The same may be said of a commissioner of agriculture. I doubt that there is a man in the Province who is sufficiently intimate with the science and practice of agriculture to be able to deal efficiently with the intricacies of this great problem. That there are competent foreigners is true; but they would be out of place in this Province. The man so eagerly sought must also be perfectly familiar with all our agricultural circumstances and resources, and the tendencies and temper of our agricultural population.

The incapacity of our agricultural authorities may be exemplified in many ways. The placing of Tanner's "First Principles of Agriculture" on the public school optional list is a striking example; as well also as the recommendation of Stewart's "Feeding Animals" to be read by our farmers. There is no wonder that the minds of our farmers revolt against "book farming." It is certain that no work confined to British agriculture will fill the wants of our Public Schools. Any manual specially written for British farmers might safely be condemned as a text book without perusal. In his introduction Professor Tanner says that he purposely avoids the use of technical terms; that is, he omits the "first principles"—just the very thing that should be taught in school. The agricultural press, as an educator of our farmers, will be hampered until the technicalities of agriculture are taught in our Public Schools. A text book of this kind should not be an arbitrary one; it should contain no subject that could not immediately be put into profitable practice by our farmers. In this way the parents would learn from their children—just as foreigners in the United States usually acquire the English language Stewart's "Feeding Animals" will prove a failure on still more objectionable grounds. Notwithstanding the many excellent hints contained therein, it must not be forgotten that the work was written during the height of a series of agricultural booms which have since collapsed, and much of it is encumbered with analytical tables which are beyond the comprehension of those who have not studied the first principles of agriculture.

Nothing illustrates the incapacity of our agricultural authorities more strikingly than the management of our fat stock shows and

agricultural exhibitions; but these matters are too well known to require comment. They have yielded to and encouraged speculations of the vilest kind, to the detriment of the true basis of agriculture. The whole system is rotten to the very core, as every sensible farmer already knows. No matter how commendable an object may be, if it is encouraged on false principles the day of doom is certain and near. We commenced too high up, and the higher we go the more certain and dreadful will be the fall. Let us go straight back and seize hold of one sound principle, instead of a score of false ones, and when its encouragement is once fairly established, all the powers of ignorance and fraud cannot prevail against it.

PRIZE ESSAY.

How can the "Farmer's Advocate" Best Expend \$100 Annually in the Farmers' Interest?

BY JAS. SHANNON, WOLVERTON, ONT.

The agricultural interests of our country being in a depressed condition, it is not unlikely that, in common with all other trades and occupations, it will feel the effects of competition in the future more keenly than it has done in the past. We are also in the transition state between the old hap-hazard style of farming and the systematic or scientific method, which naturally accompanies age and development, and is made necessary by reason of the exhaustion of our soil. We have reached that point in our history when brain work must largely supercede muscular effort. The requirements of the times, then, naturally suggest organization among farmers for the purposes of mental improvement and protection, and the dissemination of the soundest and most practical doctrines and methods.

I therefore urge the claims of farmers' clubs—in some measure, at least—to meet these requirements, and bespeak for them aid from the ADVOCATE'S liberal offer. This scheme, if worked out on a proper basis, is of great importance to the future of our country. An intelligent and united electorate can, and undoubtedly will, control the public affairs of the country, and in this pre-eminently agricultural Canada of ours, we do not know the limit of our power when united. In every community are to be found sound, practical men in almost every respect; yet if called upon to give a detailed exposition of their views on any subject, fail, not so much for want of knowledge as discipline of mind; and thousands of our young men although possessors of a good education, are being confirmed in this undisciplined habit of mind. To obviate all this, and improve the social status of isolated families, we need organization.

But how to organize, or how to infuse public spiritedness enough to effect this result, is a problem yet to be solved, and will require time, agitation and example.

As briefly as possible I shall give the details of my plan, fully realizing, however, that "the best laid schemes," &c., and I have not the presumption to suppose that my schemes will prove an absolute exception to the general rule.

I propose, 1.—That clubs be formed under the patronage of the FARMER'S ADVOCATE, and

as nearly as possible under the same constitution and by-laws.

2.—That clubs so formed shall stand in competition with each other in the thoroughness and practical value of their discussions and conclusions.

3.—That minutes of each be prepared and submitted, in competition, to your committee; its choice be published each month in the *ADVOCATE*.

4.—That the club proving to be the most efficient during the year, shall receive, as first prize, the sum of \$— or its equivalent in standard agricultural books, as may be chosen, such books to form the nucleus of a circulating library of said club. The second in efficiency and practical value, to receive a prize under the same conditions as first, except the publication of the *M.S.*, which should be left optional with the editor of *ADVOCATE*.

These are the general outlines which I have in mind, and I deem it superfluous to enter into minor details. Some may contend that this plan will give precedence to scholarly institutions. Not so, however, I think, for

"Great men are not always wise."

Another scheme I desire to present for your consideration and aid is the cultivation of forest trees. The urgency of this scheme presents itself in the ever decreasing supply of timber and the bleakness of many districts that have been denuded of trees, and exposing the country to the sweep of fierce winds. Many ingenious schemes have been devised to create public interest in this question, but as yet with very meagre results. As a primary step, statistics and facts should be collected and arranged at whatever cost, to show the relation existing between the forest and the operations of the farmer, in the protection of crops, in the humidity of the atmosphere, the cost of planting and cultivation, the age at which they might be expected to be of service as wind-breaks, and for economical purposes. It would be a great stimulus at the present time, if living examples of the possible success in forest cultivation could be pointed out in every neighborhood; and we think it would be in keeping with the importance of the case, for supplying these examples, to offer cash prizes for the best growth of forest trees, planted in blocks or belts as wind-breaks. This will be example as well as precept.

No agricultural country can be prosperous unless its farmers are so; hence the aim of all legislation should be to lighten the burdens of the agricultural classes.

Calm reflection after the bustle of many years, has brought American politicians to their senses. Millions of dollars have been squandered in the attempt to pamper agricultural pursuits by creating sinecure offices. Worthless seeds have been lavishly foisted upon farmers for the purpose of creating the impression in their minds that a vast amount of good was being accomplished in the cause of agriculture, and many other useless expenditures have been made. The appropriation for this year has been cut down \$108,000, being \$150,000 less than the amount asked for. This unexpected reduction will send many government employes on the tramp. The Bureau of Animal Industries also needs a trimming.

The Dairy.

Canadian Butter for Export.

BY L. B. ARNOLD.

At the recent dairymen's conventions in Eastern and Western Ontario, a good many earnest words were said in favor of improving the quality of Canadian butter and swelling its production to an extent that would enable the Dominion to export butter as largely as it does cheese. Every speaker who discussed, or referred to the matter, labored to impress the conviction upon his hearers, that the improvement in quality and the expansion of the butter product to the extent suggested, were not only desirable, but were easy ends to attain.

That an improvement in the quality of butter as at present made is desirable, no one will question, but there is a question about its being as easily accomplished as the speakers intimated, and as to laboring for an exportation of butter equal to that of cheese, I consider such an attainment not advisable if it were possible.

It is not such an easy matter as some may imagine, to successfully develop such a large and important interest that would be comparatively new. It has taken twenty years to develop the cheese interest to its present position, and it has involved a large amount of energy and capital in the work. Would it require any less time and effort to develop an export butter trade equal to that of cheese, from a starting point as low as that from which cheese started, and cause it to overtake the exportation of cheese? I do not see how there can consistently be more than one answer to this question. It strikes me very forcibly that instead of embarking in a work of such magnitude that must involve a sacrifice of time and labor, and of doubtful propriety, if accomplished, it would be better and more profitable, for the present generation at least, to turn the spare milk of the country into a channel already developed, and, as long as possible, reap the benefit of the labor and capital already expended in developing it to a paying condition, and if dairymen have still more energy to spare, they could very profitably expend it in improving it still more, for though it is fast becoming conceded that Canada is leading the world in the quality of her cheese, there is still room ahead for further improvement.

Butter is not as good a commodity to export as cheese. It necessarily depreciates with age, and a voyage across the ocean so affects it as to make it old butter when it gets there; while cheese, for a time at least, may grow better with age, and appreciate in value, while butter must depreciate, especially if it should chance to meet with the misfortune of having to lie in store awaiting sale.

The history of the exportation of butter from the ports of the United States for the last fifty years, goes to show that all the way through that period it has never paid to export first class butter. The price for such butter has run but little different in the cities of the United States and those of England and Europe. Sometimes it has been higher on one side of the ocean, and sometimes on the other. At this date it is about the same on both sides. It is generally a little higher on the other side, but the difference is so little that it is more

than balanced by cost of transportation and the certain depreciation from the journey in getting there, hence the rule has been that first class butter has not been exported, nor will it be in the future, unless ruinous competition or some other unforeseen cause should run the price down so much lower on this side than on the other, as to make a margin wide enough to afford a profit to shippers.

With lower grades of butter it has been different. There has often been such a preponderance of that class of butter that the price has fallen far enough below what it was worth in other countries to make its exportation profitable, and hence it is that exports have been confined to that kind of butter. While good butter has run up and down from 25c. to 40c., according to supply, butter for shipping has stopped short at about 22c., and from that down. Generally, prices have been considerably below, and very rarely a little above. According to current market reports shippers are now paying about 16c. to 18c. Nothing much above is touched, although good butter is selling freely in New York and Boston for domestic use at 32c. to 36c. What inducement is there in the lessons of the past and the prospects of the future for the dairymen of Canada, and of this country, as well, to labor for a large export trade in butter? Before it could be accomplished, prices must be brought down to a shipping basis, which always means the ruinous rates for low grade butter. Every now and then a lament goes out from would-be advisers, through the American press, that in butter we are doing so small an export business. A greater misfortune could hardly befall us than its expansion. The only good the exportation of butter from the United States has ever done, has been to relieve the country from a burdensome load of butter which, so far as dairymen are concerned, had better never been made. Our history is suggestive.

The milk required for a pound of butter, it is generally estimated, will make two and a half pounds of cheese. It costs the same to make a given quantity of milk into butter that it does to make the same into cheese. The by-products of butter are worth a little more than those of cheese. Aside from this difference, a pound of butter ought to sell for as much as two and a half pounds of cheese. It often does sell at such a rate and above, for home consumption, but since my remembrance it has never sold at that rate for shipping. The extreme price any grade of butter would now command for export would be 22c., while its equivalent in cheese would bring 30c., and this is about the way it has generally run. An enormous expansion of butter production would not be very likely to help the situation. The experience of a long time past ought to be of some significance to our dairymen, and to those who assume to advise them.

Granting that the exportation of butter would be as profitable as that of cheese, and that its production should be expanded to an extent that would give an amount to send abroad equal to that of cheese, where would the milk come from to make it? Certainly, nobody would advise turning into butter the milk now employed for cheese. There are now, probably, about one and a half million cows in the Dominion. This number would have to be en-

ormously increased. At 150 pounds of butter per cow annually, it would require an addition of 4,000,000 of cows to make 60,000,000 pounds of butter to match the 60,000,000 pounds of cheese now exported. The land required to support such a herd would preclude the possibility of raising any spare meat or grain. The nation would have all its eggs in one milk pail, which would be no better policy for a nation than for an individual. The present proportion of cows to population cannot be very much increased without disturbing the relation between a necessary variety of industries. Whatever increase the present proportion of cows may safely bear, and whatever increase may grow from bringing more land into a state of improvement, may, it appears to me from every standpoint from which I can view it, safely have their milk turned into butter only so far as may be required to furnish the home demand with all it will take at remunerative rates, and that the rest, if any, would be better turned into cheese for export, at a leading price, than into butter for export at an inferior price.

The Best Dairy Barn in the Dominion.

We lately took a trip to "Prospect Farm," the property of Mr. H. S. Losee, of Norwich, Oxford Co., in company with our artist, for the purpose of sketching his new dairy barn, an illustration of which appears on the first page of this issue. Knowing Mr. Losee to be one of our most successful farmers, and far in advance of the times in his system of husbandry, we were also desirous of hearing the story of his successes, for the purpose of presenting it to our readers, but we are obliged to defer this for our next issue.

The circumstance which gave rise to the conception of the plan of this barn was a change from summer to winter dairying. Mr. Losee has been carrying on a cheese factory for some years, and has attained a high reputation for the excellence of his cheese; but his project now is to divide his herd into two portions, 12 cows dropping their calves in November, and in March 15 cows will come in for the cheese factory. With his winter herd he will conduct a butter dairy, and when the cheese season opens he will utilize the milk of all his cows in the manufacture of cheese. We had a somewhat vociferous discussion with the general proprietor of "Prospect Farm" concerning the breeds he should use for his complex purposes, ending in a final decision to be given on some future occasion.

Having enjoyed the family hospitalities, our next treat was to take a survey of the barn with all its original features. Our entertainer first explained to us that he had examined many plans, but found none reliable for his purposes, and that the designs originated with himself. We had to confess that in all our travels, both in Canada and the United States, we had seen nothing like it or to be compared with it. He explained how it was impossible for the structure to give or sag in any shape or manner, that the basement floors and walls being lined with Portland cement, there was scarcely a limit to their durability, that the double boarding above the cemented walls of the stables, with the double sash windows, insured effectual

warmth, and that the timbers and the liberal coatings of paint gave correspondence to the whole structure in point of durability.

"How much did this barn cost?" inquired we. "Upwards of \$3,000," was the reply.

We felt astonished as we thought of the utility of presenting such an expensive structure to our readers. It struck us that it was altogether too far ahead of the times for the average farmer, and that all our labor and expense in getting up the illustration would be in vain. We then inquired if the barn could not be built for much less money.

"Yes," said he; "I intend to cheapen it by expending another \$1,000 in its completion."

This is Mr. Losee's characteristic way of making money; but for those farmers who cannot fathom these mysteries, let us add that, if posterity is to look after itself, no farmer who needs a building and can raise \$2,000, can afford to be without a barn constructed on this plan. We were then asked to criticise the structure.

"We came to learn, not to criticise," said we.

However, upon being pressed, we said: "We see a mistake in the construction of your stables, which, although it may not be a serious one in your case, is a matter of vital importance to the average farmer. With your underdrained farm and your inexhaustible source of manure, occasioned by the use of your cheese factory, you have no difficulty in keeping up the fertility of your soil, and you can therefore afford to put less value on your manure heap than many other farmers. From your system of high feeding, your farmyard manure is very valuable, but the arrangement of your stables is not calculated to preserve it efficiently. You are, of course, aware of the importance of thoroughly mixing the cow and horse manure, but your contrivance makes it difficult to do so, having to wheel the horse manure through the cow stable, and in order to save this labor we observe that you have a separate yard for your horse manure. We think that your tank and gutter arrangement is expensive and calculated to create unnecessary labor. In order to get sufficient drop for the urine to flow into the tank, the gutter is uncomfortably low at the cistern end. You intend to build a shed to protect the manure; but this can only be profitably done when the heap is saturated with the urine. You have clay and muck beds within easy reach of your barn, and could easily use dry clay as an absorbent for the manure intended for your muck soils, using dry muck as absorbent for your clay soils; thus more than doubling the value of your dunghill. Instead of the tank you should have a small basement under the stable large enough to back a sleigh or wagon into, and a trapway could be made at the end of the gutter, through which the manure could fall into the sleigh, and spread on the field as fast as made. You say you have doubled the productive capacity of your soil by thorough drainage; you could almost treble the yield by manipulating the manure in the manner we have mentioned."

Mr. Losee acquiesced in these observations, remarking that he felt disposed to give the system a trial.

How to make good milkers—Treat your cows kindly, liberally and gently.

Garden and Orchard.

Our Native Evergreens.

(Continued.)

BY HORTUS.

We think the hemlock (*Tsuga Canadensis*) the most beautiful and graceful tree in the whole evergreen family, not excepting the unique and interesting half-hardy varieties of evergreens introduced from foreign climes. As a single specimen on a lawn it is always an object of admiration. Its color, a pleasing dark green, forms an effective contrast to deciduous trees in foliage, or when dotted on the hill-sides in winter amongst the grey barked beech or the silver birch. It forms the handsomest of all evergreen hedges, easily kept in any desired form by the use of the shears or pruning knife. No evergreen can be more suitable for growing and training into any grotesque shape or pleasing conceit than the native hemlock. This tree loves to grow in cool, damp soils, on shady side of hills, mixed with other trees, for it thrives in company. It is particularly suitable for planting in cemeteries, and in such positions may be trimmed in an upright pyramidal form, to take the place of the Irish juniper, which is not quite hardy enough to thrive well in Canada unless specially cared for. The foliage and bark of the tree emits a pleasing balsamic fragrance; while the bark is useful for tanning purposes. The wood of the hemlock is very durable and largely used for railroad ties. Persons desirous of forming ornamental plantations and decorating home grounds, are recommended to use plenty of the hemlock for such objects.

While praising the hemlock so highly, we cannot say enough in praise of our native white spruce (*Picea alba*). It is an exceedingly ornamental tree, also growing erect and very uniform; tapering from a broad base to the past season's single growth, it forms in any position one of the most pleasing trees in the whole evergreen family. Like the hemlock, it may be kept back in its growth and allowed to extend its dimensions only at the will of the grower. Its color is of an attractive silver-grey green. It grows plentifully in the woods in the company of balsam, fir, cedars, etc., and is very easily transplanted. The balsam spruce or fir (*Abies balsamea*) makes up the principal group of pines and spruces, and like all of them, cannot be overpraised. This tree is a northern tree proper, not thriving or growing near so well much further south, while it may be found as far north as vegetation extends. While the timber is not of particular value, it is still very useful for poles and posts for small buildings. In habit it grows very erect, forming a pyramidal tree of graceful proportions. It well deserves a place in all plantings, and is adapted for planting in shelter belts, as are all evergreens.

For wind-breaks and shelter-belts our whole collection of native evergreens is invaluable, and for this purpose no particular classification or arrangement is needed, as they all thrive well together, and the soil suitable for a pine to grow luxuriantly will be found equally adapted to produce stately spruce or fir trees, while our native white cedar (*Thuja occidentalis*) will raise its dense evergreen pointed

heads to the sky. We cannot say too much in favor of the white cedar. In every respect it is a useful and indispensable Canadian tree. It is a safe assertion that ninety per cent. of all the fence posts and posts for foundations are cedar. For resisting the damp and lasting in covered places, the cedar is unsurpassed, and now it has found a large field of usefulness in the formation of block pavements in the busy streets of our crowded cities. For this purpose alone many thousand cords of wood are used annually, without counting the forests used for telegraph, telephone and electric light poles.

Many streets in our large cities present the appearance of dead forests or shipping in a harbor, from the countless poles which stud their sides. When we think of the enormous drafts made on our woods for these various demands, the grave question arises, What are we doing to replenish our forests and to keep up the supply? Trees are not like farm crops, they cannot be replaced every year. For a simple illustration we may say, to produce a full grown tree of any value is just an ordinary life time, or about the average death rate of humanity. Then if succeeding generations consume in proportion as they must progress in the arts and necessities of the times, as in the present age, we think the whole planting of this coming year would not go far to supply the demand for wood and timber in the year 1914. But we leave this question for the Government and political economists to deal with.

Our farmers would find it a good way to plant places on the farm that are not profitable for cultivation. After the trees were sufficiently large to take care of themselves, what better place could they have for grazing cattle?

The white cedar is specially adapted for planting in belts for shelter and wind-breaks. It thrives better by itself than by mixing it with other trees. It will grow any distance apart, but I would recommend as a safe distance, three feet, and always of two rows deep planted diagonally opposite, the rows about six or seven feet apart, to allow of turning in the plow or cultivator so as to keep the soil reasonably clean; for in a few years after planting they can take care of themselves. The white cedar makes up the list of our native evergreens of any importance, and while we might mention a few other sub-varieties of evergreens, including the red cedar (*Juniperus Virginiana*) and the Canadian yew (*Taxus Canadensis*) and others, we refrain from doing so, as they only occur in certain districts, and possess in themselves only certain points of interest useful to persons planting for ornamental purposes, and, while always pleasing, are not valuable enough to draw the farmers' attention. We leave them to botanists and collectors in general. While we might all wish that we could have here in Canada such trees thrive as the Cedar of Lebanon, Auracarias, etc., they would still be only of ornamental value. And as we think of the many beautiful exotic evergreens, we cannot lay a finger on any one in particular and say it is more valuable than our pines or cedars. We have, then, the most valuable trees in the world in point of economic value for all our purposes, and let us as Canadians be grateful, and make such use of our arboreal talents as Providence has blessed the country with. The duty of the hour, and of every

class, citizen as well as farmer, Government as well as individual, is to plant, plant, PLANT!

All our native evergreens produce seeds freely in cones, and that reminds us of our native tamarack or larch, which should have been mentioned in this connection, though not an evergreen in regard to its foliage, which is annual or deciduous; it still possesses all the other characteristics which mark it as an important member of the Coniferae or resinous trees. Our native larch abounds in swampy places, from New Brunswick to the far West, and while we think hardly as valuable a tree as the European larch, still it possesses many points which make it a very useful tree. Its wood is denser and more durable than the foregoing. As for growing we think that by giving it the same cultivation as is given to the European larch, we feel certain it will not be far behind, if at all.

To be successful in growing evergreens from seeds, the cultivator must study how young plants are produced in their native woods. The seed should be sown therefore in partly shaded places, moist, but not wet, airy, but not drafty. Imitating these natural conditions, which require but little observation, any of our evergreens may be grown by the million, and will be found by those who undertake their cultivation to be a very profitable business.

What the Farmers' Garden should Contain.

Now is the time to select your seeds. The old fashioned system of purchasing any variety from any seedsman should not be followed any longer. Not only should you select varieties of seeds which have been thoroughly tested in different parts of the Dominion, but you should also acquaint yourself with one or more reliable seedsmen who have the reputation for disseminating nothing but first-class articles, and do not handle seeds that have travelled all over the continent for the past few years in quest of a purchaser. Get a catalogue from all the seedsmen who advertise in the agricultural papers.

We cannot too strongly urge the necessity of a well kept garden containing early and late varieties of all the most wholesome and nutritious vegetables. An orderly arranged garden is a charming sight, as well as a profitable business and a luxury. As a summer diet, vegetables and small fruits, if a variety can be obtained, should form the chief articles of consumption, and the season should be prolonged as much as possible by securing the earliest and the latest varieties. Winter is the season for fatty foods.

We give below a list of the vegetables which every farmer should have in his garden, with the names of the varieties which are known to flourish best in different sections of the country. There are many other good varieties not mentioned in the list, but before purchasing any of them, see that it has been thoroughly tested in your neighborhood.

BEANS.—This is the most nutritious of all garden vegetables, and is therefore an excellent substitute for meat. The Golden Wax Dwarf is probably the best of the early varieties. For other varieties select Black Wax, or Butter bean, and Dutch White Case-knife.

PEAS.—Next in point of nutritive value

comes the pea. Give preference to the earliest varieties, for later you can use the field pea for the table. "First and Best" is an excellent early variety; so is Premium Glen, Kentish Invicta and McLean's Little Gem. For later select the Yorkshire Hero, and for the latest get Champion of England or Black Eye Marrowfat.

BEETS.—London Favorite is the most popular of the early varieties. It is half long, deep red with crimson foliage, and being an excellent keeper, is also good for fall use.

CABBAGE.—To get the earliest use of the early sorts, sow in hot-beds and transplant in early spring. Paris Early Market is an extra early sort of excellent quality. New Improved Drumhead is also an invaluable early variety; and Filderkraut, or Pointed Head, a later German variety, is one of the most solid cabbages grown.

CAULIFLOWERS.—The early varieties of this vegetable take the lead. Erfurt, Very Early New Dwarf, Extra Early Paris, and Snow Storm, are all excellent sorts.

CARROTS.—Early Scarlet French Horn is taking the lead in popular favor. It differs but little from the English Horn, except in being stump-rooted.

CORN.—Marblehead Early Sweet has been thoroughly tested, and has been found to be a week earlier than any other variety. We have heard reports from Manitoba stating that this corn ripens well in that country. Stowell's Evergreen bears the reputation of remaining green longer than any other variety, as well as being very desirable in every other respect.

CUCUMBERS.—Stockwood's Long Ridge is one of the latest tested varieties, and has given excellent satisfaction in many parts.

LETTUCE.—Golden Drumhead is probably the leading variety, and possesses a fine flavor. Hanson is a remarkable grower, and possesses many desirable qualities.

ONIONS.—We know of no varieties that we can recommend with greater confidence than Large Red Wethersfield and Yellow Danvers. If your soil is not exceedingly rich, you should buy sets instead of seeds.

PARSNIPS.—Improved Hollow Crown is one of the leading varieties both for live stock and for the table.

RADISHES.—Olive-Shaped Violet, Earliest Erfurt Frame, and Golden Yellow Summer are the leading varieties.

RHUBARB.—Myatt's Linnæus and Myatt's Victoria cannot be surpassed.

TURNIPS.—Early Red Strap-leaved and Early White Stone are the best flavored table varieties.

POTATOES.—In nutritive properties the potato stands the lowest of all the vegetables, yet it is the most popular and the most extensively grown. There is an endless number of varieties, and no two authorities will agree as to the best. We shall merely mention the names of a few of the varieties which hold a leading position: White Star, Dempsey's Seedling, Clarke's No 1, Early Rose, Rural Blush, Beauty of Hebron, White Elephant, Early Ohio, Early Vermont.

See that you set aside and preserve the most valuable portion of your manure heap for the garden. It should be thoroughly fermented.

Best Varieties of Small Fruits to Plant.

BY W. W. HILBORN.

The following choice list of small fruits may be planted with safety on any soil; and where they will not succeed, there will be little use in trying any other varieties:

STRAWBERRIES.—Crescent Seedling, Wilson, Daniel Boone, James Vick, and Manchester.

RASPBERRIES.—Black—Souhegan, Mammoth Cluster, and Gregg. Purple—Shaffer's Colossal. Red—Turner, and Cuthbert. Caroline is the best yellow, a cap variety of good quality, hardy and productive.

GOOSEBERRIES.—Houghton is the most hardy and productive, but is rather small in size. By giving good cultivation they will grow to a very good size. Downing is quite large and productive, but not quite as hardy as Houghton. Smith's Improved is one of the best in every respect; fruit large, bush hardy, and productive.

CURRANTS.—Red Cherry has been planted more extensively than any other sort, but it is not productive enough on most soils. Victoria is perhaps the best of the old red varieties; it holds its foliage very late in fall, and protects its fruit from the hot sun; hence you can let the fruit hang on the bushes for three weeks after becoming ripe, a very important consideration, either for home use or for the market. Red Dutch drops its leaves so early that the fruit is quite often spoiled by the hot sun. Fay's Prolific is the best red currant yet introduced. It is high in price yet, but it is so large, such a strong grower, and will produce such a quantity of fine fruit, that I think all who procure one or more bushes will be well pleased with their investment. White Grape is the best white currant, and Lee's Prolific the best black.

Currants and gooseberries should be planted in rows six feet apart and four feet apart in the rows. Clay loam is best, but any soil will grow them. They will well repay good cultivation, and liberal quantities of manure and hard wood ashes.

BLACKBERRIES.—Snyder is the most profitable and very hardy.

GRAPES.—Concord is the best black grape for everyone to grow, if limited to one variety. Delaware is a very hardy red grape of best quality.

The above varieties of small fruits have all been thoroughly tested in many parts of the country and found to be the most reliable for general planting. There are many new varieties now being sent out, and nearly all of which are claimed by their disseminators to be the best varieties ever introduced, while not more than one in ten of them will be heard of in a few years, and perhaps not more than one in fifty that will prove to be as good as some of the old varieties.

For those that can afford the time and money, it is very interesting to test many of the most promising new sorts. We sometime find a new variety that is a great improvement, such as the Manchester strawberry, Shaffer's Colossal raspberry, Fay's Prolific currant, etc. It will sometimes repay the expense and trouble of testing many varieties to get one that is equal to either of the above.

Among the most promising new varieties are

Cornelia, Prince of Berries, Sucker State, and Atlantic strawberries; Marlboro red raspberry; Early Cluster and Gairner blackberries; Moore's Ruby red currant; and among the many new grapes well worthy of trial are Jessica, a white variety of good quality about the size of Delaware, and quite early; Niagara is no doubt the most promising white grape now offered, of large size, both in berry and in bunch, and to my taste, somewhat better in quality than Concord. Worden is a large black grape that is gaining favor wherever best known. It is the only rival of the Concord, of which it is a seedling, a little larger and a few days earlier.

In selecting varieties of small fruits, you should get both early and late kinds, as well as intermediate, and then you will enjoy "the luxuries of the season" during many of the summer months, always remembering that there is no article of food so wholesome, profitable, and delicious during the warm weather as the best varieties of small fruits. When you have them once planted the labor and expense are a mere trifle, and I shall keep you posted through the columns of the *ADVOCATE* in the best modes of cultivation, propagation, etc. I shall give you all the information you need in the proper season. Now is the time for you to select your varieties.

The Best Varieties of Apples.

For you who are contemplating the planting of new orchards, or the enlargement of old ones, now is the time to complete your arrangements. If you have already given your order for trees, your nurseryman will gladly make any changes that you think desirable. One thing is certain, viz., that you can scarcely err in planting out too many trees, providing you get the right varieties for your section of country, and select the right soil and aspect. Mismanagement has been the cause of many failures, and if you have failed, try again, learn as you proceed, and profit by your past mistakes.

The reputation which Canada commands for fruit in the English market should stimulate you to greater enterprise in fruit growing. England has been cultivating our tastes in beef and dairy products; we are now educating her tastes in the choice of apples. Apart from all this, the value of apples for stock, especially for milk cows, is only beginning to be understood. The best samples will always command the highest price in foreign markets, and the inferior qualities can be profitably fed to stock. Apple orchards, when once fairly established, require less labor than many other products of the farm, but require liberal manuring, so that apple raising can only be profitably undertaken in connection with stock raising on a large scale. The present relative prices of the different varieties in the English markets will not be much of a guide in future years, for apples are as much subject to booms as other farm products; but we append the average prices of the last season, being convinced that the varieties named with prices attached will be likely to command profitable figures for many years to come.

For the purpose of procuring the latest and most reliable information, we interviewed the leading fruit growers in different sections of the Province, and we herewith give the varieties that flourish best in sections named:—

1.—Chatham district, summer varieties—Early Harvest and Yellow Transparent. Fall varieties—Duchess of Oldenburg. Winter—Baldwin, Greening, Golden Russet and Northern Spy.

2.—St. Catharines district; summer—Red Astrachan, Duchess of Oldenburg and Sweet Bough. Fall—Colvert, Gravenstein and Ribston Pippin. Winter—Baldwin, Ribston Pippin, King of Tomkins County, Rhode Island Greening, Northern Spy, Wealthy, Golden Russet, Gravenstein and Roxbury Russet.

3.—Goderich district; summer—Duchess of Oldenburg and Early Harvest. Fall—St. Lawrence and Fall Pippin. Winter—Baldwin, R. I. Greening, Northern Spy, Ribston Pippin, American Golden Russet, Wagner, and King of Tomkins County.

4.—London district; summer—Early Harvest, Colvert and St. Lawrence. Fall—Duchess of Oldenburg, Gravenstein, Red Astrachan, Alexander, Wealthy, Ribston Pippin, Red Canada and Winesap. Winter—Ben Davis, King of Tomkins County, Baldwin, Golden Russet, Flushing Spitzenburg.

5.—Toronto district; summer—Yellow Transparent and Red Astrachan. Fall—Duchess of Oldenburg, Colvert, Maiden's Blush and Gravenstein. Winter—Golden Russet, Baldwin, Ben Davis, Northern Spy, Ribston Pippin and Wealthy.

6.—Lindsay district; summer—Red Astrachan and Duchess of Oldenburg. Fall—St. Lawrence, Fameuse, Alexander, King of Tomkins County and Kiswick Codlin. Winter—Yellow Bellflower, Grime's Golden, English Russet, Wagner, Northern Spy, Am. Golden Russet, Eng. Golden Russet, R. I. Greening and Talman Sweet.

7.—Ottawa district; summer—Russian Transparent, Red Astrachan and Duchess of Oldenburg. Fall—Fameuse. Winter—Haas, Am. Golden Russet, Pewaukee, Hastings and Wealthy.

8.—Barrie district; summer—Red Astrachan and Early Harvest. Fall—Duchess of Oldenburg, St. Lawrence, Alexander and Colvert. Winter—Baldwin, Northern Spy, Golden Russet, Pomme Grise, King of Tomkins County, Ontario, Ribston Pippin, Wagner and Wealthy.

Some of the varieties ripen earlier in some districts than in others, so that they are sometimes classed as summer and sometimes as fall apples.

The following are the average prices obtained in the English market for the varieties named: Red Canada, 12s.; King of Tomkins County, 18s.; R. I. Greening, 14s.; Colvert, 12-14s.; Maiden's Blush, 9s.; Am. Golden Russet, 15s. 6d.; Baldwin, 15s.; Ben Davis, 14s.; Northern Spy, 16s.; Ribston Pippin, 22s.

If you want good fruit trees or good seeds of any kind, send for the catalogues of all the firms you see advertised. Let these be your main study for this month. Don't tolerate agents.

Mr. Miller, consulting landscape gardener of Fairmount Port, N. Y., says that sulphur is fatal to all lower organisms, and he therefore has tried it with success as a remedy for peach yellows.

The Farm.

Permanent Pasture.

No. II.

One of the greatest features of success in permanent pastures is the securing of varieties of grasses which are best adapted to your soil and other conditions. Some varieties like to be alone, but most of them thrive best in company. Your chief aims should be to sow together some that will flourish in spite of late spring frosts; some that will defy summer drouth, and some that will not succumb to the autumn snaps and blasts. We shall have space merely to mention the leading characteristics of those varieties with which a large number of our farmers are unacquainted, omitting the well known sorts of clovers and grasses. As the names of our leading seedsmen will be found in our advertising columns, you may send for their catalogues, in which you will find mixtures and prices to suit your circumstances.

ALSIKE CLOVER.—This variety is more nutritious than red or white clover, but the duration of its season is not so long as the red. In this Province it usually lasts from the 15th or 20th of June till the end of September, or first week in October. It is specially noted for its hardiness and the time it lasts in the soil. As it remains in bloom for a much longer time than red clover, it is well adapted to farmers who keep bees. Being a hybrid between white and red clover, it is intermediate in productiveness and many other characteristics. It is an excellent soiler.

ORCHARD GRASS.—Although not so nutritive as some other varieties, this grass is, without doubt, the most important in the whole mixture. It furnishes the earliest bite in the spring and the latest in the fall. As a hay crop it can be cut two or three weeks earlier than timothy, and it also makes a magnificent soiling crop. It blooms about the same time as clover. It delights in a heavy loam, and as a soiler may be cut three times in a season.

LUCERNE.—Also called Alfalfa, belongs to the leguminous plants, like the other clovers, and it possesses about the same nutritive value. As it has immensely deep roots, it requires a deep soil. And if it has drainage, natural or artificial, it is proof against drought. This plant seems to flourish everywhere. In this Province it has about the same length of season as orchard grass, viz., from the middle of May till the middle of October, and being a rank grower, it also makes a prodigious soiling crop, often being cut four times in a season.

FESCUE.—There are many sorts of Fescue grasses, but we prefer recommending the Meadow Fescue to your notice. The Fescues are highly nutritious, and seem to stand our winters well. They should not be wanting in any permanent pasture. The Meadow Fescue has about the same duration of season as Lucerne and Red Clover.

THE RYE GRASSES.—There is the Italian Rye grass, and the Perennial Rye, the former being best adapted to dry soil, the latter requiring a richer soil than the other. They have been known to succumb to the hard winter frosts of this Province when grown alone, but have done admirably well in mixtures. They furnish a bite as early as the second or third week in May,

but fail a week or two earlier in the fall than the latest growers.

All the grasses above mentioned should be found in every permanent pasture, but we shall also mention the names of a few others which may also be sown with advantage, viz.: Our native or Blue grass (which, however, is still one of our most reliable grasses, and should not fail to be in every mixture). Red Top can nearly always be sown with profit and safety. Yellow Oat grass, in a mixture, seems to flourish in most any soil, and is very tender and nutritious when young. Meadow Foxtail is worthy of notice, if sown in a clay soil. Although it gets very woody when ripe, it is very tender and nutritious when young. It stands our winters well. White Clover, Yellow Oat, Alsike, Timothy, Red Top, and Bent Grass only flourish during the warm weather, say from the middle of June till the end of September, but are all very useful in permanent pastures during these months.

Reducing Bones: Farmers' Methods

In answer to several inquirers as to how the farmer can best convert the bones which are scattered around his premises into a fertilizer, we note some of the most approved methods. It is questionable that the farmer can reduce his bones more cheaply than he can purchase superphosphate. Certain appliances are required which would scarcely pay unless the quantity of bones is considerable, or unless he intends to manufacture for the whole neighborhood. However, we think every farmer should test the value of phosphoric acid on his soil, and he cannot make a better experiment than reducing a few bones for this purpose.

The simplest and quickest method of getting rid of the bones is to burn them. First kindle a wood fire in the stove, and then use the bones as fire wood. When the inflammable matter is completely exhausted, the bones will crush to pieces almost with the fingers. The residue may be spread on the soil with the ashes of the wood. If you have too many bones to be treated in this way, you can either use a furnace or make a small kiln. There are two disadvantages in this method: (1) Although they may be finely pulverized with facility, they are not reduced, that is, they are not in a soluble condition, and will hence become slowly available in the soil for plant food; their action will last for many years. (2) Bones contain small quantities of nitrogen which is lost in combustion. Unless the burnt bones are separated from the wood ashes, this method will not do for testing if your soil is deficient in phosphoric acid.

The quickest and most satisfactory way of reducing bones is by applying sulphuric acid, which may be procured at any drug store. Sugar or soap kettles would come handy for this method, but unfortunately the acid is too strong for the iron, and will eat it greedily, unless lined with sheet lead. Earthenware crocks may be used for reducing bones on a small scale; but perhaps the most effectual plan would be to make a box of boards or planks and line it with sheet lead, using four or five pounds to the square foot. Dilute the acid with an equal quantity of water, and pour it into the vessel. Then put in the bones and allow them to remain until they form a pulp, using sufficient bones

to effect this purpose. It is better to break the bones as fine as possible before putting them into the liquid, as they will dissolve sooner. For this purpose a block and a sledge hammer are required, and if the bones are fresh you will find them difficult to break. Nail boards around part of the block to keep the pieces from flying. In all cases beware of the acid, either by splashing into your face or otherwise. This pulp will be too strongly acid for a fertilizer, and should be mixed with leached ashes. If you have a manure heap under cover it may be spread over it, as it will catch any ammonia that may attempt to escape; but if you want it for experimental purposes, it should be mixed with some non-fertilizing material, such as coal ashes, dry earth, or saw-dust, so that it can be strewn on the land regular and not in too large quantities.

The method of reducing bones by ashes and lye has often been described in the *ADVOCATE*; but we hear that some farmers have not made it a success, owing possibly to a lack of that close attention which the method requires. Let them now try one of the above methods, and we should be glad to hear of the results.

The Wheat-Chess Question Again.

Editor Farmer's Advocate:

SIR,—As I sent you for examination a head of wheat with a spikelet of chess growing upon it, which appeared in the September issue of the *ADVOCATE*, and which you have kindly undertaken to investigate in a most praiseworthy manner, after all that has been said and written about it, I hold myself at liberty to express my opinion upon the question. The head has been submitted to a committee of distinguished botanists in Michigan for examination, and their verdict is against wheat turning to chess. Now, I hold myself to be equal to any of them in my knowledge of botany and vegetable physiology, and the puerile, bungling, unsatisfactory manner in which they tried to explain away a natural fact, is, to say the least of it, amusing—just because it does not square with their preconceived notions or doctrines. They must enlarge the basis of their theories. They go too much on the artificial arrangement of plants by Linnæus; it is the natural system of Decandolle that makes chess and wheat closely allied. They belong to the same natural order, that of Gramineæ. The Linnæan system places them widely apart. There are five different species of wheat, but that grown in this country is the *Triticum vulgare hybernum*, belonging to the natural order Gramineæ, and it is well known to botanists and horticulturists that all cultivated plants under unfavorable conditions tend to revert to their original condition. It is an instance favoring the Darwinian doctrine of evolution. The head of wheat I sent is proof enough to any unprejudiced mind; it is a growth produced by nature, and therefore a fact, and cannot be explained away. There is only one thing wanting to make proof doubly proven, and that is to sow the grains of chess produced on the head of wheat, and if they grow chess it should settle the question beyond further dispute, that wheat turns to chess.

ROBERT DUNLOP, M. D., Norfolk Co., Ont.
Of the University of Edinburgh.

The Apiary.

Spring Management.

BY G. B. JONES.

During the month of March bees often become very restless, sometimes flying in the cellar and bee house, and dying in large numbers. The warm spells of this month render it very difficult to keep the temperature of the repository sufficiently low; and a rise at this time will arouse the bees, while in mid-winter they would scarcely have noticed it. The bees have begun breeding, which, in itself, is good cause for unrest. Much food is being consumed and the stores are being reduced. The winter is nearly over, and by instinct the bees take advantage of every mild spell to fly. All this tends to frighten the inexperienced beekeeper, and his natural inclination, when he sees his bees flying in their winter quarters on a beautiful sunny day, is to "carry out." But let him remember that the loss incurred thus in confinement is not equal, by long odds, to that sustained on account of a week, or even a few days, of cold weather, when the bees are upon their summer stands for the spring. Bees put out too early invariably dwindle badly, and suffer more or less from chilled brood.

Early in March, however, it is often beneficial for the bees to have a purifying flight; and especially so if they are at all affected with diarrhoea (indicated by fecal spots upon the frames and about the entrance of the hive, accompanied by a bad smell); or if the repository cannot be kept cool enough to prevent flying, and at the same time be well ventilated. For this purpose choose a fine sunny spell without wind. "Carry out" as directed below. Leave them out as long as the fine weather lasts, being careful to close the entrances to about a half an inch during cloudy days, and from 10 a. m. to 4 p. m. every day. As soon as cold enough for them to cluster nicely, "carry in" again, and do all in your power to keep them quiet till the black willow is in full bloom, and even later, unless the weather be warm for the time of year. If the bees can be kept quiet without this flight, give it only to the sick ones. If it cannot be given before the fifteenth of March, don't give it at all.

Brood-rearing in confinement makes bees very restless. If a few sticks of porous bee candy be laid across the brood frames in March the effect is very beneficial. It quiets the restless colonies and starts the others breeding.

Having kept our bees quiet as long as possible, or till there is sufficient bloom to afford abundant pollen, we must choose a day to "carry out." This should be mild and sunny, without wind, and with no prospects of a cold night. Now start with the nearest colony to the door. If its hive has a bottom on, close the entrance quietly, and if the bees "boil over" much put on a cover; if no bottom, spread a sheet upon the floor and set the hive into it without any unnecessary jar; enclose it in the sheet. In either case if the hive has handles or a rim, carry it by these; if not, stand opposite the ends of the frames, place the fingers under the hive and carry carefully, so that the combs cannot strike each other. Place the hive exactly where it stood last fall; open the entrance wide, and put on the cushion and

cover. To remove the sheet from the bottomless hive, procure a bottom and set the hive, sheet, and all upon it; spread the sheet out flat upon the ground; raise the hive a little, and have an assistant quietly draw the sheet forward till it is clear of the hive; set down the hive and shake the bees from the sheet to the alighting board. After each hive is in its place, set some conspicuous object in front of it, such as a piece of board, a chair, a piece of cordwood, a stone, a box, a clod, or something else that will differ from that in front of the next one, and in such a position that not a bee can fly out without seeing it. This is to cause the bees to locate themselves, and to prevent them mistaking their hive. At night remove it.

Sometimes, in spite of all precautions, bees will make mistakes. A common one occurs when some hives are arranged in front of others, namely—many of the bees from the rear hives enter the front ones, often sadly weakening their own; they have lost their way, and it is useless to attempt to send them home again. While the mistake cannot be corrected, it may be used to advantage thus—put the weak colonies in front and the strong ones behind, and so equalize the strength of all. If after the weak ones are reinforced the same trouble exists, make another change, and so on. When all is quiet, clean out the dead bees from the hives through the entrances by means of a piece of heavy wire with a square turn on the end of it.

If necessary the smoker may be used in all these manipulations—even in the cellar and bee house—to make the bees cluster before removal; but great care should be taken not to overdo it. A little smoke is beneficial, but much may do serious injury. This same fact should be remembered all through the season.

Straighten up the bee yard and make things generally tidy. Leave the bees alone for a few days; then on a warm, calm, sunny day, when the bees are well at work, find out the queenless stocks and unite them with weak ones, having good laying queens. Any medium or strong colony without brood or eggs at this time may be considered queenless, though each should be carefully searched in case an old or injured queen be present. If such be found kill her, or any queen in a good colony not laying at this time. Mark the queenless stocks in some conspicuous way (simply by laying a stone on the hive of each). To unite two or more colonies, move them gradually towards each other a little at a time each day, or several times a day, the number of movements depending upon the proportion of the bees flying, as sufficient time must be given for each bee to locate itself before another change is made; three feet is sufficient at a time. Leave each pair together for at least one day's flying, and upon the next warm day smoke both colonies; cage the queen; spread the combs in her colony, and between each two insert one with its adhering bees from the other; leave the caged queen immediately above the brood; replace the cushion and cover; shake any bees in the queenless hive upon a quilt at the entrance of the other, and if they do not run in at once smoke them a little, taking care that they do not clog the entrance. In two days, if fine, release the queen quietly.

While "going through" for queens, all combs not immediately required by the bees should be removed, the others spaced three eighths of an inch, and the empty space shut off by a division board. Remove those having no board and least honey. The cushions should be well tucked in, and all cracks and openings except the entrance stopped, and this kept nearly closed except for a while during very warm days. The cushions should remain on till May, and then not be removed till the bees cluster outside on warm days and inside on cool ones, thus showing that they are at times too warm. If short of stores they should be fed candy behind the division board. I shall give directions for stimulative feeding, building, and buying bees, next month.

Sheaves from Our Gleaner.

The latest U. S. boom—Hog Cholera.

Small fruits are food, luxury and profit.

You can't afford to put good grain into bad stock.

The chronic malady of our country—Office seekers.

There is no patent on the manufacture of farmyard manure.

Are your tools and implements ready for the spring work?

Eternal vigilance is the price of keeping agents off your premises.

The worst phase of farming—Planting potatoes in the phase of the moon.

If you think you were born to be a drudge, keep on farming in the old rut.

If you are a good farmer you will buy good stock in preference to good fertilizers.

If you now want to calculate your profits for the coming season, begin by measuring the size and shape of your dunghill.

Potatoes may be assorted in cellars on stormy days in winter, which cannot be done when stored in pits.

Mr. Moreton Frewen, the Wyoming Cattle King, still thinks he can get his cattle frames shipped to England via Canada.

It is actually a fact that some people are beginning to enjoy fruit of extra quality in preference to that having a showy exterior.

If what's worth doing is worth doing well, don't lay out more fields for cropping than you can cultivate thoroughly. Then you will make haste more slowly and profitably.

It would not be difficult to calculate which is the greater source of loss to the farmers of the United States, their corn or their corners. The former only destroys their hogs; the latter corrupt their morals. This is where the shoe pinches.

A weed has been defined to be "a plant out of place." In this respect, as well as in many others, plants are like men. A weed seems to be able to thrive most anywhere; it is not very particular as to what food or accommodation it gets, and can therefore hardly be starved to death or perish. If we attempted to weed out bad men, such would also be their character. Has anybody ever tried to starve a tramp or a bum, or freeze or parch him to death? He is always everywhere except where he should be, and, like weeds, is always robbing valuable growths of their means of subsistence.

Veterinary.

Lameness in Horses.

No. II.

We present herewith an illustration embracing the bones of the horse. In doing so we have two objects in view: 1.—We are almost daily in receipt of letters concerning the horse, in which we are requested to answer questions through our correspondence columns. We are obliged to throw many letters into our waste basket, especially those relating to lameness, owing to defective descriptions, and in many instances the bones are so peculiarly named that we are unable to ascertain what the writer is aiming at. If our friends would kindly keep this cut for ready reference, this difficulty will be obviated. 2. We are now presenting our readers with a series of articles on the causes, symptoms and treatment of the different kinds of lameness, and the illustration will be necessary in order to point out the location of the various infirmities of the limbs. These articles will be thoroughly practical, and will repay careful perusal by those who want to save veterinary doctor bills.

2. ELBOW LAMENESS.

This usually arises from one of the following causes: (1) Disease of the elbow joint; (2) Sprain of the lateral ligament. This ligament is often sprained or ruptured when the animal's fore leg is suddenly or violently forced outwards; when the foot slips forward a sprain of the muscles which extend the arm is apt to follow. Such accidents are common amongst most all domestic animals when the roads are icy, and especially amongst horses which are not properly shod. If you feel heat or swelling on the part, especially if the animal also manifests pain and stiffness, you may be sure that the ligament or muscle has been strained. When the joint, however, is affected, the diagnosis is quite different. In this case the patient, while standing, will hold its limb in a semi flexed position; but when in motion a sudden drooping of the head and anterior portion of the body will be observed. The ulna (K), the radius (L), and the humerus (I) sometimes

become fractured by accident, in none of which cases should a cure be attempted, there being so many muscles in these parts that the bones can hardly be kept in their proper place. The treatment of many kinds of lameness being the same, we shall deal with it separately in a future article.

3. LAMENESS IN THE KNEE JOINTS.

You will observe in the cut that there are eight small bones which enter into the formation

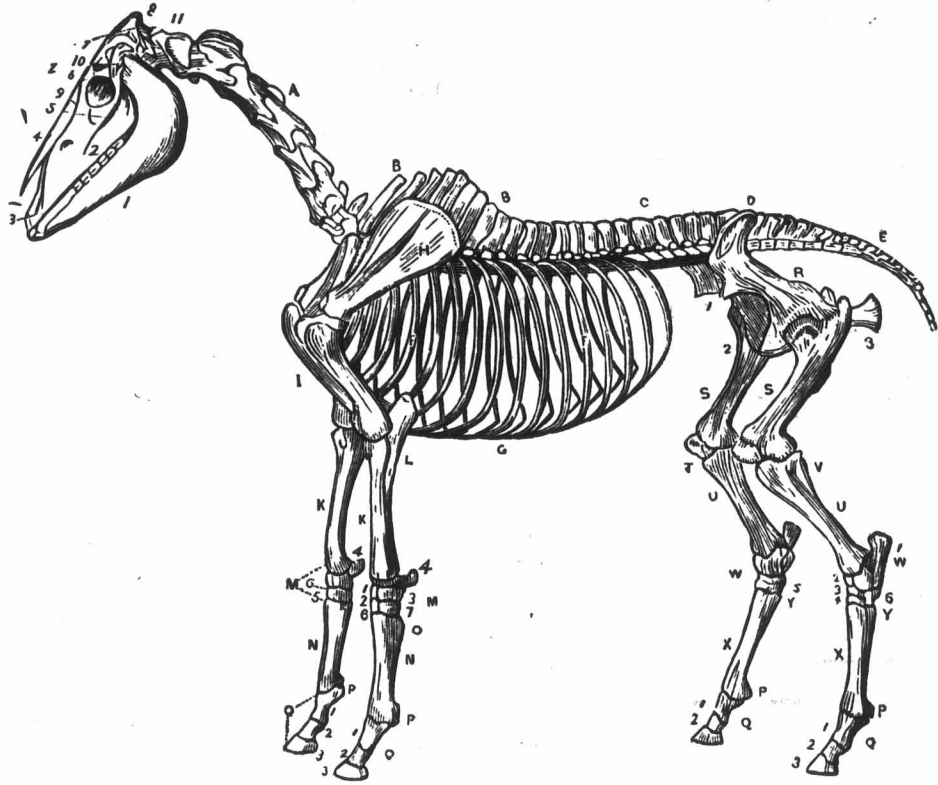
If you flex or distend the joint, pain is sometimes manifested, and sometimes an exostosis, or unnatural growth of bone, is observed, usually on the inside of the knee. When first taken out of the stable, he may appear quite sound, but lameness becomes manifested on exercise, especially when trotted. When both knees are affected, he swings the limbs around laterally, so as to prevent bending as much as possible, but there is no dragging motion, as is the case with shoulder lameness.

"Broken knees"

sometimes occur from falling on hard substances. Careless driving is a prevalent cause. The injury is sometimes trivial and sometimes severe, and is divided into five classes according to its extent: (1) —When the skin is bruised, but not broken; (2) When the skin is cut; (3) When the skin is separated and torn, more or less, the tendon being exposed, and its bursa (the joint-oil sack) opened; (4) When the tendon is penetrated, the knee bones being exposed; (5) When one or more of the bones is fractured. The first case may be successfully treated by washing the part and sponging with white lotion two or three times a day for two or three days. Tincture of arnica may be substituted for this remedy; and if there is heat, a cold water bandage should be applied. In the second form of injury, bring the edges together with a plaster, but don't stitch. If suppuration or running takes place, apply antiseptics and astringents (say carbolic acid, one part to 70 or 80 parts of water). Of course, in all cases the wound must first be probed and all foreign bodies removed. The third form

of injury, the synovia or joint oil may discharge profusely, and the whole limb may be more or less swollen, but successful treatment should not be despaired of, especially if the tendon is not crushed. In such cases, however, you should call a veterinary surgeon, as also in form No. 4. In the last named condition of the injury the patient, if cured, will only be useful for breeding purposes; and in the fifth form, the only known remedy is to destroy the sufferer.

"Speedy cut" is a name given to an injury inflicted on the inside of the knee, caused by striking the limb by the foot of the adjacent



Skeleton of the Horse.

EXPLANATION OF CUT.—A—Cervical vertebrae, or 7 joints of the neck. B, B—Dorsal vertebrae, or the 18 joints of the back bone. C—Lumbar vertebrae, including 6 back bone joints. D—Sternum. E—Coccygeal bones, or 17 bones of the tail. The elevations or processes on the dorsal are called the withers. F, F—The ribs. G—Costal cartilages, joining the ends of the ribs. H—The scapula, or shoulder blade. I—The humerus, between elbow and shoulder point. K—The radius. L—The ulna. M—The carpus, or knee, including (1) the scaphoid; (2) the semi-lunar; (3) the cuneiform; (4) the trapezium; (5) the trapezoid; (6) the os magnum; (7) the ulneiform; (8) the pisiform. N—Large metacarpal or cannon bone, between knee and ankle. O—Small metacarpal, or splint bones. P, P—The sesamoid bones, two small bones detached from the cannon bone. Q—Phalanges (each being called a phalanx); embracing (1) the upper pastern bone; (2) the os corona, or lower pastern; (3) the os pedis, which fits into the hoof—also called the coffin bone. There is a small bone at the back of the lower pastern called the navicular, which is not marked on the cut. R—The pelvis, embracing (1) the ilium, or flank bone; (2) the pubis; (3) the ischium, the hinder and lower part of the hip bone. S—The femur, or thigh bone. T—The patella, or small bone overlapping the stifle joint. U—The tibia, between hock and stifle. V—The fibula, a long, thin bone attached to the tibia. W—The hock, being composed of the following small bones: (1) the os calcis, or point of hock; (2) the astragalus, or upper bone of hock which supports tibia; (3) the cuneiform magnum; (4) cuneiform medium; (5) cuneiform parvum; (6) cuboid. X—Large metatarsal, between hock and pastern joint, below which the figures 1, 2 and 3 represent the phalanges, the same as those of the fore legs. Y—The small metatarsal, a small splint behind the large metatarsal. Z—The head, embracing: (1) the inferior maxilla, or lower jaw; (2) the superior maxilla (upper jaw); (3) anterior maxilla; (4) nasal bone; (5) cheek bone; (6) frontal (or forehead) bone; (7) parietal, embracing the sides and upper portion of the skull bones; (8) occipital; (9) lachrymal; (10) squamous; (11) petrous, which encloses the organs of hearing.

of the knee. Carpalitis is a diseased condition of these bones, which causes occult lameness, that is, a form in which there are no external symptoms of disease. The bones become inflamed, and if treatment is not speedily resorted to, caries will set in; that is, the bones will become ulcerated, as it were, and will die out piece by piece. In diagnosing this disease, observation should be made as to whether lameness occurs in one knee or both, as the symptoms are different in each case. When only one knee is affected, the patient steps longer with the lame than with the sound limb.

leg. Inflammation and swelling take place, and an abscess is formed. Speedy cut may be prevented by proper shoeing, using a three-quarter or charlier shoe, the foot being kept well pared internally, and shod frequently. If this precaution is not sufficient, than wrap an old boot leg round the part. The wound is treated by fomenting the part, opening the abscess and applying a stimulating absorbent to remove the thickening.

(To be Continued.)

Stock.

Modes of Rearing Calves.

The calving season will soon be at hand, and those of you who intend withdrawing the milk from its natural use should now make up your minds as to the most efficient and profitable substitutes for the calves. Consider first what you will conveniently have as the basis of the ration, whether skim-milk or whey, or whether you will have none of these products.

1. USING THE WHOLE MILK.

Fresh, whole milk being the natural food for calves, is usually employed in raising thoroughbreds or other animals intended for the show ring. When the raising of a good calf is the main object, no regard being had to the milking properties of the dam, the calf is allowed to suck, and is generally dropped early, many breeders preferring January or February, or even autumn. The calf is allowed to remain with the dam in a box stall during the first week, being removed at nights to prevent accidents. It is then allowed to suck three times a day, ground grain is furnished as soon as the calf is able to consume it, and bran or shorts is sometimes gradually added, with small quantities of oil cake. The run of a small grass patch will be of great service. Many feeders soil their calves all summer, but this should never be done except when it is desired to spoil them for the show ring, as they need plenty of exercise for health and muscular development, especially if they are to be kept for dairy purposes. The milk is gradually reduced to one feeding per day, and weaning takes place at the age of five or six months.

2. FEEDING SKIM MILK.

Some feeders contend that skim may be substituted for whole milk with equal success. Calves of great vital powers may appear to thrive on almost anything; but experiments have been numerous enough to prove the unsoundness of the skim-milk theory. They might as well contend that whole milk is not the natural food for calves. Some fatty material should be added to make up for the loss of the butter fats. It is advisable to give the calf whole milk for the first six or eight days, or longer if it is not inclined to flourish, and then change gradually to skim milk. The best feeders remove the calf from the cow immediately after birth, not allowing it to suck at all; and if they are placed beyond the hearing of each other, so much the better for the prosperity of both calf and dam. The best substitute for the butter fats is the oil found in flax seed. As the milk of some cows is much richer in fats than that of other cows, it will be seen that no fixed rule can be given for the quantity of flax seed to be substituted. Take ground flax seed and

boil it to a jelly in about six times its bulk of water, and four to six ounces of this, mixed with the skim milk at blood heat, will be a good daily ration at the commencement. Oat meal has also a large quantity of fat, and when boiled into a thick gruel, may be given instead of the flax seed, but as it has less fat than the flax seed, a dessert spoonful of sugar or molasses may be added to each meal. Some feeders change from flax seed to oat meal every alternate week, but we think it is better to change oftener, and still better to mix the two, feeding the mixture continuously, some days using two-thirds oat meal and other days two-thirds flax seed; but it is better to use the flax seed alone for the first two or three weeks, it being more digestible than oat meal, and make the change to the oat meal gradual.

3. WHEY AS THE BASIS OF THE RATION.

The skim-milk is only wanting in the butter fats, but the whey is minus part of mostly all the constituents of the milk, leaving the fluid too watery. There is 93 per cent. of water in the whey, only 87 being in the milk, so that the calf must drink too much water in order to get a sufficient quantity of solid matter. The casein is taken out with the cheese and most of the fat and mineral matter, leaving very little solid matter in the whey excepting albumin and sugar. About four-fifths of the flesh forming matter, and variable quantities of minerals according to the system of making, are taken out of the milk, and these constituents must be supplied to the whey. Flax seed contains all the elements of nutrition; when the oil is pressed out and the by-product ground, it is then called linseed meal, usually known as oil cake, before it is ground. Under the old process of manufacture, about 10 per cent. of oil is left in the cake; but under the new process only 2½ to 3 per cent. is left, the former now being usually known as linseed cake meal, and the latter linseed meal. The old process meal is the best substitute for the lacking flesh-forming and mineral constituents of whey. It has only to be dissolved in hot water or whey, when it is ready for use. This diet may be commenced when the calf is 10 to 14 days old, and one-quarter of a pound of the ground cake or the linseed meal to each gallon of whey will make a good ration at this age, and when the calf is three or four weeks old, the same quantity of bran or oat meal may be added to each gallon of whey. A pound of the linseed cake without any grain will be a fair daily allowance for an average calf of three months old. Pea and bean meals are almost as rich in flesh formers and minerals as oil cake, and may be substituted in slightly larger quantities, but should be scalded so as to facilitate digestion and prevent scouring. Shorts may be substituted for oat-meal. The oil meal will sometimes be found too laxative, in which case ground grains may be substituted in whole or in part.

4. RAISING THE CALF WITHOUT MILK.

In England chemical substitutes for milk are growing fast into popular favor, and they are beginning to be introduced into Canada. They are sold in the form of a powder, and when warm water is added, they are ready for use. Adulterations have brought a good deal of disgrace upon this business, but the analysts are at work and driving them into other occu-

pations. Any substitute which has not the same analysis as milk is at once rejected. In this country the closest substitute is oil cake. The calf may be raised for about a fortnight by any of the methods above described, before the milk is entirely abandoned. But oil cake by itself is too laxative, so that boiled bean meal should be added in such proportions as will give the excrement the proper consistency. Good calves have been raised on bean soup, made by boiling the beans thoroughly and fed in the proportion of one pint of beans to two gallons of water. Small quantities of oat meal or wheat middlings may occasionally be added. Calves have also been raised on hay tea, but this is rather deficient in some important constituents, there being a lack of both flesh formers and fat. Only early cut hay of first quality should be used. Cut the hay into fine chaff and steep it in hot water. Two gallons of hay tea, adding one-quarter of a pound of oil cake and the same quantity of shorts, will make a good diet for a young calf. In England a very popular milk substitute is made by taking linseed cake or linseed meal, adding wheat meal thereto, first soaking the meal in cold water, then boiling it.

GENERAL REMARKS.

In calf raising the only fixed rule we can give is that no fixed rule can be safely followed. "Use your judgment" may also be regarded as a fixed rule. A great deal depends upon the breed and the constitution of the calf. If you understand how to manipulate a table of analysis of the various foods, you can compound them in a thousand different ways, putting the right proportion of the constituents of the milk into each ration, and you can use the foods you have instead of being bothered with much purchasing. In increasing and varying the ration as the calf grows, your own judgment is the only reliable guide, care being taken to make no violent changes of any kind. Give the calf plenty of exercise, and a plentiful supply of pure water is an important consideration. Be careful not to dilute your ration too much; for then, like whey, the calf must drink too much water before it can get the necessary supply of nourishment. Don't put in more water than is found in milk. You will be safe in not using enough water, for the calf can get the balance from other sources. Most feeders use too much cooked food, and change too suddenly to raw grain. Keep raw meal constantly before the calf, and as soon as it begins to eat, slacken off with the cooked rations. It is better to feed three times a day at first, and don't let the animal gorge itself. If you are successful the first two months, the calf will then be able to raise itself; just put a variety before it and it will be sure to take just what it needs. At this age it begins to chew its cud, and is then able to do its own managing. If you now encourage it to eat bulky foods, thereby developing and expanding its digestive organs, you may possibly have a finer animal than the feeder who gorges his calf all the season through with whole milk and other concentrated foods.

There is about as much profit in making a present of a bad cow as in receiving a present of a good one.

Half kerosene and half lard is a good mixture for killing lice on stock.

What is Gained by Exercising Fattening Animals.

There is usually a pointed meaning in the saying that a question has two sides; and it certainly has an application to the feeding of animals that are reared for their flesh. It is commonly said of fattening animals that they take on flesh more rapidly from a given amount of feed, if tied up in the stall and almost entirely debarred from taking exercise. This statement, if based solely upon an abstract view, is, to quite a degree, correct. But an abstract view means in this case, as in many others, the shutting out of considerations that are indispensable to a proper understanding of the subject. Thus, suppose we tie up, and debar from exercise, the breeding animals of a herd, year after year, taking them in their calfhood, and following up the practice during the breeding career of their maturer years, repeating this, in the regular order upon the progeny, to the third and fourth generations: What would be the result? This, and nothing less; that this repeated and long continued lack of exercise would so impoverish and debilitate the muscular tissue, that the lean portions of the body would as generation followed generation, become less and less in bulk. Not only would the quantity of this portion of the system shrink, but it would become flaccid and inefficient, and this lessened muscular development would become, like many others, a defect liable to transmission by hereditary descent.

The saving influence which operates upon the feeding steer, comes of the fact that he is from ancestors that have grown up with the liberties of the pasture; but the question occurs upon the extent to which the muscles of a given beast may be attenuated by being tied up during a large portion of its feeding life. Muscles (lean flesh) are portions of the system that in the natural course of things, grow in the ratio of the exercise taken; hence they may be expected to shrink if debarred from motion for a lengthened period of time. What follows? Simply this; that the conditions which favor decreased growth in the lean parts favor increased development of the fat cells; and, as a consequence, of the fat deposit within these. This explains why our prize fat animals show such an excessive amount of fat when cut up, as compared to their flesh, or lean tissue. So, for these reasons, exercise while growing and also while feeding, should be encouraged, clearly because this promotes the growth and full development of the parts we expect to roast and broil; while, as stated, depriving the beast of exercise promotes the growth of that portion, which, now that tallow candles are out of date, is counted as an impediment in the way of securing the highest perfection in the meat product.

Apart from the considerations mentioned, we are to consider the added vigor to digestion from a fair, in other words, a necessary amount of exercise in the open air. It should not be forgotten that the legitimate growth of the bodies of our domestic animals is in the direction of muscle, and the frame work of bone to which this is attached; the growth of both portions being promoted by the habits incident to a state of nature. The fact should also be borne in mind that the free accumulation of fat is the outgrowth of a state of domestication; and it will be well to stop and consider to what

extent artificial treatment, as illustrated in prize and Christmas heaves, sheep and pigs, is giving such an excess of fat as render it a burden upon our hands. It is becoming a common saying that close confinement in a stall or box, favors the accumulation of fat, hence, confinement is proper because profitable. Are we not on the eve of a reaction against this extreme development of fat cells and fat, this end being reached by withholding exercise, and as a natural result lessening the growth of muscle, as stated? An accumulation of fat as food is not according to the plan of Nature; but on the other hand Nature stores away her surplus fat to be used as a reserve, when the animal from any cause is cut off for a time from access to the usual supply of food. Nature, when left to herself, endeavors to carry this fat accumulation where it will, in the least possible degree, impede the motions of the body; namely, about the kidneys, where it hangs, as it were, suspended; interfering in no way with the action of any muscle. The Indian ox (zebu), an animal eminently fitted for traveling long distances, carrying its rider twenty or thirty miles a day over rough and rocky going, has scarcely a trace of fat throughout the body when in his native condition; but carries a store in the hump upon his shoulders. It is the custom of the hour to push enterprises until the supports tremble and give way; and it will be well to consider whether we should not look upon the modern show bullock as, in a degree, a monstrosity, rather than a suitable beast for a model.—[National Live Stock Journal, Chicago.]

There is sometimes a rage in favor of sleek-skinned horses. This may be all right as a matter of ornament for those whose fancy gets away with their judgment; and it is a boom which farmers especially should guard against. It is impossible to get a horse into a sleek condition without debilitating its constitution. It must be warmly blanketed in a warm stable and fed on warm mash as a portion of its ration. Its hair must not be ruffled up by much exercise, and nothing must be done which will tend to ruffle its smooth temper. The opposite extreme is bad enough, but can hardly be worse. Sleek horses and prize horses are usually identical; and if you have means enough to retire, your sole ambition being to get a big name and amuse yourself with pet animals, by all means have them sleek. Sufficient smoothness can be produced by cleanliness and judicious feeding, without injury to the animal.

The modern Garden of Eden is the Island of Jersey, the home of the famous race of cattle bearing that name. It contains only about 29,000 acres, and yet it supports about 60,000 people and 12,000 head of cattle. The Jersey has for centuries been bred to be a butter machine, and for no other purpose whatever; this is the reason why she can produce her own weight of butter in a year—the half of which result would be an excellent showing for any other breed. The farms are gardens; and indeed they must be, when it is considered that rents amount to an average of \$43 per acre. The peasantry live in comfort and ease, every farmer labors with his own hands, and poverty is unknown. Every cow is a family pet and can be managed by a child; this accounts for her extraordinary docility, and her marvellous productive capacity.

Poultry.

Turkeys as Pest Destroyers.

The Fresno (Cal.) Republican, speaking of the value of turkeys in vineyards, says: "Our vinegrowers are on the lookout for turkeys. A market for 2,000 or 3,000 young turkeys could be found at the leading vineyards. They want them to range in the vineyards and catch the slugs that are now attacking the vines. They found the turkey an excellent hand at the business. They would hire men and set them at work, but a sufficient force is not obtainable when needed. But the turkey does the work nearly as well as a man, and while catching the worms is earning his own food. Then, too, after the worm-catching season is over, he will sell for as much or more than he cost in the first place, and, therefore, he is a more valuable employe than a man would be. We think it would pay the large vine-growers to put up incubators and every spring have a large brood of young turkeys ready to turn into the vineyards."

What to Feed Young Chicks.

At the early stage hard-boiled eggs are wholesome and nourishing for them. But unless eggs are plenty and cheap, they are an expensive feed, and not at all indispensable. Bread-crumbs, dry or soaked in milk, will answer very well for the first feeding. As a staple food for the first few weeks some breeders recommend wheat bran and coarse cornmeal in equal parts. This should be either scalded or cooked, and fed to them in a crumbly state. It is well, occasionally, to cook the meal with meat scraps from the table, or put in a little grease of some sort. Boiled potatoes, cabbage chopped fine, meat raw or cooked, and table scraps, all will be relished by the little birds, and will help them to grow. This variety is more essential in the early spring, before the grass and insects appear. Cracked corn, dry and whole wheat are excellent articles of food. These may be alternated with the meal and bran mentioned above; feed each three times a day. In cold weather a little red pepper may be used in the morning meal to advantage. The food of young chicks should be of the very best, not necessarily strong and highly stimulating, for such would engender disease, but it should be of such a kind and quality as will cause a healthy growth and natural development. This is the true system of feeding chicks successfully, and should be practiced by all who expect to raise a large percentage of their young birds, and at the same time have them strong and vigorous. While the quality and kind of food given is of the utmost importance, regularity in the time of feeding, and frequency, has much to do with success. Very young chicks can not consume enough food at a single feeding to last them for several hours, as their crops are small, their growth rapid, and the demand for material proportionately active, and to compel them to wait from morn till eve, as is done in some cases, is not only cruel, but works greatly to the disadvantage and loss of the breeder. Even feeding three times daily is not enough for the young, tender and downy chick, and if they are fed at morn, noon and eve, and then once be.

tween times, making five feeds daily in all, and even more frequently during the first ten days, you will find that they will thrive much better, will grow faster and develop sooner.—[Poultry World.]

Eggs for Hatching Purposes.

It is often a problem with some why they at times secure good hatches from a portion of the eggs placed under hens, while but poor results are obtained from other sittings. In the first place, in a majority of cases, the trouble is with the eggs and not with the hens. For hatching purposes, especially in the winter, the eggs must be collected as soon as they are laid, in order to prevent them from becoming chilled, for extreme cold is fatal to the germ. No monstrosities in eggs should be used, such as those large enough for two yolks, or that are pointed at both ends. Ordinary, smooth, medium sized, well shaped eggs should be selected, and the fresher the better. The nest in winter should be made in a warm location, which is not exposed to drafts, nor is dampness essential, though a moist nest is better for the summer. Avoid giving the hens too many eggs to cover. Common consent has adopted thirteen as a sitting, no matter whether the hen is large or small, but it is more economical in winter to place only ten under a hen, and she will be enabled to impart more heat to a smaller than to a larger number, as a full nest sometimes does more injury than one but partially filled, owing to the larger number of eggs that become exposed, there to remain until they in turn are changed to the centre of the nest by the hen. In extremely cold weather an egg so exposed is destroyed by the low temperature, but if the hen succeeds in covering a small number she will save the difference in the cost of the eggs required, and also hatch more and stronger chickens. It would be well if the eggs were tested after being under the hen for a week; the incubator operators understand this, and why should not the same practice be followed with sitting hens? It is a very easy matter. Make an egg tester by pasting paper boards together, or by using thin boards if preferred. A box should be made so as to fit over a lamp globe; say a square box, with a round hole on top and an oval hole on one of the sides. Place the box over the lamp, allowing the chimney to pass through the hole on top; now darken the room, using no light but that from the lamp; hold each egg to the oval hole on the side, and look through the egg at the light. If the eggs are a week old they will appear dark, should they contain chicks, the upper part, or large end, appearing clear; this clear space around the inside of the large end is the air-sack (or air-bladder as some term it). Below this air-sack the contents of the eggs will appear dark. Should the egg contain no chicks they will appear clear, and if compared with fresh eggs will show the same appearance; therefore always use a fresh egg for comparison. Put the dark eggs back into the nest, and keep the clear ones, cook them, and keep them for feeding the young chicks.—[Farm and Garden.]

SAVING EGGS FOR HATCHING.—Put them in a box of oats, small end downwards, and in a place of even temperature, as they must not freeze nor be kept too warm. Packed carefully they will keep well for quite a length of time, and will hatch when two weeks old, but the fresher they are when placed under hens the better.

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.—Would you please state in answer in correspondence column if sewing salt on meadows of clay loam soil of 3 to 5 years old, is profitable. **SUBSCRIBER.** BELLEVILLE, ONT.

[Salt would most likely be of some direct benefit to your meadow; but we would advise you to be cautious about its use. You will find this question fully discussed in our next issue in connection with our articles on "How to Save the Manure," which we trust will be soon enough for your purpose.]

SIR.—I have a mare that got a cut on her bag twelve months ago last summer, when she was suckling her colt. I had it nearly healed, but my son put her on the thrashing mill and fed her heavy on oats. There is a lump on her bag as big as my fist. It never healed up; it is running sometimes blood and watery stuff; it will form a scab and after a few days it will come off. I imagine it is getting larger. She is carrying a colt now; she had none since she got cut. Please tell me what is best to do to it, or will it hurt her when she comes to her milk? I am offering a good price for her, but she is so good I do not like to part with her. **WINDSOR RIVER, P. E. I. J. B.**

[We are of the opinion that there is some foreign body in her bag, perhaps a piece of stick or part of whatever cut it. Call in a veterinary surgeon; he will cast her and open up into the place, where he will likely find what is causing the trouble: Then treat as a common wound, which will quickly heal.]

SIR.—I have a colt coming two years old, that has a constant itching on its withers, and when tired out for exercise it rubs the skin off. Please state cause, and remedy, and oblige. **A. F. CHATHAM, ONT.**

[If you have chickens in the same building it would be well to examine for chicken lice. If not, give the colt a purgative drench, say Barbadoes Aloes five drachms, ginger one drachm; soda two drachms, water one pint; mix and give as drench. Then give every night one teaspoonful of sulphur in bran mash. Keep it warm and groom well.]

SIR.—In the September number of the *Advocate* there appeared an article treating on chess. Since that time a few writers have given their views on the matter, but differ widely in their opinions, some contending that wheat will turn to chess, others that it will not. Now I content that oats will turn to chess, and with your permission, Mr. Editor, I will give the public my experience in the matter. About twenty years ago I had a logging bee in the fall of the year on a piece of land I chopped the winter previous. I had four yoke of oxen at work. At noon the cattle were hitched by their chains to stumps where they were at work, and I cut and fed them green oats. The oats were out in head, but most of the grain was soft. In the following spring I sowed the land to wheat. When it had grown about six inches high, one day I walked across the field and observed four patches of very green and luxuriant grain, and as thick as hair on a dog. After studying the matter some time I came to the conclusion that at seeding time I had laid down the bags of grain at those places, and by some means had spilled

some of it. I set to work and pulled out a large quantity of it, still leaving the patches thick. At harvest time I was surprised to find those four patches to be principally chess, and then I remembered that it was there I fed the green oats to the oxen the fall before. Now, Mr. Editor, I suppose the scientists will say the thing is an impossibility, but still the fact remains. And I content that the green oats shelled in the fall did grow chess the following summer. I might observe that there was not a particle of chess in the remainder of the field. **G. R. NEWRY, ONT.**

SIR.—In your last number there is an article on the cheese business from an Ingersoll subscriber, and as he seems to know all about it I wish to say to him, Why don't you start a factory of your own and break down the monopoly? There is a fortune in it as at \$1.15 per 100 pounds for making, when you can buy dairy salt weighing 250 pounds per sack, and act as salesman yourself; and if any of the buyers ask you to sell him a carload of cheese, demand \$1,000 on the spot, and teach these fellows something, and don't allow them to treat us poor soft beings as they have been in the habit of doing. Respecting subscriber's complaint on the buyers, I wish to say that I have been in the market as salesman for the past nine years, and have done business with almost every buyer in the bounds of our Association, and during that time not one of them ever broke his word or backed out of his agreement with me, and I believe them to be a most honorable class of men. I never had trouble selling but once, and that was my own fault, as I sold to a person not in the regular trade, and he could not move the cheese. But does not trouble sometimes originate with salesmen? Some of them are not very well experienced in the market and not the best judges of cheese, and they come to the market and represent their cheese as fine—the maker tells them so and they honestly believe him—but when inspected and found not up to the mark, there is disappointment. When patrons send their milk to a factory they agree to send it pure. Do they ever back out of this? If there was no trouble but with the buyers, I would think the trade satisfactory. **"SOD." BELMONT, ONT.**

SIR.—I have an old cow with a something growing on her eye. It commenced like a boil, broke and ran twice; then it began to grow very rapidly, and almost covered the eye. It looks like proud flesh, only it is a reddish blue color. Will it affect the milk? Can you from the description tell what it is? If so, send me a receipt. **J. I. S. KIRKTON, ONT.**

[Your cow has what is generally called fungus haematodes. It is a perplexing and loathsome disease frequently seen in cattle. At first it has the appearance of a small vascular tumor, and by gradual enlargement pushes aside the eyeball, which, together with the bones of the orbit, become involved in the tumor. To ensure success treatment should be adopted early. Caustics, or the knife, or both, are needed in all cases. It may be necessary to remove the eyeball if the disease has made much headway, or in fact in all cases it is best to use remedies that will speedily relieve the sufferings of the animal in order that it may gain flesh and fit it for the butcher. We would recommend you to call in a veterinary surgeon, as an operation will be necessary. The disease will not affect the milk until it has made considerable progress.]

SIR.—Please answer the following questions in your valuable paper as soon as convenient: 1. What is the best kind of corn to sow for green fodder? 2. What quality of cheese would you get by taking the first of the cream of the night's milk and using the whole milk of the morning? Would it be fair selling cheese? 3. What weight of cheese could you reasonably expect per cow from good common cows well fed? 4. What is the best kind of oats to sow for feeding the straw in the winter? 5. Please give a full description between this and spring how to make a good soft cheese. **A. B. CAMBOROUGH.**

[1. Ma amoth Southern Sweet Corn. 2. Much depends upon the percentage of cream in the milk and the mode of manufacture. The selling would depend upon whether you have a home or a foreign market. Don't attempt to sell it to buyers as whole milk cheese; but in your local market you may get within a cent or two per pound of the price of whole milk cheese, all other conditions being equal. Of course, if you sell it for whole cheese, and if it is as good as other articles, nobody in the local markets may find the difference; but we would not advise you to act dishonestly or risk your reputation. 3. A good common cow, well fed, ought to give 4,500 to 5,000 lbs. in a season, and each 10 lbs. of milk ought to make a pound of cheese. 4. Any kind that is free from rust, the white varieties being most free therefrom, of which the White Australian and the Welcome are best. 5. By putting a little more rennet and less salt into cheese made in the curdling method, you will get a soft cheese.]

SIR.—Can you inform me if there is any cure for string halt in a young horse, or if anything can be done to relieve it? **I. F. C. WOLF ISLAND.**

[There is no known remedy for string halt.]

SIR.—Please tell me in the March number of the ADVOCATE, 1. What is your opinion of white oak fence posts, and how long will they last? 2. Do they last longer when split than when sawn? I think the sawed posts lasted for a wire fence, but a neighbor says the sawed won't last as long as the split posts. 3. Do wire fences need a cap of wood? If so, what sort of a cap is best? 4. I suppose four strands of wire and a cap are sufficient? What will the wire for four strands cost per rod. W. S.

BRAMSVILLE, ONT.

[1. Many experiments have been made with regard to the durability of the different kinds of timber in every position and under every condition, and the results prove that full grown white oak for fence posts comes next to cedar in point of durability. In a dry gravel soil it will last 20 or 30 years, and even longer. 2. It is immaterial if the wood splits straight you gain nothing by sawing. 3. It is not necessary to use a cap of wood, although one is frequently desirable, and cedar spars about five inches in diameter, sawn or split in two, serve the purpose very well, or white oak scantling may be substituted with equal success. A 2x4 pine cap is also a good arrangement. 4. Four strands will not make a very substantial fence. Six with cap, or seven without cap, are generally used. One rod of No. 8 wire weighs about 19 ounces, and costs about 6½ cents per pound.]

SIR.—I read an article in the January number, and in the main endorse it, but especially that part relating to spring pigs. If there is any money in feeding hogs it is in feeding them so as to be fit for market say from six to eight months old. In your remarks you say, "We require a breed that grows rapidly, so that a spring born pig will dress not less than 150 pounds when winter sets in." Then you go on to describe the different breeds, etc. I shall not presume to think that you would consider that 150 pounds would be a fair return in weight for spring pigs say from six to eight months old. Be that as it may, I am going to tell you what we did in that line last summer. We took seven suckling pigs from the sow at three weeks old, and fed them until they were eight months old, and when slaughtered or dressed the seven pigs averaged 257 pounds each, the heaviest pig weighing 278 pounds, and the lightest weighing 220 pounds. This breed is pure white, with fine hair, well proportioned, mature rapidly, and a cross between Yorkshire and Chester White. Imported to the Province by the Stock Farm Commissioners. And I think I might hazard the assertion and say that a large majority of farmers in this Province could if required give equal results. T. A.

LOWAR MONTAGUE, P. E. I.

[In the markets of this Province the demand is for dressed hogs weighing about 150 pounds for cutting up in butcher's shops, and about 250 pounds weight for packing purposes. The weight we gave was the minimum, and we did not decide the age of the hog. The impression we intended to convey was that there was no demand here for heavy, coarse carcasses, and a hog dressing 250 pounds cannot be regarded as such. Your hogs made very fair averages, and we should like to see more farmers aim at your standard.]

SIR.—1. What is the best kind of floor for cattle stalls? 2. Will a stone pavement covered with water lime make a good floor for cattle? 3. What is your opinion of iron grates for a floor under the hind feet of cattle? Are the cattle comfortable on them without any litter? Will the excrements all last through? 4. Are cedar blocks the best thing for horses? G. K.

GLENALLAN.

[1. A floor composed of Portland cement makes the most durable footing for cattle, but as this material is pretty expensive, American cement, which costs but little more than half the price, will make quite a substantial floor. 2. Yes. See answer to No. 1. 3. Iron grates placed behind cattle are a very good arrangement when the saving of the manure is an important item. They also save labor in handling the manure, and serve to keep the cattle clean. When the cattle become accustomed to the grates they find no inconvenience, so far as comfort is concerned. The excrements fall between the bars into a receptacle below. When the droppings are hard the cattle usually force them through with their feet. The wooden or cemented part of the floor may extend between three or four feet back from the manger. The gutter is placed under the grate, and is made waterproof by cement, the size being sufficient to hold the droppings for two or three weeks. Muck, or some other deodorizer, is thrown down the grate to prevent noxious gases from rising. The grate is attached by means of hinges, so that it can be easily elevated. The bars are 1½ x 1½ inch wrought iron, and are placed 1½ inches apart, 12 forming the usual width of the grate. The gutter should be well ventilated in warm weather to prevent diseases of the feet. If you can arrange a basement below the gutter, in which you can back up a wagon, it will save the labor of shoveling the manure up out of the gutter. 4. Under horses' feet nothing should be used that will absorb urine, as it makes the stable unhealthy.]

SIR.—Will you please tell me through the ADVOCATE what causes smut in wheat, and if smutty wheat when sown grows smut. If so, is there anything can be used to kill the smut, what quantity per bushel, and how should it be used? J. G.

SHEPPARDVILLE, MAN.

[Smut is a parasite or parasitic fungus, there being several varieties, some causing rust and some mildew. When a smut grain is broken it flies to powder or spores, the size of which may be faintly imagined when it is known that a square inch will contain over 7½ millions of the spores. Each spore will germinate and produce a separate plant. When smutty wheat is threshed, thousands of spores attach themselves to the tufts of hair which are found on the germ of the kernel, and cannot be seen with the naked eye. They also find a lodging place in the blossom of the grain. By these means smut is usually propagated. It grows with the young plant up the interior of the stem in the shape of a very slender filament, which sends out suckers into the cells, the filament itself growing between the cells. In this manner the parasite lives on the plant and reduces its vitality. When the wheat kernel is formed, the filament finds its way into it, where it lives luxuriously. It is first observed as a blackish slimy mass, but gradually dries into a solid mass of spores, forming a smut ball, all the substance of the kernel first being devoured. There are two methods in common use for separating or destroying the spores. 1.—Soak the seed in brine for about 12 hours; then mix with air-slaked lime until the seed is perfectly dry. 2.—Soak the seed in a solution of sulphate of copper, using 3¼ or 4 oz. in about a gallon of water. A gallon will be sufficient for say four bushels of wheat.]

SIR.—1. Is fresh ground or kiln dried meal the best for fattening purposes? 2. Would wheat bran and smashed barley make good feed or fattening cattle? 3. Should meal be fed raw or cooked? 4. What time in the day should meal be fed to fat cattle? 5. I have a young horse with loose lump on front of ankle joint, caused by a cut about 18 months ago, which is very troublesome in the snow; easily made bleed. Can I remove lump and have it heal with hair on? SUBSCRIBER.

STINKCORE, N. S.

[1. Cooked foods put on more fat than raw, and the animal usually increases faster in weight, but the flesh is inferior in quality, and you don't get the same quantity of lean meat. The flesh from your kiln dried meal may be good enough to sell, but if you have regard for your health don't eat it, if the animal is highly fed without enjoying much exercise. Cooked foods are more digestible than raw, but the digestibility depends about as much on the completeness of the mastication as on the cooking. 2. First class. 3. Raw for quality of flesh, cooked for quantity of blubbery fat. 4. Three times a day is better than twice; as to the time of day it makes no difference, so long as you feed regularly, and at equidistant intervals. Don't feed finely ground meal by itself; mix it with coarser foods, else it may form a ball in the stomach. 5. Get a veterinary to remove the lump with a knife, and you may treat as a common wound. Neither hair nor skin should be removed, and no trace of the wound should be left when healed.]

SIR.—The yield of barley is not so good, and it does not weigh as many pounds to the bushel as it did some 3 or 10 years ago in this part of the country. Some parties have been advocating a change of seed, and that the seed should be procured from distant localities where the climate is similar to our own. Please let us know through the ADVOCATE what you think of the matter. T. K.

VANDELEUR.

[If your barley has decreased in yield and weight, it is on account of the deterioration of your soil or climate, or both. If you import barley that has been raised under more favorable conditions than yours, it will degenerate. At any rate a change of seed, whether of the same variety or not, is desirable. All other conditions being equal, it is better to import from a similar climate; but, within certain limits, the soil and the system of cultivation are as important as the climate. If you get superior seed, developed under the most favorable circumstances, you must either import every two or three years, or improve your soil and system of cultivation. You may think of animals when you are reading about plants, for both are governed by pretty much the same laws.]

SIR.—I have a valuable blood mare which will be four years old in the spring. She has got swellings in front of hock joints resembling hog swavin. When exercised the swelling goes down, but when standing in the stable it returns. H. J. C.

CORNWALL, P. E. I.

[It is bog spa in. The best treatment is cold water and astringents, or pressure by means of a pad made specially for the purpose.]

SIR.—1. Can you tell me through your valuable paper what is the cause of smut in wheat, and if there is anything that can be done to prevent it, as we are greatly troubled with it here? 2.—If there is any kind of wheat that is clear of smut altogether? 3.—What is the cause of a sow, when having pigs the first time, having no milk for some days and then come to her milk all at once? I have one that was a week without milk. The first time it was early in the spring and I thought it was the cold, but she had pigs again in the summer and she was 3 or 4 days the same way, and came to her milk without any medicine whatever. J. E. R.

ROUNTHWAITE, MANITOBA.

[1.—See answer to J. G. 2.—All varieties of wheat are subject to rust, and if one variety is freer from it than another, it is because it has not been sown in a smut-infected district. 3.—This complaint is usually caused by feeding too much dry feed.]

SIR.—I plowed a field last fall in which I intend to plant cabbage. The soil is a heavy clay loam, and very poor. This is the second plowing since the stumps were taken out. I have plenty of barnyard and cess-pool manure which I can mix. Will you be kind enough to let me know through the ADVOCATE how I can best apply the manure to get the best result this year? Also would salt be any benefit, and how much per acre? T. Mc.

INDIAN TOWNS, ST JOHN, N. B.

[Turn the manure under, plowing as deep as possible. If, however, your barnyard manure is very coarse, the plowing under of a large quantity would not give the soil the proper mechanical texture,—that is, it would be too porous to retain sufficient moisture for cabbage. In such a case you use part of the manure as a top-dressing, being careful not to apply so much coarse stuff as will prevent free evaporation from the soil. We would not advise you to use salt. We will fully explain the salt question in our next issue.]

SIR.—1. Would peas and oats be a suitable green crop to turn down, followed by fall wheat. It is held by some men that it takes as much from the soil as it gives. 2.—Would buckwheat be better to turn down? 3.—Which is the best mode to use land plaster for a turnip crop, and does it injure the soil? P. G.

LUCKNOW, ONT.

[1.—Crops used for green manuring should have deep roots, so that the clovers are best for this purpose, peas and oats being too shallow rooted. The object in green manuring is to take the plant food from the deep subsoil and deposit it in the surface soil; also to furnish vegetable matter to the land. Your soil would be benefited by green manuring, but injured by plaster. 3.—Plaster is best applied by sowing it on the surface and mixing it well into the soil with the harrow. We shall describe the action of plaster on the soil in our next issue.]

SIR.—Peach crop is done for again. Trees looked fine in the fall, but 16" below zero was too much. Under-draining is being commenced here quite enthusiastically for the first time. Small fruit and grape vines are being planted very extensively. There are nearly 200 acres of grapes planted in California now. E. D. S.

WINONA, ONT.

SIR.—Let me thank you for the stand you take in connection with our Township shows. I look upon them as feeders of our great shows; cut off these little rivulets and the beds of our great rivers will soon become dry. I see that there was a motion made to establish a spring show for bulls and studs horses in connection with our Western Fair. I think that would be a move in the right direction, and I have no doubt but it would be self-sustaining, and it would become a great market for the sale of these two classes of stock. In the spring of every year there are scores of farmers in want of that class of stock. On the other hand, there are scores of farmers who have that sort of stock to dispose of, and by establishing a show in the spring of every year as early as the first or the middle of April, buyers and sellers would know where to meet each other, and it would be to the advantage of both. To be without a fair of that sort in the spring of the year is to me to be quite behind the time. I would urge you to use the influence of your very valuable paper in that direction and you will confer a blessing upon us farmers. To say that I like the ADVOCATE would express very little. I could not think of being without it. Its cost is not comparable with its real value. SUBSCRIBER.

BRYANSTON, ONT.

SIR.—Please inform me how it is that butter will not come at times in the winter season. I have churned for hours without being able to bring the butter, although the cream was kept at what I thought the proper temperature. Is it because cows are approaching the calving season? H. L. S.

HILLINGS BRIDGE.

[The chief cause may have been the cold weather; you have possibly permitted the milk or cream to undergo too sudden or too extreme changes of temperature. Cows which approach calving produce milk the cream of which is more difficult to churn than that of newly calved cows, and the milk of some cows is constitutionally hard to produce easily churned cream.]

SIR.—I would like to know what is the matter with my pigs; first they got lame in one fore leg, now one is lame all around. They are confined in a house 12x16 feet; no yards, ve and s x in a pen. They were pigged the 16th of September, bred between a Yorkshire and a Berkshire. They are well fed and kept dry. A. G. M.

[Give them more room and more exercise. Change feed. Give sulphur in feed.]

The New White Grape, Niagara.

No grape that we have ever heard of has attracted so much attention as this one. For years the company controlling it has supplied it to grape growers in large quantities, realizing a portion of the extra profit from the crops and reserving all the wood. They would not sell a single vine to anyone until the present season; now it is procurable only at \$2 per plant, and we believe the sale of it at that price is enormous, as all nurserymen and all amateurs that have space for it are so well satisfied with its superiority that they will have it. The great advantages claimed for it are that its foliage, being remarkably tough and leathery, will withstand the effect of frost better than most any other variety; 2nd, it has always been free from mildew or blight; 3rd, it is earlier than the

In Sarpy county, Nebraska, all the hogs are said to have perished from cholera. Virulent outbreaks are also reported from other quarters of the Union. This is a practical comment on the statement lately made by the Agricultural Department at Washington, that the hog cholera had been so completely exterminated that not even a sample of the virus could be procured for examination. If the Americans would dump a whole year's yield of their corn into Boston harbor, it would be the most profitable speculation ever undertaken by them.

An old and successful farmer of 40 years experience, in giving a list of points of his experience to the Editor of the Southern Planter, says: "The farmer who never reads the papers, sneers at book-farming and improvements,

The Household.

Washing the Face.

There are some who object to washing the face often, especially with soap, thinking this an injury to the complexion. But those who have made a specialty of skin diseases say no part of the body needs soap so much; that the face, being constantly exposed to dust, collects so much, it is not enough to wash it in clear water. They say if soap makes the face shiny, as so many claim, it only shows that it is more needed, and that the work of drying after the bath has not been properly performed. The face, however, should not be wet immediately before or after going out. Its most thorough ablution should be performed at night, before



The New White Grape, Niagara.

Concord; 4th, it holds its fruit better; 5th, it will bear transportation better; 6th, it will keep better; 7th, the quality is much superior to the Concord, many preferring it to the foreign and hot-house grapes; 8th, it commands double the price of ordinary grapes.

It has been grown and has produced a marked success in Canada. It was a hybrid or cross between the native white grape, called the Cascade, and the Concord. In a few years these grape vines will be procurable at a low rate, but this year they are not procurable at a less price than \$2. We have seen and eaten these grapes years ago, and desired to procure a plant, but could not do so until the present time, and we feel a confidence in recommending it. Its appearance, size, flavor, quality and hardiness have long since convinced us of its desirability, and we are pleased to be able to offer it to our subscribers for sending in four new paid subscribers, or \$2. These plants will be sent to you by mail, and you may depend on them being good and true to name.

always has a leaky roof, poor stock, broken down fences, and complains of bad seasons."

Dr. Gilbert, F. R. S., who has long been associated with Sir J. B. Lawes in the agricultural experiments at Rothamstead, has accepted the position of Honorary Professor of Chemistry at Cirencester, which post was rendered vacant by the death of Dr. Völcker.

FEATHER PULLING.—This vice is one for which no cure has been found. Many remedies have been tried, but none have proved successful. The flock that becomes addicted to pulling feathers may as well be destroyed as to be retained, so far as the value of the fowls is concerned, for the hens will not lay, and by plucking feathers from each other have a very unsightly appearance. The latest suggestion is to smear the feathers with some disagreeable substance, such as tar, which prevents the practice. If this can be done, and the fowls well supplied with animal food, the vice may be forgotten in a few weeks.

going to bed, and the following method should be observed in the process: Fill a basin with soft, warm water, lather a medium-sized sponge with good soap, and wash the face carefully. Then take fresh water, without soap, and wash again with the hands, and rub thoroughly with a Turkish or crash towel until the face is dry and tingling. This will do much toward improving and preserving the complexion; and the little vexatious black spots called "flesh worms," will usually disappear after a time, if it is persevered in.—[Household.]

Sleepless people, says Health and Home, should court the sun. The very worst soporific is laudanum, and the very best is sunshine. Therefore it is plain that the poor sleepers should pass as many hours of the day in the sunshine and as few in the shade as possible. The injurious effect of the shade is very noticeable in plants growing in secluded places and ladies who are accustomed to carry sunshades.

1885

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Family Circle.

THERE'S MANY A SLIP.

BY MARK INLEER.

CHAPTER I.

TELLS A DIVERTING STORY.

A midsummer night, two young men were seated on the forward deck of a Hudson River steamboat, bound from New York to Albany. They were on their way to Saratoga, and the delightful coolness of the air, and the beauty of the scenes through which they were passing, caused them to ignore their state-rooms, though it was already past midnight. They had no company but their cigars and the pale moon, which enveloped them in a flood of crisp, metallic light. Their chairs were tilted back, and their feet rested upon the boat's guard in true American fashion.

The names of these young men were Gilbert Elliott and Jack Marston. Gilbert was a youth for whom Fortune had always shown a decided liking. He was about twenty-five years old; his education was ample; he had a good temper, so long as he had his own way; he moved in the most refined society, and he was good looking enough for all reasonable purposes, or people. His parents were wealthy, and he was the possessor of an independent income, left him by an aunt who had become very dear to him since her death. In all his life he never experienced a heavier sorrow than that brought about by an ungratified whim.

Jack was of about the same age and social standing as Gilbert. His father, mother, and only sister were at one of the principal hotels in Saratoga. It was Jack who was speaking.

"It strikes me, Gil," he said, "that you possess an immense talent for letting trifling and absurd events carry you off your feet."

"And you call that golden-haired angel an absurd event, do you?"

"Nonsense. You're as romantic as Romeo, and as little given to reason as a politician just before election time. But come, go on with your story. It's interesting, to say the least."

"Where was I when you interrupted me?"

"You were rhapsodizing about a lovely blonde young woman whom you had met by chance on several occasions, and who had fascinated you wonderfully, though you were never able to ascertain who she was."

"Ah, yes. I met her for the first time late last spring. It was in a Fifth Avenue stage going up town. I was reading the afternoon paper, and hardly noticed when we stopped, at the corner of Twenty-fifth Street, I think, to take in a lady passenger. I laid my paper aside, however, to hand her fare to the driver, for I was the only person besides herself in the stage, and then I saw that she was young and exceedingly beautiful. She was dressed richly, and with exquisite taste, and I thought her the most bewitching object I had ever seen."

"That's the one hundred and fiftieth good-looking woman I've heard you say the same thing about."

"Yes, but the others could not compare with this one. Her features were regular, not the insipidly regular sort, you know, but as even and clearly defined as those of the classic statue. Her soft and wavy hair rippled over a low, white brow that gleamed as pure as alabaster. She had a pair of tempting, rosy lips, and as she looked in her pocket-book for her fare, her eyes were veiled by long lashes which just brushed her cheeks with a familiarity that made me wild with envy. The cunningest little foot you ever saw peeped out from under the edge of her black silk dress, and the delicately gloved apology for a hand with which she put the fare into mine, sent a thrill up my arm and straight into my heart. The effect was as direful as if it had been a genuine Cupid's arrow."

"How touching!" murmured Jack. "Really, Gil, you ought to turn poet."

"Oh, it was nothing to what came afterward," said Gilbert. "All previous sensations were mild compared with those I experienced when she raised her eyes to mine and thanked me. Heavens, what eyes! Great, dark, lustrous, swimming eyes, upon whose intense depths I immediately floated off into a whirlpool of ravishing emotions. I made a grand struggle to preserve my presence of mind, but was not entirely successful, for I was so nervous that I dropped the money on the floor twice before I could get it to the driver, and then I knocked my hat off and stepped in it while trying to reach my seat. I think I could have turned a somersault on a bare-backed steed with more genuine agility, ease and grace than I exhibited in performing that not particularly intricate feat of handing a stage driver his fare. I have a suspicion that she looked upon my manoeuvres as in a measure gotten up for her particular amusement, for I noticed something wonderfully like a smile lurking about the corners of her mouth, as I concluded my antics."

"She didn't seem at all disposed to encourage you to make any advances?" interrupted Jack.

"Not a bit of it," answered Gilbert. "She was as dignified and lady-like as possible. Well, I took my paper up, but I could not read. She sat directly opposite me, and must have known that I was watching her, although she pretended not to notice me, for after she had left the stage, I discovered for the first time that I had been holding the paper wrong side up all the while."

"And you have been haunted by her image ever since, I suppose?" Jack remarked.

"I should say so, though it would not have been so bad if Fate had not thrown her continually in the way. I met her several times in the street, I saw her at a matinee performance at the opera, and I passed her once or twice when driving in the park. I have given her description to all my friends, but they know of no one who can answer it fully. Do you know any one like her, Jack?"

Jack shook his head dubiously. "There's Carrie Boughton," he said, "she's a blonde."

"Oh, confound it, man, the girl I'm talking about is no such dumpy, badly-made person as Carrie Boughton."

"Why didn't you follow her home some of the numerous times you met her, if you were so terribly anxious to discover who she was?"

"And have her take me for a common loafer? No, indeed! How would I feel if I had ever annoyed her in such a manner and should meet her out in society?"

"And suppose you should be so fortunate as to make her acquaintance and should find that she is married or engaged?"

"Jack, don't put such ideas into my head. I can't bear to think of them. Come, let's turn in, it's two o'clock."

The next morning the pair took the train for Saratoga. On arriving there another train was moving off just as their train stopped at the depot. They had stepped on the platform, and were looking at the cars that were getting under way, close by them. Suddenly Gilbert grasped Jack's arm. He seemed to be choking with excitement. When he was able to speak, he said:

"There she is!"

"The one reading the book?"

"Yes. Didn't you see her look at us?"

"I thought I did."

"It's always the way. Just my luck. If I happened upon her once a day for a month, I'd never be any nearer to finding out who she is."

"Never mind," said Jack. "Brace up. Don't be down-hearted, you know the old proverb, 'There's many a slip 'twixt cup and lip.' It certainly will not be a difficult matter to learn at what hotel she has been stopping, although people may not know her name. She couldn't pass in a crowd, without being noticed, and lots of folks will remember her. The hotel registers will tell you the rest."

Jack's sister was standing on the piazza waiting to receive them as they drove up. She had been to school in Germany for several years—until within about six months. Gilbert had known her when she was a child. He shook hands with her, and, as he did so, he said to himself, "Jack has a pretty sister, that's a fact, but she can't compare with the lovely creature whom I mean to win, if I have to devote all my energies to it for the rest of my life."

They stepped back to the office to register their names. As Gilbert wrote his, the hotel-clerk glanced at it.

"There's a telegram here for you, sir, I think," he remarked.

"Yes, that's right," said Gilbert, as he took the buff-colored envelope.

He tore it open and read:

"Your mother and I both injured, not very seriously, in railroad accident at Barton. Come there at once."

"FATHER."

"Thank God it is no worse! When does the next train start that connects with the road for Barton?"

"Then I'll take it."

"You will have some dinner?" said Jack.

"Yes, I suppose so."

"I am very sorry to hear of this misfortune."

"You are all going back to town by the latter part of this week, are you not?" said Gilbert.

"Yes."

"Well, I'll meet you there. No Saratoga for me this year."

That afternoon Gilbert was whirling over the railroad in the direction of Barton.

While he was making his journey, Jack and his sister established themselves in a corner of the piazza. Said Jack, "Would you have remembered Gilbert, if you had not seen him with me?"

"I think so. He has not changed much."

"He would amuse you, Emily. And I don't know, too, but that you would become downright friends. He is a rattle-brained sort of fellow, but he has many splendid qualities."

"He wants to be under the influence of some one who can steady him."

"I suppose so. What do you suppose is the latest wild-goose idea that has got into his head?"

Emily could not guess.

"He has fallen madly in love, so he says, with a beautiful young lady, with blonde hair and magnificent dark eyes. He doesn't know her, can't even find out who she is; but he is constantly meeting her in the most unaccountable manner. Why, this morning, as we got out of the train at the depot, he suddenly clutched my arm and said in the most melodramatic manner, 'Jack, there she is: there's the fair charmer, or words to that effect. And, sure enough; there in the window of a palace-car, that was just moving off out of the depot, sat a handsome young lady, holding a book in her hand. She looked towards us, just as my attention was drawn to her, and I fancied she gave a little start when she saw Gilbert standing there. Strange coincidence wasn't it?"

"Yes," said Emily. "Then she suddenly said, 'Oh!'"

"What's the matter?" said Jack.

"Can you keep a secret, Jack?"

"I think so."

"Did Mr. Elliott meet the young lady first in a stage in New York, do you know?"

"Yes; he did."

"Then it's the very same."

"Same what—stage?"

"No, no. He's the same, she's the same."

"Don't go on in that absurd way, Emily, do be a little more explicit."

"Do you remember, Jack, in one of the first letters I wrote to you, after I came to Saratoga, that I spoke of meeting here a school-mate, one that I had had in Germany?"

Jack nodded.

"She left school only a few months ago. Her name is Kate Worthington. She went away from New York when she was quite a little girl, so she is not known in society

there now. I imagine, though, that she will make a sensation next winter."

"Well," said Jack.

"You mustn't breathe a word of it," said his sister. "Kate Worthington is the lovely and mysterious blonde that Mr. Elliott has fallen in love with."

"You don't say so?"

"Yes, I do. She told me when she first came to Saratoga about a young man she had met in the city several times, by mere chance, and who was evidently very much taken with her. His admiration never manifested itself in an impertinent manner, but his face would exhibit such a woe-begone expression of tender regard whenever he encountered her, and he would appear so abashed in her presence, that it was impossible to misunderstand the cause of his tribulation."

"Humph!" said Jack; "a woman seldom misunderstands anything that can possibly be construed into admiration of herself."

"And a man, Jack," replied his sister, "never disturbs himself at all concerning the admiration of other people; he is perfectly contented with self-appreciation. Kate Worthington is a blonde, and a very lovely girl. She left Saratoga by the train on which Mr. Elliott saw her. I have a photograph of her in my album. I'll show it to you."

The picture was brought, and Jack exclaimed at once, "Yes, that's Elliott's charmer!"

"Very well; but remember, Jack," said his sister, "you are not to give Mr. Elliott the slightest clue in this matter. Kate wants to mystify him as long as she can."

"Is she a coquette?"

"No. She is the best-hearted creature in the world. Still, she does not object to worrying a man whose ardor is so sudden and unrestrained as Mr. Elliott's appears to be. No true woman would."

Jack promised to keep the secret, and within the next twenty-four hours he had dismissed the entire subject from his mind.

CHAPTER II.

FOLLOWS A CLUE.

Back again into town. Our three acquaintances are seated in the library at Jack Marston's. Emily is trifling with a crochet-needle and a ball of cotton; Gilbert and Jack are smoking. It is Gilbert's first call since the return of the Marstons from Saratoga. The conversation has flagged a little, and just now there is a slight pause.

Gilbert knocks the ashes off his cigar, and says:

"By the way, Jack, did you get the letter I sent you at Saratoga, asking you to make inquiries about the blonde young lady I told you of?"

"Good gracious, Gil! you don't mean to say you are still following it up?"

"Yes, I do, though," says Gilbert, picking up the ball of cotton which had rolled from Emily's lap upon the floor, and replacing it in its original position. "But you don't answer my question. Did you gain any information?"

"Well—you see—" answers Jack; "ah—I—"

"Oh, we had so much to do," answers Emily; "so many entertainments, and drives, and excursions all the time Jack was there, that I'm rather afraid he neglected your commission."

"Then you didn't find out who she was," says Gilbert, with a despairing expression upon his face.

Jack looks appealingly at his sister. There are times when the strongest man will need to turn to the weaker sex for aid. Jack feels this to be such a time.

"You must forgive him, Mr. Elliott, really you must," she says, coaxingly. "It was not altogether his fault, though, for I kept him by me as much as I could. I required his attentions all the time."

She gives Gilbert a delightfully sweet smile as she says this, and Gilbert replies, bowing gallantly, "I do not doubt that he found the yoke imposed upon him by you a pleasant one to bear."

"That is a very pretty compliment, I am sure," replies Emily. "It is marred by one thing, though."

"What can it be?" asks Gilbert, with a look of meek and forgiving resignation.

"It comes from a source where, I fear, the wholesale manufacture of such exquisite trifles is extensively carried on."

Gilbert appeals to Jack—"That is rather unkind, is it not?"

"Don't be disturbed," says Jack; "the female mind will travel a long distance for the grains of salt necessary to make a palpable compliment palatable. Appearances, however, require that it should always be met with some exhibition of acerbity."

Emily receives this with a scornful little laugh, and remark, "What a brilliant wit you have, Jack."

"Do you know, I thought I had secured a clue the other day," says Gilbert.

"Yes. What was it?" asks Jack.

"I was walking on Madison Avenue, last Monday afternoon, and as I neared a street crossing I noticed a young lady coming toward me. Her veil was down, and she held in her hand a letter, which she was about to drop in a lamp-post letter-box. We reached the lamp-post at the same moment. She raised her hand to put the letter in the box and at that instant a gust of wind blew her veil aside. It was she, my beautiful blonde. I suppose she was afraid I would recognize her, for she attempted hurriedly to pull the veil over her face. The effort caused her to drop the letter on the pavement. I sprang forward to pick it up, and thought, now is my time—the address—I will remember it, seek out the person to whom it is written; ha, ha! you can escape me no longer. I picked the letter up, and, of course, just my luck, it had fallen with the address side down. However, I contented myself with a glance at the monogram, her monogram, on the side facing me. There was a big K and a little W; that was all."

"Which wasn't much," says Jack.

Shortly after this, Gilbert takes his departure. He thinks, as he walks home, that Emily Marston is a bright girl, and pretty too, decidedly pretty; a great deal prettier, in fact, than a man would think at first sight. He is

she will make a... said his sister... mysterious blonde... first came to Sara... in the city several... evidently very much... manifested itself... face would exhibit... regard whenever... appear so abashed in... misunderstand the... from misunderstands... admiring... never disturbs... on of other people;... appreciation. Kate... lovely girl. She left... Elliott saw her. I... I'll show it to... exclaimed at once... said his sister, "you... clue in this matter... she can."

glad she has grown up to be such an interesting young lady. He is on Broadway, and is attracted by the tasteful appearance of a shop window in which are displayed pictures, ornamental articles, and stationery. Can it be possible! There is an envelope right before his eyes with the easily-recognized monogram upon it composed of the letters "K. & W." And there by its side is a sheet of letter-paper with the same monogram. Are his eyes deceiving him? He can scarcely believe them. He is greatly excited. There is something else on the sheet of paper. It is an address, the name of a street and the number of a house. He does not lose a moment; he has not far to go, but he hurries away with as much celerity as if his destination were at the farthest end of Manhattan Island. He is at the place at last. Yes, this is the right number, but the house is dark, there is not a light to be seen in any window. His heart sinks. It had gone up to "fever heat," now it stands at seventy. However, up the steps he goes, and takes hold of the bell-handle. As he does so, something at the side of the door, about on a level with his head, attracts his attention. It is a piece of white paper pasted on a board. These words are printed on it in large letters. "FOR SALE." His heart becomes much more depressed; it is nearly down to freezing-point, but a thought that flashes into his mind revives him slightly. The house-agent's name. It is his last hope. He is a smoker, so he draws a match from his pocket, lights it, examines the paper more closely. Alas! some mischievous boys have torn off the lower portion, leaving only the two melancholy words. "For Sale." He turns away disgusted. They have a personal application which is particularly exasperating.

CHAPTER III.

BRINGS ABOUT UNEXPECTED RESULTS.

The possession of such a temperament as Gilbert Elliott's requires abundant consolation and sympathy when tried by disappointment. He had made confidants of but two people, Jack Marston and his sister Emily. But it was in vain that he looked to Jack for solace. That individual merely laughed at what he called Gilbert's "folly." But to Emily, Jack admitted that he felt like a base and unregenerate conspirator. Kate Worthington was, of course, kept thoroughly informed of the many trials which Gilbert experienced in the course of his search for his unknown enslaver. "But," she said, "it must stop now. It is beginning to seem mean and underhanded." "Well," replied Emily, "come and spend the evening with me some time this week. I will have Mr. Elliott here. Then we can all make a full confession." "He'll blow my brains out," said Jack, mournfully. "No, Jack," answered Emily, "that is impossible." In the meantime, Gilbert had found in Emily a sympathetic ear. The habit growing upon him, it became necessary for him to go to her for comfort at frequent intervals. And he generally obtained it. At least, he never left her, he said, without feeling cheered; and he certainly did seem like a different being in her society. He had many excellent qualities, Emily told Jack. He was a little erratic just then, but that would wear away in time, and he would become thoroughly sedate and extractable, she was sure. All at once Gilbert lapsed into his original state of extreme dejection. "It's no use," he said, when Emily rallied him, "I am a hopeless idiot. You must think me one. At any rate, you cannot help looking upon me as a very helpless sort of a fellow, not capable of understanding my own mind even." Emily assured him she did not think anything of the sort, and then reminded him of the encouragement he had made to meet her very dear friend, Miss Worthington, on the second evening following. "She is very beautiful, and very lively," said Emily. "Perhaps she may console you in a measure for the fascinating creature whom you love so madly, but hopelessly." "There," replied Gilbert, "you are making fun of me. I knew you thought me an idiot." "Then," said Emily, "you do consider it idiotic to fall in love with a person you don't know?" "Love!" said Gilbert, with a scornful emphasis upon the word. "Why, I never really understood the full meaning of the word. I am only just beginning to see that true love is not a shallow puddle, but a sea. I thought I had discovered it, and could wade through it, but now know that it is so deep, so immense, that to venture into it is to be engulfed for ever." "I don't quite understand you," said Emily. "No, I suppose not. I wish you did, though you might not believe me. However, I may make an explanation at another time. Good-night." When he reached home, after his conversation he seated himself in an arm-chair, lighted a cigar, and smoked and thought for an hour. Then he wrote a long letter, and went to bed. Early the next morning he dropped the missive into a letter-box. "There!" he exclaimed under his breath, "it is done." The next evening, about eight o'clock, Gilbert was leaving his hat and came in the hall at the parson's. The servant informed him that Miss Emily would be down in a moment and that Mr. Jack was in the parlor with Miss Worthington. He entered the room, which was rather dimly lighted, and at first could only distinguish that there was a lady sitting by Jack on one of the sofas. He approached them, and Jack arose. "Permit me, Miss Worthington," he said, "to present my best friend, Mr. Elliott." As Gilbert bowed, the servant, who had followed him into the parlor, turned up the gas. "Good heavens!" he exclaimed. "Can it be possible?" He turned to Jack in an instant, after he had recovered from his confusion. "You knew, and never told me." "I plead guilty," said Jack, "and I recommend myself for mercy." "Treat!" said Gilbert, in a tragic tone; thou hast deceived me basely."

"Let me supplicate for him," said Miss Worthington, "and for his sister Emily, too." "And have they informed you of the full extent of my imbecility?" groaned Gilbert. "I didn't think it of you, Jack, nor of your sister, neither." "Oh, I am the only one to blame, Mr. Elliott," interposed Miss Worthington. "I made them promise solemnly not to give you the slightest clue." "Their promises, I can certify, have been faithfully kept," said Gilbert. "Will you not be generous, and forgive us all?" asked Miss Worthington. "Yes," said Jack with a malicious twinkle in his eye—after giving Kate an inquiring look, in reply to which she made a gesture of assent. "Yes; and be quick about it, for Miss Worthington and I wish to ask your blessing." Gilbert's eyes almost started from his head. "You don't mean to say—" he cried. "That we are engaged to be married, I really couldn't help it, Gilbert," pleaded Jack. He expected to see his friend quite cast down by this bit of news, but Gilbert only laughed, and remarked: "Let me congratulate you heartily before I give you my blessing." And he added: "Jack, you made good use of your time." At this moment Emily entered the room. Her face was beaming with an expression even brighter and happier than usual. She held a folded letter in her hand. "What do you think of the surprise I have given you?" she asked, looking towards Kate. "Have you a terrible scolding in store for me?" As she said the last words, she came close to him and looked earnestly into his face. "Never mind that now," said Gilbert, in an undertone. "I see you have received a letter. Did its contents interest you? When are you going to reply to it?" "Now," she said, "There is my answer," and she held out her hand to him. He took it, and turned proudly to Jack and Miss Worthington. "You see," he said, "I, too, have been making the most of the swiftly flying moments." "Well!" exclaimed Jack, "you quite take away my breath. Gilbert, you won't have to go to the proverb, 'There's many a slip 'twixt cup and lip, for consolation, after all, will you?" "No. And the slip 'twixt the lip and the first cup makes me value the second, and the one I have secured, all the more highly." There was silence for an instant, and then Emily was heard to observe: "Gilbert, I must positively insist upon your keeping quiet and behaving yourself. It is not proper to try to put the cup to your lips when there are other people present. I am astonished at you."

A Witty Archbishop.

Archbishop Whately delighted in oddities of thought and in quaint distinctions. He once took the strange Australian weapon, the boomerang, and was often seen on the sands casting it from him and watching its return. At ecclesiastical meetings, when business languished or speakers were dull, he would cut out little boomerangs of card, and amuse himself by shooting them from his fingers. Among the little witty missiles that he sent fluttering from his mouth, are the following: "What is the difference," he asked of a young clergyman he was examining, "between a form and a ceremony? The meaning seems nearly the same; yet there is a very nice distinction." Various answers were given. "Well," said Whately. "it lies in this: you sit upon a form [a long bench], but you stand upon ceremony." In Whately's time, the great circulating library of Dublin was Morrow's, and the most popular preacher was the Rev. Mr. Day. "How inconsistent," said the archbishop, "is the piety of certain ladies here. They go to Day for a sermon, and to Morrow for a novel." What is the laziest letter in the alphabet?" he asked. "The letter G! [lethargy]. "Is your chum a close student?" wrote a father to his son in college. "You bet he is, father," was the reply. "You couldn't borrow a V of him if you were in the last stages of starvation." A pretty answer was given by a little Scotch girl. When her class was examined, she replied to the question, "What is patience?" "Wait a wee, and dinna weary."

Minnie May's Department.

MY DEAR NIECES.—The essays upon "Family Government" have been unusually good. We are glad to find that so many of our readers attach such importance to the subject. The prize of a silver brooch has been awarded to Mrs. John Trout, of Kemble P. O., Grey Co., Ont. Owing to a mistake made in the January number of this paper, as to the date for essays on "Music and its Influence," which was Moh. 15th, instead of Feby. 15th, and was not noticed until after the last issue, a number of essays upon that subject have come in since the prize was awarded; therefore in justice to the competitors, we cannot do less than give another prize, the winner being Miss E. Hall, of Piccadilly street, London, Ont., whose essay we hope to publish in a later number. This month we offer a prize of a handsome silver bracelet for the prettiest pattern of knitted lace edging in cotton, with directions for making the same. All samples must be in by the 15th April. We hope our young readers will take an interest in the work competitions, as well as the essays, it being our great desire to assist them in as many branches as possible. MINNIE MAY.

Work Basket.

Outline work has become very popular since etching is manufactured in so many beautiful colors and shades of colors. This style of work is particularly suitable to the present age, when all articles of daily use are so generally decorated. The work is quickly done and at comparatively slight expense; it is used on tablecloths, napkins, d'oylies, tray cloths, toilet sets, mats, splashers, towels, sheet and pillow shams, etc. The stitch is taken like the back stitch, only it is worked from instead of toward you, and by entering the needle exactly on the line, always throwing the thread on the same side of the needle throughout, the line will be perfectly smooth; but if the thread is first on one side and then on the other, the line will appear zig-zag and uneven, so in this as in all other things, practice makes perfect. Always use short stitches on all curved lines. Variety may be given to any pattern by the number of colors used, and by doubling the cotton or using thicker cotton to mark out the bolder lines of the design, but the stitch covering the outline should be the same throughout. The colors of etching silk that laundry the best are black, blue, brown, old gold, gold, yellow, and pink, red being apt to run unless care be taken to prevent. Wash the articles quickly, and immediately extract the water by rolling it in a crash towel, not permitting any part of the embroidered design, when wet, to come in contact with other portions of the ground. PLAIN CROCHET MITTEN.—Two ounces of wool any shade. A steel crochet hook of medium size. Make a chain of 52 stitches, (this will fit a lady who wears 6½ kids), join the ends of the chain, crochet 2 rows around single crochet. On the third row exactly opposite the starting point, widen by crocheting 2 stitches in one, then one plain, then widen again, rest of row plain.

4th Row—All plain single crochet.

5th Row—Widen opposite the first widening in the third row, crochet 3 plain, and widen again, rest plain.

6th Row—All plain single crochet.

7th Row—Widen as before opposite the starting point, and crochet 5 plain between the widenings. Thus continue, every other row plain, and every other row widening twice, increasing the number of plain stitches between by two every time, until the number of rows is 25 and the number of stitches between the widenings is 23.

Join the mitten where the last two widenings occur by drawing the wool once through the hook. Crochet the rest plain till it reaches the end of the little finger, narrow at each side by skipping one stitch, and draw the noose tight, so as not to leave a hole. Narrow only twice in the first row, then one row plain, twice in the next row, and after that shape it to the hand by narrowing more frequently until completed.

Join on the wrist at the opening left for the thumb, and shape it to the size of the thumb.

TABLE COVER.—An odd looking, but very stylish table cover can be made with a dark green or plum-colored centre of felt with a border of two narrow bands of scarlet or bright blue plush, between which is a strip of unbleached Russia crash four or five inches in width. The plush is joined to the felt with herring-bone stitch in any bright color that is preferred, but it is fastened to the crash with a plain seam sewed on the wrong side. The crash is covered with long outline stitches in shaded embroidery silk, done in imitation of the crackle upon the earthenware, upon the glazing of which time, fire, or climate has scored the irregular lines. After the crackle-work is finished, small, detached figures may be embroidered upon the corners, or occasionally all along the strip. Fans, Japanese squares, and flags, or any easy design may be chosen and worked in either floss or crewels.

WASTE PAPER BASKET.—Line a pretty wicker or straw basket (used for such purposes) with pale, rose-colored satin. Then decorate the outside with a valence of deep plush that corresponds with the lining. Upon this work pond lilies and leaves, with grasses in the background. Finish with a fringe of gold and crimson. Place a full bow of satin ribbon on one side near the top.

Recipes.

POTATO GEMS.—3 cups cold potatoes, mashed, $\frac{3}{4}$ cup of butter, 4 cups flour, 4 teaspoonfuls baking power, a little salt. Equal quantities of milk and water to make a stiff batter.

BEEFSTEAK BALLS.—Broil very slightly 2 pounds of lean steak from the round; chop it very fine, add one tablespoonful of flour, 2 of milk, and salt and pepper to taste. Fry in hot fat. Serve hot with mashed potatoes.

HICKORY NUT CAKE.— $\frac{1}{2}$ cup butter, $\frac{1}{2}$ cup sugar, 2 $\frac{1}{2}$ cups flour, 2 $\frac{1}{2}$ teaspoonfuls baking powder, 1 cup milk, 2 eggs, 1 cup walnuts or hickory nuts chopped.

SOCIETY CAKE.— $\frac{3}{4}$ cup butter, 1 $\frac{1}{2}$ cups white sugar, 2 $\frac{1}{2}$ cups flour, $\frac{3}{4}$ cup milk, 3 eggs, whites and yolks beaten separately; 3 teaspoons baking powder or one of cream tartar, and $\frac{1}{2}$ of soda,

salt. Flavor with lemon essence, bake quickly.

RICE CAKES.—5 eggs, yolks only; 2 cups sugar, 3 cups flour, 1 cup ground rice, 1 teaspoonful of baking powder to each cup of flour, $\frac{3}{4}$ cup butter, 1 cup milk. Bake in patty tins.

Answers to Inquirers.

LUCY C.—You cannot snub a person with sufficient politeness to prevent him feeling it to be a "snub." If a gentleman asks permission to call, your answer will naturally be in accordance with your feelings in the matter; if you want him to do so, you will say "Certainly, with pleasure," or otherwise, "thanks, but I fear I shall not be at home." or "it would be better not."

A. M. M.—1. Wait patiently; the present will no doubt come soon, probably the gentleman is not yet in a position to offer a handsome ring, and he may not care to offer a simple one. 2.—Milk is decidedly fattening.

STELLA.—Mourning is less necessary now-a-days than formerly and much less significant, because black is so commonly worn. Black bordered stationary would be quite out of place, as you do not adopt formal "mourning."

SUBSCRIBER.—St. Valentine was a priest of Rome, martyred in the third century; but he seems to have no connection with the practices to which his day has been given up. The original ceremony on St. Valentine's Day, both in England and Scotland, was the drawing of a kind of lottery. An equal number of young men and maids meet together, each writes his or her name on separate papers, the maids draw the men's papers, and the men the maids', so that each young man has thus two sweethearts allotted to him, but he is supposed to stand by the one whom he has drawn rather than the one who has drawn him. Fortune having divided the company into couples, the valentines give balls and parties, and wear their billets several days upon their sleeves, and this little sport is often supposed to end in marriage.

PRIZE ESSAY.

Family Government.

BY MRS. JOHN TROUT, KEMBLE P. O., GREY COUNTY, ONT.

In order to properly govern a family we must first govern ourselves, remembering that "an ounce of example is worth a pound of precept" any time. It is utterly useless striving to correct bad temper and other faults in our children while we are given to like errors ourselves, for they will do as we do, not as we say. It also becomes us to have great patience with our children, bearing always in mind that their faults and failures are largely inherited, and that we, their parents, are in a great measure responsible for those very faults which we correct in them. If we could remove the evil tendencies with which our children are born, our task of home government would be much lighter, and we could work confident of success; but as that is impossible, the best we can do is to keep, or try to keep, the evil in their

natures quiescent, and to fill their minds with good principles.

Therefore I maintain that none but truly pious parents can successfully govern a family, for children are quick to notice inconsistencies in parent or teacher, and if we would have them do right, we must lead them by walking circumspectly in the narrow path ourselves; it is worse than useless trying to drive them on the right track while we travel on the wrong. I care not how well a family is trained in the principles of honesty, industry and like virtues, or how well they are educated in schools, if they are not trained in the "virtue and admonition of the Lord," and filled with the "wisdom that maketh wise unto salvation," that family, in going into the world, is liable to failure. I know whereof I speak, for I have seen families of bright, clever boys and girls pushed forward in all the world's accomplishments, to the exclusion of heavenly things, and sometimes, owing perhaps to being thrown into good company, they have done very well, and become useful men and women; but too often have I seen the promising young man or young woman founder on some one of the many rocks of temptation that are scattered throughout the sea of life. And no wonder they are cast away, for a human being sent out into the world to gain a living and make his way therein, without the sustaining influence of a pure religion to keep him steady and on the right track, is like a ship making a voyage without a rudder, only to be cast helplessly about at the mercy of wind and wave.

Worldly accomplishments must by no means be neglected, but our first great duty to our children is to strive earnestly to lead them to Jesus.

In every home there should be an altar set up, around which, if possible, every member of the family should be gathered morning and evening, while the father presents the petitions of the household for care and guidance, to the notice of the loving Father in heaven, who delights to hear and answer true prayer. And the mother should, if possible, spend a little while at their bed time with the children, hearing their little prayers, talking over the events of the day, and encouraging them to confide all their little troubles into her sympathizing ear. And before leaving them, she should give each little one specially into Divine protection, for the night season is sometimes fraught with terror to timid, nervous children, and such in particular should be led to feel that God's care is around them. Depend upon it, the children will never forget the honest family devotions conducted by father, nor the loving private talk and prayer by mother. The seeds thus faithfully sown will some day bring forth good fruit.

Let us take, not send, our children to church and Sabbath school, and also accompany them to places of innocent amusement. Let them associate their parents with their devotions and enjoyments, and the memory of it will influence their whole after lives. For their sake we should try to be cheerful, and to make for them bright, pleasant homes; clouds and trouble will come to them soon enough. It will be but a few years at the farthest till they are scattered far and wide, leaving the home nest empty.

It behooves us, then, while we strive to bring up our children in habits of industry so as to be useful in their day and generation, to also provide for them suitable recreation in their leisure time. We ought also to invest, as largely as our means will permit, in instructive and entertaining literature; good newspapers, books of history, biography, travel and harmless tales, according to each one's taste, for in reading, as in other things, tastes will be found to differ, and we should be as particular about our children's reading as about their companions; either may sow the seed of poisonous weeds in the fertile soil of their young minds.

If there be musical talent in the family, it should be encouraged by the purchase of one of the different kinds of musical instruments, if such can be afforded.

All these things tend to make home cheerful, and if with suitable provision for leisure hours, we train our children to perform their various duties punctually, cheerfully, with order and despatch, we shall do much to secure their present and future happiness; for as the members of bright, sunny homes go forth to perpetuate joy and gladness, just as surely will those who attain to the estate of manhood or womanhood in dark, sad ones, carry bitterness and grief into their future habitations, (for a house in which there is discord and strife, cannot rightly be called by the sacred name of home.) Here let me warn parents of the danger of harshness in the least degree in addressing one another, as the quick, sharp word, if exchanged between mother and father, is soon caught up by the children and passed around the entire circle.

Without good health none can be wholly happy; we should therefore impress on the minds of those in our charge the importance of cleanliness, abstinence from tobacco and strong drink of any kind, of proper exercise, pure air, wholesome food well cooked, and taken in moderate quantities, of clean, pure water, good drainage, regular hours, and, last but not least, of continued cheerfulness, and firm self-control, for nothing more quickly consumes the vigor of life than the violence of the emotions of the mind.

It is also our duty as parents to give children the advantage of the best schools within reach, remembering always that it is better to empty our purses into our children's heads than into their pockets, for they cannot squander nor lose an education, and it is no trouble to carry around.

But the education must be thorough and practical, so as to be of service in after life; not merely a smattering of one thing and another, with nothing solid to fall back upon. In the matter of education we can do much to assist the teacher and help the children by taking an interest in their studies, and helping to make clear to them anything that they cannot understand. I have often helped my children in a single evening to understand a rule they had been puzzling over at school, perhaps for days, notwithstanding the teacher's frequent efforts to explain it on the "board" to the class. Assist them not by doing the work for them, but by teaching them to understand how to do it themselves in the readiest manner. And a little such assistance from mother or father, does much to push the children ahead

at school, to increase their love for it, and eagerness to attend.

I am of the opinion that parents should not suffer themselves to fall behind their children, but be able to lead in all matters of importance; of course they should not be domestic tyrants, or their children mere echoes; but as they grow older, should be allowed their own opinions, and encouraged to express their ideas in suitable language, by conversing freely on all legitimate subjects. But by example and precept we should teach them to shun that bane of society, mere empty gossip, and to avoid the scandle monger as they would a leper. Every person has in his own life follies enough, troubles enough, and in his own disposition evils enough, without minding his neighbor's business.

While our boys are generally helped to gain a position for themselves in the world, we too often lead our girls to believe that their only aim in life is to dress in the latest fashion, and to get married as soon as possible. This is to be condemned, for though they should be so trained in habits of neatness, cleanliness, and order, good housekeeping in all its branches, and in domestic economy generally, that they may properly preside over a house, if called upon to do so—they should be taught to regard marriage as a compact too sacred, to all powerful for happiness or misery to the contracting parties, to be lightly entered into. I do not for a moment deprecate marriage, contracted with right motives; but I do not see why our girls, any more than our boys, should regard it as the whole sole aim of existence; or have the idea that they must marry *some one*, when there are so many honorable means whereby a healthy, intelligent, well educated girl can earn her own living.

If we are reasonably firm, we can never spoil our children by kindness, and if we bring them up in an atmosphere of love, and educate them to be true Christians, they will not be likely to disgrace themselves or us, in whatever station they may be placed. If we would have our children popular and lovable, they must be well versed in those little acts of loving courtesy that go so far to render life happy. We should teach our children to be polite, by ourselves, in our own families, observing the rules of etiquette, and showing politeness to all around them.

I have dealt principally with the government of the family while its members are young, for I believe in the words of Holy Writ: "Train up a child in the way he should go, and when he is old he will not depart from it;" and also in the old adage: "As the twig is bent the tree is inclined."

Lapland mothers are not in the habit of staying at home with their babies. The Laps are a very religious people, and take long journeys to hear their pastors. As soon as the family arrive at the little wooden church, and the reindeer are secured, the father shovels a snug little bed in the snow, and the mother wraps the baby in skins, and deposits it therein. Then the father piles the snow around it, and the dog is set on guard, while the parents go decorously into the church. Often as many as thirty babies may be seen laid away in the snow about a church.

March.

Fierce blows the blustering wind, and chill
Its breath; from snow-capped northland hill
O'er sunny southern slopes it sweeps,
And rudely blasts each bud that peeps
Untimely from its cover dun,
Too early trusting to the sun.

The dull clouds scud across the sky;
The dust and stubble swirl on high;
The beggar shivers to the bone;
The earthworm burrows 'neath the stone;
Before the gale each vessel's tossed,
Or, dashed upon the rocks, is lost.

Old Winter in the lap of spring
In surly spite is lingering.
Dame nature in this cheerless mood
Seems doomed to lasting widowhood.
The sighing tree-top loud bewails
The desolation that prevails.

Grim March is here, and all is drear,—
But look! what sign doth here appear?
Beside your pathway, with rare grace,
The tiny Bluet lifts its face,
Radiant with Heaven's divinest hue,
A promise sure that skies are blue.

C. ALEX. NELSON.

The Little Frock.

Faded and worn in places,
Faded and worn and old,
My tears on it leave their traces,
As I smooth it out fold upon fold;
For it beareth a magic power,
The fount of my tears to unlock,
When I think of the happy hour
I fashioned that little frock.

My darling sat beside me,
With his beautiful eyes a gleam,
And the joy that was erst denied me
Seemed into my heart to beam,
As I thought of the wondrous mercy,
Of the goodness and the love
That prompted "Our Father" to send
Such an angel down from above.

My needle flew fast and faster,
My thoughts took wing as it flew,
To the courts of the blessed Master,
From whose gates my babe came through;
And I wondered if all God's angels
Looked as pure and as frail as he—
If among the shining archangels
There was any more fair to see.

But there came a pale, sad stranger
Unto my house one day;
My heart stood still, as if danger
And darkness about me lay.
I besought him that he would leave me,
For his touch was chill and strange,
And he laid his hand on my baby,
Who straightway seemed to change.

His pale little cheek grew paler,
His bright blue eye grew dim,
His clasp on my fingers grew lighter,
The victory was to him—
To that pale and icy monarch,
Who rules with relentless sway,
Who came to my house in triumph,
And bore my treasure away.

But a greater than he remaineth
Who hath broken the bands of the tomb—
Who hath robbed King Death of his terrors,
And lighted the pathway of gloom;
Who hath promised us sweet consolation
If we patiently bow 'neath his rod,
And I know he has taken my darling
To bloom in the garden of God.

It's well enough to be posted in orthography.
When an editor receives a letter saying, "Sur—
Stopp mi papper, kuss yew!" he doesn't feel
half as badly as if the writer had put his words
in straight English.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—Winter has gone at last, and the wind and snow have gone with it. The brown old earth is once more turning its northern face to the sun. Dry spots appear in the streets and in the walks and yards before the schoolhouse. "Ho for a game of marbles!" This is the message which this particular season whispers in every boy's ear; and lo! at a hundred street corners, and in vacant lots, and on bridges, groups of eager and often highly excited lads may be seen intent on "Ring Taw," "Long Taw," "Bridge Board," "Bounce Eye," "Pick the Plums," "Eggs in the Bush," "Spanners," "Knock out," "Die Shot," and many other games which are played with marbles. During a short season it is a royal game, and boys who will soon be thinking of nothing but bat and ball now find ample sport with their bags and marbles. Well does your Uncle Tom remember when he used to dearly love a game of marbles, and became such an adept in the art that he soon gained several bagfuls which he used to keep in an old tea-chest under his bed. A word about your puzzles; the answers sent in are all very good, but the puzzles are not at all satisfactory. There is scarcely any variety, as I see all send the easiest kind of puzzles to make. I would suggest that you try and make some different kinds, and if you have never noticed any like them in the ADVOCATE, send one for an example as well. As I have often said before, it is not the quantity but the quality of puzzles that counts. UNCLE TOM.

Puzzles.

1—DROP-VOWEL PUZZLE.

Th-q-l-t-f-m-r-c-s-n-t-str-n-d
-t-dr-pp-th-s-th-g-ntl-d--fr-m-h-v-n
-p-n-th--rth-b-n--th; t-s-t-c-bl-as'd
-t-bl-s-th-h-m-wh-g-v-s-nd-h-m-wh-
t-k-s. ADA E. ARMAND.

2—HIDDEN TOWNS.

After having a nap, Leslie and I went for a walk.
You shall have my reply on Saturday.
He was very healthy when he came from England.
The preacher of our parish is ill.
He says that hen shall be killed to-night.
WILL THIRLWALL.

3—CHANGED HEADINGS.

To punish—a vessel.
Daybreak—a young deer.
An animal—presently.
To excel—a sort of fuel.
To wither—a covering.
Value—a kind of grain.
WILLIAM A. LAIDMAN.

4—SQUARE WORD.

He too a piece of boiled — for his dinner.
He said he had seen the centre of mount —
He took — (two words) after dinner.
She wore a — around her neck whenever she went out.
The words which form the blanks make a square word.
J. ELMER STINSON.

5—HALF SQUARE.

1, a useful animal; 2, a State in the United States; 3, to tear; 4, thus; 5, a letter from Perth.
HENRY REEVE.

6—SQUARE WORD.

Famous English battle.
A very soft metal.
To construct.

A port at the mouth of the Red Sea.
G. W. J.

7—STAR PUZZLE.

Form of puzzle:

***** A vowel; a girl's name; freight;
***** a town in Spain; sailed; finis; a
***** consonant. WILL THIRLWALL.

8—TRANSPOSITION PUZZLE.

Hedta aseth su yb erpsuis
Dan yatas rou ginruryh efte
Het trega nigdse nisfihdenu seli
Rou viles rea telimocpne.
JANE L. MARTIN.
No. 9.

My whole is found the country over,
Especially among my first;
My second as in days of yore,
Upholds what's true and just.
ROBERT J. RISK.

10—NUMERICAL ENIGMA.

I am composed of 18 letters.
My 8, 16, 7, 12, means size; my 5, 18, 13, is a kind of grain; my 17, 10, 11, 2, 2, 9, means a course; my 14, 6, 1, is a small horse; my 15, 4, 4, 3, is a perfect participle. My whole is an officer engaged in the Egyptian war.
ANNIE M. SCOTT.

11—ILLUSTRATED REBUS.



Answers to February Puzzles.

- 1— HAVEN
ADORE
VOTES
ERECT
NESTS
- 2—Since we cannot get what we like, let us like what we can get.
- 3—Why do smiles so oft repel us,
Bright eyes turn our feelings cold;
What is it that comes to tells,
All that glitters is not gold?
- 4—Half a loaf is better than no bread.
- 5—Goat—boat.
Vie—lie.
Cover—lover.
Train brain.
Toad—road.
Tear—fear.
Money—honey.
- 6— S
SHE
FLAME
WORKING
PROJECTED
SHAKESPEARE
PROSPECTS
SEVENTY
FRAUD
ARM
E
- 7—Apple—peach.

8—The forest has spells to enchant me,
The mountain has power to enthrall,
But the grace of a wayside blossom
Can stir my heart deeper than all.

9—Maple leaf.

10— H A W K
A R E A
W E A R
K A R S

11—Bell, cell, sell, seal.
Park, dark, dare, fare.
Help, held, head, lead, lend.
Cold, cord, card, ward, warm.

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

Geo. F. Ballah, Clara McLean, Jas. W. Danbrook, Willie B. Bell, Emma Dennee, Albert E. Robinson, J. Elmer Stinson, Mary Silcox, May Baker, Robert J. Risk, Will Thirlwall, Stella Louise Pepler, Ada Manning, Becca Lowry, Milla Warren, Libbie B. Bowerman, Annie M. Scott, Daniel G. Parker, Henry Willson, Henry Reeve, Ellen D. Tupper, Annie Lampman, Annie I. Lang, Hattie Kirkley, Wm. A. Laidman, Robt. W. W. Purdy, G. W. Hutcheson, Wm. Webster, Lottie A. Boss, Annie B. S. Scott, Lillie Hodgins, Ada Armand, Robt. Kerr, I. J. Steele, Mary E. Dantzer, Wm. Jackson, Edmund Pepper, Anna M. Morrison, Walter A. Inglehart, Robt. Wilson, Joseph Allen, Belle Richardson, Jane L. Martin, Minnie Stafford, Lou M. Berg, Mary Morrison, Sarah E. Fuller, Nettie Ryckman, Georgia Smith, Minnie Stevens, Mary E. Hargan, Alice Mackie, Frank L. Mimer, Sophia H. Fox, Chas. Herbert Foster, Alice Hume, Harry A. Woodworth, Sarah H. Pickett, Ada Hagar, Thos. J. Lindsay.

Irish Bulls.

Blunders will happen, and often the best use to make of them is to let them create a smile. The following are Irish "bulls:"

An Irish gentleman called on an eminent singing-master to enquire his terms.

"I charge two guineas for the first lesson, but one for as many as you please afterwards."

"Oh, bother the first lesson, then," said the other; "let us begin at once with the second."

Another native of the Green Isle exhibited an equal comprehension of economic possibilities when he went to have his banns of marriage proclaimed.

In an answer to his inquiry as to the cost, the registrar told him that the fee for being proclaimed in one day was ten shillings; for two proclamations, it was five shillings; and for three times, it was half a crown.

"Bedad," said the Irishman, "but that's an illigant arrangement. You can just go on proclaiming me and Biddy, till there's nothing to pay at all."

On another occasion at a military dinner in Ireland, the following was on the toast list.

"May the man who has lost one eye in the glorious service of his beloved country never see distress with the other."

But the person whose duty it was to read the toast accidentally omitted the important word "distress," which completely changed the sentiment and caused no end of merriment at the blunder.

"Why don't you come in out of the rain?" said a good natured dominie to a ragged Irishman. "Shure, it's av no consequence, yer riv'ence," returned Pat; "me clothes is so full of holes they won't howld wather."

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.

AUCTION SALE

OF PURE-BRED

Shorthorn Cattle and Leicester Sheep

WEDNESDAY, 25th MARCH, 1885.
AT MAPLE LODGE STOCK FARM.

On the above date and place I will sell 14 pure-bred Shorthorn Cattle, ten females, two and three years old, bred to "Baron Constance 5th—2188—" and four young bulls; also, 25 Leicester Sheep, six of them rams. Two Clydesdale Colts, sired by imported Premier (1288) will also be offered. Nine months' credit will be given on sums over \$25, on approved notes. Sale to commence at 12 o'clock. Send for Catalogue with particulars.

JAMES S. SMITH, Maple Lodge P. O.
Co. Middlesex, Ont.

FOR SALE

TEN SHORTHORN YOUNG BULLS
and a few Heifers. Pure Bates blood. Send for Catalogues.

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

For Sale.
AYRSHIRE BULLS.

Seven one-year-old Bulls, three of the lot are of direct importation by sire and dam. Address,
THEOS. BROWN, Petite Cote, Montreal.

For Sale.

THREE ONE-YEAR-OLD JERSEY BULLS.

Fine, large animals, very handsome, from GOOD MILKING COWS. All registered in the A. J. C. C. H. R. For particulars apply to

231-b SAMUEL SMOKE, Canning, Ont.

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.

To Farmers, Breeders & Importers of High-Class Cattle, Sheep and Pigs.

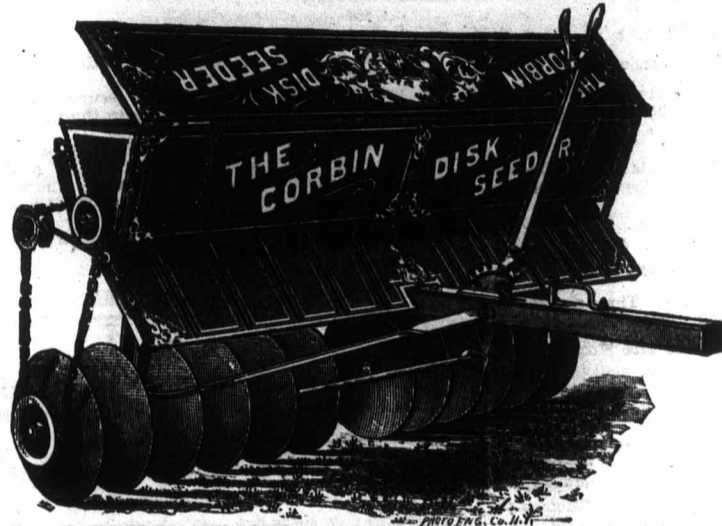
Lythall, Mansell & Walters, Secretaries of the Shropshire Sheep Breeders' Association, the Birmingham Fat Cattle Show, the Birmingham Shorthorn Show and Sale, &c., &c., can, at the shortest notice, execute commissions and ship all descriptions of British stock, especially Shorthorn and Hereford Cattle and Shropshire Sheep. Address—

231-f Shrewsbury or Birmingham, England.

HENRY SLIGHT NURSERYMAN.

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

The CORBIN DISK HARROW WITH SEEDER ATTACHMENT.



A GREAT
**LABOR-SAVING
TOOL.**

Price, - \$50

SIMPLE,
DURABLE,
Easy on Team and
Driver.

NO OTHER DISK HARROW OR TOOTH CULTIVATOR CAN COMPETE WITH IT

Thousands of Testimonials. Send for Circular (Cut of Harrow w thout Seeder next month.)

231-b

ST. LAWRENCE M'FG CO., PRESCOTT ONT.,

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 so many acres as the horse will walk over (from 5 to 6 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 Eges.
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 else-

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

231-b

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

The Light Running Bain Wagon



MANUFACTURERS OF

FARM, SPRING AND FREIGHT WAGONS

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-f

MARCH PREMIUMS, 1885.

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 Grape.—An excellent white. Three plants.

Lee's Prolific.—A choice black. Three plants.

Trees especially adapted to the Northwest.

The Crab Apple.—Two plants by mail, of what is said by Mr. Leslie to be the best in the world. These useful and valuable trees should be planted by all farmers, particularly in the Northwest.

The Ash Leaf Maple.—One packet of seed or six plants of this ornamental and hardy tree. For description and illustration see page 297 of October number.

The Silver Poplar.—One packet of cuttings or six plants. This tree is of very rapid growth and when dry makes good fire wood. See articles on page 297, October number.

The Norway Maple.—One packet of seed or six plants of this beautiful and hardy variety of the maple, a description of which appears on page 297, October number.

—OR THE—

CHROMOS

Chromo "Life's Voyage."—Or Lithograph "Yes or No." Beautiful pictures, and highly prized by those who have received them.

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.

Two plants of the **Dwarf Juneberry**.—These plants should be in every garden. The plant is very hardy. The fruit ripens early, and in enormous quantities.

Six plants of the **Russian Mulberry**.—The popularity of this plant still continues, and we have decided to give it again for another year.

ROSES.

So very few really good roses are to be found in the country gardens of Canada that we have decided to offer two of the best varieties grown, one a dark crimson and the other a deep yellow. The ordinary price for these roses if bought from florists is 50 cts. to \$1, but we offer your choice of either of the following for one new subscriber:

One plant of the **General Jacqueminot**.—This rose is one of the finest and prettiest; in color it is a rich velvety scarlet, changing to brilliant crimson. The buds of this variety are magnificent, rendering them of especial value for bouquets, and for wearing in the button hole. It is also a good rose for forcing. See issue for April, 1884.

One plant of the **Isabella Sprunt**.—In color is sulphur-yellow. It is a very free bloomer, and is one of the most beautiful of the yellow roses, and in the bud state can scarcely be surpassed. It is of especial value for bouquets, and makes an excellent potting plant.

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 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.

OUR RULES.

Each new name must be accompanied with \$1 for the annual subscription.

The premium is for the person who secures the new name, and does not in any way belong to the new subscriber.

All plants, seeds, &c., will be sent free by mail early next spring. Books, chromos, &c., will be mailed free as early as possible after receipt of name. The apple and potato papers will be forwarded by express at cost of receiver.

Send for sample and commence your canvas at once. Sample copies sent free.

Address:
The FARMER'S ADVOCATE, London, Ont.

Eggs as a Diet.

There is no other article that farmers have in abundance that can be used in so many different forms and yield so much nourishment as eggs. They are an excellent substitute for meat, without any objectionable qualities. For an invalid raw eggs are a most wholesome diet, either beaten with sugar and milk, or dropped into cider and swallowed whole. Dyspeptics can use them with safety. An egg dropped into boiling water, cooked till the white is solid, then drained off and laid upon a toasted half cracker, with a little salt and cream poured over it, makes one of the most harmless and toothsome dishes that can be prepared for an invalid. Hard-boiled eggs, sliced thin and laid in a cream gravy, are a delightful accompaniment to baked potatoes, and an excellent substitute for any kind of meat for breakfast. Boiled eggs are nice at any meal; and there is one good thing about eggs, one does not tire of them as quickly as of any other kind of food. Eggs and milk, with a little wine or whiskey, will make a refreshing drink for old people on a hot day. Beat two eggs to a froth, sweeten well, and add a little wine and a pint of milk. Serve with crackers. A teaspoonful of vanilla can be substituted for wine.—[Country Gentleman.

The Scotchman and the mineralogist:—
"Yon man gave me his bag to carry by a short cut across the hills to his inn, while he took the other road. Eh! it was dreadfully heavy, and, when I got out of his sight, I determined to see what was in it, for I wondered at the unco' weight of the thing; and man, it's no use for you to guess what was in that bag, for you'd ne'er find out. It was stones." "And did you carry it?" "Carry it! Man, do you think I was as mad as myself? Nae! nae! I emptied them all out, but I filled the bag again from the pile near the house, and I gave him good measure for his money."

The minister stopped at a house last week, and sought to improve the time by giving an eight-year-old boy an instructive lesson in morality. "My boy," said the minister, "I have lived forty-five years, and have never used tobacco in any form, nor told a lie, nor disobeyed my parents, nor uttered an oath, nor played truant, nor—." "Gimminy crickets," interrupted the lad, "yer ain't had any fun at all, have ye?"

As the happy couple were leaving the church, the husband said to the partner of his wedded life: "Marriage must seem a dreadful thing to you. Why, you were all of a tremble, and one could hardly hear you say 'I will.'" "I will have more courage and say it louder next time," said the blushing bride.

(See Commercial, page 90.)

THE AYR AMERICAN PLOW Co. (Limited.)

DIRECTORS:

JOHN WATSON, President.
THE HON. JAMES YOUNG, AND ALEXANDER BARRIE.
DAVID GOLDIE, Vice-President.
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
231f AYR, ONT., CANADA.



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.

231-a
Sheep are now selling in some parts of the Western States for fifty cents per head.

Every one of you should be an experimenter. Just keep an account of the loss you sustain for one year by keeping your worst cow, and this will be the first step towards enabling you to lift that hateful mortgage.



GLASGOW

—AND—

LONDON

Insurance Co.

CAPITAL, - - -	\$2,500,000
INCOME, - - -	\$1,000,000

CANADA BRANCH STATEMENT

—1884—

Premium Income -	\$309,542.77
Interest - - - -	3,845.50
	\$313,388.27
Losses - - - -	\$120,277.92
Expenses - - - -	82,758.50
Balance - - - -	110,351.85
	\$313,388.27

Can. Gov't Deposit, \$100,000 Cash.
Assets in Canada, \$163,638.

HEAD OFFICE, - - MONTREAL.

JOINT MANAGERS:

EDWARD L. BOND. | STEWART BROWNE

CHIEF INSPECTOR:

J. T. VINCENT.

SUB-INSPECTORS:

A. D. G. VANWART | C. GELINAS.

The GLASGOW & LONDON make a specialty of Farm Insurance by issuing a Policy with no vexatious conditions, insuring against lightning, and allowing Steam Threshers without extra charge. Live Stock killed by lightning anywhere on farm are paid for.

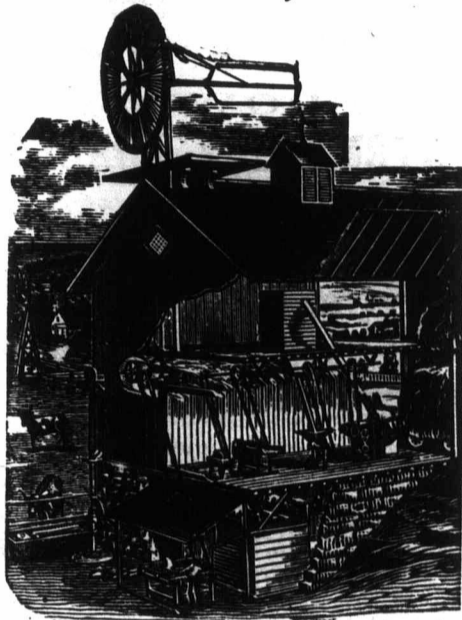
NOTE. — All losses paid at once without discount.

Every Agent of the Company has a Specimen Policy. Ask to see one, and be insured.

Active Agents wanted in the Provinces of Ontario and Nova Scotia. Special terms.

231-a

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



MANUFACTURERS AND DEALERS IN

Halladay's STANDARD WINDMILLS

Seventeen Sizes.
GEARED WINDMILLS
from 1 to 40 horse power, 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 5 to 20 bushels per hour according to size. These Mills are the most durable, perfect and cheapest Iron Feed Mill yet invented.

PUMPS

both Iron and Wood, Force and Lift. We will guarantee our Deep Well Pump to beat any other pump in the market.

HAYING TOOLS

A full line of the Best.

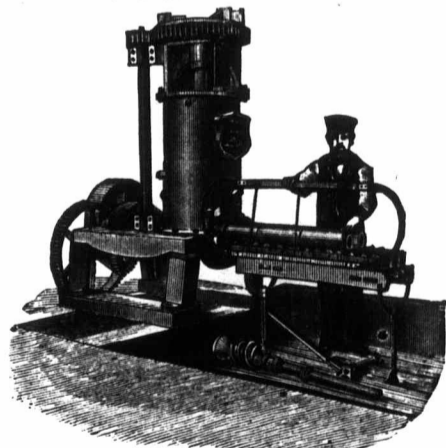
TANKS

From the smallest up to 2,855 bbls.

Pipe & Pipe Fittings,

In fact a full line of water supply material. Send us your address on a post card and we will send you 104 page illustrated catalogue free. 231-y

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. Doherty, Glencoe; John Hich, Strathburn; Alex. Stewart; James Nichols, Frome. Send for Descriptive Circular. Address—231-b D. DARVILL & CO., London, Ont.

PERFECTION

AT LAST.



"This is very convenient, and keeps my dress so clean."

Combined Milk Bucket, Strainer and Stool

Patented June 21, 1883.

Improved August 9, 1884.

This Milk Bucket is Invaluable to all Persons Connected with the selling of Milk and the making of Butter and Cheese.

BY ITS USE:

Milk is kept pure and clean.

The value of Dairy Butter is enhanced.

The inconvenience of the old-fashioned Stool is avoided.

This Milk Bucket saves its price in a short time, as no milk is lost if upset.

Concerning this Bucket, Prof. Brown, Ontario Agricultural College, Guelph, writes: "We have used your combined Milk Bucket and Stool with much satisfaction indeed. The changes in the Stool and Funnel are very important, and now the whole arrangement is an article that should be widely patronized."

Mr. H. S. Loebe, Cheese Manufacturer, Norwich, Ont., writes: "I have used your Milk Buckets this last season. They are invaluable to any Dairyman. Your last improvement makes them complete. It is arranged so as to prevent all unpleasant odours entering the milk, for which cause alone it recommends itself to the dairymen community. Unquestionably when the use of your Milk Bucket becomes more general, it will raise the standard and increase the price of butter and cheese. I can safely recommend it to all Dairymen"

Testimonials also from Prof. Arnold, Rochester, N. Y.; Captain Bunbury, Oakville, Ont.; John Butler, Inasane Asylum, Toronto; and numerous other farmers and dairymen.

Prizes taken at Montreal, Toronto, Ottawa, and other Exhibitions.

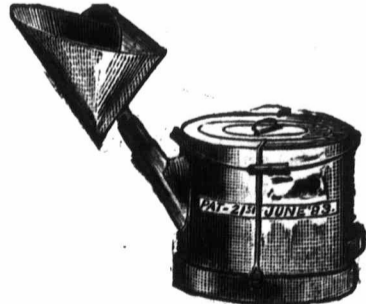
Parties who purchased any of these Buckets before August, 1884, can have improvements sent them on receipt of fifty cents, or if the Buckets are brought to Toronto, the improvements will be furnished free in exchange. The improvements and prices for same are as follows:—Funnel, 20 cents; Tube (vulcanized rubber, not hose), 20 cents; Stool, 10 cents. Changes must be made before May 1st.

Agents wanted in every County and Township in the Dominion. Quick sales and liberal terms. Samples sent to any address on receipt of \$2.00.

For full information apply early—for the season for the sale of the Buckets is at hand—to the

Ontario Milk Bucket Mfg. Co.,
40 West Market St., Toronto.

P. O. Box 242.



231-a

Improved Style, 14 inches high.

Commercial.

THE FARMER'S ADVOCATE OFFICE,
London, Ont., Mch. 2, 1885.

The January cold snap continued through the greater part of February with unabated rigor. Snow blockades demoralized traffic, by means of which the buoyant feeling which existed in hope of approaching good times suffered a temporary shock. Farmers still feel unsatisfied with their lot, and are at a loss to know what changes to make in their system, in order to place their business on a better paying basis. The most advanced farmers are feeding as much stock as possible, in preference to selling their grain, and are preserving the manure in hope of being able to get better crops when prices are high. The fact that so many farmers are able to do this, as well as to keep their wheat in their granaries, speaks well of their circumstances, and indicates that the time is not far distant when they will exercise considerable control in regulating the condition of the times.

CHEESE.

There is unusual dullness in the cheese trade, and it is expected that the coming season will open with low prices.

BUTTER

is remarkably dull, and there are large quantities of inferior grades in the market. Low grades are not in demand.

PRICES AT FARMERS' WAGONS, TORONTO.

	Feb. 1st, 1885.	to	0 82
Wheat, fall, per bushel	0 80	to	0 82
Wheat, spring, do.	0 80	to	0 82
Wheat, goose, do.	0 67	to	0 68
Barley, do.	0 60	to	0 72
Oats, do.	0 37	to	0 38
Pesa, do.	0 57	to	0 60
Peas, do.	0 59	to	0 60
Beans, do.	1 00	to	1 25
Dressed hogs, per 100 lbs.	5 90	to	6 25
Beef, for quarters	4 50	to	6 00
Beef, bluequarters	6 50	to	8 00
Mutton, carcass	6 00	to	7 25
Lamb	7 00	to	8 50
Chickens, per pair	0 60	to	0 75
Ducks, do.	0 80	to	1 00
Butter, pound rolls	0 20	to	0 23
Butter, large rolls	0 15	to	0 17
Turkeys	1 00	to	2 00
Geese	0 85	to	1 00
Cheese	0 14	to	0 15
Eggs, fresh, per dozen	0 20	to	0 25
Potatoes, per bushel	0 40	to	0 45
Apples, per bbl.	1 50	to	2 25
Cabbage, per dozen	0 40	to	0 50
Turnips, per bag	0 25	to	0 30
Carrots, per bag	0 30	to	0 35
Beets, per bag	0 50	to	0 55
Parsnips, per peck	0 15	to	0 20
Onions, per bushel	0 75	to	0 80
Hay, Clover, per ton	7 00	to	9 00
Timothy	7 50	to	11 00
Straw, do.	7 50	to	8 50

(See Notices, page 92.)

PATENTS! Thomas P. Simpson, Washington D. C. No pay asked for patent until obtained. Write for inventor's guide. 231-c

YOUNG MEN—Learn Telegraphy or Short Hand. Situations furnished. Send for terms. Com. and R. R. Tel. College, Ann Arbor, Mich. 231-c

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, TRUE & CO., Augusta, Maine. 231-f

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. McPHERSON 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. 237-ff

BARLEY.

THE MANSURY BARLEY
is the most productive variety in cultivation. Full description in my Seed Catalogue for 1885.
WM. RENNIE, TORONTO
231-a

BROWN'S PATENT HAY LOADER.



Since the first introduction of the Hay Loader, each succeeding year has added every evidence of its practicality, 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.
231-d

FERTILIZERS
BEST QUALITY.
LOWEST PRICE.

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

FRANK WILSON'S PATENT GRINDING MILLS



For Grinding CORN, BONES and SHELLS for Poultry
These Mills are a complete success for crushing Oyster Shells, grinding Bone Meal and all kinds of Grain; also grinds Corn and Cob. A peck of Shells can be crushed in fifteen minutes. They are made in the very best manner, and will last for years.

PRICE, without Legs, \$7; with Legs, \$9.
Circulars giving full particulars on application.
231-a **WM. RENNIE, TORONTO.**

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.

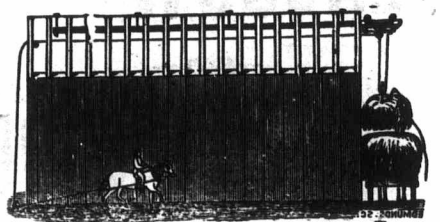
320 IN THE DEVILS LAKE,
TURTLE MOUNTAIN,
And Mouse River Country.

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-g

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 raking 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

FOR Fruit Packages
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

CATARRH

CONSTITUTIONAL CATARRH REMEDY CURES CATARRH. Thousands applaud its wonderful cures. Hear what a Reverend Gentleman says of the Constitutional Remedy.

To T. J. B. HARDING, Esq., Brockville, Ont.
DEAR SIR.—It is now two years since your "Constitutional Catarrh Remedy" was introduced to me. I have waited this long to see if the cure would remain permanent before doing this, my duty, to you, as at first the happy effects seemed to me to be "too good to be true." I was afflicted in my head for years before I suspected it to be Catarrh. In reading in your Circular I saw my case described in many particulars. The inward "drop" from the head had become very disagreeable and a choking sensation often preventing me from lying long. I would feel like smothering and be compelled to sit up in the bed. My health and spirits were seriously affected. 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 of that ailment, and have not used any since until of late I have taken some for a cold in my head. A sense of duty to sufferers from that loathsome disease, Catarrh, prompts me to send you this Certificate, unsolicited, with leave to make what use of it you may see proper.

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! 231-o

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

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.
W. RENNIE, TORONTO.

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. 231-a

WILLIAM EVANS,
 Seedman to the Council of Agriculture for the Province of Quebec. Importer of

FIELD, GARDEN AND FLOWER SEEDS

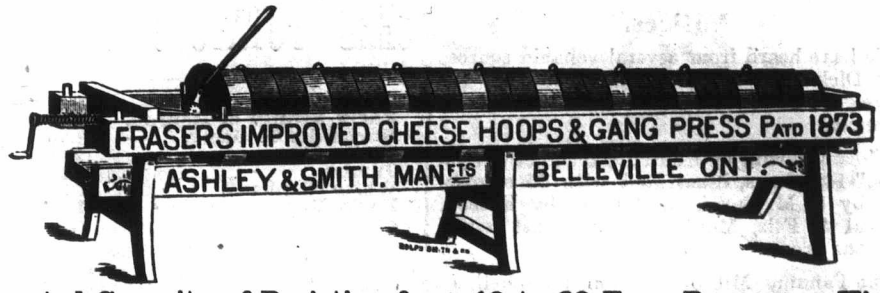
Clover and Timothy Seed, Pasture and Lawn Grasses, Seed Wheat, Barley, Oats, Peas, Tares, etc. Send for Catalogue.
 Corner of McGill and Foundling Streets, MONTREAL. 230-c

ISLAND HOME STOCK FARM,
 Grosse Ile, Mich.

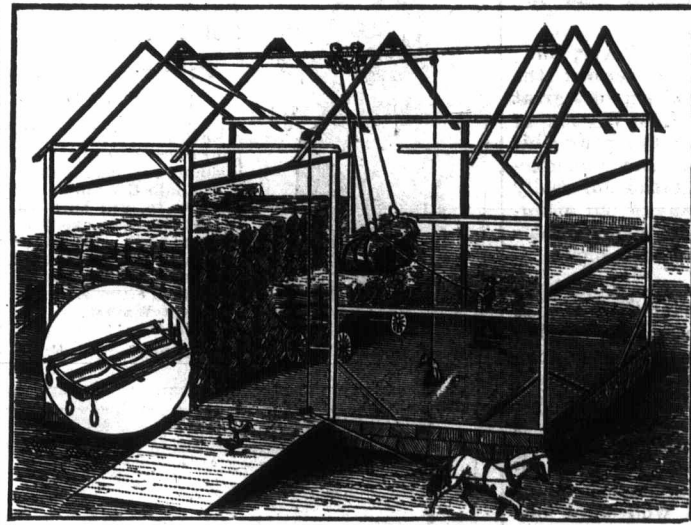


IMPORTED PERCHERON HORSES
 All stock selected from the best of sires and dams of established reputation and registered in the French and American Stud Books. We have a very large number of imported and grade Stallions and brood mares on hand. Prices reasonable. Correspondence solicited. Send for illustrated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

RUGS Beautiful Colored Designs of Flowers, Birds, Animals, Etc., printed on Burlap (cloth) to be worked in rugs, yarn, etc. Wholesale and retail. Large discount to dealers. Send to manufacturer for catalogue.
 239-c **GEO. R. ANDREWS, Biddeford, Me.**



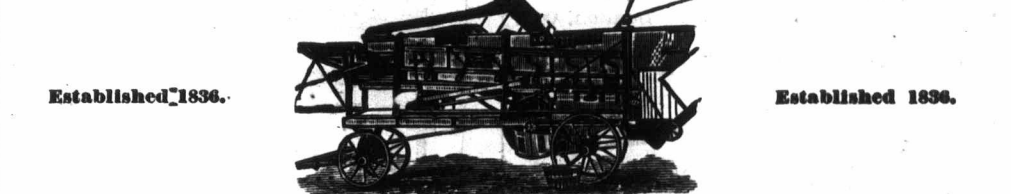
FRASER'S IMPROVED CHEESE HOOPS & GANG PRESS PATD 1873
ASHLEY & SMITH, MAN'RS BELLEVILLE, ONT.
 Warranted Capacity of Resisting from 40 to 60 Tons Pressure. Highly Recommended by all Cheese Makers. Prices Reduced for 1885.
 Price of Hoops, exclusive of Press:—14 or 15 inches diameter, to press cheese 8 to 10 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.**



This cut shows **Chambers' Elevator and Slings** unloading grain in bundles; also how slings are placed on the rack. We have yet to find the equal of Chambers' Unloader to handle hay, grain and corn stalks. Sixteen shocks of grain have been unloaded at one draft (with treble power). We have often been asked, "In what condition does it leave the grain in the bay?" We will say that the experience of all who have used Chambers' Car and slings is that by slinging on the team the draft can be lowered before it is tripped, so that the grain will be placed in the bay bundle for bundle as it was taken from the rack.
Agents Wanted for all Unoccupied Territory.
 To those who can devote their time to this business in one county or more we will give extensive territory.

Address all orders and applications for agencies, circulars and general information to
 231-a **A. FLETCHER, Wendigo, Ont.**

HAMILTON AGRICULTURAL WORKS



The Pioneer Threshing Machine Works of Canada

Our Celebrated **GRAIN SAVER** is the Best and Most Perfect **THRESHER** and **SEPARATOR** made in the Dominion, being first over all others for
Durability, Workmanship, Fast and Clean Work, Perfection of Parts, Ease of Management, Simplicity of Construction, Lightness of Draft, Capacity for Work.
 We have Machines working in all parts of Canada, giving the very best satisfaction, when driven by either **Steam or Horse Power.**

It is a General Favorite with the Farmers, who prefer it for Fast and Clean Work.

Special Size Made for Steam Power.

Address us for Circular and Price List of **THRESHERS, CLOVER MILLS, HORSE POWERS, REAPERS** and **MOWERS.** A personal inspection is solicited.
 178-1eom **L. D. SAWYER & Co., Hamilton, Ont., Can.**

Notices.

We have heard from several reliable sources that Dick's horse and cattle medicines are really good and notable medicines. See advertisement.

"Cream Raising by Centrifugal and other Systems," 142 pages, illustrated with 55 engravings, by S. M. Barré. Published by Eusebe, Senecal & Fils, Montreal, Que. Just issued from the press.

The Fanning Mill of Manson Campbell, of Chatham, deserves special attention, particularly so among our readers in the Northwest. He has made many notable improvements. These mills will clean out all the cockle and wild peas from seed grain, besides being equally efficient in all other respects, and being substantially constructed for durability. It is better to purchase one good implement than two bad ones.

The Ayr American Plow Co., of Ayr, Ont., are introducing a new harrow termed the Whipple Spring Harrow, for which very great advantages are claimed. Mr. John Watson, of Ayr, is the President of this Company; his name as an agricultural implement manufacturer stands as high in reputation for really good, efficient implements as any of our manufacturers. Send to the Company and see their circulars about this harrow and their plows.

Recently we passed through the workshops of the Bain Wagon Manufacturing Company, at Woodstock. They were assorting the timber to be used in the wagons; we never saw such good looking material rejected. We enquired why, and were informed that they intend using nothing but the very best material of all kinds, and if they carry out the strict culling that we saw, and we believe it to be their intention to do so, we would commend the purchase of their wagons to those who want one to last and give satisfaction.

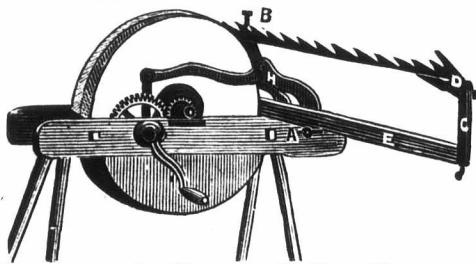
(See Stock Notes, page 94.)

Farmers' Sons!

Spare time filled in for a reliable house that will not countenance fraud. Will yield big pay. Write for terms to

PAYNE & WESTON,
231-a Tea and Coffee Merchants, London, Ont.

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,
281-d Box 80, CLINTON, 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,
230-b Bay View Farm, Deseronto, Ont.
N. B.—Detailed particulars by mail when requested.



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.

HOME-BRED JERSEYS FOR SALE.

Three pure-bred, unregistered Heifers, coming two, fawn and white, in calf, and A. J. C. C. Bull, for \$300. Four A. J. H. B. Heifers, coming two, fawn and white, in calf, and A. J. C. C. Bull, for \$500. Four Heifer calves, pure-bred, unregistered, and A. J. C. C. Bull, all nearly solid color, for \$200. Also five Ayrshire Heifers, Canada register, two years, red and white, in calf, for \$250.

ALBERT P. BALL,
Lee Farm, Rock Island, Que.

FOR THE LATEST PARISIAN STYLE OF
Hoops, Skirts, Bustles, Corsets,
Hose Supporters,
Send for Circular. Address—
WEEDSPORT SKIRT & DRESS CO.,
231-a Weedsport, N. Y., U. S. A.

Miller's Tick Destroyer
FOR SHEEP



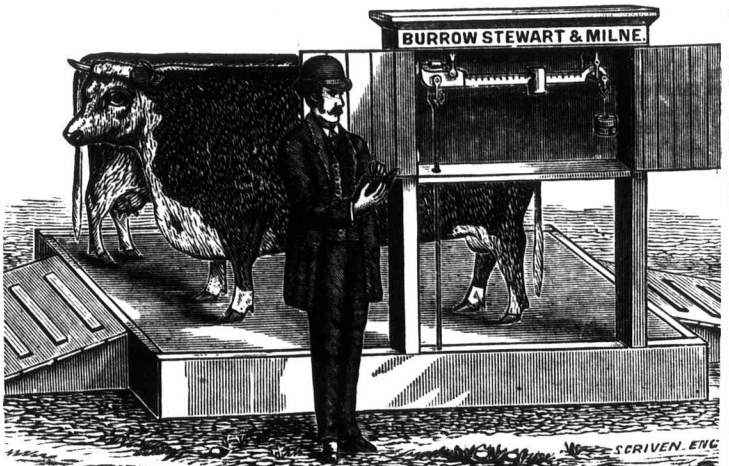
Effectually kills the Ticks, improves the lustre and growth of the wool and prevents it from coating. In boxes at 35c, 70c. and \$1.00. Thirty-five cent box sufficient for 20 sheep.
221-y HUGH MILLEP & CO., Toronto.



THE ELEVATOR DITCHING MACHINE
FOR UNDERDRAINING.

One man with The Elevator Ditching Machine can do more work than 30 men with spades.
MANUFACTURED BY WM. RENNIE, TORONTO, ONT.

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. 282-y

G. H. PUGSLEY,

IMPORTER AND BREEDER OF

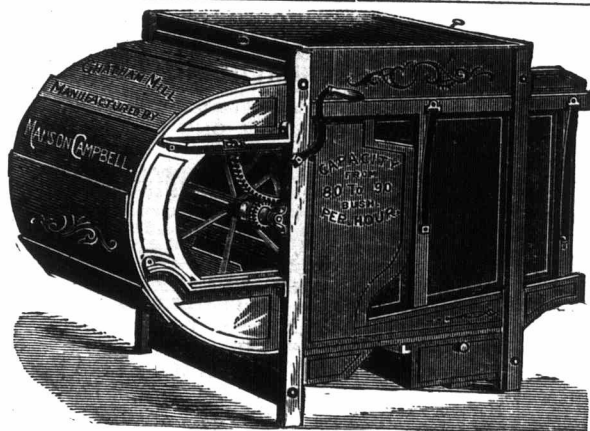
Fancy Poultry, Pheasants, Italian Bees, Fine Bred Dogs, Shetland, Wild and Fancy Ponies, Jersey and Kerry Cattle, Dealer in Fine Carriage and Roadster Horses.

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. Brahmans, Cochins, and all varieties of Hamburgs and Leghorns, Langshans, Black and Mottled Javas, Black Sumatras, Golden, Silver and White Crested Black Polish, Plymouth Rocks, Games, English Malays, Sultans, Silver, Grey and White Dorkins, Lafeche, Creveceurs, 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 fleece 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 CHATHAM FANNING MILL

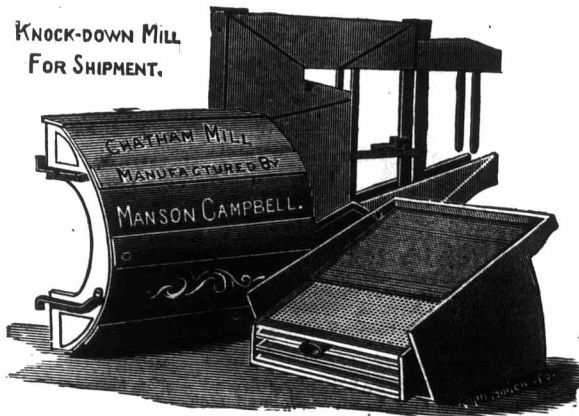
Over 10,000 of these Mills are now in use!

FARMERS, BUY THE CAMPBELL AND HAVE NO OTHER, IT CANNOT BE SURPASSED IN AMERICA.

More Improvements for 1885:

Increased capacity. Shoe being 25 inches wide (inside measure) giving a capacity of from 30 to 90 bushels per hour. A Screw Feed to raise and lower the Hopper Slide with ease. Shoe can be given six different shakes—fast or slow, short or long—as desired. Each Mill will be furnished with my Patent Riddle for Extracting Cockle and Wild Peas or Tare from grain. It will separate as much Cockle as ever grows in wheat with one running through the mill. A first-class Gang Riddle and Grader goes with each mill for separating oats from wheat, which does a thorough y first-class job that any farmer or grain dealer will be pleased with. In addition to the Cockle Riddle and Gang and Grader for separating oats from wheat, each mill will have Screens and Riddles for cleaning Chess and Whitecaps from wheat, also to clean Oats, Barley, Peas, Beans, Corn, Clover Seed, Timothy Seed, Flax, and first-class for Chaffing. Send for descriptive circular. Address MANSON CAMPBELL, CHATHAM, ONT. Mills sold wholesale in lots to suit agents. AGENTS WANTED. 231-a

KNOCK-DOWN MILL FOR SHIPMENT.



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.

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.

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

E. ASHLEY SMITH, Secretary CAMPBELLFORD, Ont., Dec. 29, 1884. Dear Sir—The past season has more than ever convinced me of the mistake I made in not planting thousands instead of hundreds of the Niagara grape vines when urged to do so by Mr. Woodward, then Secretary. My Niagaras were fully ripe the 8th of Sept., this year, several days ahead of Concord. I had bunches this year that could beat any I saw at Lockport, both in size of bunch and berry, and I have now bunches before me as sound and fine flavored as when picked in Sept. the berries on which are 1/4 of an inch greater in diameter than on your colored plate. Your illustration of single bunch does not do the grape justice as grown here. When planting my vineyard had I only been planted Niagaras instead, it would have been hundreds of dollars in my pocket, as the latter varieties are too late here, and not ripening by the 8th of Oct. this year, when the first frost severe enough to injure grapes took them. I have over 150 varieties in the vineyard. Niagara is the strongest grower and none healthier. I truly regret not planting more of them. Yours truly, J. W. JOHNSTON. 231-a



EVERY "NIAGARA" VINE Has this Registered



TRADE MARK Stamped on a Lead Seal Attached.

SEEDS

SIMMERS' SEEDS Are the BEST SEEDS 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. J. A. SIMMERS, Seed Merchant and Grower, TORONTO, ONT. 230-c

SEEDS ALL TESTED! TRUE TO NAME! IMMENSE STOCK

CATALOGUE (1885) telling all about NEW and OLD varieties, full Descriptions, profusely illustrated, much valuable information. Sent to all applying FREE

LARGE STOCK FRUIT TREES, SMALL FRUITS and VINES J. C. EVERITT, LIMA, INDIANA 230-c

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

ROCK SALT!

Lump Rock Salt—For Horses and Cattle. A natural salt far superior to sea mon 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. PRICES—In bulk, \$10 per ton; in barrels or sacks 20c per lb.

J. R. WALKER, 30 Foundling St., Montreal. 231-c

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.

JAMES B. HAY, Proprietor. 231-c

IMPORTANT To Farmers and Fruit Growers.

If you intend planting Apple, Peach, Pear, Plum, Cherry, or any kind of fruit trees, Grape Vines, Currants, Gooseberries, Blackberries, Raspberries, Strawberries, or fruits of any kind, it is for your interest to get them direct from the grower; you will get them in better order, and for less money, than from agents, and be sure of what varieties you are getting. I am offering great inducements to farmers clubbing together and taking large quantities.

NIAGARA GRAPE A SPECIALTY

Send for Catalogue and Price List to A. M. SMITH, 230-b Dominion Fruit Gardens, St. Catharines, Ont

TO FARMERS and SHIPPERS

American Co-Operative Dairy Company

Incorporated May 24, 1884, with a CAPITAL STOCK OF \$100,000 Offer extra inducements for consignors of BUTTER, EGGS, BEANS, CHEESE, POULTRY, GAME, and All Kinds of FARM PRODUCE.

This Company is duly established by law, and farmers, shippers or dealers can depend upon prompt and honest returns for all consignments. For particulars address J. W. WHITE, Secretary, 31 Beach Street, BOSTON, MASS. 230-c

Stock Notes.

The annual auction sale of pure bred Shorthorn cattle, under the auspices of the British American Shorthorn Association, held in Toronto, on Feb. 25th, proved a disastrous failure and will be entirely abolished.

We have received a copy of the third volume of the British American Herd Book, published by the Shorthorn Association, and ably compiled by Mr. R. L. Denison, Secretary. The work is neatly and substantially got up, and we believe it is destined to become the standard herd book of Canada.

It may now be stated with confidence that the collection of cattle at the stock breeding farms of Canada is among the most valuable in the world. It is made up of the very best blood of the bovine aristocracy of England. Not many years ago there were no pure herds in the country, except the small species of cow in the French part of Lower Canada, which were brought in chiefly from Bretagne, and possess the milking characteristics of the Alderneys. To-day there are in Canada, and the Canadian Northwest, many herds of the best English breeds, with a pure and unbroken record extending back many generations.—[Farmers' Gazette.

At the sale by auction of the remaining portion of the world-renowned Lord Wilton herd of Hereford cattle of Stocktonbury, near Leominster, the property of the executors of T. J. Carwardine, the celebrated bull, Lord Wilton, which in August fell under the hammer for 3,800 guineas, was sold for 1,000 guineas. Several other animals were sold at sums much under those realized in August. Rumor has it that Mr. Vaughan, who made this sensational bid of 3,800 guineas, was unable to stump up the money, hence the fresh sale. On the other hand it is asserted that the animal in question was bought subject to certain conditions, which were not fulfilled, and that Mr. Vaughan was perfectly justified in refusing to implement his part of the bargain. At \$19,000 an aged bull was certainly no great bargain, and even at \$5,000 it is extremely doubtful if he will pay his way.

SCOURS IN CALVES.—The enquiry is often met with in the columns of the agricultural press, as to what to do in cases of scours in calves. Jersey calves are especially liable to this dreaded disease. The cause is, frequently overloading the young stomach beyond the capacity to digest—in other cases the mother's milk is too strong, thus producing irregularities and clogging the digestive apparatus. A good plan, and one that scarcely ever fails of success, is to immediately separate the dam from the calf as soon as the symptoms appear; dilute the milk with one-third or one-half warm water, and teach the calf to drink, allowing it but moderate rations of this weakened food until it recovers strength sufficient for full allowance. If the calf becomes much weakened by the "fast" required by this course, change to another cow will often work wonders, allowing it to suck (in moderation at first). When this is done, a cow should be selected that is about as long in milks as the mother, though this is not entirely essential in every case. The mere change of diet will frequently produce an entire and speedy cure in the worst cases. The milk of some cows is poison to the calf when taken in large quantities and very soon results in death (unless counteracted), and this change—always being guarded in the quantity, to avoid overfeeding—is wonderfully sure in its beneficial consequences.—[National Live Stock Journal.

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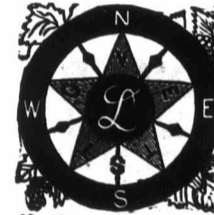
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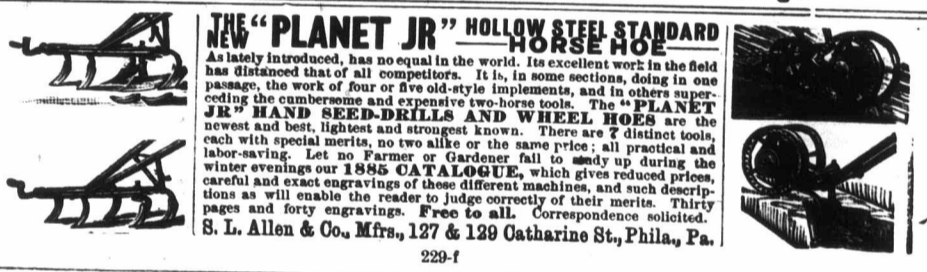
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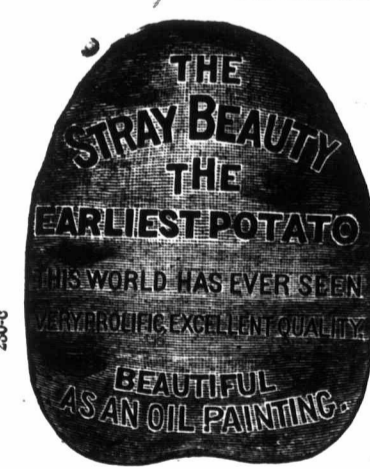
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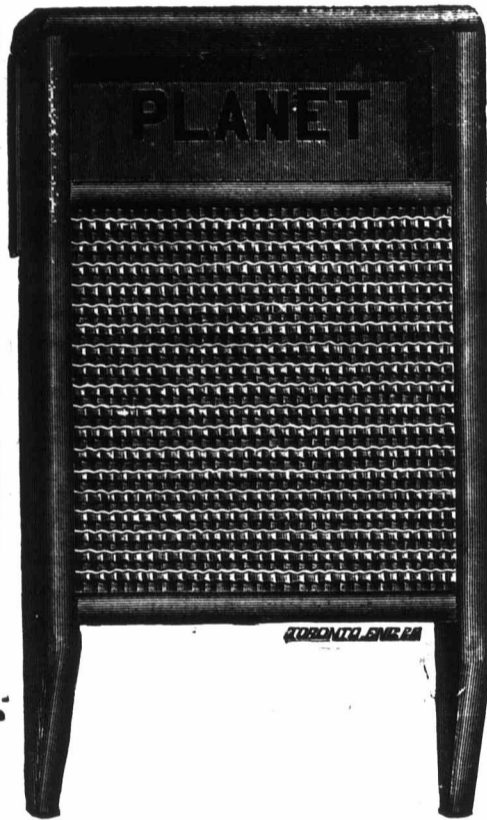
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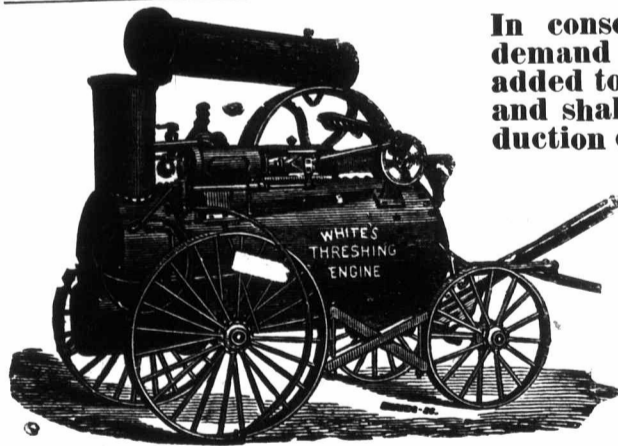
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