

The FARMER'S ADVOCATE

AND HOME MAGAZINE.

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THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED
IN THE DOMINION.

The FARMER'S ADVOCATE is published on or about the 1st of each month. It is impartial and independent of all cliques or parties, handsomely illustrated with original engravings, and furnishes the most profitable, practical and reliable information for farmers, dairymen, gardeners and stockmen, of any publication in Canada.

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THE FARMER'S ADVOCATE,
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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

- 1.—No award will be made unless one essay at least comes up to the standard for publication.
- 2.—The essays will be judged by the ideas, arguments, conciseness and conformity with the subject, and not by the grammar, punctuation or spelling, our object being to encourage farmers who have enjoyed few educational advantages.
- 3.—Should one or more essays, in addition to the one receiving the first prize, present a different view of the question, a second prize will be awarded, but the payment will be in agricultural books. First prize essayists may choose books or money, or part of both. Selections of books from our advertised list must be sent in not later than the 15th of the month in which the essays appear. Second prize essayists may order books for any amount not exceeding \$3.00, but no balance will be remitted in cash. When first prize essayists mention nothing about books, we will remit the money.

Our first prize of \$5 for the best original essay on *Farm Drainage*, has been awarded to W. A. Hale, Sherbrooke, P.Q., and a second to James Laidlaw, jr., Guelph, Ont.

A prize of \$5 will be given for the best original essay on *The Best Method for the Registration of Stock*. Essays to be handed in not later than May 15th.

A prize of \$5 will be given for the best original essay on *How can Farmers Best Protect Themselves Against Combines*. Essays to be handed in not later than June 15.

Now is the time to subscribe for the *Farmer's Advocate*, the best agricultural paper in Canada.

Editorial.

On the Wing.

In quest of information regarding seeds and plants we visited the city of Rochester. This city to us appears to have the largest amount of beneficial attraction and the least amount of disreputable notoriety than perhaps any other city in the United States. Still it has enough. Jas. Vick called it the "Flower City;" we would call it the "Fruit City," as from it a larger amount of fruit trees are sent to all parts of the world than from any other place we have seen or heard of. Many millions of dollars annually is the value of the fruit product. The climate and soil in this locality appears pre-eminently adapted to the growth of fruit trees and fruits. Its fruit interest has naturally attracted the seed interest.

They conduct business on a large scale here. We visited the seed establishment of Mr. Hiram Sibley, one of the most extensive farmers and seedsmen in the United States. He is now an aged and wealthy gentleman. In his youthful days he conducted business successfully in Canada. He is now the owner of between fifty and sixty thousand acres. Three years ago he raised on one of his farms in Illinois 820,000 bushels of corn, and since that he has been gradually reducing the cultivation of so much land, and has rented a large portion of it. The past year he grew 180,000 bushels of oats, 70,000 of which were grown and sold for seed. He has now a rent roll from land of over \$60,000 per annum. The present season he intends planting out 100,000 walnut trees on his farms. He has been a reader of the FARMER'S ADVOCATE, which publication he says is as good as any agricultural paper he sees. He has for the past eight years imported from Canada about 10,000 bushels of seed peas annually. He has sown this year 250 acres of early peas for his canning factory, and as soon as the peas are off he will plant the same land with sweet corn. By this means he intends to show the principle of intense cultivation, by taking two crops off the same ground in one year. From his establishment we procured the Munroe potato, which is claimed to be the largest cropper known; also the Sibley squash, an entirely new kind, and distinct from all others. The flesh is solid, thick, orange in color, and the finest for table use, having a very desirable flavor. It is a very prolific grower, excelling either the Hubbard or Marblehead, and has the advantage of ripening its fruit all about the same time. It is an excellent keeper, remaining in a dry cellar per-

fectly sound until April, and constantly improves in flavor until the very last.

We called at the seed establishment of Crossman Brothers. In conversation with them we find that they are the sons of the late editor of the *Genessee Farmer*, an agricultural publication which we appreciated more than any we read when on the farm. They are doing a large and increasing business, and have a high reputation in the United States. They are this year introducing the Crossman potato, only to wholesale dealers for propagation for next year. We with difficulty procured a few. This potato appears destined to take a high position. It is claimed to possess superior qualities for table use, early, even, productive, and a very good cropper and keeper; is smooth, oblong, slightly rose colored, having white flesh.

Messrs. Elwanger & Barry speak highly of Mr. J. F. LeClare, who is introducing the Diamond grape, which you will hear more about next year. From reports it appears destined to rival all grapes of recent production.

Jas. Vick this year introduces the Moon Flower, a beautiful sweet-scented, thrifty creeper, which will attain a height of twenty-five feet. It blooms in the evenings, on gloomy days and in the night.

The Autocrat is a new tomato now being introduced. The great advantage claimed for it is that it will keep longer than any other, and will be most advantageous to our country as a shipper to foreign markets.

The Triumph is a new water melon very highly recommended, and is said to succeed well in any latitude. It is long, rind dark green, with mottled stripes; the flesh is brilliant red, crisp and very sweet.

We glean the above from what we believe to be the most reliable source, and have pleasure in furnishing you with such information. We intend to test these new varieties this year. See prize list.

OUR SECOND TRIP TO ASSINIBOIA.

Five years ago, in company with the Press Association of Ontario, we passed through Assiniboia to Pense Station. We then had some doubts in regard to the capabilities of this Territory. Now, our doubts have been dispelled. Last autumn we took a trip through it. Moosomin was the first station at which we stopped, a thriving village which, from appearances, will soon become a town, perhaps a city. A fine, fertile country, which is fast filling up with farmers, surrounds this place. Good homesteads are being established, and general thrift is apparent. The exhibition of stock, grain, fruits, roots, and the various handicraft works and cultivated products

evince the certainty of rapid progress. We have seen the granaries overflowing with fine wheat, and astonishing crops have everywhere been realized. Here we see the cattle are thriving, fattening, and looking better even than those in Ontario, convincing us that this country, by judicious management, is destined to contain an immense population. The inhabitants are most hopeful, and as a general rule satisfied.

From Moosomin we visited Wapella, which is situated on a rising ground and commands a fine view of the prairie. In the exhibition then being held we saw white spring wheat as white as the average fall wheat raised in Ontario.

The next place visited was Whitewood. From this point we drove to Dr. Myers' farm, some eleven miles distant, situated on the Pipestone Creek. Dr. Myers is probably the most extensive experimenter in the Northwest. He has a large farm with fine flats and uplands. He has imported a great variety of grain from foreign countries, employs a French gardener, and has expended some \$2,000 on his garden alone, planting it with all varieties of fruits and trees that might be adapted to the country. He has a system of underground heating for the early production of vegetables and fruits, and his vegetable productions we have never seen surpassed. It was a pity to see large quantities going to waste which he had raised in hopes of supplying the various towns along the railway; but he had met with discouragement in freight rates, etc. His house was built after the Russian principle, having two large brick furnaces in the centre. It was so arranged that his verandah was also heated. In this glass enclosed space he had his plants and flowers growing even in the winter. Water did not freeze in his house.

He had a peculiarly-constructed double cellar, and had seeds from the most northern part of Russia and any other part from which he thought beneficial results could be derived. Dr. Myers was one of the most intelligent and best informed men on agricultural affairs that we have ever met. We think it unfortunate for the country that such men do not meet with the encouragement that they deserve.

From Whitewood we proceed to Broadview, and find the stock as good as at previous exhibitions witnessed in the Northwest, with a good showing of vegetables and grain. On Saturday evening we left Broadview for Grenfell, and in the morning we learned that most of the inhabitants of the place had gone out to fight the prairie fire which raged about five miles distant. These fires are one of the greatest dangers that the settlers of this country have to contend against, which they are able to do pretty effectually by having wide or double guards plowed around their stacks and buildings.

RECIPROCITY.

It has now been admitted by some of the American officials that reciprocity was abolished by the Americans because it was thought that Canadian sympathies were with the Secessionists. This opinion is now dying out. We are pleased to see that a more amicable feeling now exists, and that in some slight ways concessions have already been made. We hope these may be increased, as a freer intercourse would be of advantage to both Canada and the United States. We believe that the admission of trees, plants, seeds and fruits will be found beneficial to both. They are now free, except cereals.

We may anticipate some great changes, as

our politicians are now dividing, one favoring a stronger connection with the United States under Commercial Union, the other advocating a trade policy with Great Britain and her colonies under the name of Imperial Federation. Both parties have some good planks to stand on. Could not some American or Britisher devise a plan in which we could all join hands for good, —the United States, Great Britain and her colonies—as one English-speaking people, having higher aims than that of individual greed or blood shed. We would hail such with pleasure.

Our Prize Essay.

The essays received competing for our prize of \$5 on the subject of *Farm Drainage* were so numerous and so ably written that we regret exceedingly to be compelled to waste so much valuable matter. The principal points given by the essayists, save the drainage of some special soils, are covered by the two receiving the prizes. The Drainage Act and its effects upon the farmer, a very important subject, requiring thorough ventilation, was also touched upon by some of the writers.

The ability with which all the competitors wrote on this subject convinces us that they will be able to write on others equally well. We therefore offer to divide \$65 among them, giving each essayist a remuneration of \$5.00 for an article on any subject that he may consider to be most important to the farmers, or on one which we have most neglected in his estimation. The essay will, however, have to meet our approval, and requires to be clear and concise, occupying from one to two columns in the *ADVOCATE*, unless suitable for continuation.

A Grievance Removed.

For some years past it has been the practice of our more extensive breeders of live stock, to hold annual or periodical sales at important centers across the line, and until recently all such exports to the U. S. were admitted free. But for some time past duty has been imposed on herds sent across the line by Canadians, yet Americans were allowed to come to Canada and buy such stock, which was then admitted free of duty. The preceding circumstances prevented Canadians holding sales in any of the neighboring States, which was certainly a hardship. The attention of our Government was called to the fact, and by the efforts of Sir Chas. Tupper, the American Government has removed the embargo, and issued the following orders to their Custom Officers:—

"Under the tariff laws of the United States no discrimination shall be made with respect to the liability to pay duty between citizen and alien importers, and the statute which exempts 'animals especially imported for breeding purposes' from the payment of duty is to be applied without regard to the persons by whom they may be imported, that is without regard to whether the persons are foreigners or citizens of the United States. The question to be determined upon the importation of such animals is whether, upon the proofs presented and an examination of the animals, they are found to be principally valuable for breeding purposes, and that their importation, although for sale, has that object specially in view. If this question is determined in the affirmative free entry should be granted. This rule accords with Article 388 of the general regulations, which, in the case of blooded animals imported into the United States, prescribes that:

'It may be generally assumed on the formal proofs that they are imported for breeding pur-

poses, because there would be no profit in importing them for any other purpose. You are therefore instructed, upon the importation of blooded animals into your port, claimed to be exempt from duty under the said provision of the law, to pursue the same course with regard to those imported by foreigners, as is now the practice regarding animals imported by citizens of the United States.'"

Notes from the Eastern Provinces.

BY OUR CORRESPONDENT.

New Brunswick has just abolished its Board of Agriculture and connected the Department of Agriculture with the Solicitor-General's Department, to whom the Government and the Secretary of Agriculture is directly responsible. Thus the farmers are ruled out of any direct influence in agricultural matters. The Secretary of Agriculture is a lawyer, and, with the help of the Solicitor-General and the Attorney-General, the farmers certainly will be kept well up in law. It seems rather a reflection, to say the least of it, that, among the forty or fifty thousand farmers in New Brunswick that there can't be one found who is qualified to act as Secretary of Agriculture.

The new department, however, has decided to spend twenty thousand dollars in the importation of horses and sheep, to be sold outright to the farmers. The Government at present own some 18 stallions of the different breeds, that are leased each year—the Agricultural Societies chiefly being the competitors. \$150 is the upset price at which each horse is put, and the terms for service not to be above a certain figure. This year two or three of the horses—two Clydesdales and a Percheron—sold for more than double the upset price. A few went for just the price, and two or three were not bid off. It was supposed the Government would give up the Stock Farm, which is not by any means a paying institution, directly—at least it may be indirectly. It was allowed, however, to live awhile longer.

The Nova Scotia School of Agriculture, in Truro, is working its way quietly along under the care of Prof. Herman The. Smith. Last year there were eight students, which, the Professor says, is as large a number in proportion to his constituency as is attending any similar school in America.

This spring they expect to have a farm in connection with the school, and by combining the practical with the theoretical, hope to attract a larger number of students.

Although there is a large amount of capital invested in mining and fishing in Nova Scotia, she has a great many energetic and intelligent farmers, especially among her young men, who are determined to work the business for all it is worth.

Of the latter it is but fair to mention the Page brothers, of Amherst, who are almost the only breeders of Holsteins in the Maritime Provinces, and Mr. Frank Black, a Guelph student, who is now on his way to France to buy Percheron horses. Mr. J. R. Lamy, of the same town, and Mr. Amos Etter, have been spending thousands of dollars in the last two or three years in introducing the best racing blood in horses from the States, and claim they have some of the fastest stock on the continent. How far this will be an advantage to the Province your correspondent sayeth not, but it shows a disposition to be up with the times.

I was somewhat surprised in looking over

Professor Saunders, F. R. S. C., report on Agricultural Colleges and Experimental Farm Stations, in noting the work attempted for the advancement of agriculture by the different Provinces of Canada, that no mention was made of the Stock Farm on P. E. Island. The Islanders are proud of their Farm, and claim that one cause, for their leading the Provinces in the raising of horses, is due to the early establishment by the Islanders of this Farm.

Mussel-mud digging has grown to be a large business on the Island. Near the shore it is not so much used as formerly, but immense quantities of it is being hauled inland both by teams and by the railway. At one of the places where the diggers were at

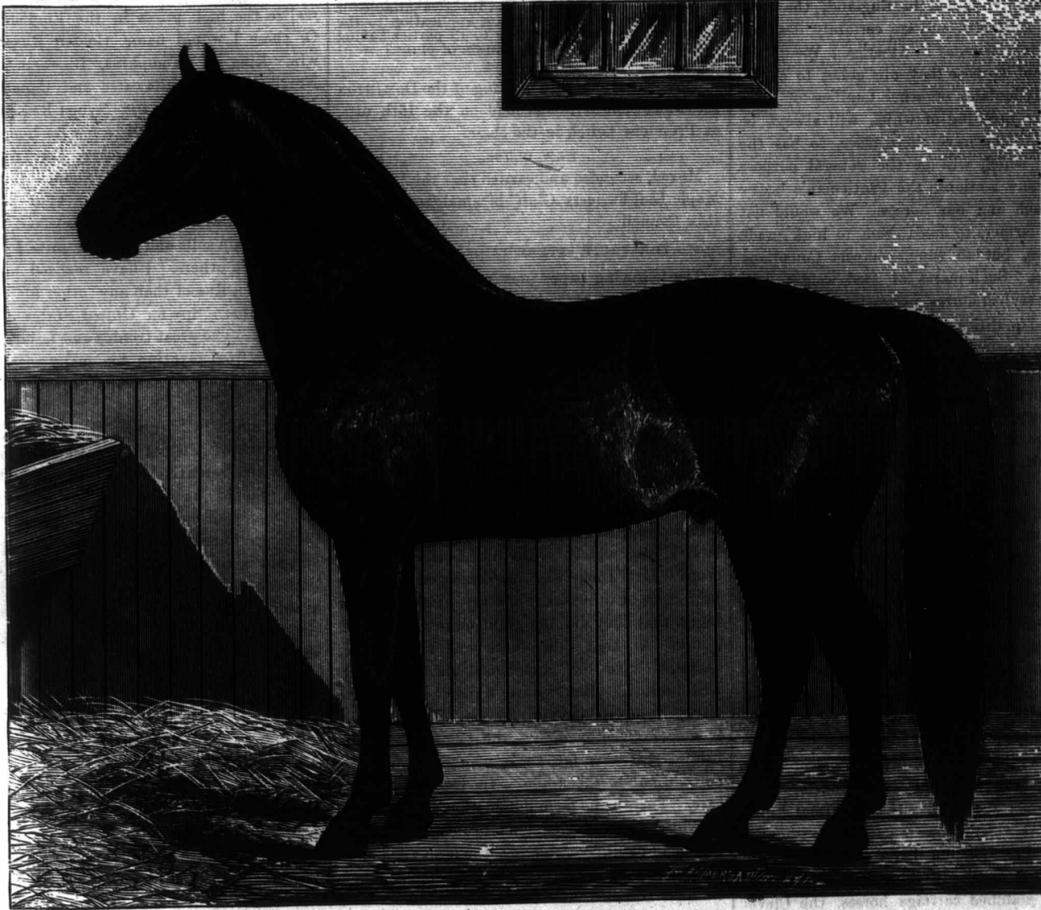
other Maritime Provinces in horses, sheep, swine, and in raising grain. Last season alone, there were sold on the Island between eighty and a hundred binders, and the agents of these implements are preparing for a larger sale this year; probably there was not a tenth of that number sold in both New Brunswick and Nova Scotia.

The winter has not been more than usually cold, except, perhaps, a couple of weeks in January. Stock has come through well. Nova Scotia's short hay crop was more than made up by the abundance of that article in New Brunswick, and hay is plenty at a reasonable price to those who want to buy.

Corn planted on good dry land soon after frost is out will surely outstrip later planting, delayed for the ground to get warm.

Cleveland Bay.

The accompanying cut will give our readers a very good idea of the Cleveland Bay stallion, St. Hubert (655), imported and owned by Barrett Bros., Manchester, Ont., bred by G. Hogarth, Grosmont, Yorkshire, England. He will be four years old in June next, and is registered in Vol. II. of the British Cleveland Stud Book; was sired by Sportsman (299); 1st dam by Champion of England (550), 2nd dam by Successor (301). (See Vol. II. Stud Book.) St. Hubert is a beautiful bright bay, without white; stands 16½ hands high; of fine proportions; has most beautiful skin and hair. His action is all that could be desired—very attractive and speedy. His feet and legs are perfect, and his



ST. HUBERT (655), THE PROPERTY OF BARRETT BROS., MANCHESTER, ONT.

work this winter, the bed became exhausted; teams had to go back without loads, and it was supposed the business was done for in that locality. It was known, however, that some distance out in the Bay there were good beds; but it was open water and could not be reached. All at once a plan struck some enterprising fellow, and he proceeded to carry it out, which was to cut and saw around about three acres of ice, and float it out, diggers and all, over the bed, allowing one part to touch the board ice. All this was accomplished successfully, and if this can be accomplished successfully every winter, the problem of the supply of mussel-mud in that locality is settled for the next generation.

The Island, agriculturally, is in advance of the

We are pleased to announce that after a necessary absence of six years Mr. F. W. Hodson, a practical farmer and stockman, has re-entered on our editorial staff as one of our assistant editors, who will, during the present season, visit many of the farms of our subscribers, from which important information is to be gained. Mr. A. Lehmann, who is well versed in practical and scientific agriculture, will occupy the position held by our recent assistant editor. We hope, personally, to be able to visit some of our numerous friends throughout the Dominion, whose kind invitations have been unavoidably postponed.

One acre of land well prepared and well cultivated produces more than two which receive only the same amount of labor used on one.

breeding is excellent, being descended both on his dam and sire's side from horses all recorded, which have been prize winners for generations.

This breed of horses deserves more than a passing notice, and are essentially the farm horse for the American and Canadian farmers. They were very much used in England years ago, especially in the northern counties, as coach horses, before the railroad days, and at that time were large, strong, showy, sinewy clean legged horses of great endurance, then as now. They were a popular and costly horse, and considered by many North English farmers their best farm horse. Frank Tonester, in his excellent work on the horse, speaks thus of them:—"The Cleveland Bay in its natural unmixed form is a

tall, powerfully built, bony animal, rarely falling short of 15½ or exceeding 16½ hands. The chest and withers are almost invariably good; the head bony, lean, and well set. They are sound, hardy and active, with excellent capabilities for draft and good endurance. Their general trotting speed may be estimated at from six to eight miles an hour."

After the stage coach passed away, the farmers, to meet the requirements of the gentlemen, inter-bred these horses with the blood horse, and by this means reduced them in size. From this course of breeding has descended a very superior class, which have developed into the family now found throughout Yorkshire, and more or less in the midland counties, as the farm, riding and driving horse of the farmers. They are highly valued in England, the Continent and Australia, and are certainly destined to become very popular in America. We do not for a moment suppose they are going to supercede the Clydesdales or other families of draft horses, the breeding of which will always be profitable. They have their place, so has the Cleveland, which will be the general purpose horse in many sections, the gentleman's heavy driver, coach and bus horses. We would not advise our farmers to breed them to high grade draft mares, but to snug, compact Canadians and natives. Such mares, of good weight, will give us fine stylish horses, possessing many, if not all the good qualities of their sire, and the depth and substance belonging to their dams; bred on our smaller mares, we may expect handsome light drivers, when not too leggy, but in any case they will be showy, yet very kind and tractible; bred on our large, loose draught mares we would expect a lank, raw brute of little beauty or value.

The St. Louis Republican, speaking of the Clevelands, says:—"English buyers have hunted our horse market through repeatedly for good coachers, and seem happy if they manage to secure half-a-dozen head in two weeks, without stopping at price. The scarcity is due to the want of stallions of the proper class, and it is as well to be frank at once and say that neither the thoroughbred nor the trotting stallion will, by crossing, give the desired result. If we want a real coach horse, we should look for animals from 16 to 16½ hands. Whole colors, bays and browns, are most desirable, and these can best be raised from ordinary good-sized mares, crossed with a Cleveland Bay stallion. As we are now practically without a coacher, and as London, Paris and New York horse dealers will give almost any price for large, well matched carriage horses, the Cleveland Bay is the horse to which all the London and Parisian dealers look for coachers, and the home of this horse is Yorkshire, where they have been bred for ages. As youngsters, the colts of this breed are slow to mature, and at two years old rather leggy, but a year later they begin to fill out, and at four years old are superb. For steady return a farmer cannot do better than dip into this blood, by securing a good full blood stallion, either imported or home-bred. They cross well on almost any kind of trotting stock or fairly well-bred running, provided the mares given are not too small."

Barrett Brothers have been very enterprising breeders for upwards of twenty years, and in that time have imported and bred a large number of very fine Clydesdales, Shire horses, Morgans and standard-bred trotters.

Among their recent importations is the famous trotting horse Kentucky, also Master Morgan, a superb horse, and the Clydesdale stallions Brachead (3456) and Lord Morton (5190), both very good horses. These gentlemen do not feed as high as most of our importers, but keep their stock in good growing condition, and by close attention to business and the strictest economy in all departments, they are enabled to sell first-class animals at very reasonable prices.

Farmers' Clubs.

Dominion Farmers' Council.

[The Dominion Farmers' Council meets in the city of London, Ont., on the third Thursday of every month, at 2 o'clock p. m. All communications should be addressed to the secretary, A. LEHMANN, LONDON, ONT. This Council has now on hand pamphlets containing its Constitution and By-laws, with an account of its origin, objects, etc., also a form of Constitution and By-laws suitable for Farmers' Clubs, which will, on application to the Secretary, be distributed free to all parties having in contemplation the organization of clubs.]

The regular monthly meeting of the DOMINION FARMERS' COUNCIL was held on the 15th ult., ex-President Leitch in the chair.

NEW CLUBS.

Moved, seconded and carried that the "Fitzroy Maple Leaf Farmers' Club" be amalgamated with this Council.

THE FRUIT INTERESTS OF CANADA.

The following paper was read by Mr. A. G. Deadman, an experienced orchardist, who has at present 15 acres in orchard:—

I trust after 30 years experience I may offer some hints and instructions that may assist in successfully growing of fruits. There was a time when growing apples to a large extent was considered by many the greatest folly, and I was told by several, when I planted my orchard about 30 years ago, that I was crazy, that I never could dispose of my fruit after it came into bearing, and that I was occupying the best land I had, which would pay better in farm crops. But I may say my anticipations have been more than realized, and my neighbors now regret that they did not plant more fully when I did. At that time there was no shipping demand, save for our home market, which was limited. But for a series of years we have realized paying prices. The change is now noticed by many who begin to see the bright prospects for those who enter into the cultivation of the apple with intelligence and care. There is no farm production that can approximately yield the same profit. Some seasons may be unfavorable, or the crop may be so abundant that a glut occurs at home; but now we have the assurance that the foreign markets take all we can produce, if we grow the right varieties for shipment—those that will keep longest and are most in demand both in the United States and England. Last year has been one of the most profitable to the fruit grower; the crop was excellent and good prices were paid, and the acknowledged excellence of Canadian apples will surely cause it to continue to be a most valuable crop in the future. Many say we are going to plant too much, and will overdo the market, but the apple cannot be successfully cultivated everywhere; and the great Northwest is going to be our future market, increasing year by year, even this year some thousands of barrels were shipped there from Ontario, diminishing the export to England by nearly 100,000 barrels. They will never be able to grow apples to any great extent, except in the far

west in and favored localities. Besides, the West India Islands and Cuba will be a good market as soon as steam communication is opened up. I saw a quotation of American apples at \$16 per barrel at Cuba. With rapid transit and cheap freights our fruits will be shipped to all parts of the world.

I do not expect we can greatly improve on many varieties we now have, except by a chance seedling that may prove more hardy for northern culture. I think no one can complain of the quality of the kinds we now grow, nor of their beauty. What we must do is to keep them from deteriorating, as many kinds have done, and are not now worthy of a place in the orchard.

First then let us cultivate those kinds that are of good color and quality, and that realize the best prices in the English market. Of these I would name, Golden Russet, Baldwin, King of Tompkins, Blenheim Orange, Northern Spy, Fallwater and Canada Reds, for winter shipment; and Cayuga Red Streak for late fall and early winter; a few for home market in addition to the foregoing, Red Astrachan, Duchess of Oldenburg and Snow. But in any locality where any particular kind does well, those varieties should then be selected, as we all know certain soils and location suits some kinds better than others. I have realized more from the Golden Russet than any other for shipment, and Northern Spy for United States and home markets. The great trouble and failure in profit has been from planting too many worthless varieties, not good for shipment, glutting the home market.

The apple will grow in any well-drained soil, provided it is not too mucky or too heavy clay with a retentive subsoil. In the latter case trees should be planted near or on the surface, and well ridged up after planting by two plowings; have the land dressed with lime or ashes and old manure, making good surface drainage between the rows. But to grow good fruit the tree should be planted in a strong loam, or loamy clay, with a calcareous or limestone subsoil, but a sandy loam with a gravelly subsoil will grow excellent fruit and healthy trees. They should be planted 35 or 40 feet apart according to the variety of tree, and where there is plenty of suitable land not less than 40 feet, so that in after years there will always be plenty of light and sunshine to the roots. We planted ours 30 feet, the usual distance, but they are nearly touching each other, and altogether too close. If planted 40 feet the land can be easily worked for years and crops put in with very little inconvenience from the trees, and the tillage will be beneficial to the trees. We have always cultivated our orchard, and manured it occasionally with stable manure and ashes. Under any treatment a yearly growth of not less than one foot on leading limbs is necessary, or your orchard requires more stimulating manures; but never let your trees become stunted by neglect or by being too long seeded down, or any other cause. Our trees have made a growth of more than one foot the past season, notwithstanding the great drought we experienced and the heavy crop of fruit they matured.

Next in importance is pruning, and I am sorry to observe such ignorance and want of common sense shown by those who, by reading and observation, ought to know better, but as long as newspapers will continue to insert articles giving advice to prune at any time when convenient, it

no wonder that some are misled. Pruning should never be done in winter in this country; it might do south, but is ruinous here. It is better done after growth commences, from 10th June till August. I have had very good success with this work from the end of sugar-making time to last of April, generally a leisure time and weather suitable. Most of the old orchards have been ruined by winter pruning, the cut turning black, and never healing, and in large wounds, eventually causing a total inward decay of the tree. This was the cause of the loss of not less than \$60,000 worth of nursery stock near this city. No cut should be made quite close to the branch, but at the end of a swelling at the bottom of limb; if cut quite close, on large limbs the inner bark of the limb will grow around the cut, forming a sort of basin, which will hold water, and cause decay in the wound before it is healed. This is a little contrary to a leading nurseryman's advice given at a Farmers' Institute some little time ago. Never attempt to alter the natural growth of the tree. Keep a straggling grower, like the Greening, up; never prune the centre out, only take out superfluous branches; never prune from the inside, but thin out the outside to let in the sun and retain as many of the inside bearing branches as possible, instead of taking out all the inside shoots and leaving long limbs with bearing shoots at the ends not pruned at all. This country does not require too much sun to ripen the fruit, and does not want too much wood cut away.

The fruit should be picked when dry, and kept from even slight frost while in the starchy state. If it remains till it has fully matured it will not keep so long. About the 1st of October, as a general rule, is the right time for winter fruit, and have all the fruit gathered if possible after the full moon, as I have found that any bruises made then will become dry and not decay. This I have often proved to be a fact, and I have had the thanks of many to whom I imparted this information, after being themselves satisfied by experience. If at all put in barrels they should be kept unheaded, and put in a cool place under cover, or otherwise in heaps under shelter to allow them to sweat for a week or two before finally barreling for shipment or storage.

When barreling for shipment, place the apples in circles over the bottom of the barrel, with stems down, until covered; then fill with a uniform size and quality. Never by any means put inferior ones inside; it would ruin the reputation of any fruit grower. Shake well after putting in each basketful. Fill about one inch above the chine, then press the head in tight and brand with the name and quality of the apple. Always put inferior ones by themselves, and mark them accordingly. A want of principle in some shippers has greatly depreciated prices, and caused suspicion against the honest shipper. But if a brand is once established there is no trouble in getting the highest prices. I think that farmers ought to ship their own fruit, with their name and brand attached, appointing one of themselves to see to the shipping, forming themselves into a co-operative association in each locality; and as each farmer's apples would be sold separately, he would receive the amount they sold for, less his share for expenses and carriage, and he would receive all the profits himself, whereas at present a greater part goes to the middleman who buys and handles it. I was in-

formed that one man at Lucan cleared \$12,000 this winter on the apples he bought last fall. I look on the formation of this institute through the noble and untiring exertions of Mr. Weld, as calculated to do much good in disseminating practical information through the medium of the FARMER'S ADVOCATE, that now reaches to every part of the Dominion; that we, as members, should be very careful in expressing our views; from actual experience only should every member speak, so that no erroneous teaching be spread throughout the land.

Mr. Bartlett stated that the Baldwin was a tree which at present would not thrive well in this locality. Young trees would soon lose their vigor, decay in their stalks and then die. He had frequently seen and heard of large Baldwin trees, the trunks of which had been broken off during a storm. These had always been found to be largely decayed at the point where they had been broken off.

In reply to a question why he had not included the Wagner (which the buyers had called least last season), and R. I. Greening, in his list, Mr. Deadman said that the former variety was small, and, like the Snow Apple, liable to be injured by black spots, and that the Greening shrunk very much during the winter months if stored in bins. Replying to a question about the cause of the black spots seen on apples, Mr. Deadman said that they were not due to the soil, that he was conducting experiments with them, and hoped to be able next year to furnish the Council with reliable information about both the cause and the remedies of this plague, which was so detrimental to our fruit interests.

Mr. D. Leitch said that although the Baldwin and R. I. Greening did not thrive well on root-grafted stalks, they did very well in his locality when top-grafted on a hardier variety. He attributed the blowing down of the branches, to which the former variety was so very subject, to the winter frost. The sap, which was very abundant in this soft-wooded variety, expanded when freezing, thereby splitting the tree, especially in the crutches. These fissures—although closing up again in summer, when they could not be seen—admitted sufficient water to decay, and thereby a material weakening of the attachment of the branches. The Baldwin thrived better on light soils than on those of a heavier nature. Too rapid a growth, caused by too rich a soil, was very detrimental to it, as well as all other varieties. This caused the tree to have sappy and not well-matured wood, which was more liable to suffer from frost than that which was well matured. To this too rapidly forced growth he attributed much of the loss of the nursery stock referred to by the essayist. He had found the seeding down of an orchard with clover very injurious to its productiveness and to the quality of the fruit. The fruits of the orchard not requiring nitrogenous fertilizers, he recommended using ashes and an occasional dressing of phosphates in the orchard, and saving the products of the farm yards for other crops. He had found that highly-flavored varieties of fruit required a more liberal manuring than those not possessing so much flavor.

Mr. Weld said that while the fruit interests of Michigan were declining, as reported in the last report of the Michigan Board of Agriculture, those in Ontario were rapidly rising; acres and acres were added annually

to the orchards. The famous fruit grown on the Pacific slope he had found to be far inferior to ours. They were large but light, and inferior in flavor. He favored the essayist's remarks about branding each barrel, but would recommend the name of the locality in which the fruit had been grown to be added as well, as otherwise foreign goods might be shipped from Canada under the name of Canadian fruits, thereby injuring our reputation, which was very high at the present time. He drew attention to the numberless frauds that were conducted in the sale of so-called cider, canned and dry fruits, &c.; e. g., cider was very extensively sold in the N. W. T., which resembles no more the genuine article than soap-suds did, and some American citizens had last year bought large quantities of turnips in Ontario, dried them, and exported them as dried apples to the U. S. All such frauds were necessarily very injurious to the fruit interest, and should therefore be carefully guarded against. He announced with pleasure the removal of the tariff on trees, shrubs, seeds and green fruits, for the American fruit trees had been proved to be more satisfactory as well as cheaper.

Mr. Deadman said that he had always cultivated his orchard, taking good care not to injure the roots. He had found the codling-moth to affect the trees near the house, while those some distance away were not injured by it. For the destruction of this moth he recommended placing a lantern in (or directly over) a tub filled with water, or, still better, with vinegar, one of such traps to the acre being probably sufficient; the traps to be set out when the apple was in bloom, and remaining out till no insects were caught.

The old and well-tryed practice of pasturing with sheep or pigs was also recommended; the sheep to be taken out before much of the fruit fell, as otherwise they were liable to be injured by consuming too much of it.

Combine Against the Beetle.

The Colorado potato beetle can be subdued if all growers will take sufficient remedial measures with concerted action; otherwise the scourge is likely to proceed from bad to worse. As a step in the right direction it is proposed that all farmers' clubs and granges take the matter into consideration and purchase the necessary Paris green or London purple, and supply all who may call at about the wholesale cost, and then discuss the subject at their meetings, through the press, and if need be, make from-house-to-house visits among all the neighbors and urge upon them a concert of action. The long-looked-for parasite to destroy these insects not having put in an appearance this seems to be the only way out of the difficulty. Isolated and spasmodic effort does not avail much. The safest way to apply the poison is to add a heaping teaspoonful of the powder to a pailful of water, keep it well stirred and apply by spraying with a watering-pot containing very small holes in the nozzle. Three applications during the season are requisite.

While the English people welcome the importation of Canadian horses into England, they insist that it shall be done by private enterprise and shall not be stimulated by the English Government. A recent writer in the English Live Stock Journal declares that the life of any administration that in any way assists Canadian importation of horses is not worth a month's purchase.

The Farm.

Grasses and Clovers.

IV.

LUCERNE (*Medicago sativa*) is a variety of clover known for a long period of years to the inhabitants of continental Europe, some of the nations being conversant with it for more than two thousand years. It is known by a large number of names, the most important of which are Lucerne, derived from the French, and Alfalfa, a Spanish name. Some of the other names not so frequently used are:—Chilian and French Clovers, Spanish Trefoil and Purple Medick.

Prof. Beal, in his work on "Grasses of North America," describes it as "an upright, deeply-rooting, smooth perennial, 1 to 2½ feet high, leaflets obovate-oblong, toothed, tip notched, flowers in a short dense raceme, (flowers attached by a small separate stem, peduncle, to a central stalk, similar to the currant), blue or purple; peduncles longer than the leaves; pod, ¼ inch in diameter, spirally twisted."

Lucerne is specially recommended for soiling purposes. It commences growth very early in spring, grows rapidly, and produces a large number of successive crops, furnishing a large bulk of food for a large number of years. It has been known to flourish for over 20 years. Care must be taken not to feed it when wet or frosted, as it is then very injurious to the animal system—more so than the red clover. It is frequently cured for hay, but as its leaves are very liable to be lost great care must be taken in the drying. As it turns to woody fiber very rapidly during the latter stages of its growth, it should always be cut when commencing to bloom, when it contains the largest amount of nutriment. Horses relish the coarser portions of this hay, while cattle favor the finer parts. Some writers claim that the hay is very liable to cause bloating if fed to excess, and care should therefore be taken not to overfeed animals with it.

The plant, being deep-rooted, sometimes having been traced to a depth of 16 feet, will withstand drought marvelously well, flourishing when nearly everything else fails. A wet, cold climate is very detrimental to its growth; dry cold does not seriously affect it, and a dry, warm, sunny district is most favorable to it. It does not reach its greatest productive power till about the third year after being sown. For the first two years of its growth it is easily crowded out by weeds or grasses. In countries where labor is cheap it is therefore generally sown in drills, and weeded or cultivated between the rows. In Canada good results have, however, been obtained by sowing it broadcast (with and without a foster crop) in a clean field.

It flourishes, if once established, on all soils lying on a loose, warm, well-drained, calcareous subsoil. It is useless to sow it on soils having a cold, stiff or water-lodged subsoil.

WHITE CLOVER (*Trifolium repens*) is a low creeping variety, growing on almost all soils. It is very valuable for pastures, but is said to make horses "slobber" if they eat it when it is ripening its seeds. It rarely requires to be sown, as it spreads very rapidly, and is almost sure to appear in all the older meadows and pastures. It forms a very close sod, and should therefore be included in all lawn mixtures. As a clover for bees it stands second to Alsike.

YELLOW CLOVER (*Medicago sativa*), also called

Black Medick, is a small, creeping variety, which gives an early bite in spring, but does not yield a second crop. It is a biennial, and thrives on most soils, but especially on those containing an abundance of lime. Like White Clover, its low growth makes it of little value in a meadow. When used for pastures it should form only a small portion of the mixture.

First Prize Essay on Farm Drainage.

BY W. A. HALE, SHERBROOKE, P. Q.

The question of farm drainage is so comprehensive a one that to do it proper justice within the limited space of an essay is an extremely difficult undertaking. Volumes might be written upon the subject and yet much left untold. In the following paper, therefore, I shall not attempt to do more than give a general outline of the various modes employed, leaving the study of the minute details, necessary to the successful carrying out of the same, to those who contemplate engaging in the work and for whose benefit much valuable information can be found in the back volumes of the various agricultural papers and in books written especially upon the subject; for let it at the commencement be thoroughly well understood that this is an undertaking which, though not in itself difficult, is one which is far better to leave entirely undone than to do it in any but the most thorough and workman-like manner. To such soils as require draining the benefits derived from the operation are manifold; compact soils are rendered more open and friable year by year by removing all undue moisture, and substituting therefor atmospheric air, which greatly assists in the chemical preparation of the plant-food contained in the organic portions of the soil. Rain water is more easily absorbed, and in consequence surface washing very materially diminished, and by checking evaporation the temperature of the earth is noticeably raised even to the extent of from 5 to 15 degrees—a fact which market gardeners and those anxious to escape early frosts should not lose sight of. The products of the land are not only largely increased in yield, but the quality of the same is in most cases much improved. Properties detrimental to vegetation are washed out of the soil and carried off by the drains, while the nourishing portions contained in the vegetable mould and supplying the food for the growing crops, being so slightly soluble, are all taken up by the roots (unless, perhaps, in the case of bare summer fallow), long before they reach the depth at which the drains should be. Plowing, harrowing and cultivating can be done not only with much greater care, but also at an earlier date, and in really boggy soils without the distress and even danger to the teams. All fertilizers respond more quickly and profitably on a well-drained soil, and the freedom from rot and rust in a damp season, and the decreased ill-effects from drought in a dry one, are but a few among the many advantages that go to repay the provident farmer who makes so wise an investment of his money. The air also of a well-drained district, even where malaria does not exist, is pleasanter and healthier, and the vast decrease in the number of mosquitoes, where actual swamps and swales have been drained, is a point which will be appreciated by every member of the family.

Taking it for granted that drainage, either natural or artificial, is a thing to be desired, the

most important point to decide is whether it will pay or not. We often hear it said that good naturally drained land can be bought in the North-west for less than the cost of draining land in Ontario or Quebec. This may be, but it hardly affects the subject on hand, for I fancy there are but few who would wish to sever family ties and old associations for the sake of saving the cost of draining such of the old homestead as requires it. Just what the expense of underdraining an acre of land would be is, owing to the different cost of labor and material in different parts of the country, very hard to establish, but \$40 an acre should safely cover all, even where all the labor has to be paid for. We are told by those who have made a study of it that this outlay is often repaid in from two to three years—equal to a return of from 33 percent. to 50 percent. Or suppose we allow 10 percent. annually upon the outlay, we have a charge of \$4 per annum, to meet which an increase of only 10 bus. of potatoes per acre would be required; but as we might reasonably expect an increase of 50 bushels per acre, we should in this case be receiving 50 percent. on our outlay. And the personal testimony of such men as Thomas Irvine, of Montreal, goes to prove that no investment on the farm pays so well as a thorough system of underdraining land where it is needed. Being convinced that underdrainage is good and the investment wise, it is of no less importance to ascertain what portions of our land require it and what portions do not; for while it is true that some soils do not need artificial drainage, it is equally true that some, and generally, too, our very best soils, are not worth cultivating or even pasturing without it. Between these two extremes there are soils which are in a greater or less degree improved by it, and to find out just where to draw the line between mere improvement and profit is where our best judgment is most required. Ordinary swamps, swales, boggy places and springs speak for themselves. Plowed fields showing continued dark portions, while the remainder is dry; water standing on the surface after rain, cracking of the soil in a dry time, marsh grass, moss or water ferns scattered over old meadows, water standing in test pits dug three feet deep for even a short time at any season of the year, are sure and certain signs that drainage is required, and for soils in which clay, clayey loam, or hard pan exists either near the surface or within three feet of it, depend upon it underdraining is the thing of all others here most required, while loamy or sandy soils resting on a sandy, gravelly, or alluvial subsoil are generally sufficiently well-drained by nature.

Where natural watercourses exist, these, if crooked, should be straightened with plow, scraper and spade, and used as the outfalls for the drains, whether covered or open, and where artificial outfalls, either along boundary fences, or along road sides, have to be formed, their sides should be, if possible, even of a lower slope than an angle of 45 degrees. Emptying into these with a slight fall, the main drains should commence running up the lowest parts of the hollows, so as to allow as free a discharge of the laterals into them as possible. The laterals being the same depth as the mains, from 3 to 4 feet, and from 18 to 40 feet apart, depending upon the retentive character of the soil, should always run parallel and as directly down the slopes as possible.

Independent of this plan of drainage, where swamps or damp places occur in hollows with no natural outlet, or where springs appear too far from any drain to warrant the expense of conveying them thereto, I have been very successful in sinking them out of sight by digging one or more perpendicular drains down to gravel or sand and building up the hole in the form of a small well, filling in the opening with small stones and covering the top a foot underground with inverted sods well rammed down.

As to what materials should be used in the construction of the mains and laterals much depends upon the cost of the different materials required and the nature of the soil through which they pass. Where stones of the proper shape are close at hand and have to be removed and the drainage operations not very extensive, I have found that making the mains of stone, with a six inch square run for the water, to work very satisfactory, and where small round or broken stones are to be had for the picking up, I would use them for the laterals and even side mains; but I have found from experience that the proper filling in of these stone drains is of as much importance as their construction. Inverted sods, straw or shavings should be thoroughly packed not only on top, but in the case of flat stone drains also at the sides, every layer of filling well tramped down, and the finished surface left rounded up to allow for settling and to prevent the surface water from washing down into the drain.

Where stones are not at hand and tiles difficult to procure, where but a limited amount of draining has to be done, or where the land is too soft to properly hold the tile in position, I would unhesitatingly use wood. Hemlock boards, 1 inch thick and 12 feet long, ripped up into strips of 2, 3, 4 and 5 inches, would leave no waste, and are quickly made into square tubes, costing when complete something less per foot than pipe tiles and collars, and in inexperienced hands far more easily laid; for the small drains use the 2-inch strips for sides and the 4-inch for tops and bottoms; for larger ones use 3-inch sides and for the mains 3-inch sides and 5-inch tops and bottoms. The tops should be lightly nailed down (to facilitate opening should it at any time be required), and before doing so single saw cuts made across both sides half an inch deep and 3 feet apart will admit all the water required and prevent any sediment from forcing its way in. Where, however, good hard-baked tiles can be procured at reasonable prices, where stones are scarce and when any large extent of land is to be drained, I should certainly give the preference to them, using 1 1/2-inch pipe tiles for laterals, discharging into 2 1/2-inch, both with collars, from which 3 1/2-inch, without collars, will take a full drainage from an ordinary 20-acre field into the outfall or open drain, and towards this system of underdraining I feel we are advancing year by year as the benefits derived from it are more and more appreciated. At present the trouble and expense of importing tiles deter many from using them who otherwise would, but I believe that were tile-makers to begin the manufacture of tiles either in connection with the making of brick or by themselves that soon such a demand would be created for them that the enterprise would be made a paying and profitable one. To such as have lands underdrained I would say, begin at once by straightening your watercourses and com-

pleting main drains through your low lands and swamps, adding side drains year by year as time and opportunities present themselves, and when once a good beginning has been made there is little doubt but that the work will be most cheerfully pushed on to completion as the practical benefits prove the wisdom of the undertaking.

A Cheap Country Paint

A method of painting farm buildings and country houses, while by no means new, is yet so little known and so deserving of wider application as to warrant a description. The paint has but two parts, both cheap materials, being water-lime or hydraulic cement and skimmed milk. The cement is placed in a bucket, and the skim-milk, sweet, is gradually added, stirring constantly, until just about the consistency of good cream. The stirring must be thoroughly done to have an even flow, and if too thin, the mixture will run on the building and look streaked. The proportions cannot be exactly stated, but a gallon of milk requires a full quart of cement and sometimes a little more. This is a convenient quantity to mix at a time, for one person to use. If too much is prepared the cement will settle and harden before all is used. A flat paint brush, about four inches wide, is the best implement to use with this mixture. Lay it on exactly as with oil paint. It can be applied to wood-work, old or new, and to brick and stone. When dry, the color is a light, creamy brown, or what some would call a yellowish stone color. Neither expression describes it well, but it is a very good color for a country building. A pigment-like ochre may be added to change the color, but it is very difficult to do the mixing so thoroughly as to give an even tint. If attempted, the cement and coloring matter, in carefully weighed proportions, should be first run through a paint-mill. This skim-milk paint, well mixed, without added color, has a good body, gives a smooth, satisfactory finish on either wood or stone, and wears admirably.

A friend of mine used this paint for a set of farm buildings, which have since passed through three winters, and are now looking fresh and well. One building was new and the covering boards imperfectly seasoned; others had been white-washed, some repeatedly for more than half a century. All appear equally well. The older buildings were prepared by scraping off the loose and scaly white-wash, the scraper being a curry-comb; it was not much work to do this. The expense of this piece of painting was surprisingly slight. A laborer at \$1.50 a day did the work, and he covered a two-story, twelve-room house in six working days. He laid on from three to four gallons a day, the whole quantity used on this building being less than a bushel of cement, costing fifty cents, and twenty-two gallons of skim-milk, worth less than a dollar on the farm. The whole cost of satisfactorily painting a good-sized house, brush included, was less than \$12.

This painting mixture, so easily and cheaply prepared, was described in recipe books years ago, but a knowledge of it was revived by Gen. Le Duc while he was U. S. Commissioner of Agriculture. He mentioned an instance of a country house within his personal knowledge, the body of which was covered with skim-milk and cement, and the trimmings with lead and oil paint, forty-five years before he described it; during this period the trimming paint had been renewed several times, but the cheap body color remained well preserved.—[H. E. Alvord, in American Cultivator.

Success with Clover.

An analysis of clover roots dug from a square rod of ground was made at Cornell University a few years ago, from which it was estimated that an acre of such roots contained nitrogen, potash, and phosphoric acid, worth \$18.83 at market prices. This amount is about equal to what is found in 800 lbs. of high-grade ammoniated phosphate, and according to the published opinion of Prof. Roberts, it was mostly recovered from the subsoil through the aid of the clover, and thus was made available for the use of the wheat crop that followed.

This is scientific corroboration of what many careful observers believe to be true—that the growing of a clover crop does not diminish the available plant food in the soil, therefore a clover sod is an excellent preparation for a corn or potato crop.

Very few farmers have made that extensive use of clover that the facts above stated would warrant, and perhaps a still less number have comprehended its great value in agriculture. Its roots will penetrate the subsoil and recover plant food otherwise lost. When cut at the right time and properly cured, it makes the best hay known for butter cows. The manure from cows kept on clover is of far more value than when timothy is fed.

A retired farmer who has made a small fortune in dairy farming, says that he credits the clover plant with \$5,000 of his accumulations. His rule for seeding during many years was 14 lbs. of clover and 14 lbs. of timothy to the acre. The growing clover was plastered at the rate of two bushels to the acre. He used to the amount of ten tons of plaster in a year. No wonder that he was successful. Another wealthy farmer, an excellent manager of great experience, said to me that whatever success he had attained in farming was to be attributed directly to clover. It is a singular fact that in the immediate neighborhood of such intelligent, successful farmers, may be found those in great numbers who never use more than two or three pounds of clover seed to the acre, and who do not to this day succeed in curing clover hay so that their cows will eat it with a relish.

A peck of clover and a peck of timothy sown to the acre will secure a good stand on land in fair condition. Of course a much less quantity would do it if all grew, but with a thin seeding weeds of various kinds will fill the vacant space and inflict a positive damage by their worthless growth. If the large clover is sown, it will not lose in value by over-ripeness as readily as the medium, but it is a good practice to sow one quart of the small kind to two of the large, as this will secure a quick start of aftergrowth for pasture, and also will keep the ground fully occupied by useful plants. An acre can be heavily seeded at an expense of \$2, and he who tries to save money by scrimping in clover and timothy seed does not practice true economy.

Clover should be cut as soon as it is fairly in blossom. A few days' delay, especially with the medium variety, will greatly lessen its value. Begin cutting as soon as the dew is off and all that can be cut before 2 o'clock may be cocked the same day. As soon as it can be raked, and while quite heavy and green, it can be cocked with safety. If good hay weather follows, it may stand two days in the cock and be drawn the third day. It is sometimes necessary to turn

the cocks over so that the bottom may be aired for a time, but usually it may be drawn without. In case of very hard rain it will be necessary to spread out the cocks, but with only ordinary showers they will dry without this labor. If clover is cocked the same day that it is cut, and is cured without opening, it may be drawn when quite heavy to handle and still keep perfectly in the mow. Such hay is of the highest value for cows or other stock, but over-ripe or mouldy clover is almost worthless. I like to see the clover blossoms retain their red color until they are placed before the cows. Such hay will be greedily eaten and there will be no refuse to remove from the manger.—[C. S. RICE, in Country Gentleman.]

Economy of Labor.

With the low price of all farm products, and the high price of help, it is the duty of every farmer to economize labor in every possible way. This can best be accomplished by procuring good implements. The old narrow, wooden harrow, and other old-fashioned implements that did good service ten or twenty years ago will not do now, but only such tools as will do the greatest amount of work in the best possible way, require the least human labor. In many sections sulky plows are coming into use, which turn a furrow ten to sixteen inches wide. With a good implement, which will cut and turn a twelve-inch furrow, one man with two or three horses—depending on the condition of the land and the depth of the furrow—will plow from two to two-and-a-half acres per day, and do the work better than it can be done by hand. Several manufacturers of sulkies are building plows turning two ten-inch furrows at a time, and doing good work. With these one man and three horses can easily plow three acres a day, doing better work with more ease to man and beast than when plowing one-and-a-half acres with an ordinary walking plow drawn by one team. A saving of one horse and man is therefore made in accomplishing a given amount of work. In harrowing also a like saving may be made in using wider harrows drawn by three horses. For ordinary work the harrows commonly made are not heavy enough.

In the counties immediately east of Toronto, many of the farmers are using what is known there as the chisel or "duck-foot" harrow, to which they attach three horses. This implement is not as wide as the ordinary harrow, but is somewhat heavier, and has hooked teeth with a chisel-shaped point. With this tool three horses and one man will thoroughly prepare from ten to twelve acres per day, making an excellent seed-bed, quite equal to one which has been gang-plowed and harrowed twice in the usual way with the common iron harrow. In fact, that prepared by the chisel-tooth harrow will be a better and finer seed bed, not costing half what it would to gang-plow and harrow. This tool works best when the ground is somewhat dry, or, in other words, when the land is in the best condition to till. It will accomplish wonders on sod, doing on it as much good by one going over as an ordinary harrow will in four or five times.

Sod, as well as stubble land, should always be plowed with a skimmer, or jointer, which are now made like coulter, attachable to any plow, and do good work. They will pay their cost in less than a week, rendering the land so much more easily worked. For burying clover, long manure, &c., they surpass any other devices.

When the land is very wet and sticky, the chisel-tooth harrow may clog. Where it does, a spring-tooth cultivator will be found very serviceable, cultivating about ten acres a day. It will work the land when quite wet, but it is necessary to give it a subsequent harrowing. We prefer this tool to a gang-plow. For spring use it is very much superior, and lessens the cost of preparation about one-half when the land is too wet to work the aforesaid harrow successfully. There are several different patterns of this tool. Some of them are very good, others are worthless. Those having a wheel and a lever on both sides are best. In the section previously mentioned, a good many use a drill or seeder having from twelve to fourteen hoes. On well-prepared land a team can handle them easily. A drill or seeder should never be put on land that is not well prepared. A fair day's work with a ten-spout drill is twelve acres. A team walking at the same speed with twelve-spout would seed 14 2-5 acres. Fourteen hoes would sow nearly seventeen acres. Besides doing more in a given time, there are other important considerations in favor of the wide drills. These can be used very well where the horses are strong and well fed, and the land is level. On hilly land the ten-spout drill had better be retained. The manure-spreader, when it works well, will effect a considerable saving of time.

[To be continued.]

Fodder and Edible Corn.

Those sowing corn for fodder will find the Mammoth Southern Sweet much better than any other variety. It grows quite as large, if not larger, than the common American varieties. The stalks are more juicy, have more leaves, which remain green much longer than those of the common kinds. It produces large ears, which will not ripen in this latitude, but may be used for table purposes.

Stowell's Evergreen Sweet, which though not as early as some other varieties, is the best corn we have ever used for cooking, canning or drying, and will mature here, if sown early. It is suitable for the table from the time it is large enough to use until late in the fall. A number of the earlier ears should be allowed to remain for seed. The fodder from this corn makes excellent feed. When planting, select a warm soil and exposure, which will make a difference of a week in the time of ripening.

The Mammoth Sweet (a separate variety not to be confounded with the Mammoth Southern Sweet), is very highly spoken of for family use.

Corn that is planted early is always the best; better have it frozen twice in the spring than once in the fall. This crop may be rapidly and efficaciously sown in drills, with an ordinary grain drill, by stopping up some of the spouts. The drills may be made twenty-one to twenty-eight inches apart, to allow cultivation. The quantity of seed can be regulated as desired, and if the plants are hoed out in the rows to one foot apart, they will yield as well as if in hills, and are much more cheaply planted, when a quantity is put in. Great care should be taken in selecting seed.

Some trust to an examination of the germs. This is not reliable. Corn germs have a greater tendency to loss of vitality than many other seeds. A sure way to test its quality is to put an inch of soil in a common milkpan or other shallow vessel; take a certain number of grains

from as many different ears and place them on this, covering them an inch deep with earth; keep all warm and moist, and if inside of ten days nine-tenths of the kernels do not germinate and come through the ground, the seed should be rejected if better can be obtained. The test-pan should be so placed to receive as much sunshine as possible. The sounder the seed the quicker it will sprout, and it is less liable to rot in the ground when conditions are unfavorable. As the entire crop depends so much upon quality of seed it is wisdom to make the above easy test where there is any doubt, and thus be relieved of anxiety on that score.

Second Prize Essay on Farm Drainage.

BY JAMES LAIDLAW, JR., GUELPH, ONT.

Few who have not tried it, have any idea of the improvement to be effected on a piece of low-lying or springy soil, or even on land that is fairly dry, by laying tile through it. On very wet land it makes the difference between no crop and—in an average year—a fair, and often a very good one. The object in draining is to remove the surplus water, which, if allowed to remain, would become stagnant, sour the land, and, after it had passed away by evaporation, it would leave the land hard and in such a state as to be wholly unfit for a crop; whereas, by draining, we draw off the water from below, and if by this means we do not increase the fertility of the soil, we at least render available that portion of it, which, under existing conditions, is simply lost. It is generally conceded that tile is the cheapest as well as the most lasting material that can be used in the construction of drains. Other forms of drain, such as cobblestones thrown in loosely, and covered with straw and clay, or stone laid in such a way as to form an arch, are much more liable to choke and be filled up by vermin. Wooden pipes or boxes are not so lasting, and more expensive both in cost of the material and construction, for they require a much larger trench to accommodate them, which means more digging. In these days good tile can be had in almost unlimited quantities at the kilns in this section, and be hauled in winter when roads are good and teams often idle, at the following prices, which every one who knows anything about the value of such articles will agree in saying is cheap:—6 inch, \$24 per thousand; 5 inch, \$16 per thousand; 4 inch, \$11.20 per thousand; 3 inch, \$8 per thousand; 2½ inch, \$6.40 per thousand; 2 inch, \$4.80 per thousand. Surely it would be a better investment to sink our surplus funds in a clay-bank in the shape of a tile drain, than in such rotten institutions as the Central Bank and others of a similar character. No one should be deterred from making a start at draining, because his means are too limited to admit of his doing so in so thorough a manner as he would like.

It is a mistake in draining to begin and lay tile at random, touching a wet spot here and running to a spongy hole yonder. Begin with some well-defined plan, taking care to have as good an outlet as possible, and as few of them as possible, as there are then fewer places to protect and keep clear. Before beginning to drain levels should be taken to ascertain the amount of fall available. This, in most cases, is an easy matter, almost anyone being possessed of sufficient skill to do so himself without going to

the expense of engaging an engineer. There are many simple contrivances, which, with the assistance of a common spirit level, will serve the purposes. Among these, perhaps, the best is a straight-edged board, set on legs, sharpened at the points so that they can be driven into the ground till the board is level. Then look along its top, noting where its continued line strikes the ground or a marked pole held by an assistant. The difference between the point at which the continued line strikes the pole, and the ground, and between the top of the straight edge and the ground, indicates the rise or fall between the two points. If there are turns in the drain it will be necessary to move the leveling apparatus at each turn. It will be necessary before going further to decide upon the size of the tile required. To arrive at the proper size of a tile required to be laid in any particular drain, practical engineers have prepared tables showing the size of a tile, which, with a given fall, will remove from a fixed area a certain amount of water or rainfall in a given time, but which it would take up too much room to insert here, feeling confident as I do that the ADVOCATE will furnish this information to any anxious enquirer. The depth of the drain will be the next point, and upon this we do not presume to lay down any cast-iron rules, circumstances often beyond the control of man, such as a shallow outlet, a rocky or a quicksand bottom, rendering it impossible to go to the depth one might desire. A great deal depends on the nature of the soil and the lie of the land in fixing what may be regarded as a proper depth. If the soil is a deep porous clay which works easily, and through which the water percolates freely, it is only natural to think that deep drains would draw further, and thus would not require to be laid so closely as in harder soils. But when it is necessary, in order to reach a desired depth of say three feet, to pick every inch of a hard-pan subsoil, for a foot or more at the bottom of the drain, it is labor in vain, as the water can never be brought to draw through this pan. A shallow drain would have the same effect, and cost less. I have seen many cases of such a hard-pan subsoil, which was just as hard in the spring, as soon as the water was off, or after the soaking rains in the fall, as in August or September. It is desirable, in order to secure as even a flow of water as possible, that the fall of the drain should be carried through at an even grade, as the tile will last better and is less liable to fill up with sediment than when one part is steep and another is level. To new beginners, and even old drainers, a spirit level will be found to be a very useful article in keeping the proper grade, as it is a very easy matter to try the bottom as we go along, thus making sure that the desired level is being maintained, which is much easier done with the proper spades, and a scoop with a long handle, which the drainer draws towards himself, standing on the unfinished part of the drain, looking back over the work, and lifting the bottom clay up on the bank with the scoop, than the old-fashioned method of standing on the finished bottom, shovelling it out, and working the bottom, if there is water, into mud and mire. Where many drains join into one, a silt basin formed of a plank, or brick box, with cover, into which all the tile enter and from which the discharge pipe is fed, is a very good plan, easily constructed, and very useful in gather-

ing up any sediment that comes down, which should be regularly removed. Have the tile laying along the edge of the ditch, so that they can be reached by the drainer standing on the tile in the bottom of it, and the laying in of them is a in very small matter. Some would reach the tile and place them from the top, with a pole having a hook on its end. This system answers well, particularly where the bottom is soft and muddy. After they are laid dig a little of the mould from the top, on to the tile, trample it, and then finish the filling in with a plow. The question of laying mains and their laterals is one that admits of argument. After locating and laying the main up through the lowest part of the field, some would lay their laterals at right angles to it, through the field. At the junctions, in all cases, all right angles should be changed to an acute angle, as the water passes from the lateral into the main much more freely in this position. A plan much in vogue, and much in favor in this section, is to lay a sub main at right angles with the main, and lay the laterals from it, parallel or nearly so with the main. The idea is this: that you catch the water as it comes down; it sinks into the tile, and is carried off, but with the laterals running at right angles with the main, the water in springy or from a spongy hole would run down between the two, as every farmer is not in a position to drain so closely as to catch every inch of ground. Where an open ditch runs across a field, and the volume of water to be carried off is so great that to lay a tile of sufficient capacity for it would be too costly for the average farmer, but where the land adjoining this ditch is almost worthless until drained, it is better, instead of emptying each tile into the ditch by a separate mouth, to lay a larger tile closer to the edge of it, and run the laterals into it, as by this means you have all the fall and only one mouth to protect. If the lay of the land is such that the same main can run up through two or three or more fields by starting with a large tile, you can lessen it, as each sub-main branches off. To the average farmer under ordinary conditions, who does not wish to sink too much at first, it is an easy matter to place the laterals at such distances that, should he feel inclined at some future time, he can lay one or more between each of them. The increased yield from draining land is great, many holding that the expenditure will be recouped in two or three crops; and, added to this, the pleasure of working land rendered friable and loose by the removal of the water, we have a very satisfactory showing.

Harrowing and Rolling in Spring.

Gerald Howatt in an exchange says:—When the snow is off the wheat and rye intended for grain, and land is dryish, it should be harrowed and rolled thoroughly. This has been my practice for years with all winter grain. Whether sown by drill or broadcast, the soil from snow and frost becomes hard, and this harrowing is as essential as the hoeing of any garden crop when it becomes baked, and which starts the plants into fresh vigor. Should it have been sown in the fall with grass seed, it is equally necessary. In some localities they cannot sow grass seed in sowing their grain. Those sowing in the spring, following the harrow, will find it a nice bed when thoroughly done. It is no use showing it the harrow; it must be a heavy one, run both ways. Those roots that may be torn up, the roller will

press into the ground; this will make your grain tiller better, and give better straw and heads. The young grass that may be rooted up, the roller will also settle into its proper place. If you are skeptical about this, try one field so, and let another go untouched; mark the growth of both all through the season, particularly so in harvesting and threshing, and then report to these columns for the benefit of your neighbors. It is not only on grain that the harrow and roller will pay to use after the winter frosts; grass land, particularly timothy and orchard, will more or less heave. If timothy and orchard grass are in clumps, occasioned by too thin sowing, you can only roll them thoroughly, if heavy, and if the aftermath of orchard grass has not been cut or fed off (as it should have been), put a very heavy harrow over it; this tears out all the dead grass from the bottom, giving all your grasses a good, clean start; and bear in mind that one inch at the bottom is worth two at the top. This will also facilitate your mowing machine, the guards not clogging up with rotten and dead grass.

Sheaves from our Gleaner.

Sprigs of cedar distributed throughout the nests of fowls will effectually clear them of vermin.

A quickly-ripened cheese will decay soon, just as a summer apple, that ripens quickly, decays before the slowly-ripened winter apple.

Silver-plating swindlers are abroad in some parts of the country. "The articles look right at first, but all effect of the treatment disappears within twenty-four hours."

The Western Rural says there is nothing about the Dorset sheep to recommend them above the breeds already in the United States. In fact this paper prefers our old famed-kinds.

A recent trial proved that a ferret kept in a cage in a barn or other building will drive rats away. The scent from the ferret is what does it. It is claimed that rats are so fearful of it that they will even abandon their nests of young.

The Russian Agricultural Department announces that the time has arrived when Russia can come forward with considerable chance of success, to compete with America and other countries in supplying the western European markets with live stock.

The commodity known in the United States as "white grease," which the N. Y. Tribune says is rendered from dead animals, and from the heads and entrails of hogs, is used, after being bleached, as a lard adulteration. All such lard should be forbidden access to our markets.

It occasionally happens in the best managed flock that there will be a motherless lamb and a lambless mother. There is just one way to make these fit. Strip the skin from the dead lamb at once (it comes off very easily while warm, and you need not skin the head or legs), and sew it on the lamb you wish to take its place. Fit the skin neatly around the neck, legs and belly, especially on the rump and tail. Put the foster mother alone with the lamb, and though she may demur at first, stamp her feet, etc., she will presently own the lamb as her own. It may be necessary to gently hold her a few times for the lamb to suck. Do not take off the skin too soon or she may go back on you. This plan is almost always successful.

Stock.

Chatty Letter from the States.

[From our Chicago Correspondent.]

An enthusiast on dehorning cattle declares that he can feed four hornless steers in the space required for one with horns.

There is being developed quite a demand for goat meat. Texas has large quantities of Angora goats, grades and thoroughbred, and it is just being discovered that the goats have a fair commercial value in the meat markets. Some good "billies," 220 averaging 80 lbs. live weight, sold at \$3 per head. They dressed 48 lbs., and the hides sold at 60 cents. It is said that the annual clip of mohair pays all expenses, and the \$3 per head at three years old represents net profit. However, the clip ought to do more than pay expenses, and fat he goats averaging 80 lbs. ought to be more than \$3 per head.

Mule raising is receiving something of an impetus, especially in the South-west. Big, fine work mules sell for as much as draft horses, and for some work are more serviceable. They are more hardy and seldom get sick. They are easier to raise than horses, and are generally stronger, though not so kind or willing.

Horse feeding is coming to be quite a business. There are some men who make considerable money by purchasing and fattening their horses. Some say there is more money in feeding horses than cattle; and that has certainly been true the past season, if there has been any money in fattening horses. However, it is well known that fat, like charity, covers a multitude of sins.

The crusade against plug horses and the comparative cheapness of well-bred ones is having a marked effect upon the general average breeding of those one sees every day.

J. H. Freeman & Sons, of Bushnell, Ill., recently imported the shire stallion Great Britain, weight 2,775 lbs., claimed to be the largest in the world.

A large share of capital formerly invested in cattle is being put into horse raising. There does not seem to be any imminent danger of over-doing the horse business, but some of the more cautious are expressing such fears. The horse markets of the States have been pretty heavily supplied the past winter, perhaps owing to low prices for other farm assets and the great desire on the part of farmers to turn things into money. The demand for horses has been good, however, and prices have held firm, especially for all desirable kinds. At Chicago there is a tolerably regular range of prices for street car horses. "Streeters," good clean-built 1,050 to 1,150 lb. animals sell at about \$130 to \$135 per head. Prices are naturally higher in the spring when work horses are wanted on the farm, and when the appearance of grass cheapens the keep of them.

Why are cattle selling at such low prices when hogs and sheep are bringing such very good money? This is a question that has been troubling many people of late. One man says it is because the cattle trade has largely become centralized in the hands of half a dozen dressed beef operators; another says it is due to over-production, and another thinks the trouble is all on account of the large amount of money locked up in the vaults at Washington, and contends that if there was a freer circulation of currency

the problem of depression in cattle values would find ready solution. All of these explanations seem to be faulty, however, except the second. Why? Simply because either or both of the others apply with as much force to hogs and sheep as to cattle. In other words, if the depression in cattle values was the result of monopolistic combinations or under-circulation of money, the same causes would affect all kinds of stock alike. The facts are, however, that receipts of hogs are and have been light, and receipts of sheep are and have been very light, compared with the demand and with former periods, while receipts of cattle, on the other hand, have been very heavy, in fact the heaviest ever known. There may be something, there probably is a good deal in the combination and under-circulation money arguments, but the facts would indicate that there is much more in the fact that if there is not over-production there is at least over-marketing of cattle.

The Canadian Draught Horse Stud Book.

At the last meeting of the Council of the Agriculture and Arts Association, the Secretary had been instructed to go on with this Stud Book when the number of subscribers chosen at the organization meeting in December had been obtained. So, on the 7th of April last, the Secretary called a meeting of the Provisional Directors and subscribers to adopt a constitution and to fix a standard.

The following were confirmed in their offices:—President, Chas. Jackson, Mayfield; Vice-President, A. Fanson, Toronto; Secretary-Treasurer, Henry Wade, Toronto. Directors—James Gardhouse, Highfield; Chas. Lawrence, Collingwood; John Vipond, Brooklin; Dugald McLean, York Mills; W. A. Fanson, Toronto; F. T. Coleman, Arthur; and Thos. Natress, Mackville. The constitution of the Clydesdale Association, with the necessary changes for name, etc., was adopted. The annual membership fee was fixed at \$3, and \$2 for members and \$3 for non-members as fee for each registration in the Stud Book.

The following standard was agreed upon. Draught horses shall be received for registration on the following lines:—

1. Stallions or mares having sire and dam both on record in either the Canadian Clydesdale Stud Book, or the Canadian Shire Horse Stud Book, or in the Canadian Draught Horse Stud Book.
2. Mares having from top crosses of recorded sires in any of the aforesaid Stud Books.
3. The produce of a recorded mare if got by a recorded sire.
4. As many stallions were imported from Great Britain before any public records were kept, it is left to the discretion of the Revising Committee to accept such for registration in the Draught Horse Stud Book when they have been generally recognized as either Clydesdales or Shires.

The Canadian Draught Horse Stud Book is not a new book, but the appendix to the Clydesdale Stud Book, enlarged, and continued to suit the requirements of Canadian breeders. Herebefore the Clydesdale blood predominated, now no account is taken of the proportion of the bloods, only each individual cross must be in itself a recognized and registered animal.

The Kansas Agricultural College have found the kohl rabi a wonderful drought resister, and to be as easily kept over winter as the turnip. Cattle are fond of them, and eat them with relish.

Ramblings Among our Farmers and Stockmen.

SKETCH OF MAPLE SHADE HERD OF SHORTHORNS.

Mr. John Dryden, M. P. P., Brooklin, Ont., proprietor of this herd, has been a breeder of pure bred stock for nearly twenty-five years. During this time his herd has not only achieved great notoriety in this Dominion, but also in the neighboring Republic. From a small beginning, consisting of the purchase of one heifer, the herd has grown during these years until it now numbers nearly 100. If easy keeping qualities, thickness of flesh and general uniformity are the requisites of a good breeding herd, we think this one will stand among the foremost.

Some five years after the foundation was laid, a small importation was made from the world famed herd of Shorthorns owned by the Messrs. Cruickshank, of Aberdeenshire, Scotland. This importation consisted of two heifers, whose names have become familiar to many of our breeders, namely, *Mimsus*, the dam of Mr. Watts' celebrated bull *Barmpton Hero*, winner of 13 first prizes, and scarcely excelled in this country as a useful breeding bull, and *Queen of Beauty*, dam of *Orange Lad* (notorious as a sweepstakes bull in Iowa), and the bull *Stanley* (32954), whose portrait graces both the American and Canadian herd books. Mr. Dryden seems to have been so pleased with this purchase, that from year to year additions have been made from the same place. The breeding bulls during all these years have been without an exception supplied from the same quarter.

The first purchase in this herd was a heifer descended from the cow *Lady Eden*, imported by the late Mr. Wade. Females from this source have been bred to Sittytton bred bulls only, and it is wonderful to observe how strikingly the characteristics of this breed of cattle have been stamped upon this sort also. For all practical purposes they are of equal value, and from them have been taken from year to year the young animals which have won for their owner prizes in the show ring.

During the past few years importations have been received from the herd of E. Cruickshank, Lethenty, the nephew of Amos Cruickshank, of Sittytton, whose herd was originally founded from choice selections at Sittytton, to which were added five cows of superb quality, purchased at the sale of Mr. Longmore, of Rettie, in Banffshire. The young bulls received from this herd have given the utmost satisfaction as they seem to have done when sold in their native land. From the Aberdeen Free Press we learn that they invariably secured for their owner the top prices at the annual joint sale in Aberdeen, and some of them when used turned out so admirably as to create quite a sensation in the district where they were owned. Of the bulls received at Maple Shade from Lethenty, perhaps *Red Emperor*, sired by *Perfection*, and out of the Sittytton bred cow *Harmony*, has acquired the greatest reputation. After winning in this country as a yearling he was sold to Mr. Miller, of Missouri, and the following season he was shown at numerous State and other fairs, winning thirteen first prizes and one second. Seven times he won sweepstakes over his own breed, and four times sweepstakes over all breeds. The following year he entered again the show ring and came home with sixteen first prizes. No shorthorn bull of late years has succeeded better in the show ring. He is a beautiful red, has an imposing appearance, is of great weight and stands on short legs. A sister named *Red Empress* now graces the stable at Maple Shade.

A visit made by Mr. Dryden to Scotland last year resulted in the purchase of the entire herd belonging to Mr. Edward Cruickshank, who had determined to retire from farming. The purchase included thirty females and eleven bulls. Twenty-one out of the thirty were descendants of the selections made from the herd at Sittytton, the remainder being mainly descended from the purchase made at Rettie, as previously mentioned. We shall only have space to notice a few of the animals. Among the Sittytton-bred families stand prominently the eight-year-old cow *Victoria 67th*, bred at Sittytton, and sired by *Lord of the Isles*. This cow is full of the blood of *Champion of England*, one of the most noted among the sires

used at Sittyton. The family is a very renowned one, and is very highly prized by all lovers of a good pedigree. She is accompanied by her daughters, *Golden Hair*, sired by *Cawdor* (44506), and *Velvet*, sired by *Prince Rufus* (51926), a son of *Perfection* (37185); and her grand-daughter *Vestal*, also sired by *Prince Rufus*, dam *Golden Hair*. *Vestal* is a very promising young heifer; large size, deep ribs, prominent brisket, combining almost every characteristic of a Scotch-bred Shorthorn.

Next in order we note the Secret family represented by the cow *Fernleaf*, also bred at Sittyton, and sired by *Bampton* (37763). Her pedigree combines Cruickshank breeding with that of the world famous Mr. Bates, being descended from *Sympathy*, sired by Mr. Bates *Duke of Athol* (10150). She is the dam of a very superior bull sent to Mr. Dryden a few years ago, and sold by him to a prominent breeder in Missouri, who declares him now to be the best bull in that country. She is followed by her daughter *Oakfern*, sired by *Lanchester* (46594), which has been sold since their arrival to Albert Hagar, ex-M.P.P., Plantaganet, county of Prescott. Mr. Dryden, previous to this late purchase, had in his possession ten females of this family descended from the cows *Sunbeam* and *Sultana*, both imported from the herd at Sittyton. He considers this one of the best families in his herd. We notice next seven females of the Brawth Bud family, headed by the eight-year-old cow, *Griselda*, one of the selections made by Mr. Cruickshank, at Sittyton. This is a very heavy cow on extremely short legs. She has immense heart girth and well developed ribs. Were it not for a little slackness in her hind quarters she would be a model Shorthorn. Her daughter *Winterberry*, sired by *Cawdor*, a beautiful red, is more taking in her appearance, if possible, than her dam. Among the choicest of this family is the two-year-old heifer *Orange Flower*, by *Perfection*. She is the dam of a fine red bull calf sired by *Sussex*, noticed hereafter.

Among the older animals in this purchase we notice *Harmony*, now famous as the dam of *Red Emperor* and *Roseberry*, both bred at Sittyton, and sired by the great show bull *Pride of the Isles* (35072). This is said by Mr. Cruickshank, to be one of the best show bulls ever bred at Sittyton. His sire, *Scotland's Pride*, was also a superior show bull, winning a \$250 challenge cup against all ages when he was a yearling. He was described at the time as a perfect animal, that carried the honor with ease. Altogether there are in the herd four females sired by this bull, namely, *Sultana*, *Lavender 30th*, *Harmony*, and *Roseberry*. The progeny of each one certainly speaks in the highest terms of their breeding. Among the best specimens we notice the three-year-old cow *Butterwort*. She is a deep red, deeply bred in red, belonging to one of the earliest breeding families at Sittyton, familiarly known as the *Butterfly* tribe. We also notice the cow *Amethyst*, out of the Sittyton-bred cow *Alma*, and belonging to the family which produced the renowned show bull *Field Marshall*, owned by William Duthie, Collynie, Aberdeenshire, and now hired for service in the Queen's herd in England. Two out of the nine included in the recent purchase, which were descended from the herd of Mr. Longmore, *Rettie*, have been sold since their arrival. The seven that remain are undoubtedly of equal merit to any in the herd. Three cows, *Northern Belle*, *Almond Blossom* and *Primrose* would do credit to any breeder. They have the same thickness and quality of flesh which characterize Sittyton-bred families; and in addition have rather greater length, and what is termed among Shorthorn breeders, more style. Seldom will one see young heifers combining size, quality and symmetry to a greater degree than the two-year-old heifers *Meadowsweet* and *Daisy*. *Lady Marjorie* and *Daisy Flower*, both by *Perfection*, are young cows of great promise indeed. Both of them have young calves at their side, which are among the best to be seen at Maple Shade. The breeding bulls in use in the herd at present are *Patriot* (53391), bred by Mr. Cruickshank, at Lethenty, sired by *Perfection*, dam *Pelonia*, by the Sittyton bred bull *Lord Forth*; and *Sussex*, bred at Sittyton, and containing a combination of the best blood in that herd. Both are red in color, and were used at Lethenty.

Patriot is an exceedingly neat bull, with a grand back and loin. He is covered evenly with flesh of good quality, stands well on his legs, and is admired by all who see him. *Sussex* is a rather thicker, more compact bull, with massive hind-quarters and is rather shorter in the leg. Judging from the young calves to be seen in the herd at present, both of these bulls will prove a success. At the time of our visit there were seven young bulls unsold. All of them of considerable merit.

Mr. Dryden reports the enquiries for choice Shorthorns to be very brisk, the last two months his sales amounted to over \$4,000.00. We venture to prophecy for this herd a brilliant future. They are greatly admired by their enthusiastic owner, who has been able during the past years to breed cattle adapted for the use of ordinary farmers and for the more advanced breeders as well. Mr. D. believes that in every department of the farm *Excelsior* should be the motto. That not merely the best breeds should be chosen but only the best individuals should be kept; that it costs no more to care for good animals than it does for poor ones. It is not surprising, therefore, to find here superior sheep, horses, pigs, and poultry.

The sheep are Shropshires; a description of the flock, as well as an illustration were given in the October number of the "ADVOCATE." The horses are Clydesdales, with them considerable success has been achieved.

The Dairy.

Butter versus Beef.

Waldo F. Brown, writing in the N. Y. Tribune, says:—It is almost impossible for the farmer on 100 acres or less to produce beef at a profit, for having so few animals to sell in any one year he cannot afford to ship them, and he is at the mercy of the local buyer. In my market choice two-year-old cattle sold during the last six months at from \$2.90 to \$3.50 per cwt., and nice smooth three-year-old steers have not at any time this winter sold in the local market for more than \$4. There is much uncertainty, too, as to whether one can get paid at all for the feed when stock must be kept until three years old before realizing on it, for a dry season and short crops, like last year, first depress the price of cattle in the fall, on account of the pressure to sell, and then the advance in the price of feed makes it impossible to feed through the winter without loss, and I have known cattle kept a year that did not pay 75 cents a month for their keep, and there are farmers in my locality who would be better off to-day if they had given away half of their cattle last fall. One thing is certain—scrub cattle do not pay and never will, for any purpose. Nevertheless, to maintain fertility of our farms we must follow "animal industry." Our rotation must include an extended acreage of grass and clover—to be fed on the farm, not sold—and this must be fed so as to insure a profit besides the manure-pile. I cannot advise farmers indiscriminately to go into pork-raising, for this would, if successful, soon result in over-production and unremunerative prices. Dairying, I believe, offers better chance for profit than any other plan of keeping animals on the farm. The fact that so many object to being tied down to milking twice a day during the entire year will probably prevent the business being overdone.

I think I can prove that the food required to make a pound of dressed beef will make a pound of butter. The average cattle of the country do not gain 500 lbs. a year, and there are plenty of dairies that average more than 250 lbs. of butter to the cow and some that average 300 lbs. Now,

the rule is 2 lbs. of live weight to 1 lb. of beef, and the cow that makes 250 lbs. of butter in a year produces a weight equal to 500 lbs. of cattle live weight, and this weight of beef will bring, at \$4 per cwt., \$20, while the butter, at 20 cts. a pound, will bring \$50; and all my experience as a feeder and a dairyman goes to show that it is easier to get 20 cts. a pound for butter than \$4 per cwt. for beef. In other words, 20 cts. a pound for butter is equal to \$10 a cwt. live weight for beef. The farmer with ten good cows can milk them for ten years, or longer if he gives them the care he ought. The income of the dairyman will be regular, giving him weekly cash to meet expenses, while the man who looks to the beef-cattle for his money must wait a year for it. To be sure, he will not have so much milking and will not have to churn, but to offset this there will be enough income from the skim-milk and buttermilk to pay for this labor. If wisely fed in connection with other food, each ten to fifteen pounds of milk will make a pound of pork, and after raising the heifer calves you can make several dollars' worth of pork to the cow before the year is out. I believe I have made a fair statement, but even if you reduce the butter to 200 lbs. per cow there is still a good margin of profit when compared with beef at \$4 per cwt. I have put the price of butter at 20 cts., but there is no need of selling it for that if you make a first-class article, and if—as I believe you can—you get 25 cts. or more, all the better.

Ayrshire Breeders' Association of Canada.

The annual meeting of this Association was held in Montreal on 27th of March, 1888, and was largely attended by members from both Provinces. Mr. William Rodden presided, and Mr. S. C. Stevenson was Secretary, pro tem. The chairman stated the objects of the meeting, and said they were so well understood by members it would only be necessary to give any further information required as questions came up.

A committee was appointed at the last meeting to consider and act upon the proposals made by Mr. Wade on behalf of the Agricultural and Arts Association of Ontario, and several of the Ontario Ayrshire breeders. The report of the committee was considered and unanimously adopted.

Its conclusions were, that they could not recommend the acceptance of the terms and conditions proposed for the removal of the work to the office of the Association at Toronto, as it would not be in the interest of the Ayrshire breeders of Canada to accept the same, but considered it of the utmost importance to continue to record pure-bred Ayrshires in the Canada Ayrshire Herd Record.

Application was received from Mr. Wade for the return of the two second volume books of Records, received from the Agricultural and Arts Association of Ontario. Mr. Rodden said they were ready for delivery, on being authorized to do so.

It was resolved to authorize the delivery of those two books, and he, Mr. Rodden, was requested to retain the books and vouchers of the Canada Record.

Letters from Mr. Wade were received, asking for entry papers received from owners of Ayrshires; also for copies of many pedigrees in the second volume of the Canada Ayrshire Record, and for particular information he needed to assist

him in perfecting pedigree entries in his books to correspond with the same in the Canada Record.

It was resolved that, on payment being made for entries not paid for, that were required and made to complete others from Mr. Wade, copies and certificates of the same, and other information, may be furnished to him at the rate of payment charged to members of this Association, for entries and for certificates they require.

The following officers were elected:—

President—Wm. Rodden, of Plantagenet, Ont.

Vice-President—James Drummond, of Petit Cote, Montreal.

Secretary and Secretary-Treasurer—George Leclere, Quebec city; S. C. Stevenson, Montreal.

Executive Committee—The President and Vice-President, and the Hon. Louis Beaubien, Thomas Irving, Thomas Brown, Robert Kerr, A. E. Garth, John Hay and John Morrin.

The Executive Committee was authorized to prepare By-Laws adapted to the Constitution and business of the Association.

The President, Mr. Rodden, was authorized to make the necessary arrangements for an assistant to proceed with the preparations for publishing the second volume of the Canada Ayrshire Herd Record, new entries will be received by him; by Geo. Leclere, Secretary, Quebec, and S. C. Stevenson, Secretary-Treasurer, 76 St. Gabriel street, Montreal; and funds were provided to meet necessary expenses of the work.

The President announced that there was now a good list of members—thirteen from Ontario, thirty-nine from the Province of Quebec, and seven from other parts. He desired soon to be replaced, but would endeavor to look after the completion of the second volume.

There were several young men on the members' list he would like to see actively engaged in the work.

The meeting authorized the President, Vice-President and Executive Committee to conduct financial and other business of the Association till next meeting, and then adjourned.

Bitter Milk.

Very frequently we have heard farmers complain that they were troubled with bitter milk or cream, which would materially reduce the quality of butter manufactured from it. Such cases may sometimes be traced to the want of care in the dairy, e. g., not cleaning or scalding all the dairy utensils or not thoroughly removing milk that has been spilled on the floor. In such cases a thorough scalding of all the utensils and a thorough cleaning and disinfecting of the dairy will prove satisfactory.

Very frequently, however, the cause is partially or wholly with the cows supplying the milk. They may have been fed on musty, mouldy, or otherwise damaged foods may have received an improperly balanced ration; or have consumed bitter or acid foods, such as the dandelion and closely allied species, or improperly prepared lupines. All of these are said to be liable to produce such a milk, and the remedy, therefore, naturally lies in giving other more appropriate foods.

A changed condition in the secretion of the milk in the udder of old milking cows has also been known to cause it. The only thing that can be done in such a case is not to use the milk of these cows, or at least to carefully prevent it from becoming mixed with that of others. The

smallest quantity of bitter milk is sufficient to affect all the milk with which it remains in contact. Sometimes an animal may give perfectly sound milk from all but one teat, but as the quantity of milk given is generally very small, it will, in the majority of cases, be safer to discard all of it, even if a portion seems sound. Very frequently the bitter taste will not be perceptible in the newly-drawn milk, but develop after standing for some time.

A slight attack of indigestion has also been said to cause it, which was cured by giving the stock for several weeks 1½ percent. of hydrochloric acid in their drinking water. We would, however, not recommend our readers to resort to this till all other remedies, chief among which is judicious feeding, have failed.

Perfectly healthy animals, with a full flow of milk, have also been subject to this complaint, which caused their owners considerable loss and annoyance, until it was discovered that it was likely due to bacteria, which were effectually destroyed by frequently sprinkling carbolic acid through the stall after it was cleaned out, and occasionally introducing a very weak solution into the teats of the cows.

Churning Cream from Strippers.

It is generally supposed that the cream from cows old in milk is more difficult to churn into butter, and that the butter lacks the flavor and quality of that from fresh cows. But according to an experiment made by a correspondent of the "Country Gentleman," this does not always follow. He writes: "We churned the cream from a number of cows fresh in milk and about half as many strippers, i. e., cows due in two to four months. All along since we have had new milch cows the cream has all been churned together, the butter generally coming in from 15 to 20 minutes and coming uniformly in good granulated condition. The butter in this test from the fresh cows came in about 15 minutes, while that from the strippers came in just nine minutes, both lots being excellent in quality and no perceptible difference between them."

The North British Agriculturist declares that "amid the wreck of fortunes and the crash of falling prices the dairy industry has still maintained its position as something that pays." This is encouraging, but not at all strange. Dairying as an industry has always paid; it has had its ups and downs, periods of depression and prosperity, like other industries, when it has paid sometimes more and sometimes less than the average, but it has always paid. Individuals have failed in it for want of adaptability of surroundings or personal habits or methods, but it has never failed that where a district has largely adopted dairying as its leading industry it has become signally prosperous.—Breeder's Gazette.

Sometime the dairymen will fully realize the fact that the profitable cow is the one that is the best mother, and his profit will be realized from fostering that mother's functions; and just as he puts sturdily into complying with its conditions, and promotes comfort and puts the idea of "hardiness" out of sight, the sooner he will be on the highway to success. Vigor and hardiness are too often compounded. Hardiness is too often made the cover for a man to excuse abuse of his stock. Vigor is the result of heredity and aided by comfort, good feeding, pure air and promoting the development of qualities that put feed, cow and profits in harmony with each other.

Garden and Orchard.

Cauliflowers.

Many of our readers suppose they cannot grow cauliflowers, which is a mistake. They are as easily grown as cabbage, and will head as readily. For home use sow the seed in a suitable place prepared for the purpose; it should be sown so that they will be ready to transplant the same time the cabbages are, and, like the cabbage, need a deep, rich, clayey soil, but will not do well on sandy land. They require frequent watering and cultivation. As they advance in growth draw the earth toward the stems. When beginning to flower, carefully break the leaves over the head, and when fully formed, pull up and hang up by the roots in a cool place.

The most suitable kinds for general cultivation are Erfurt, a very early kind and a sure header. Erfurt Dwarf is an extra good one. Henderson's Early Snowball is a very early kind, much like the Erfurt, but not so large. Veitch's Autumn Giant, a very large and good variety, but must be planted early, and requires all the season to mature.

Asparagus.

Every farmer should grow enough asparagus to plentifully supply his table. It comes in when there is hardly anything else in the way of vegetables. Once planted, with proper care, it will give good crops for twenty or thirty years. Almost any soil will grow it if dry and warm, but heavy clay is not as good as lighter land. Sandy, loamy, or even rolling ground will produce capital asparagus, but, in any case, it must have lots of manure. The plants may be raised from seed sown early, in drills one foot apart and the seeds dropped every three inches. The land must be rich and well prepared. If this is done, and the plants are kept clean, they will be fit to plant in permanent beds or drills the next spring, and the third year will give a fair crop. The "Colossal" is in every respect the best variety. The beds lasting so long makes it necessary to get the best sort. In preparing the land for the plants, dress heavily with well-rotted manure; plow and work the soil deeply, rendering it uniformly fine, and mixing the manure well with it. For growing on a small scale, or for family use, plow furrows 12 inches deep every two feet; beginning at one end of a furrow, place a good shovelful of fine manure every nine inches; spread this so as to make a layer three inches deep. An inch of soil should be thrown on the top of the manure, and the plant placed on it, spreading the roots well; the crown should be six or seven inches below the level. Now cover the plant, say, two or three inches, and when it commences to grow fill in the furrow until the surface is level. On heavy soil the plant must be set three or four inches shallower. Nothing should be cut the first or second year, but the third year will give a return, and a full crop afterwards. Those having beds should manure freely each spring, and cultivate between the rows and around the plants to a fair depth. In all districts distant from the sea, apply half a pound of coarse salt to the square yard; 500 lbs. of superphosphate of lime or bone dust per acre will increase the yield considerably. The shoots may be cut for several weeks each spring, but as soon as they begin to show signs of weakness cutting should be discontinued.

Celery.

Farmers may raise their own celery plants by sowing the seeds as early in spring as possible, in fine and rich soil. Sow in drills eight inches apart; cover about half an inch; after sowing, press the soil firmly. An ounce of seed will sow a drill 150 feet long. After the seed is sown and the ground pressed down, rake gently. Keep the bed free of weeds; thin the plants to about one inch apart. As they advance in growth the tops may be shorn off twice before the time of transplanting, which will ensure a more stocky growth. From the first to the fifteenth of June is a good time to transplant. Low, moist, damp ground is the best for this plant, though it will succeed upon almost any ground by supplying plenty of manure. When the time has come for transplanting, a very good plan is to run furrows three feet apart across the ground, and about eight inches deep. When convenient, put about three inches of very fine manure in the bottom of the furrow, cover the manure with two or three inches of earth, and on this set your plants six inches apart in the rows; press the earth well around the roots, drawing the soil from the furrow in around the plant, care being taken not to cover too deeply. Nothing but the necessary cultivation to destroy the weeds and keep the soil in good condition is necessary for several weeks after transplanting.

The kinds most recommended by our growers are: The new Dwarf Golden Heart, a good cropper and a good keeper. White Plume is a very early sort, but not so good a keeper. Turner's Incomparable Dwarf is more inclined to grow pithy than either of the above. Boston Market grows too many shoots. The Dwarfs do not grow as pithy as the larger ones. The self-blanching varieties do not keep as well as those which need earthing up.

Melons.

No farmer's table should be without melons. They are easily grown and bear abundantly in our climate, and the fruit is of good quality. The most suitable soil is a rich, warm, deep, sandy loam, having a southern or southwestern aspect, a clover sod is especially good for melons, but any rich land of the desired quality will do. If the land was not plowed in the fall, plow as early in the spring as possible, and again about the tenth of May. Apply a good dressing of stable manure, at least 20 loads to the acre, and work the land until it is fine. From the 15th to 24th of May, according to locality, is a suitable time to sow. Run furrows five feet apart over the ground you intend to plant. Four feet apart in the furrows put a good shovelful of well-rotten manure; a handful of hen manure in each hill will give good results. Mix the manure and soil well together nine inches deep and 24 inches wide, keep it level with the surface; in each of these so-called hills put eight or ten seeds. When the second leaves appear, and are somewhat grown, thin the plants to three in a hill. Do not let them crowd each other before they are thinned. A good way to protect the plants from the cut-worm (when these insects are troublesome), is to make a ring of thick paper about a foot in diameter and three inches broad and place this around the plants; the worms cannot climb over this. Deep cultivation should be given at least twice, and frequent stirring of the soil until the vines begin to run; then the terminal buds should be pinched off to cause th

growth of the lateral branches. The main vine produces mainly barren flowers, and if it is let run the laterals will not push out and there will be very little fruit. The lateral shoots bear the fruit bearing flowers, and to encourage these is one of the secrets of melon culture. This treatment of the vines apply to all the gourd tribe, squashes, cucumbers, melons, &c. In musk melons we would recommend the following: Montreal Market, a green fleshed nutmeg, grows very large; the Extra Green Nutmeg is also a good sort; the Bay View is pink fleshed, large, most prolific, fine flavored and very hardy, if it is picked green it will ripen up finely and carry safe for a long distance; the Early Yellow Canteloupe is a yellow fleshed kind, very early, and a favorite in many gardens, and when ripe is very soft.

Among the water melons the Cuban Queen is of large size, fine flavor, and ripens quite early, this is a general favorite wherever grown. The Mountain Sweet is another very popular and productive variety.

Wire and Cut Worms.

BY PROFESSOR A. J. COOK.

Wireworms live three years as grubs before the mature beetle is developed. The beetle usually lays its eggs in grass fields. The worms are likely to do most damage the second year after ploughing grass. I think they feed on the grass roots the first year. I know of only three ways to destroy this pest. 1, summer-fallow; 2, sow buckwheat or peas, which is a more desirable method, as it secures a profit at the same time; 3, we bury pieces of potatoes with a stick stuck in each piece to mark its position. As the worms gather on the pieces, the latter are pulled up and the worms killed. This is expensive, but often pays well in gardening. Let it be remembered that because wireworms created havoc last year, it is no certain sign they will this year. If last year was the third year, they have now left the ground, and the eggs for the next brood are placed in some meadow, may be rods away.

Most cutworm moths fly in August, and at that time lay their eggs. The caterpillars begin to feed in late summer and are partly grown in spring. The eggs are laid on some permanent crop, like grass. If the grass is ploughed in May, for corn, of course it and its roots become very dry and wilted by June, and the cutworms, in lieu of green, succulent grass, take the fresh, tender corn, etc. The best way to manage the cutworm evil is to examine the ground as it is freshly ploughed, and see if it is peopled by these worms; if so, just as the corn is coming up drive through the field with a load of green grass, throwing forkfuls thickly over the field. The next morning numerous cutworms will be found under the grass and may be killed. A better way is to poison the bunches of grass by spraying it with a dilute mixture of London purple and water, one pound to 100 gallons. Then we need pay no more heed to the matter after the grass is scattered. The cutworms will eat the poison with the grass and die, and the corn will grow undisturbed.

The English sparrow is driving the native birds out of Kansas.

The Nova Scotia gold mines yielded about \$500,000 last year.

Frauds by Tree Peddlers.

Mr. Boyle's Bill to prevent fraud by tree peddlers and commission men, in the sale of nursery stock, is as follows:—It requires every person selling plant, shrub, vine or other nursery stock not grown in Canada, to file with the Secretary of State an affidavit setting forth his name, age, occupation and residence, also some particulars regarding his employer, and to deposit a bond for a sum not yet mentioned, guaranteeing that the purchasers of the nursery stock he sells shall not be defrauded, either with regard to the place where the stock was grown or the name of the grower, the quality of the stock or its suitability for this climate. Any person selling foreign-grown nursery stock without first complying with the provisions of the Act will be liable to a fine of not less than \$25, and not more than \$100, or to imprisonment in the county jail for a term of not less than 10, and not more than 60 days.

Why the salesmen of Canadian-grown stock were not included in this Bill, we fail to understand. We have known men who sold Canadian goods to resort to as evil practices as any, and their goods to give as poor satisfaction.

Right Methods in Setting Out Trees.

My convictions are that nine-tenths of all fruit and other trees set out are set and treated in a way that they cannot thrive.

I recall an instance of some two years ago, in which I supplied a man in this State with thirty apple trees. He had them heeled in, and on a certain drizzly morning when some of his neighbors and myself were present, he asked me to show him how to set out one of those trees. He first dug a hole for it, then said, "now set the tree." My response was made by taking his shovel, and, laying coat and vest aside, throwing out the dirt the width of the shovel around the hole he had dug. The surface soil was about the depth of the shovel blade's length, beneath which was clear gravel and sand, in which there was not a particle of vegetable mold. Reaching this sterile subsoil, I threw it out to a full shovel's depth. I filled the lower part of the hole thus made, with surface soil, on which the tree was set. Whenever fruit, ornamental or shade trees are to be planted, dig a much larger and deeper hole than is apparently required, fill the bottom for at least one foot with good surface soil or rich mould; plant on this. Mulching afterwards is a good practice. Water systematically, and with judgment. The losses will be very few.

On another occasion a gentleman was about to plant two standard pear trees, and remarked to me that he intended setting them in his dooryard. That to me meant no culture. I suggested we set out the trees, to which he agreed. When the holes were dug to the size of six to seven feet across, and two feet or more deep, I asked for the wheelbarrow, and filled it with scrapings from the barnyard, which we thoroughly mixed with the other soil to put in the holes and bottom. Into this mixture we set the trees. They bore the second year, one of them six, the other eleven, nice pears, and today they are fine trees, having continued to bear each year since.

My convictions are, that if as much time and labor was applied in the preparation of the soil and in the setting of the average tree as it would take to earn the money to buy said trees, the foundation for successful fruit growing would be laid.—[Z. C. Fairbanks.

Practical Thoughts on Windbreaks.

D. N. LONG, IN POPULAR GARDENING.

At no other season can the value of a wind-break be so appreciated as in the winter. Its very presence gives to a home a look of coziness and comfort, while if it be rightly located on the windy side, it serves a most economical purpose as well, in the saving of fuel and health, and of feed for live stock.

Not only with the present low price of that best of screen trees, the Norway Spruce, should all farm buildings be well protected by belts of these, but it would prove a paying investment to provide lines of such to the windward of each field or lot. Here they would serve the several purposes of protecting the crops in the winter by preventing the snow from drifting off and also from the drying winds and storms of summer. A spruce wind-break would make an excellent line fence that would last a life-time, and would often save over-winter crops from heaving, by keeping the snow on it.

On the garden and fruit farm, especially, a good spruce wind-break on the north and west sides would serve as the best kind of a protection, and indeed would promote earliness even more than the much coveted slope to the south-east. A wind-break 18 to 20 feet high is not only a very effectual wind-break, speaking in direct terms, but better than all this it leaves the snow nearly on the level and evenly spread over the surface, instead of in drifts, thus securing a winter mulch in snowy sections.

EFFECT ON THE WIND.—The degree to which a well-grown evergreen belt will break the force of the wind is most remarkable. Even when a storm is raging and the wind has acquired a speed of 40 miles an hour, scarcely the least current will be felt to the leeward of such a living barrier. That much of the complaint against tender, short-lived and unprofitable fruit trees, bushes and plants, due to the unprotected condition of fruit plants is now well understood by our wisest horticulturists. Another point in favor of protected orchards is this: Much of the best fruit that grows necessarily becomes wind-falls, where there is no adequate protection from winds, because the largest and finest specimens are usually the first to fall before the force of the wind.

For the early vegetable garden a wind-break is of inestimable value. By its presence the severe cold storms and bare ground of winter, the cold raw winds of March, the drying wind and severe storms of midsummer, and the cold November blast, could all be avoided. Aside from the consideration that early vegetables could be grown to be much earlier, and it may be said that damage by wind to the glass of the hot-beds and cold frames would also be avoided.

STARTING WINDBREAKS.—Is the most universal absence of such a valuable adjunct to the fruit farm and garden to be laid to high cost? This cannot be, for the price of evergreens and especially of thrifty young nursery seedlings is by the quantity really ridiculously low. If such are procured and brought along on the premises the cost really needs hardly to be considered.

The one fact that more than any other may account for much of this seeming neglect, no doubt, is the poor success that so often attends the transplanting of medium and large evergreens especially. The fact is not to be disregarded that as compared with deciduous trees,

evergreens as a class are very susceptible to injury from improper handling between digging and transplanting. But on the other hand, by right methods, there are no easier trees to have grow. The great and only secret is, keep the roots always moist and protected from air and sun; exposure to a drying wind or sunshine for even but ten or fifteen minutes is almost certain death. It is for just this reason that the average sized nursery evergreen that is shipped succeeds so poorly. And it is the one strong reason why, if this kind of stock cannot be obtained from a nursery close at hand, it should by all means be procured in small sizes, such as can easily be handled and packed, to be kept moist and then be grown on the place until large enough for permanent planting. Indeed, the smallest sized seedlings with less top than root and with no stiff side branches can be so readily and compactly done up that they can even be received with safety by mail. It need not be said that the cost of such is very insignificant.

DISTANCE TO PLANT.—For the purpose of a wind-break alone, Norway spruce can be planted from 2 to 6 feet apart, according to the means to be expended and the haste for shelter. In time 6 feet apart will make a complete shelter, especially for orchards. If also wanted to turn stock, the trees should not be planted farther than 3 or 4 feet, and then by attaching a couple of barbed wires to them when 6 or 8 feet high a good fence, as well as wind-break, will result.

While some other evergreens besides the Norway spruce make good wind-breaks, this variety being perfectly hardy and making rapid growth on almost any kind of soil, and is not easily injured by trimming, is pre-eminently the best for general purposes. The American Arborvitæ makes a good hedge, but is more liable to be broken by snow while young. It is also of slower growth, and requires to be set closer, and loses its bright green color in the winter season.

In writing of this subject the editor of the Country Gentleman says:—Now that the season for transplanting trees is approaching, it may be well for owners of farms in regions liable to be swept by hard winds, to examine into the advantages of providing shelter for their fields in the form of belts of timber trees. This protection would be of great use where land has been reduced in value and its crops by stripping it entirely of the original forests. By setting the right kind of trees, valuable timber will be afforded in twenty years; and by planting the belts two or three rods wide, one-half of the width may be cut at alternate periods and thus always have a belt growing. We have seen several striking instances where such shelter has proved of great benefit by increasing the growth of crops, and by preventing their destruction from the sweep of storms. They are also a benefit to the animals which graze such farms, and they would often add greatly to the picturesque appearance of the country.

The exports of potatoes from Canada during the last fiscal year were in round numbers 1,500,000 bushels, of which 1,276,000 bushels went to the United States at an average cost of forty to fifty cents per bushel. Prince Edward Island furnished more than fifty per cent. of the quantity, and the balance came from the other maritime provinces.

Burning Strawberry Beds in the Spring.

The most thrifty bed I saw was where a spark from a passing train fired the mulch and burned it off in spring—there was not a sign of rust, not a leaf perforated by insects, and the plants stood nearly a foot high, with dark glossy foliage and every sign of vigor. The eye could easily trace to a foot where the fire ran. Many growers practice and recommend burning over the beds at the close of the picking season, and as there are so many insect enemies to contend with, and probably fungi, there is little doubt but it is an excellent plan. I believe, however, that burning in spring would be better, and the only objection to it is that the berries are left without mulch or must be mulched again, but much can easily be supplied to a family bed. The advantage of spring burning is that it disposes of the enemies of the crop before they have any chance to do any damage. I recommend that each grower try burning a spot this spring and carefully note the result.

Grape Grafting.

As regular as the season comes round I am asked to describe the mode. By the time this gets before our readers some who are in a hurry may have already done the work. After many years of experience, doing the work at all times, from the time the frost was out of the ground, until the vines have made shoots a foot long, with varied success, I have come to the conclusion that the best time is when the vines have started to grow, the grafts being kept in a cool shady place so that they were a little behind the stock in starting. To keep them entirely dormant in an ice-house, as some recommend, is wrong. I have had the buds on the grafts swollen ready to burst when inserted that started to grow in a week after. Clear the ground away from the root three or four inches deep, saw off at a smooth place at the bottom. If no smooth place can be found, saw into the stump instead of splitting, as usual. A thick, wide-set saw I prefer to the knife, even in a straight stump. Shave your graft to fit the cut with a shoulder, tie if the stock is less than an inch in diameter, then fill in the earth carefully, press firmly, but do not move graft. Hill up to the upper bud, stick a peg one inch from each graft on one side, always on the same, so you can tell exactly where the graft is. Then cover the eye over with a handful of saw-dust; throw a little mulch on and leave it until the grafts begin to grow. I use two-eyed grafts, unless the wood is long-jointed and thick, when one eye will answer. When the grafts begin to grow the suckers must be kept off. As soon as the graft begins to grow it must be tied up to a stake to keep the wind from blowing it down. In this way I nearly always get fruit a little sooner than when I buy a small vine. Have now strong vines of Empire State that were set in spring of 1886; bore fruit last year, while three vines planted the year before that cost me six dollars, have not borne a bunch of fruit yet, and not much show of doing it the coming season. I cannot see the policy of digging worthless vines up and planting others in their place. Graft them with something better.

GRAFTING WAX.—How to make this is often asked, and while there are many receipts given, the one that I like best after forty years of experience is made as follows:—Use 1 pint linseed oil, 4 lbs. resin, 1 lb. beeswax. Melt all over a slow

fire; stir well and pour on water; when cool enough to work, grease the hands well and work it like shoemaker's wax or taffy. Then roll balls of convenient size for putting into the vessel used when grafting. It should be heated over a moderate fire and put on the grafts thin, but not too hot. This wax will not crack in cold weather, nor run, even if the weather gets up to 100° in the shade.—[Samuel Miller, in Popular Gardening.]

Success and Failure with Small Fruits.

BY E. W. REID.

If you allow weeds or grass to grow with your vines they rob them of the plant food which by rights belongs to the plant. If you think you are lowering the cost of production by only working them once a month you are mistaken; you also lower the profit. We should furnish the most favorable conditions of the soil and keep a strict account of every dollar and every hour we have charge of the vine. There is no use for us to plead innocence when we fail, and say we have done it to the best of our ability. In this age when so many practical books are issued on this branch of industry, you should try and be at the front. Have a mind of your own; think, for thoughts put in practice do wonders. Do not mean by this that you can make a success by reading either books or papers alone; these should go with practical ideas of your own.

It is the profit we are after. Our first thought should be the soil and the preparation of the same. It should be drained naturally or artificially, and should be in the finest condition. It is impossible for vines of any kind to do well if water stands on the soil. We should make the soil as fine as possible. I think the best way to do this is by fall plowing, and then to stir it in spring with cultivator. This cannot so well be done in soil inclined to wash with winter rains. It is utterly impossible for plant food that is concealed in rough soil and lumps to do the plant any good whatever.

As to fertility the time has passed for relying on the natural fertility of the soil alone. If we want the cream we must furnish the feed for it—the large crop makes the profit. This can be done with stable manure, and there is nothing better. It is better if well decomposed. I never use cow droppings, however. I find that this favors the white grub, hatched from eggs deposited by the May beetle. Last year I tried five loads again and it caused me more trouble than all the rest put together. Prof. Hoard, of Wisconsin, acknowledged the same fact to me.

Berry plants contain a large amount of rich material, and this is why they require so much plant food. In a deep and rich soil the plants are better able to go through an extended drought as we have had last season; a very essential point when fruit is ripening as much moisture is then needed. Years ago I commenced to cover my young bed with manure instead of straw. But the proof has come; they use manure in a pinch; the pinch is when they can get it. It has increased greatly in yield and gives brighter and larger berries. This is not only to be done with strawberries, but raspberries and blackberries. Some practical growers think it better to use straw the first year and manure the second. I use it as a mulch the first year and plow it in for plant food the second.

The roots need air almost as much as moisture, and are deprived of it if a crust forms on the surface, and for this frequent stirring is

the remedy. This also keeps down all weeds, but you should not work too late in the fall. I do not use the horse-hoe after Sept. 15. If any weeds or grass appear after that time, I go through with sharp hoes.

Planting should be done as early in the spring as the season will permit. We want a good plant taken from a young bed, with good strong roots, and if set early it will receive almost no check whatever. My method is to use a spade and line. I stretch two lines across the field, or as long as the rows are wanted, then two men and a boy can plant one acre per day if the ground is in good condition. The spade is pushed in alongside of the line, which makes a straight row and the same width. The boy carries the plant in a basket, and drops as the planters want them, so as not to expose them to the wind or sun, which is very injurious to them.

The plant is held in one hand and allowed to go the right depth into the opening with its roots spread out and hanging straight down, and then press the dirt firmly about it with the foot. The plant should be so firmly set that a leaf will pull off without disturbing the plant. It is a big loss when you have a poor plant and get a poor stand, for it takes the same cultivation, covering and time as if you had a good stand. It is a point worthy of the greatest possible care; failure here, and the plants are of a feeble nature the whole season. To set the plant too deep and with the crown covered is very injurious. Not deep enough is as bad. Planted with the roots all in a bunch close to the surface they will dry out in a short time. A most critical time is when it is out of ground.

Hardy Apples for the North-west.

F. K. Phoenix, of Wisconsin, says:—Five successive hard winters make planters in the cold North and North-west ask what style of apple tree will give us the best fruit on the very hardiest, best stock? We favor root-grafted or seedling iron-clad Siberian Crab stem-worked in nursery, three to five feet from the ground, to the more hardy choice apples, like the Red Astrachan, St. Lawrence, Wealthy, Fall Orange, Bailey Sweet, Alexander, Fameuse, Romantown, Tallman Sweet, Ben Davis, Golden Russet, &c. The new Russian iron-clads seem hardly well enough tested as to quality of fruit, winter-keeping, &c.

Not finding such trees already worked in nurseries, you can find the Siberians, plant and stem-splice or cleft-graft them yourself. They always graft best the same spring transplanted. Stocks or limbs an inch in diameter are as large as it is safe to graft in the cold North. Trees with larger stems are best splice or cleft grafted on side branches an inch or so from the main stem, which in growing will soon wholly cover graft joints. Large-bearing, sound-hearted Siberians not needed for fruit may also be profitably grafted over. To prevent fire blight scatter on or through the foliage one-fifth sulphur mixed with four-fifths slacked lime dust, on early dewy mornings, three or four times, say a month apart, commencing when the buds open; a'so whitewash bodies with the same. Let the above be tried and results reported.

Mr. David Nichol, of the Kingston district, talking about the kinds of apples that are worth growing in Eastern Canada, quotes the McIntosh Red as a hardy variety, adding that the parent

tree, over seventy years of age, is in a healthy bearing state on the ground of the son of the originator in Dundela, Dundas County. The La Rue is a large red winter apple originated at La Rue mills in Leeds, Ontario. The Gibson, a handsome dark-red winter apple, originated at Yonge's mills in the same county. The parent trees of both varieties are still bearing fruit, although over 70 years old. These kinds may be said to be perfectly hardy, if endurance in a cold climate is a reliable indication. They can be advantageously shipped to foreign markets, where they are in demand at remunerative prices.

Poultry.

Minorcas.

As the Minorcas have been admitted to the American standard as excellence (or, as it will henceforth be called, the standard of perfection), a few words on the breed may not be out of place. Personally, the writer has watched the course of the mania for this breed carefully, and has often expressed himself in these columns as doubtful of the continuance of their popularity for any great length of time. But that they will hold a fair share of public favor is beyond a doubt. In a recent issue we predicted smaller combs in a few years. Already the Poultry Review has suggested the same; and when they get as small as Plymouth Rock combs they will be much more useful. There is little doubt that they are excellent layers, laying a fairly large egg, pure white; but not as early developed as the Leg-horns or the Wyandotte. That they are a good or even fair table fowl can not be for a moment entertained. Mr. Tegetmeier says in the London Field, after referring to them as a very prolific breed as layers, says: "It should be understood that I am not now writing of prize Minorcas, with combs four by six inches, that have to be kept up by wire-work when not in full dress, but such farmyard birds as may be bought by the hundred in the south-west of England. But do not ask as to their merits on the table. I know of a cook maid who calls them 'The Crows.' They are eatable, but the flesh on the breast seems to have run to eggs." Thus, the position that we have taken is supported by the ablest poultry writer in England, and we confidently expect that when this breed has become more common, and the combs, through natural or other consequences, reduced in size, to find them one of the most profitable for egg production.

Brooders vs. Hens as Mothers.

The enthusiast is ready to "catch on" to anything new. The old fogy condemns everything but the oldest systems extant. The sensible man is ready to give all systems an intelligent trial, at least so far as he has any need of them, and can do so at a reasonable expense. Now for winter and early spring chicks give the brooder a trial, and if you are not prejudiced you will continue its use next season; but for late chicks there is nothing to be gained by the brooder.

Its principal use is to afford a comfortable nestling place at any and all times, and in cold weather it is of more importance than when it is warm. Again, the artificial mother does not move about with them as the hen does, and while this is best in cold weather, they are much better for moving about in the warm weather of the latter part of May and June. Thus we see both systems should be employed if we wish to have the best results that are to be had.

Golden Wyandottes.

Several new varieties of fowls have been recently introduced, among them the Golden Wyandottes. They are described as possessing the good qualities of the Silver Wyandottes, but are larger, hardier and mature earlier. The American Agriculturist thus describes them: The color of the male, on breast and wings, is a deep rich golden-bay, laced with black, and the hen is a deep gold color, laced with black. There is little penciling in the centre of the feathers, and clear, bright hackles. Their general appearance is striking and beautiful. The variety originated a few years ago, and rapidly found favor among fanciers. Last autumn a "Golden Wyandotte Club" was formed, with a view of promoting the pure and uniform breeding of this new variety. At the recent meeting of the American Poultry Association it was voted to admit the Golden Wyandottes to the standard. They are therefore entitled to a class in all poultry exhibitions, and are likely to become one of the leading classes of standard poultry throughout the country.

The "Orphan Asylum" Brooder.

MISS E. K. WINANS.

A few years ago, when contemplating to raise several hundred chickens with only fifteen hens, I devised a plan which I termed my "Orphan Asylum," and which proved a perfect success. Most of the chickens were brought up in brooders, while the hens were given more eggs to hatch. The asylum was moved into outdoor quarters about the middle of May, and there was a frame made of broad boards standing on their edges and pegged together at their ends. It stood on the grass plot in the vegetable garden, and every few days was moved a short distance, so as not to injure the grass. The lower edges of the boards must be so closely fastened down that even the smallest chickens cannot get out. When the birds are old enough to fly over, they can also find their way back. At three weeks old they will begin to do mischief in the garden and to the smaller chickens in the brooders, and must be moved to another yard. It is best to have these yards oblong, and one end roofed and floored, and provided with a movable wire screen with which to shut in all the chickens in wet weather. That year there was a terrible three-days' storm, but not one of the orphans died during it, though they complained bitterly of being desperately bored in their prison.

One of the advantages of raising chickens without the assistance of hens becomes apparent on rainy days, when hens are very liable to trample on them. After the middle of May no artificial heat is needed in the brooders, except in those for the new hatches. I kept one warmed box especially for the babies until they were four days old. At first I used a tiny night lamp to heat a zinc sheet in the box, but this made it too hot; then I found that a great tin pail of hot water, filled twice a day and kept thickly wrapped, warmed my brooder to ninety degrees, which is warm enough in summer. I had a shelf over the pail and a rug tacked on the inside of the top of the box, and hanging down in front. An easy ladder led up to the shelf, so that the chicks might come out and lie in the sunshine. As soon as they were strong and active they were put into brooders made of a slanting board, lined with old fleecy rugs.

It is said that there is no profit in late-hatched

chickens, but I find them always profitable. Many boys and girls would be glad if they had raised two hundred chickens in the way I speak of, and had sold them in the fall, even if they made on each only ten cents clear gain. If you try it, do not let any one persuade you not to go out to care for your asylum as often as usual on stormy days. The worse the weather is, the more the orphans need their five or seven meals a day. Don't fail to fasten in the chickens, safe from rats, every night. Beware of clucking hens near your brooders. One evening I found the babies had deserted the asylum and had crowded into the coop of an old hen who had twenty chickens of her own, but was delighted to get thirty fresh ones.

To clean every crumb of food away after each meal seems to me the best way, although very high authorities advise keeping dry food always near the chickens. A good quality of the ground meal is capital food, especially if there is in it a large proportion of buckwheat. In summer it is a good plan to bake bread of it twice a week and crumble it freshly for each meal. Milk is almost necessary, and if in any way a supply can be had cheaply secure it. Chickens flourish on wheat. See that they have every day, besides their regular meals, proper animal food, green food, bone-meal or oyster shells, and clean water or milk.—[Abridged from the Agriculturist.

Stealing Nests.

Some of our hen turkeys would hide their nests, but others would walk into the poultry houses, and under the sheds and lay in nests just like hens, and they didn't seem to care who knew it. For the benefit of those who desired to "make believe" hide their nests, we provided accidental looked places for nests in fence corners, and other retired nooks, not far from the buildings, and the turkeys generally took to such places kindly. In the few instances when they did not, a little patient watching soon enabled us to discover the nests.

But mind this: when watching a turkey, in order to find her nest, don't let her see that you are watching her, or pounce upon her when she is on her nest. Keep an eye on her from a distance, but do not follow her close up to her retreat; just take your "bearings," and then, an hour or two later, carefully search in that direction for the nest, and you will probably find it. If you remove the eggs as fast as laid, the turkey will lay twice as many eggs before offering to sit as she would if the eggs were allowed to accumulate in the nest; but you should always leave one or two nest eggs of some kind, and if you find the eggs covered with leaves, leave the nest eggs covered in the same way. After the turkey has laid a dozen or fifteen eggs, and the danger of the eggs chilling is over, they may be left in the nest.—Fanny Field in Prairie Farmer.

TAME TURKEYS.—If you want tame turkeys, take pains to make them tame, and keep them so. Do not allow the children, cats, dogs, and hired men to frighten and worry your turkeys, if you desire to keep them tame. I never allowed our turkeys to be driven about and worried or frightened. "From their childhood up," I always made pets of my turkeys, and the result was that they were so tame that they would eat from my hand, and I could pick them up any where at any time. My little girl made a special pet of an immense Bronze gobbler, and visitors at our place were astonished to see that great bird stand quietly, while "Topsy" stroked his back as if he were a cat.

The Apiary.

Strong Colonies.

The great secret in securing a honey harvest is a strong colony, and in time for the honey flow. No effort should be spared to secure this desired end, and many a bee-keeper has been compelled to report a poor season because his bees were not in a condition to take advantage of an early honey flow. It must be the aim of every bee-keeper to know his locality, and the best results cannot be secured without such knowledge. For an example, let us say A, B and C go into bee-keeping in different localities. A may have sufficient natural flow to keep his bees working and building-up to the best advantage from willows, one of the first sources of pollen and honey, to the clover-honey season. B may have an abundance of willow, but nothing from that time until clover. It will readily be seen that A can do little more than keep his bees snug and warm, especially by packing over the top frames; his bees will build themselves up for the harvest, if it is a fair colony. B, to secure the best results, must resort to an artificial honey flow. If pollen is very scarce, he should put out a little copped oats or rye meal, and the bees should always have sufficient stores ahead to do them for at least a week. It is not advisable to feed them liquid food, and a little, day by day in early spring. It is advisable to either purchase a candy, sold by supply dealers for the purpose, or take granulated sugar and make a cake of sugar of it by adding a little water and boiling. Liquid food, frequently given, is apt to wear the bees out, as in the honey harvest, when we all know a bee's life is much shorter—about six weeks. Keep sufficient stores, then, in the hive, and keep all the warmth you can in the hive also. If the colony is strong, under these conditions it can take care of itself, far better than you can, for the rest. In our example C may not be in a district where clover is, and his yield may be from basswood; if such be the case there is no object at all in getting colonies strong so early, and they should have nothing which might be called stimulative, as plenty of time will be given to have them build up for such a harvest.

On the other hand, A's locality may not permit him to secure any basswood honey, and clover may be his only source. It will at once be seen that, should he not have his bees strong for his harvest, his profits from the apiary will be left to evaporate in the flowers, and the farmer who has been depending upon his bees to fertilize his clover field and increase the seed yield will be correspondingly disappointed. Again, towards the latter part of the season, especially in taking comb honey, although the honey flow may be prolonged or shortened, dependent upon the weather, knowledge of locality will prevent such errors as the putting on of sections when the honey flow is about over, and many unfilled sections to be carried over for the following season.

C's locality is quite an exceptional one, and, therefore, colonies should be strong and at their best about the 20th of June, or even a little earlier. Then, when you see the cells along the top, in the brood chamber, have that fresh, white appearance, being newly drawn out, you may rest assured the bees are storing honey, and your surplus arrangement may be put on.

Good Honey.

The quality of honey differs quite as much as that of butter, and the article is quite as susceptible to deterioration in keeping as butter; and when we consider the carelessness and ignorance displayed by bee-keepers in this matter it opens up to us many reasons why honey is not growing more rapidly in favor amongst the masses, and why so much of it is a drug upon the market. Honey costs more per pound than sugar. To offset this we must give them an article either more palatable, more wholesome, more pleasing to the eye or more economical. Honey in its proper condition, at least from our leading sources of honey, clover, thistle and linden (basswood), combine all these four points. It has a rich color, a flavor which is peculiarly and pleasingly its own, and which cannot be imitated—a food which can entirely be assimilated by the digestive system, leaving no residue, and wholesome beyond dispute, it having already undergone the first stages of digestion and having been prepared for assimilation by the system. Such an article, carefully preserved, need never beg for a market; and in the next number the best way to secure this will be given.

Keeping Wax-Moths from the Honey.

Picking up a bee-paper lately, I read in it the following:—"As fast as the honey is sealed it is removed from the hive, and all openings in the boxes pasted over with paper, so that the moth cannot get within to deposit its eggs." This was given as the true plan for keeping the larvae of the wax-moth from comb honey. I was very much surprised that any writer of recent date should advocate such a doctrine as this, at this day and age of the world, for Quinby proved the fallacy of such a course as long ago as 1865. In his "Mysteries of Bee-Keeping Explained," published in 1865, but written some time previous to that, he says:—

"I have taken off glass jars, and watched them till the bees were all out, and was certain the moth did not come near them; then immediately sealed them up, absolutely preventing any access, and felt quite sure I should have no trouble with the worms. But I was sadly mistaken. In a few days I could see a little white dust, like the sides of the combs, and bottom of the jar. As the worms grew larger this dust was coarser. By looking closer at the combs, a small, white, thread-like line could be perceived, enlarging as the worm progressed."

He then continues:—"The reader would like to know how these worms come in the jars, when to all appearance it was a physical impossibility." To this he says he cannot give a positive answer, but thinks the bees carry them among the combs on their feet, where they are left to hatch.

That all should know that combs taken from the hive in the summer are liable to the attack of the larvae of the wax moth, and should be looked after as often as once a week, is the object of my noticing this point here.—[G. M. Doolittle, in Bee-Keepers' Journal.]

Look for the first brood of currant worms. They are hidden on the under side of the lower leaves, and first usually on gooseberry bushes, beginning their devastation there just as fruit trees come into bloom. A syringing of the leaves with an infusion of fresh white hellebore, one ounce to a gallon of water, will poison them in time to save the bushes and their crop.

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.

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.

Painting Roofs.—It would be to my interest, as well as many other farmers, if you could let us know through your next number of the ADVOCATE, what you think is the best plan to adopt to add to the durability of our sawed shingles; whether paint, coal tar, or some other application is the best? and in what way is it applied, before or after they are on the barn roof? (for it is a barn I am going to enlarge and reshingle). Are pine or cedar shingles the more durable? Our shingles are all sawed, not split, as formerly; consequently, they last a short time unless something is done to preserve them.—S. N., Salina, Ont.

[There are a large number of preparations used for painting roofs, chief amongst which is a tar paint. An ordinary cheap oil paint, made of fish oil and mineral paint, is frequently used by painters, and claimed to be superior to the tar for this purpose. Laying shingles in mortar not only adds to their durability, but also lessens the risks from fire, and is a practice to be highly recommended. For this purpose the roof is sheathed closely, and from a quarter to a half inch of mortar spread on it, and then shingled as usual. Cedar shingles stand the weather better than any other, and, if laid in mortar, will last a long time. One cause of rotten shingles is to have the roofs too flat. See "A Cheap Country Paint," page 135.]

"A Uniform Standard."—I notice an article by Mr. Sharman in your April issue, on the above subject, in which he suggests a meeting of the officers of the different Associations, to discuss and unite upon a uniform standard suitable to all. Is such a meeting possible? Would the D. S. H. A., with an "imported" standard, be likely to discuss a uniform standard with, say, the C. Clydesdale Association, with a "four-cross" standard? Even if such a meeting were possible, and a uniform standard of a certain number of crosses was agreed upon by the officers of these associations, would the D. S. H. A. be likely to conform to it, from their past record, or would the C. C. A. be justified in assenting to any standard that would disfranchise (if I may use the term), any animal now registered by it. Although I do not believe it can be attained by this means, some such standard firmly fixed by Government legislation is sadly needed. As it is at present these associations are controlled by the large importers and breeders; so it is difficult to get small breeders to attend the meetings, and are carried on in the interest of these men largely at public expense. The farmers of Canada want to protect themselves against such combinations, and can do so, as Mr. Sharman points out, by legislation; and, after having discussed and come to an understanding as to what such standard should be, let them petition the Dominion Government to establish such a Record. It is in the interests of the breeders of Canada that such standard should be as high as the standard in the country from which these animals come, but not higher, e. g., it is unjust to Canadian breeders, so long as the English or Foreign breeder can register the fourth cross from registered bulls, on whatever foundation, to deny the same privilege to him. It is in the interests of the farmers of Canada that they should be able to secure recorded animals for the improvement of their herds and flocks having a sufficient number of crosses to insure their purity as such, without discrimination as to whether such

crossing was begun in Canada or elsewhere. A sea voyage may be a very good thing for purifying the blood; but, sir, I believe, and I think your readers will agree with me, that a few more known crosses from known sires is a much better and more lasting purifier. It is in the interests of the farmers of Canada that they should be encouraged to improve their herds and flocks by the use of pure-bred sires, and, having attained a sufficient number of crosses, to record the same if they believed such animal individually merited such record. If the cost of record was put sufficiently high to cover all expense of registration, it would be the most effectual safeguard against inferior animals individually being recorded. A scale of points would not be found practicable, and would lead to favoritism. Before I close, Mr. Editor, let me ask this question: What right, legally or morally, have the present B. H. Association, or any individual, to designate as grades, and endeavor to reduce to that level those animals and their progeny which have been recorded in the old Herd Book, but have been excluded from present ones—not from any lack of purity, but in the selfish interest of the members of that Association? These animals are second only in numbers and importance of all the breeds of pure-bred stocks in Canada to those now registered by that Association, and though their owners may be dissatisfied, I believe the time will come when their detractors will be brought to silence.—R. J. FARR, Rappahannock, Moosomin, N. W. T.

Sulky Plows.—Are there any sulky plows made in Ontario, that you can recommend?—R. G., Komoka, Ont.

[The Cockshutt Plow Co., of Brantford, Ont., are building the J. G. C. Sulky Plow, either single or double furrow. These plows run easy for the amount of work done, and do it in a first-class manner. They will plow the hardest land and make a good job, reducing the price of cultivation about one-half.]

Composting Fish, Bones, and Meat.—Would you please inform me how to transform fish, bones, and meat into a fertilizer. I have a large quantity of fish that I want to use on the land?—G. O., Shemogue, N. B.

[These substances are not easily reduced when mixed. The bones are made available by breaking them into pieces, putting them with alternate layers of ashes on a floor, wetting them and shoveling them over occasionally. See page 81 in this year's March issue of the ADVOCATE. The fish and meat are best reduced in a common compost heap. They contain much nitrogenous matter which would largely be lost if mixed with ashes. If any smell arises from the compost heap, cover it with muck or earth, or sow gypsum over it.]

Ayrshire Herd Book Controversy.—I do not propose to occupy much of your valuable space or time by following in detail the erroneous representations found in Mr. Wade's lengthy communication, so put and calculated as to mislead and divert the attention of readers from the simple facts of the case. The Canada Ayrshire Herd Record was commenced in Montreal in 1870 by Ayrshire importers and breeders from both Provinces. It is the only work in Canada devoted to pure bred Ayrshires. It is not a sectional or party work in any sense. Among its sixty members we find the different parties, nationalities and religions. Its meetings are most cordial, and devoted purely to Ayrshire business. It was not till September, 1888, that a few in Toronto met to organize the Dominion Association, when Mr. D. Nicol was the first to approach me on the subject of rules, &c., for its management. I then expressed the opinion one I still hold, that our Association and our Canadian Ayrshire Herd Record were the best, and that one would suffice for all Canada. This he admitted. We were willing to have them join with us and revise their work. It was agreed that our book be taken as the "nucleus" for future work, to be carried on as our organization of Ayrshire breeders, the work of revision to be carried on here, under my supervision till it was complete, and for that purpose the books and the entries were to come here. This arrangement was prematurely disturbed by the unfair means adopted by Mr. Wade and others without notice, in the absence of all but five of our members, who relied upon the honorable observance of the agreement till revision was complete. This had the effect of hindering further amalgamated progress as an independent Ayrshire Breeders' Association. The breach of faith committed cannot be justified by mere subterfuge, saying that a rule "aiming at importations on the side of sire and dam" having with it a condition to use, as a "nucleus," our book, limiting entries in it to pure-bred Ayrshires, could be considered as authorizing the entry in it of mixed breeds and grades. The inconsistency of that course is now evidenced by the fact that the same parties now admit that future work on the Dominion Book must be divided into two classes:—First, the pure breeds; second, all others; and in those others it is proposed to put the very ones they would willingly break up amalgamation rather than let them be excluded from the list of pure-bred Ayrshires. Would it not have been as well to have respected the amalgamation arrangement, let the Dominion Book continue the work under way of entering all

good pedigrees of pure-bred in the second volume of the Canadian Ayrshire Herd Book, let Ayrshire breeders conduct their own business, and save the large expenditure about to be incurred in wages, printing, &c., by the Agricultural and Arts Association of Ontario? Would it not be better for that Association (if they saw fit) to contribute a certain sum, and thus be rid of a grave responsibility, bringing trouble and much loss? The work of the second volume of the Canada Ayrshire Herd Record is progressing here, entries receiving and copying for the printer. Thanking you for the space afforded while ending this controversy. I am yours, Wm. HODDIN, President A. B. Ass. of C., Plantagenet, Ont.

Large and Small Breeds of Pigs - Dose of Sulphur for Cattle - 1. What breeds of swine constitute the large and what the small breeds? 2. Would it be proper to show pigs from a sow in the large class and then show a later litter from the same sow as small breed? 3. Regarding lice on cattle, how long should cattle be fed sulphur to take effect? - H. D., Belgrave, Ont.

[1. Pigs that when full grown and fattened weigh over 450 lbs. dressed, belong to the large breeds, while those not reaching this weight belong to the small breeds. This classification is not strictly adhered to, and nearly all the larger breeds are shown as belonging to the class of small breeds when young. 2. It certainly should not be allowed, but it is done nevertheless very extensively and openly. These two divisions seem to be for the convenience of the exhibitor that intends to make use of them, for it has been known that exhibitors were showing the same pigs in both classes. 3. A dose of 1 oz. of sulphur may be given for a week or two.]

Turnip Fly - In your last issue I noticed an inquiry on how to destroy the turnip fly. In '86 we moistened our seed with coal oil with good effects. In '87 we omitted to do so, and all our plants were destroyed. On re-seeding them we again used the coal oil, and had a good crop from them. - W. C. A., Crawford, Ont.

EXTENSIVE SHOW-ROOMS AND WAREHOUSE.

One of the most desirable features in connection with the Farm Machinery trade is that the purchaser has easy access to what repairs and extra parts are required from time to time. If this be thoroughly and efficiently accomplished, the farmer need have no hesitation in buying machinery made at some distance from his nearest market. We note with pleasure the announcement that the Massey Manufacturing Co., of Toronto, who are always known to be alive in their efforts to supply the wants of the farmer, have opened extensive show-rooms for the display of their goods at 143 King street, in this city (London), where a full line of repairs is kept constantly on hand ready for prompt delivery and shipment, and where smaller implements are also sold. They also have some time since purchased the warehouse on Bathurst street, near the old Grand Trunk Station, formerly occupied by the Joseph Hall Manufacturing Co., where transhipment is made to all points in the western part of the province. This, our readers will readily see, is about the best arrangement that could be made to provide customers promptly and rapidly with the celebrated goods of the Massey Manufacturing Co. Farmers need not delay in placing their orders while such a provision exists for the ready supply of their wants. On page No. 158 will be found a cut of the Toronto Mower, whose fame is so national and world-wide that it is idle for us to enlarge upon its merits.

THE TORONTO INDUSTRIAL FAIR. - The prize list for the Industrial Fair, to be held at Toronto from the 10th to the 22nd of September next, has been revised. The prizes in the horse department will stand the same as last year, with the addition of three new classes, one for Clydesdales, one for Shire horses, and one for agricultural horses, making an addition to the list over that of last year of about \$1,500, the total amount offered in prizes in the horse department now being \$6,500. The other classes in the live stock department remain about the same as last year, except that the special herd prizes for cattle exhibited the first week have been dropped, so as not to interfere with the exhibit of cattle at the Provincial, which is to be held during the first week of the Industrial.

Commercial.

FARMER'S ADVOCATE OFFICE,
May 1st, 1888.

CHEESE.

The first of May will see the most of our cheese factories again in operation. From the reports of new factories starting up and the usual increase of capacity in those already established, we are left to conclude that should the coming season prove at all favorable we shall see a very large make of cheese this summer, much larger than any preceding year.

As all who are in any way familiar with the cheese trade know that a large make means low prices. But low prices mean a heavy consumption, and these factors are the redeeming features of a heavy make of summer cheese. We cannot refrain from again expressing our oft repeated advice, sell your cheese as fast as they are fit to move, take the market price for them and let them go forward and into consumption.

While the wind-up of the past season's trade may not be what holders would have wished, still, those who pursued a conservative policy the past season will have come out, if not anything ahead, at least nothing much behind.

The following from the London, Eng., "Grocers' Gazette" will give our readers some idea of the situation on the other side: - From what we can glean stocks are very light, and may possibly be sufficient to see the demand for last season's make through, but there is no certainty on that score. There has been too much 'personal' introduced into the trade, and we hope for a better and more consistent *modus operandi* in the coming season. Our readers may be sure that importers and dealers will be compelled by the force of circumstances and competition to sell their goods at their value, apart from posing before them as benefactors, etc. In conclusion, we would just suggest that the market has not been subjected to the excessive misfortune predicted and desired by disappointed operators."

THE EGG COMBINE.

There has been a good deal of discussion lately concerning the Egg Combine and its efforts to control the Toronto market in order to reduce the price of eggs in Ontario. This cannot be carried out, if our farmers and country dealers will study the question, remembering that the price in New York will govern the price in America, except in rare occasions. The express rates of eggs from London to New York is about 3½c per dozen; from London to Toronto 1c per dozen. Sixty-six dozen, when properly packed, will weigh about 100 lbs. Let each farmer or country dealer learn what the price of eggs are in the large centres, add to the price of his eggs the freight and five per cent. commission for selling; by this he will know whether or no he is getting a just price.

There is no immediate danger for the egg production being overdone. The Americans took 13,700,000 dozen from us last year, 130,800 dozen from Belgium, and 107,275 dozen from China.

Let it be remembered that the egg dealers, as well as some country merchants, need close watching. And should the price of eggs in your respective neighborhood be lower than the conditions of the city markets would warrant, an honest commission man can be obtained who will forward the goods to the proper markets. As soon as the farmers in any section show

signs of self protection, the dealers, in order to preserve their trade, will adjust matters immediately. Joint action on the part of our farmers is an imperative necessity, and with that they can control instead of being controlled.

LIVE STOCK.

Montreal, April 28th.

At the Montreal Stock yards at Point St. Charles the offerings of cattle were large, there being 450 head on the market, but business was quiet, although there were a large number of buyers present, but, owing to the high prices asked, buyers held off and few sales were made. There was some enquiry from exporters, but, on account of the scarcity of prime cattle, buyers could not fill their wants, and only one or two sales were made, being small lots at 5c. It is said that choice cattle through the country are scarce, which is owing to the poor pastures of last season and the scarcity of feed, consequently there is an opinion among exporters that the exports of cattle this season will be light. In ocean freights we have not heard of any space being taken for May shipment yet, and it was stated that steamship agents do not know what rate to ask, but the opinion prevails that rates will open much lower than last year, as exporters are acting more cautiously this year. A number of cattle were sent from the Point to the East End abattoir.

BRITISH MARKETS.

There has been no change in the actual condition of the British cattle markets, says the Montreal Gazette, but according to our cables to-day the break of last week has brought out a more active demand, which, however, has not manifested sufficient spirit to affect values. Receipts from Canada and the States have been large for the season. Trade at Liverpool to-day was somewhat better, but prices were quoted unchanged. Prime Canadian steers were at 11½c, good to choice at 11c, poor to medium at 10c, and inferior and bulls at 7½c to 9c. These quotations are calculated at 400 in the £. Refrigerated beef in Liverpool is cabled at 5d for hindquarters and 3d for forequarters per lb. In London it is at 3s for hindquarters and 1s 10d for forequarters per 8 lbs. by the carcass.

AMERICAN DAIRY AND EGG MARKETS.

NEW YORK. - BUTTER. - The market has undergone no decided change since last week, ruling steady and quiet. Western Creamery, 20@25c; Elgin, 20@27c; Pennsylvania, 20@27c; State half firkin tubs, 21@25c; do. creamery, 25@27c; Welsh tubs, 21@24c; dairy tubs, 20@21c; Western factory, 16@21c; Western dairy, 18@21c; Western Imitation Creamery, 18@22c; Old Stock - dairy and factory, 10@18c.

CHEESE. - Rather weak on old stock, but now is scarce; fancy steady. State factory, 9½@12½c; latter for fancy white; Ohio flats, 11½@12c; skims, 1½@9c.

EGGS. - Are again lower on liberal receipts. State and Pennsylvania, 14c; Western, 13½@15c; southern, 13@14c; duck eggs, 23c.

PHILADELPHIA, Pa. - BUTTER. - Pennsylvania creamery, extra, 27c; western do. do., 25c; D. C. and N. Y. creamery, extra, 25c; western factory, 20@23c; packing butter, 12@14c. Eggs - Penn. firsts, 13½c; western firsts, 13¼c. Cheese - Fair demand. N. Y. full cream, 12½@13c; Ohio flats, choice, 11½@12c; do. fair to prime, 11@11½c.

BOSTON. - Butter in fair demand, but prices still depressed; western extra creamery, 26@27c; eastern extra, fresh made, 26c; cheese steady; best northern, 18c. Eggs - Market well supplied and trade slow; eastern extras, 15@15½c; western firsts, 15c.

CHICAGO, Ill. - BUTTER. - Creamery, 20@25c; dairy, 15@24c. Eggs. - Easy, at 12½@13c per doz.

Farm Produce.

PRICES AT FARMERS' WAGONS.

Toronto, May 1, 1888.	
Wheat, fall, per bushel	80 82 0 84
Wheat, red, per bushel	0 82 0 81
Wheat, spring, do.	0 80 0 81
Wheat, goose, do.	0 73 0 75
Barley, do.	0 65 0 75
Oats, do.	0 50 0 51
Peas, do.	0 67 0 70
Dressed hogs, per 100 lbs.	7 75 8 00
Chickens, per pair	0 60 0 75
Butter, pound rolls	0 20 0 23
Eggs, fresh, per dozen	0 12 0 13
Potatoes, per bag	1 05 1 10
Apples	3 50 4 00
Onions, per doz.	0 15 0 20
Do. per bag	0 00 2 00
Turnips, white, per bag	0 40 0 50
Rhubarb	0 00 0 15
Cabbage, per doz.	0 50 1 50
Celery	0 40 0 75
Beets, per cask	0 20 0 25
Parsley, per doz.	0 00 0 20
Radish, per doz.	0 00 0 75
Hay	11 00 17 00
Straw	7 00 12 00

About one thousand horses of an aggregate value of \$150,000 have been imported into Manitoba this year, mainly from Ontario.

Woodstock has organized a Poultry and Pet Stock Association, and expect to hold a show next winter.

Family Circle.

SWEET SIMPLICITY.

[CONCLUDED.]

"Lovely!" he replied after me, with an accent of surprise. Then he passed his hand quickly over his mouth, and his eyes gleamed. "Yes, 'lovely' is the word for it," he added, with great energy. "Well, and what else have you been to see? Of course you've seen the Turners?"

"Oh, no!" I replied, much astonished by this unexpected leap from the frivolities of sight-seeing to the serious occupation of parochial visiting. "No, I have not been to see them."

"Not yet, I suppose; but you must not leave London without seeing them. That would never do indeed. You would enjoy seeing them, would you not?"

"Yes, I think so," I said dubiously. "My brother takes a great interest in them."

"Does he? Then in that case he will be sure to take you to see them. I quite envy you—you have a great pleasure in store."

"Have you seen them?" I ventured to enquire.

"Yes, I should think so; and I give you my word, though I don't go in much for that kind of thing, you know, I have never been more pleased in my life."

"Really!" I said, inwardly apologising to him, for I had felt that he, with his handsome face and faultless attire, would have been about the very best young man to visit ailing and infirm old ladies. Evidently I had been premature in my judgment.

"But of course no one can see them just now," he continued. "You must have patience for some few weeks longer."

"I felt overjoyed at having some knowledge of a subject broached in a London drawing-room, so I hastened to reply—

"Except my brother—he sees them every day."

"Every day?" he repeated, opening his eyes wide, and looking at me with intense astonishment. "You surprise me! Are you sure? Every day?"

"Yes, every day," I returned confidently—at least, since I have been in London he has gone there every day."

"Dear me! I had no idea Mr. Harte was such an artist! But how does he manage to see them? No one is admitted just at present."

"No one except my brother," I returned proudly. "He is never refused."

"Good gracious!" exclaimed the young man, in tones of amazement. "I had no idea of such a thing—no idea whatever; and every day, you say? Are you sure you don't mistake?"

"Evidently he had been refused admittance. I thought; and his feelings were hurt to hear of Robert's better success."

"Oh, I am quite sure," I replied; "and I ought to know, because they hardly talk about anything else at my brother's—they are always the chief topic at luncheon, and very often at dinner too!"

"The incredulity on my companion's face grew more marked each moment."

"But with his numerous duties how can he afford the time to go each day?" he asked.

"He makes the time," I said emphatically, "even if he has to give up something else. I do believe he thinks it the most important thing he does."

"Just then I became aware that my sister-in-law was looking at me with a most pleased expression on her face. Surely I was distinguishing myself at last, and, not indulging in 'araceful badinage' was at least not disgracing her by sitting in silence! She evidently could not imagine where I found such a fund of chatter for this young officer."

"Then you should coax him to take you with him," the young man said. "I suppose he could easily get you in to see them, if he has the privilege of visiting them every day?"

"I don't know about that," I returned dubiously. "Even Mrs. Harte has not been admitted for a long time."

"And is she an admirer of them also?"

"Yes—quite as much as Robert, I think."

"Well, you astonish me—not by telling me your brother admires them; any one must do that. They are simply charming. Perhaps just at first you may not like them. I must confess to you I did not like them at first—no, not in the least—and I could not understand why they were so much admired. But now!"

"My brother really loves them," I said, thinking of the Bible and its pink enclosure.

"Of course he told you of their removal?" he asked.

"Yes, I heard him say something about it. The house they are in does not suit them."

"And not only that," he interrupted warmly—"it was quite time something was done; they could not, in common fairness to the nation, be permitted to remain any longer at Marlborough House. Of course you know from your brother that Kensington will be their new home—a far more suitable place than Marlborough House, you will allow. They are the nation's pride and glory."

"I felt myself growing tall with importance to think that if the 'nation's pride and glory' should be on such intimate terms with my brother, it was with a feeling of pardonable pride that I spoke next."

"Are they really? You should see the beautiful Bible Miss Elizabeth presented to my brother only to-day." I withheld all mention of the cheque, not feeling particularly proud of that.

"Miss Elizabeth!" repeated the young man, in tones of amazement. "Miss Elizabeth who?"

"Why, Miss Elizabeth Turner, of course!" I answered. "Who else?"

"An expression of incredulity, changing swiftly to comprehension, crossed his face."

"Turner!" he shouted. "Miss Elizabeth Turner!"—and then he threw himself back on the sofa and, with both his hands to his head, actually roared with laughter.

"Of course you see the joke, girls, though I did not—not for long after. He had been speaking of the famous Turner collection of paintings then in process of removal from Marlborough House to the new art-gallery in the South Kensington Museum. I, in my ignorance, knew of no other Turners than the ancient and ailing Miss Elizabeth and her sister, residing in Gordon Square."

"You can imagine my feelings. There I sat with quivering lips and crimson cheeks, all eyes upon me—every one in the room started into silence by the loud hearty peals of laughter from the gentleman at my side, who was still lying in his corner of the sofa, in speechless ecstasies. I, quite unconscious of the dreadful breach of etiquette I had committed, did not dare to meet my sister-in-law's eyes."

"To do the young man justice, he recovered as quickly as he could from his fit of laughter, and apologised profusely his fault, his stupid blunder, his the mistake; he had perfectly misunderstood me. The mistake he had made was one so droll that he really could not help laughing at his own idioy, and so on and so on."

"But his protestations did not help me in the least. Where he met with wreathed smiles from the ladies present as he made his apologies for startling the decorum of the room by such unseemly mirth, there was nothing but shrugging of shoulders and raising of eyebrows for me. My sister-in-law smiled coldly at his explanations, and almost directly afterwards rose to take her leave, followed by poor blushing me. When we were outside, my brother's wife demanded to know what on earth was this latest atrocity I had committed. Like the prisoners we read of in Californian tales, I was tried, condemned, and executed before even my case had been heard."

"He was excessively rude to laugh like that," Annie said severely. "He might have spared you that mortification, I think."

"And the young curate," I asked—"what part did he take?"

"Oh, ask your father!" mother replied, with a laugh.

"I was the young curate, my dears," my father supplemented, when thus appealed to. "The part he took in the matter, in the first place, was to fall in love with the pretty blushing girl who bore her discomfiture so bravely, and went so prettily through her adieux on leaving the drawing-room where she had suffered a martyrdom of ridicule. She even spared a pretty smile for the atrocious young fop who had been the cause of her suffering."

"Well—and in the second place?" I demanded, as he paused.

"In the second place, the young curate, in vulgar parlance, 'made up to' Miss Harte, and had the honour of being so graciously received by Mr. Harte that he was frequently permitted to constitute himself an escort for her on her sight-seeing expeditions. Amongst other places he took the pretty young lady to the South Kensington Museum, where, standing before one of those very Turners, he offered her the devotion of his life and heart—with what results you know. And so you see, in time, she too came to admire the Turners very greatly, and confess that in truth they constitute our 'nation's pride and glory!'"

BRYL.

Prizes for May.

New, rare and scarce plants and seeds, which bid fair to be leading varieties for next year, some of which have not yet been introduced into Canada.

1. A few cuttings of the Crossman Potato.—Claimed to be a better cropper and a better keeper than the early varieties in general cultivation; oblong and smooth; flesh colored, and of excellent quality.

2. A few cuttings of the Munro Potato.—Claimed to be the most prolific potato; some claiming that from 1,000 to 1,200 bushels can be raised on an acre.

3. Three plants of the Autocrat Tomato.—Claimed to be the king of novelties; the best keeper and best shipper; does not crack, not liable to rot; red, keeps its color when canned; delicious quality, smooth and even in size, and is claimed to be the best in flavor and the most productive.

4. A few seeds of the Sibley Squash.—Claimed to be the best shipper known; skin, pale green and very thin, hard and flinty; flesh solid, thick and of a brilliant orange color; fine in grain, rich and delicate in flavor; very highly commended.

Either one of the above choice prizes will be sent to any one of our old subscribers that sends us one new paid subscriber.

It is our opinion that these will be found of great value to our country.

Minnie May's Dep't.

MY DEAR NIECES:—Now that the slavery of the farmer's wife has been somewhat lessened by all the milk being sent to the cheese factory, why not turn your attention to making a little money for yourselves? Various are the methods by which a farmer's wife and daughters can earn a few dollars per week. And it is always acceptable, for girls in the country have often to do without small articles of dress or comfort for lack of means. The taste for flowers is yearly on the increase, and every farm-house can have a garden. A small patch of ground can be prepared for you by the plow; have it well manured with cow manure, and you can do all the rest. It is healthful, and feminine work. A garden rake with a long handle, so you need not stoop; a long-handled hoe, a trowel, and a chisel on a long handle are all the implements required. Some staples, such as lilacs, syringa, wygella, Japan quince and others may be procured from a nurseryman, and will be coming into flower next year. Lilacs always sell readily; they are eagerly sought after by city people, being almost the first flower of spring. Their dainty form and sweet fragrance keep them first favorites. Then comes the large family of bulbs which live in the ground all winter, and require little attention beyond keeping the soil rich and free from weeds. Hyacinths, lily of the valley, tulips, iris, and hundreds of the lily tribe, are always beautiful and saleable. Small bunches of lily of the valley, with their own green leaves, will bring a good price. The only trouble is their scarcity. They never come to market in sufficient quantities. A grievous mistake is the putting up of hyacinths or tulips into bunches and tying them with a piece of string. They never look so well as when displayed singly. Bring them to market in small tin cans, in water, and the purchaser will make his own selection; and the full beauty of the blossoms will be displayed. Always bring some foliage with each kind of blossom—even tulips and hyacinths. It gives me the heartache to see large bunches of lovely blossoms massed close together, wilting in the sun, propped up in the end of a market wagon, or lying on the top of a basket of dirty potatoes. The innumerable family of bedding-out plants comes next; and I may only mention a few of the hundreds most easy of cultivation. Geraniums come first, and stand alone for color of blossom, beauty of foliage and freedom from insect pests. Pansies are always lovely in their numerous tints, from dark purple to pale yellow. And their bright little faces look well amongst any flowers. Verbenas and petunias, sweet peas, phlox-drummondii, stocks, asters, wall-flowers and marigolds will keep you busy for this summer. Then you can select others to extend your varieties for next year. Do not make your bouquets too large. Put some pretty green leaves with each bunch, and bring to market as fresh as possible. The foliage of the lemon geranium, oak-leaf, and the small nutmeg are all pretty and fragrant. A small quantity of asparagus leaves looks pretty.

Now, my dear girls, I have made my letter almost too long, for once, but the subject interests me, and I only hope some of you will try and act upon these few hints.

MINNIE MAY.

Value of Good Health.

Health is of such extreme value that he who is not healthy cannot possibly be wealthy. In his pockets, or in the vault of some bank, he may have title deeds, mortgage deeds and bonds; but if he cannot work, play or enjoy his food, he is poor and the estates he claims to own on this globe are no more real good to him than if they were situated in the moon. Civilized people, who are possessed of a mania for owning things, underrate the value of their own bodies. It is said that an Irishman who had only \$1 expended the dollar for a purse "to keep it in."

There are many Americans who barter their lives for fine houses to dwell in, or swap healthy livers for gold dollars. Good health cannot be bought in boxes, bottles or buckets, or at so much a pound or foot. It can be obtained only by a healthy mode of living. Without the capacity to enjoy life, no man can be wealthy. No kind of good appetite can be bought with money; and the man who has not a good appetite—for healthy work or wholesome food—is a poor man.

Home Education

Herbert Spencer has wisely said: "Always remember that to educate rightly is not a simple and easy thing, but a complex and extremely difficult task; the hardest thing which devolves upon adult life." That so much neglect exists in the home education of the young is a subject for serious consideration. Many parents give careful attention to the home education of their children in the small courtesies of life. The manners of children at table should receive the most careful training. What detracts more from the good opinion one may form of a girl or boy, than vulgarities at table—eating with the fingers, speaking when the mouth is full, scratching the head, blowing the nose, too hasty mastication speaking in a loud voice, omitting to thank any one, and one hundred other disgusting habits, that one meets in nine-tenths of the children of to-day. I do not advocate crushing all the spirit out of a child by forever correcting him, for I know half the bad habits are from carelessness; but every one of these should be firmly and kindly rebuked as they are observed, and the necessity for their continual observance impressed upon the child. It is a bad plan to allow boys to hurry pell-mell into the house from school, demand their dinner in a loud tone, gobble it down, and rush out again. They should be taught to sit quiet for a few minutes before dinner, walk slowly and quietly into the dining room, and rigidly observe all the little courtesies. Believe me, it will become agreeable to them after a little time, and you need not be ashamed of your offspring when strangers are present. I was dining with a lady not long since, at which her three children were present, and the loud demands for this and that, as it pleased their small fancies, was most disgusting. At last we Tom asked for more cream cheese; the mother refused; he screamed and kicked, jumped from his seat, and refused to be comforted. She should have felt mortified, and, instead of punishing Master Tom as he deserved, said:—"I do not know what I am going to do with Tommy; he acts so every time he does not get just what he wants." Tommy listened to this, dried his tears, and came back to finish his dinner, encouraged to attempt more next time. Never grumble yourself. At meal time keep cheerful conversation going, and do not look cross. Impress upon your boys and girls the necessity of good manners at table, and set them a good example. Good manners at table always stamp the refinement of a lady or gentleman.

Ipomea Grandiflora, or the Moon Flower.

Opinions change in regard to flowers as in other fanciful decorations. This is not a new flower, but it has recently become so much in vogue that the demand has been for the past two years far in excess of the supply. It is claimed by some seedsmen that substitutes have been sent out by some seedsmen. It is claimed by some to attain a growth of 25 feet, by others



IPOMEA GRANDIFLORA, OR MOON FLOWER.

40 feet, in a season. It is somewhat similar in growth and habit to the well-known Morning Glory. Its advantages are these, that the flower is much larger, measuring six inches in diameter, of a very delicate white color, and having a beautiful perfume, flowering at night and in cloudy, dull weather. We give the accompanying cut taken from Mr. Jas. Vick's Florial Guide.

House Cleaning, Household Hints, Etc., Etc.

The bright, warm sunshine reminds us that spring is coming and with it that carnival commonly called house cleaning, and which our long winter necessities must be commenced. But this year we will try and do it by degrees, thereby lessening the discomfort to our family, and fatigue and worry to ourselves. The attic should be overhauled, all garments hanging or packed away should be aired and brushed to dislodge any busy moths that have begun to work, piece trunks can be looked over and sorted, closets washed, dried and rearranged. And while going over them put pieces of tar-paper in every shelf, trunk or box. No moths will approach it and it will save going over them again when packing away the winter clothing. Air and beat all strips of carpet or mats, and have the floors washed with water, soap and brush, if not painted. Look well that there are no mice in your closets, if so set traps, and the little pests will soon disappear. Now for our bedrooms. Look over all bureau drawers, put clean papers in the bottom of them, they prevent the dust sifting up and settling upon the contents, wash out washstand drawers with ammonia and water, whisk the mattresses in the buttoned parts, remove the slats of the bedstead and whisk clean of dust, wash all ornaments of china, wash blinds and windows, wipe papered walls with a clean white cloth, changing often, and if any hanging draperies have them removed, well brushed and aired. The carpet now requires to be well beaten and put down, and a thorough dusting makes your room complete. Pantry-closets can be scrubbed, clean shelf paper added, glassware and china wiped and all made sweet. If all these little things are done in leisure moments, the house cleaning will be got over almost imperceptibly, and it is better to complete one flat at a time. Much of the extra washing of toilets, counterpanes and curtains can be done by degrees at the weekly wash, and not test the temper and strength by having it all at once. The cellar requires careful inspection, have all vegetables removed to an outhouse, they will not be injured by frost, and may save the family an attack of sickness; have the floor well swept of all leaves or clay, all superfluous barrels and boxes removed, lime-wash the walls, and open wide all windows and hatchways to dispel bad vapors. Do not spread sand on the cellar floor, it will become moist and hold impurities. The outbuildings and yard also require the eye of the mistress, have them well swept, all the contents put in a compact shape, the yard raked and the accumulation carted away or burned. As the family wash has increased, and taking it for granted that all my nieces are provided with washing machines, I will give you the latest news about ironing. Have hooks screwed to the under side of the pantry shelves to hang the irons on. Keep a good supply of iron-holders. The leg of a woollen sock, doubled across and covered with cotton cloth, makes an excellent one. In warm weather it is cooler and less expensive to use a charcoal heater or kerosene stove to iron by. Use a willow basket; wooden ones are apt to stain the clothes. Turpentine will remove paint from all coarse articles of clothing; for finer goods use naphtha or benzine. Grass stains can be removed by rubbing alcohol on the part. Fruit stains on

children's clothing can be removed by wetting the spot with a weak solution of oxalic acid, but wash immediately in warm soft water. A small lump of white wax, or a tablespoonful of gum water will give a beautiful gloss to linen collars, cuffs or shirt bosoms. All clothing worn by an invalid, that has to be washed, should be washed in a solution of weak ammonia—one pint to a tub of soft warm water. It removes impurities, and disinfects besides.

Fashion Notes.

If you are to have but one gown for the season do not let it be of too heavy cloth; wait until a little later and get a challis or choose one of the cashmeres about which so much has been said.

The temptation to buy a jaunty cloth suit early in the season is doubtless very great, but the woman who yields to it will find that the spring days are really few in number, and once in the midst of the perspiring discomforts of the heated term she will gladly exchange all its jauntiness for a cool calico gown one-third the cost of this.

The skirts of riding habits are short and scant, the bodice extremely plain, and the trousers long enough to strap under the boot. A plain linen collar, fastened with a brooch, is the only finish. The habit skirt is eighty inches broad at the bottom, and the top should fit without a wrinkle when in the saddle. It drops to within two inches of the floor when standing. Flying veils, ribbons or ends of any kind are in very bad taste. All should be neat and trig. A small veil of net can be worn, as it protects the eyes from the dust, and to some extent preserves the skin from the effects of sun and wind.

Among all the spring fabrics stripes preponderate. Draperies are to be arranged so as to have the stripes cross diagonally, while in the bodice they form a series of down-pointing lines in "V" shape, neatly joined together in the centre seams.

Jackets are of the jauntiest make, and are for the most part elaborately braided.

Bouquets are worn very large, and are always tied with long ends of ribbon of two colors, to match the most prominent colors of the flowers.

Some spring hats have appeared with long ribbons or velvet ends, but they will not become popular. They will be left to school girls and misses.

The ability to make a graceful bow has always been considered an accomplishment, and just now they are in special demand. A bow must not look stiff; neither must it appear as if about to fall to pieces. Its loops and ends can, of course, be too long, but they oftenest err on the side of beauty.

Velvet is in favor for bonnet ties, but its chief objection is it rubs, and collar and neck and chin are tinted the same color.

THE PLAIN ROAD TO HEAVEN.—Mr. Labouchere relates this story of Bishop Wilberforce, which has not before, he thinks, been printed. The bishop was riding in one of the old fashioned broad gauge railway carriages and was seated at one end of it when he heard a truculent voice at the other end exclaim: "I would dearly like to meet the Bishop of Oxford. I will be bound I would puzzle him." "Very well," replied the bishop to the speaker, who had not perceived him, "now is your time, for I am that person." The man was rather taken aback, but quickly recovering said, "Well, my lord, can you tell a plain man a plain way to get to heaven?" "Certainly," replied the bishop; "nothing is more easy. You have only to turn at once to the right and go straight forward."

The Cosy Home Corner.

FOR THE WORK-BASKET.

A pretty toilet-set is made of white Turkish toweling. Buy it by the yard and cut bureau scarf and mats the size you wish. Crochet around the edges of each one a pretty scalloped edge in red cotton. Make a tidy and splasher to match. Ornament the tidy with a bow of red satin ribbon placed in the centre or at one of the upper corners.

The best "wash cloths" are made of white or unbleached Turkish toweling. Cut a yard into three lengthwise strips, and each strip into four pieces. This will make a dozen nice cloths a quarter of a yard square. The prettiest finish is "button-holing" with coarse red working cotton, about one half dozen stitches to the inch.

For a fancy work apron, take one yard of ecru pongee and hem each side with an inch wide hem. Across the bottom make a hem of the same width but on the opposite side from the others. Turn the bottom up one-third the length for pockets. Stitch separations down to make pockets as you wish. Outline a pretty design in scarlet upon each, and just above them across the apron work the motto: "A stitch in time saves nine."



A LATE SPRING—WHICH LOOKS AS THOUGH IT MIGHT BE FOLLOWED BY AN EARLY FALL.

Turn a hem at the top wide enough to run a ribbon through to tie it on with.

A very handsome tea cozy can be made of deep garnet, lusterless cloth, with a monogram on one side and a spray of clover on the other. The clover may be made to look very natural by working in clover-stitch in the following manner: The blossom is first worked over, lengthwise, with pale green silk in Kensington stitch. Select three shades of clover-colored filling silk, and laying a coarse darning-needle across the blossom near the top, stitch the darkest shade work over the darning-needle, making a stitch like an inverted V. Without removing the darning-needle, repeat the same stitch *inside* the first; work the second shade, and, inside of this, make an upright stitch with the lightest shade. Work straight across the flower; pull the darning-needle out, and lay it across just below the row just worked, and work as before. Proceed in this way until the blossom is covered with raised stitches. The calyx and leaves are worked in a plain Kensington stitch. Line with a wadded garnet satin lining, and finish the bottom and seam with heavy pink silk cord, making seven loops on the top to lift it by. One made of blue cloth and worked with jonquils is very handsome.—*Good Housekeeping*.

Wisdom is one of the few things that can sometimes come to man unsought.

Toilet Notes.

Someone asks how to get rid of "blackheads" on the face. After being mortified all through my girlhood with them, I found that washing the face with cologne every night before retiring cleared the skin from them entirely. Dampen a cloth well with the cologne—the best to be had of your druggist—and give the face a good rubbing with it every night until the skin becomes clear.

I hope none of our readers have tried cleansing the scalp with the beaten white of an egg. That was recommended me once, and, oh, what a time I had getting the sticky stuff out of my hair! I was afterwards told that I should not have beaten the egg, but I never tried it again. I use sufficient borax or ammonia in water to make a lather when rubbed on the head, which will thoroughly cleanse the scalp and keep it free from dandruff, if used once a week. Borax is best, I think, as it is not in the least irritating, and costs but a few cents an ounce. After thoroughly rubbing the scalp with borax water, wash it two or three times with clean water, then rub thoroughly with a towel and dry the hair as soon as possible to prevent taking cold. SARAH C.

Recipes.

FRIED POTATOES.

Peel and boil in salted water; remove them before they are quite done; beat one egg; roll fine some cracker crumbs; roll the potatoes in the egg and crumbs, and fry in butter or lard until a light brown. Serve very hot.

FRIED PARSNIPS.

Scrape and slice lengthwise; dip in flour, and fry in lard until of a nice light brown, turning often.

FRITTERS.

Put into a stewpan one pint of water, one tablespoon of butter, and one of white sugar. When it boils, stir in rapidly one pint of flour; let it cool a little; while warm beat into it six eggs; have boiling lard, and drop the dough, which will be stiff, in lumps like a small hickory-nut, into it. Cook a nice brown, and serve hot. Eat with syrup or melted butter and sugar.

BUTTERMILK MUFFINS.

Beat hard two eggs into a quart of buttermilk, and stir in flour to make a thick batter (about one quart); stir in a teaspoonful of salt, and the same of soda; bake in a hot oven in well greased tins. Pull open with the fingers and butter.

The elephant lives 100 years and upwards; rhinoceros, 20; camel, 100; lion, 25 to 70; tiger, leopard, jaguar, and hyena (in confinement), about 25; beaver, 50; deer, 20; wolf, 20; fox, 14 to 16; llama, 15; chamois, 25; monkey and baboon, 16 to 18; hare, 8; squirrel, 7; rabbit, 7; swine, 25; stag, under 50; horse, 30; ass, 30; sheep, under 10; cow, 20; ox, 30; swan, parrot and raven, 200; eagle, 100; goose, 80; hen and pigeon, 10 to 16; hawk, 30 to 40; crane, 24; blackbird, 10 to 12; peacock, 20; pelican, 40 to 50; thrush, 8 to 10; wren, 2 to 3; nightingale, 15; blackcap, 15; linnet, 14 to 23; goldfinch, 20 to 24; redbreast, 10 to 12; skylark, 10 to 30; titlark, 5 to 6; chaffinch, 20 to 24; starling, 10 to 12; carp, 70 to 150; pike, 30 to 40; salmon, 16; codfish, 14 to 17; eel, 10; crocodile, 100; tortoise, 100 to 200; whale, estimated, 1,000; queen bees live 4 years; drones, 4; worker bees, 9 months.—[Our Society Journal.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES:—As I have asked you to give me a description of your homes and surroundings, that you may understand more fully what I want I will give you a pen-etching of an old farm homestead I once knew—one with which is linked many sacred and happy memories of the early days when as yet none of the fledglings had left the nest. A quiet, peaceful place was that old farm home—at least so it seems now as I look back upon it through the vista of memory—nestling in the shelter of the hills, which completely shut it out from the highway. Those hills! Who that knew and loved them could ever forget them, when the standing grain bended to and fro upon them in great waves of gold before the summer wind, while the sunshine and shadow quickly chased each other over them. Behind the house and but a few minutes' run for the brown, tan feet of blithe, happy youngsters were the woods, beautiful as nature left them. "The bush" was ever a favorite resort, and amid the whirl of social demands and business pressure one can scarcely repress a sigh for the days that are gone when freedom from work was granted, to chase chipmunks and gather the first wild flowers gave true unmingled pleasure, and was all the recreation that was sought, when even to childish ears the sigh of the pines had a strange, sad music. Not often now, do I visit the old haunts, yet, when that pleasure is mine, many a tree, and stump and stone recalls a tale of "ye olden tyme." The unpretentious house was situated on a gentle rising; two poplars, planted by a mother's hands years before, stood as sentinels in front, while in the old-fashioned garden bloomed roses, whose parent-stems had been taken across the Atlantic, transplanted from the heather-knoles of old Scotland to flourish in the then virgin-soil of Canada. Right in front of the kitchen door, and but a short distance from it, babbled one of the brightest, clearest, most musical "burnies" that ever bare-headed, bare-footed, brown-handed girls and boys paddled in. I can see it yet with the water dammed up at a place just where it ought not to be, with a very ingenious, if a very crude, attempt at a water-wheel, placed there by the mechanic of the family. Away down through the meadow it wended its way, with many a graceful curve and turn, and then its waters mingled with those of a larger stream in boyish vernacular, the "big creek," which ran at the base of the hills before mentioned. As the waters danced and flashed in the April sunlight, each sun-crested wave seemed radiant with burnished silver. Strange fates could the burnie tell if mortals could but read "the books in the running brooks." Beyond the stream were the pioneer buildings—relics of the days of hardship and privations—and the old orchard grown from seeds planted over thirty years before. Before we leave the old homestead we must go "up the lane," a part of the farm associated with loggings, fires, fallows and sore backs, for the wild-flower days did not last long and roots had to be picked. To this day the smell of field-fires and burning stumps bring back those days on the farm, and I would fain throw myself on the green grass and look up to the soft clouds and blue sky with the trust and faith of the

early days. The hills, the woods, and the horizon seemed to shut us in, for there was not a neighbor's house in sight, yet happy indeed was the childhood of our little world. But with all else of the things of time, changes must needs come to the old farm. As we knew it, we know it no more—my picture of it is one which hangs on memory's wall, then farewell to its quiet nooks, and pleasant walks, farewell to its fields and flowers, farewell to the burnie and the birds, a tender farewell to one spot, sacred as the last earthly resting-place of little feet that never grew tired in treading the weary pathway of life—farewell old farm home. UNCLE TOM.

P.S.—I am hoping to have interesting letters from all of my nephews and nieces by the 20th of May. The prizes will be well worth obtaining. U. T.

Puzzles.

1—TRANSPOSITION.

Nteso lsaw od ton a spnro amke ron nrld rasb a aegc dnism contnein nad uteqi aetk atth rfo a gnteehlar fl I vahh demfoer ni ym elvo dan ni ym ulso ma erfo gesina neaal ahtf arso vbaoc jenyso huse rleytbl.

2—DROP VOWEL.

Th-l-v-ng th-ngs-f --rth-and s--
Fr--d m-n th--r m-st-r-c-l.
Th-n sh--ld n-t-m-n, th--r m-st-r, b--
-t-and-r fr--nd t--ll.

[The sender of the two above puzzles omitted to write his name.]

3—ILLUSTRATED REBUS.



4—STAIR.

Diagram.

**** The steps form five half squares.
**** 1. A kind of fish. 2. A rabble. 3. Not in. 4. To cry. 5. Passion. 6. To row. 7. A stately walk. 8. To blow. 9. To steal. 10. A spy. 11. Cute. 12. Metal. 13. The nose. 14. Tidy. 15. A kind of grain. 16. A prefix. 17. A letter.

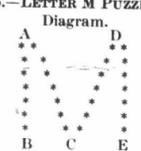
HENRY REEVE.

5—HIDDEN GEMS.

1—Please give me a pear Lucy. Oh! what a beauty.
2—We are to have a gate just like yours.
3—Mary, you must mop all the water that you split.
4—Oh! rub your ear, it is frozen.

6.—LETTER M PUZZLE.

Diagram.



From A to B—To devote with loss.
From A to C—A defence.
From D to C—Censured.
From D to E—A follower.

HENRY REEVE.

7—OCTAGON.

1—To sigh. 2—Made naked. 3—A species of satin. 4—An opening. 5—A blessing. 6—To allure. 7—A number.

FAIR BROTHER.

8—ANAGRAM.

Methought an anagram I'd make
Out of nothing; alas for me,
I could not do it without a key;
Right here I make a great mistake.
For above all things, don't you see,
Out of nothing there can nothing be.

But I will make it out of something,
While the moon casts her silver light
On this fair world of ours SOME NIGHT!
Yes, my friend! to this text I'll cling;
I'll make that anagram SOME NIGHT;
Now you just see if I don't for spite.
FAIR BROTHER.

9—NEW CHARADE.

My first she was a waiting maid,
She went to fetch some tea;
How much she brought my second tells,
As plainly as can be.
Now when you have the answer found,
Name it to others, too;
My whole is just the very thing
In telling them you'll do.

A. HAWKINS.

10—REBUS.

Name a work of six letters containing six words besides itself. Don't transpose a letter. A. H.

11—TRANSPOSITION.

Noec omer het selfd era lead ni reeng.
The sikas rea lebu nad raif.
Nda loivtse weets ethri cenrargra fatw,
Roughthoht eth bylam raif.

EARNEST RAMSAY.

12—TRANSPOSITION.

Fiendyr! sodwr rea teofn kopens,
Nwhe het ginselre ear kudinn;
Kate meth rof rethi lear lauve,
Sasp hmet yb dan verne dmin.

ARTHUR S. REEVE.

13—HIDDEN GRAIN.

What are you trying to do?
The cape Ann wore was brought from Bassons.
He lost his book when he got into the car yesterday.
Will Mac or Nahum help you?
Manco attacked a large bear single-handed.

ARTHUR S. REEVE.

14—A GEOGRAPHICAL STORY.

I want to tell you about my (Mountain in Oregon) who live at (Bay north of Canada.) They like (Mountain in New Brunswick), (Islands in Polynesia), and they have (Bay off New Zealand) of it, too. (A division of Australia.) She's the eldest, has a (Town in France), new (Valley in India) dress, a (Lake in Oregon) watch, and (River in Nova Scotia) chain, with a (River in Louisiana), (Lake in Kewatin) attached to it. A young (Island west of England) comes to see her sometimes. He calls her his (Island in Panama Bay), and gives her (Town in Ceylon); I took a (City in China) to the parlor one day and saw him. He has a (River in the North-east Territory), (River in S. Carolina) nose, a (Bay south of Africa) moustache, and parts (Island in the St. Lawrence river), in the (River in Nova Scotia). I like (Island in Georgian Bay) best. She gave me an (River in Cape Colony) for being (Cape off Nova Scotia) when I done her (Lake in Ontario) par for her. She put (River in Montana) and (River in Indiana) in my tea, too. She's (Islands north of Australia) in our (Lake in Kewatin), you know. Mother says it's her (Bay off Newfoundland). Then there's (Island in the Coral Sea). She uses (Cape wes of the United States) when her (Mountain in New Brunswick) headed (Lake in Ontario) old stick of a (River in Ontario) beau comes to see her. My (Town in Guinea?) I must make (Island S. of S. America). I'm going off on a (River in England) to-night, so (a Greenland Cape) for the present.

FAIR BROTHER.

Answers to April Puzzles.

1—What's the use of always fretting at the trials we shall find ever strewn along our pathway; travel on and never mind.

2— Fates may threaten, clouds may lower,
Enemies may be combined,
If your trust in God is steadfast,
He will help you, never mind.

3—

D
E E
N C
P O L O N A I S E
A L T L A T
B T T T
L X P A B L E

5—

L E V E R
E D I L E
V I X E N
E L E C T
R E N T S

8— TRAIN
RAIN
AID
BRAIN
REIN
AIM

TRAIN

RUIN

AIR

ROBIN

OWEN

SET

S P A I N

P A I N

A I L

I N

N

4—
Heaven is not reached by a single bound,
But we build up the ladder by which we rise
From the lowly earth to the vaulted skies,
And we mount to the summit round by round.

6.—(1.) Toad. (2.) Pig. (3.) Cat. Ram. (4.) Lion.
(5.) Camel.

7.—(1.) Dora, Otto, Tom. (2.) Kate. (3.) Ida. (4.) Amy. (5.) Edwin.

7.— A solemn murmur in the soul
Tells of the world to be,
As travellers hear the billows roll
Before they reach the sea.

9.—Past-or.

Names of those who have Sent Correct Answers to April Puzzles.

Emma Dunnee, Cecelia Fairbrother, Hattie Robinson, Russell Boss, Edith McCredie, S. Kate Banting, Allie Lane, Beatrice M. Mathias, W. B. Anderson, E. Eulalia Farlinger, A. Howkins, Mary Morrison, Nettie Ryckman, Arthur S. Reeve, Carrie Sheeres, Helen Connell, R. Wilson, Frank Kiddle, Annie L. Peters, Edward Woods, Libbie Hindley, Edith Robinson, Henry Reeve, Bessie Hickson, Thos. G. Moore, Ethel Harper, Earnest Pope, John C. Elliott, Douglas Japp.

ISSAC, instructing his son.—“Ven you zell a coat to a man vat vants a coat, dot's nodding; but ven you zell a coat to a man vot don't vant a coat, dot's peezniss, my boy.”

“Ma, can I go over to Sallie's house and play a little while?” says 4 year old Maimie. “Yes, dear; I don't care if you do.” “Thank you, ma,” was the demure reply, “I've been.”

A YOUNG woman riding with a young man, and exclaiming at the sight of two calves: “Oh, see those two little cowllets.” “You are mistaken,” said the young man, “those are not cowllets, but bullets.”

The major (rocking Nelly on his knee for Aunt Mary's sake)—“I suppose this is what you like, Nelly?” “Yes, it's very nice. But I rode on a real donkey yesterday—I mean one with four legs, you know.”

KENTUCKY COLONEL.—Waiter, something to drink!
Waiter.—Yes, sah; watah, sah?
Kentucky colonel.—Young man, I said something to drink; I don't want to take a bath.

They tell a story of a boy who was once sent on an errand to a distinguished lawyer of Essex county. When he returned home he said to his mother, “Old Squire—don't know much.” “Why, what do you talk so for?” was his mother's response. “Coz, he asked me, ‘where's your hat, boy?’ when it was on my head all the time.”

It was Freddy's first experience with soda water. Drinking his glass with perhaps undue eagerness he was aware of a tingling sensation to his nostrils. “How do you like it?” inquired his mother, who had stood treat. Freddy thought a moment, wrinkling his nose as he did so, and then observed: “It tastes like your foot's asleep.”

CLARA (Bobby's big sister)—“I heard father calling you a little while ago, Bobby.”
Bobby—“Did he say Robert or Bobby?”
Clara—“He said Robert.”
Bobby (with a serious look in his eyes)—“Then I guess I had better see what he wants.”

“Dear Charles,” said Mrs. Smith, a young married woman, leaning on her husband's shoulder as he sat at his desk writing.

“Well, what the mischief do you want now?” he growled.

“Dear Charles, do you love me as much now as you did when we were first married?”

“I told you so more than 40 times. If you ask me again I'll bounce a paper weight on you. Yes! yes! Are you satisfied now?”

The following receipt makes a very superior mixture for soap-bubbles, such as are used in scientific experiments:—Take shavings of pure white soap; put them in a bottle, and fill with warm water; shake occasionally for a few hours, and allow to stand over night. In the morning pour off the liquid, and add an equal quantity of glycerine. The bubbles blown by this mixture will be of surpassing size and beauty.

Some Curious Churchyard Literature

On a celebrated cook:—“Peace to his hashes.”

On the eminent barrister, Sir John Strange:—

“Here lies an honest lawyer—that is Strange.”

“Sacred to the memory of Henry Harris. Died on the 4th of May, 1837, by the kick of a colt in his bowels. Peaceable and quiet, a friend to his father and mother, and respected by all who knew him, and went to the world where horses don't kick, where sorrow and weeping is no more.”

In a New England graveyard:—

“Here lies John Auricular,
Who in the ways of the Lord walked perpendicular.”

In Doncaster churchyard, 1816:—

“Here lies 2 brothers by misfortin serounded,
One dy'd of his wounds and the other was drowned.”

From a gravestone in Essex, England:—

“Here lies the man Richard, and Mary his wife,
Whose surname was Pritchard, they lived without strife,
And the reason was plain,—they abounded in riches,
They had no care or pain, and his wife wore the breeches.”

A South Carolina tribute to departed worth:—

“Here lies the boddy of Robert Gordin,
Mouth almighty and teeth accordin',
Stranger, tread lightly over this wonder,
If he opens his mouth you're gone, by thunder.”

In Moreton churchyard:—

“Here lies the bones of Roger Norton,
Whose sudden death was oddly brought on:
Trying one day his corns to mow off,
The razor slipped and cut his toe off!
The toe—or, rather, what it grew to—
An inflamma ion quickly flew to;
The part then took to mortifying,
Which was the cause of Roger's dying.”

A stone-cutter received the following epitaph from a German, to be cut upon the tombstone of his wife:—“Mine wife Susan is dead; if she had life till nex Friday she'd bin dead shust two weeks. As a tree falls so must it stan; all tings is impossible mit God.”

In Wiltshire, England:—

“Beneath this stone, in hopes of Zion,
Is laid the landlord of the Lion,
Resigned unto the heavenly will,
His son keeps on the business still.”

This announcement is from a Spanish journal:—

“This morning our Saviour summoned away the jeweller, Siebald Illnaga, from his shop to another and better world. The undersigned, his widow, will weep upon his tomb, as will also his two daughters, Hilda and Emma, the former of whom is married, and the latter is open to an offer. The funeral will take place to-morrow. His disconsolate widow Veronique Illnaga, P. S.—This bereavement will not interrupt our business, which will be carried on as usual, only our place of business will be removed from No. 3 Tessi de Sclinturiers to No. 4 Rue de Missionnaire, as our grasping landlord has raised our rent.”

From a tombstone in Bodeam churchyard, Kent, England; copied by Minnie May:—

“God gave me at Kenardington in Kent,
My native breath, which now, alas, is spent;
My parents gave me Tilden Smith for name—
I to the Park Farm in this parish came,
And there for many lingering years did dwell,
Whilst my good neighbors did respect me well;
But now, my friends, I go by nature's call,
In humble hopes my crimes will measure small;
Years following years steal something every day,
And lastly steal us from ourselves away;
Life's span forbids us to extend our cares,
And stretch our hopes beyond our fleeting years.
Mary Firmenger, my wife, from Peasmarsh Place,
Lies mouldering here, like me, in hopes of Grace.”

TILDEN SMITH.	Aug.
MARY, his wife.	28 1801
	18 1789
	Aged 76
	62
	years.”

“In the days of '49” a member of a party of miners strayed away from his companions and was destroyed by wild beasts. The friend upon whom it devolved to “break the news gently” to the bereaved parents, showed himself equal to the occasion by writing the following letter:—

MISTER SMITH DEER SUR the Kiotas has ete yur sun's hed off Yurs Dick Brown.

NEW ADVERTISEMENTS.

**ASSIGNEE'S SALE OF
Shorthorn Cattle, Oxford-down Sheep, Etc.**

There will be sold by Public Auction on
TUESDAY, MAY 22ND, 1888,

at the Colonus Stock Farm, Chesterfield, the entire herd of Shorthorns, Oxford-down Sheep, a capital lot of Work Horses, Etc.

The herd, which is in nice breeding condition, consists of 33 head, and includes a Duke bull and a number of imported cows. The sheep are a good lot, several being imported.

Trains from east and west will be met by conveyances at Bright Station on morning of sale.

For Catalogue, etc., apply to

JOSEPH PETTIGREW, Ratho P.O.
279 Assignee.

**AUCTION SALE AT HILLHURST FARM
Compton, Prov. Que., Can.**

The Subscriber will Sell by Auction
ON WEDNESDAY, MAY 16, 1888,



THIRTY SUPERIOR HEREFORD CATTLE

Comprising Imported Cows in calf, and yearling Heifers and young Bulls by the celebrated sire CASSIO (6849) 11365, including some fine show animals of both sexes. Also,

**Thirty Pure-Bred
ABERDEEN-ANGUS CATTLE.**

Chosen two-year-old Heifers in calf, young Bulls suitable for sires, and a herd of 14 Red cows and Heifers, all registered in Am. A. H. B. Three generations red—calves at foot by red sire. Sold for want of room.

N. B.—This is not a draft sale, as some of the most desirable animals at Hillhurst will be offered. Stock bought in Canada enters United States duty free—Catalogue ready May 1st.

M. J. COCHRANE,
269-a HILLHURST, Que., Canada.



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Chief Office 47 Arcade, Toronto.

INCORPORATED—A MUTUAL BENEFIT ASSOCIATION

In the Live Stock Department, two-thirds the loss by death of the live stock of its members through disease or accident's also for depreciation in value for accidental injury. Those interested send for prospectuses, claims paid, etc. Reliable Agents wanted.

WILLIAM JONES,
269-y SECRETARY.



FRUIT TREES, VINES AND PLANTS,
at reduced rates. Send for prices. I will send free by mail to any address, 10 Jesse Strawberry Plants, strong, \$1; 10 Golden Queen Raspberry Plants, \$1; 6 Fay Currant Plants, \$1; 4 Niagara Grape Vines, fine, \$1; 2 each, Niagara and Virgenniss, \$1; 2 each, Delaware, Warden, Brighton, \$1; or the 6 for \$5.00

A. G. HULL,
267-d Central Nursery, St. CATHARINES, ONT.

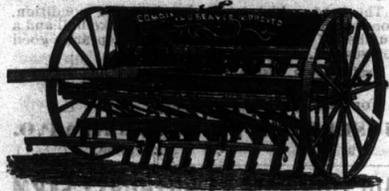
AUCTION SALE.

Douglas H. Grand has received instructions from D. T. Rogers, of Cayuga, to sell his valuable herd of registered

JERSEYS, SHETLAND PONIES AND HORSES,
at Gillson's Big Stable, Dundas St., London,
ON FRIDAY, MAY, 18TH, 1888.
Sale at 1:30 p.m. Terms cash.

200 DOUGLAS H. GRAND, Auctioneer

**THE BEAVER IMPROVED
DOUBLE GEARED STEEL SEEDER AND DRILL**

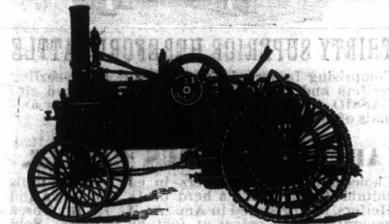


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OSHAWA, ONT.**

**SPECIALTIES—Seed Drills, Horse Rakes and
One-Horse Cultivators.**

Write for particulars and printed matter.
(See Advocate, March and April.)

200-j

KING OF THE TRACTIONS.

The most Powerful and Complete Traction and Portable Engines. Fitted with the latest improvements. Threshers will find our Engines first-class machines. Send for Descriptive Circular

**W. C. PETERSON & SONS,
SARNIA, ONT.**

**THE BOYNTON
Champion Hot Air Furnace**



Especially adapted to Heating Churches, Schools and Private Dwellings. The newest and best in the market. Send for catalogue, prices and estimates for heating. Head center for Stoves and Furnaces.

**DOHERTY MANUFACTURING CO.,
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J. F. QUIN, V. S., BRAMPTON ONT
Ridgling horses successfully operated upon; write for particulars.

201-y

A Famous Doctor

Once said that the secret of good health consisted in keeping the head cool, the feet warm, and the bowels open. Had this eminent physician lived in our day, and known the merits of Ayer's Pills as an aperient, he would certainly have recommended them, as so many of his distinguished successors are doing.

The celebrated Dr. Farnsworth, of Norwich, Conn., recommends Ayer's Pills as the best of all remedies for "Intermittent Fevers."

Dr. I. E. Fowler, of Bridgeport, Conn., says: "Ayer's Pills are highly and universally spoken of by the people about here. I make daily use of them in my practice."

Dr. Mayhew, of New Bedford, Mass., says: "Having prescribed many thousands of Ayer's Pills, in my practice, I can unhesitatingly pronounce them the best cathartic in use."

The Massachusetts State Assayer, Dr. A. A. Hayes, certifies: "I have made a careful analysis of Ayer's Pills. They contain the active principles of well-known drugs, isolated from inert matter, which plan is, chemically speaking, of great importance to their usefulness. It insures activity, certainty, and uniformity of effect. Ayer's Pills contain no metallic or mineral substance, but the virtues of vegetable remedies in skillful combination."

Ayer's Pills,

Prepared by Dr. J. C. Ayer & Co., Lowell, Mass.
Sold by all Dealers in Medicine.

The Best, Neatest and Cheapest Fruit Package Ever Offered

This out shows our 24-QUART BASKET CRATE stacked as when shipped filled with fruit. It is the best, cheapest, most convenient and altogether nearest to a cost-nothing gift package ever offered to Canadian small fruit growers. Don't fight shy or condemn this package because you may have last season or some other season been unfortunate enough to have purchased some thing similar from other makers. Ours are not slop goods, and purchasers of fruit have got on to it and can spot fruit shipped in our baskets, and are sure to go for it first. You try it and see if it is not true. You save money in the first cost of baskets; you save money in the commission man; you save money with him for he has no empty packages to be responsible for and consequently works for less. You make money every way by having your fruit in neat, respectable packages of convenient size to suit the consumer. What you want is a safe delivery of your fruit on the market in good shape and condition, and that can only be secured by using our packages, which only costs you 3/4c. per quart for marketing your berries. This may seem a dream, but send for our prices and be convinced. W. B. CHISHOLM,
Oakville Basket Factory.

NORWAY SPRUCE

In Large Quantities. Also

ROSES, CLEMATIS,

Climbers, Shrubs, Dahlias, Herbaceous Plants, &c.
Send for price list.

207-c

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GUELPH, ONT.**

**THE FARM NURSERY,
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NORWAY SPRUCE A SPECIALTY.
100 Choice, 20 to 24 inch selected spruce, boxed. Sent freight prepaid to any Ontario R. R. Station, on receipt of \$2.00. Small Trees \$2.00 per 100. Full assortment of Evergreens in stock.

**HENRY WESTNEY,
NURSERYMAN.**

200-a

TO OWNERS OF STALLIONS.

The Richmond County Agricultural Society will give a Bonus of One Hundred Dollars for a Stallion to stand in the County for service for the season of 1888. The stallion to be a Coaching Horse, or a Cleveland Bay. To be approved of by the Board of Directors, and be shown at the Town of Richmond, Que., on the 17th of May next, for such approval. Further particulars on application to undersigned.

Melbourne, P. Q. }
March 6th, 1888. } **JOHN MAIN,
SEC. TREAS.**

200-b

JOHN FERGUSON & SONS,

174 to 180 King-st., London, Ont.

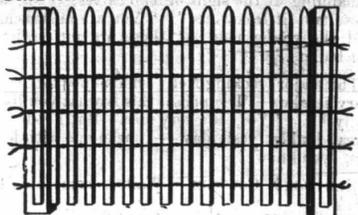
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Manufacturers of all kinds of

HOUSEHOLD FURNITURE.

Lumber of all kinds taken in exchange for furniture.

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208-a

**CHOICE
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Manitoba and the Northwest

FOR SALE.

Apply to

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Buy elsewhere it will pay you to send for our price list of

Honey Extractors, Knives, Smokers, Comb Foundation, Hives, Sections

and all other kinds of bee-keepers' supplies; also to subscribe for our **Canadian Honey Producer**, a monthly, 40c. per annum, published in the interests of bee-keepers. Price list and sample of paper free on application.

Bees for Sale at Lowest Rates.

Address **E. L. GOULD & CO.,
BRANTFORD, ONT.**

208-b

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R. McDougall & Co., Galt

Are the only manufacturers in Canada of the now well-known

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IRON WIND MILLS



Adapted for Cutting, Pumping and Grinding, and all general power purposes. The late very severe storms have demonstrated the need of a mill practically storm-proof, and the results given by our mill have been entirely satisfactory; not a mill has been damaged without the derrick blowing over or breaking. Intending purchasers bear this in mind and write us for prices.

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STRAWBERRY BOXES, \$4 PER THOUSAND.
Further discounts on large lots.

All styles of Fruit Baskets manufactured.

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"BELL"

PIANOS ARE THE ORGANS
LEADING INSTRUMENTS
FOR PURITY OF TONE & DURABILITY
CATALOGUES FREE
W. BELL & CO. GUELPH, ONT.

R. WOON & CO.,
OSHAWA, ONTARIO.

Be it announced that they have purchased from the Joseph Hall Machine Works Estate all their Patterns, Flasks, Templates, etc., and intend continuing their business, and will be prepared to furnish repairs for all machines, and machinery made at the Hall Works.

THE OSHAWA MOWER

We are completing for this season a limited number. The Mower is built almost entirely of steel and malleable iron; 4 1/2 feet rear cut, Steel Guards; Dowe Wheels 32 in diameter; light draft. The strongest and best mower in the market. Address all communications to

R. WOON & CO.,
OSHAWA, ONT.

A WORLD-'ROUND RECORD!

THE UTTERMOST PARTS OF THE EARTH PRAISE
WARNER'S "SAFE" CURE!

Merit wins
In the past decade H. H. Warner, who was restored to health from an "incurable Kidney disease" by what is now known as Warner's Safe Cure, and made a vow that he would spread its merits before the entire world of sufferers—has seen the most signal proofs of the world's need of a Scientific Kidney Specific. All nations recognize and welcome Warner's Medicines as standards of the highest excellence because their curative effects are PERMANENT—a sure proof of power and merit. Read a few of their voluntary testimonials. They speak a varied language, but tell a common story:

FRANK STUART, 28 Free School Street, Calcutta, India. "In 1875 was prostrated with a sudden attack of liver trouble. From '75 to '81 I had twenty of these terrible attacks. On the way to Japan, Capt. Connor of the 'Geukai Maru,' recommended me to use Warner's Safe Cure. After using 15 bottles, I had a sound, hearty appetite, thorough enjoyment of life, things to which I had been a stranger for six long years."

GEORGE BICKNELL, Editor Daily Telegraph, Melbourne, Aus., the great Australian Daily, March 20, 1888, wrote: "Work of a sedentary character for 20 years developed unpleasant symptoms of illness, of the Liver and Kidneys. I used Warner's Safe Cure, which speedily relieved me of the unpleasant symptoms, remedied my Dyspepsia, bettered my appetite, increased my enjoyment of life and work. It is a most valuable medicine, and I have no hesitation in recommending it."

DR. GUSTAV WEBER, of Dessau, Duchy of Anhalt, Germany, May 30, 1887, writes: "For several years I have suffered with inflammation of the Kidneys, Rheumatic Pains, etc., for which I go every summer to Carlsbad, and find a little relief. To this suffering is added a Diabetes Mellitus (sugar diabetes), which appears alternately with Rheumatism. With the using of the 15th bottle of Warner's Safe Cure I have completed my cure, for which I am greatly indebted to you, Warner's Safe Cure. I have apparently been restored. I repeat with this my sincere gratitude."

REV. HENRY PLUME, M. A., Archdeacon, Townsville, North Queensland, Oct. 13, 1887, writes: "During my long bush tours I have come across many wonderful cures effected by Warner's Safe Cure. For fever, so prevalent in the bush, it seems to be a certain cure. From what I have seen on my late trip, I should never start on a journey without my pack being furnished with a bottle."

GEO. THORNE, Ex-Premier, Queensland, at Ipswich, Sept. 2, 1887, writes: "I have recommended Warner's Safe Cure to many people who have suffered from different complaints, and in every case a cure has been effected. Personally I have used the medicine and derived the greatest benefit from it."

CAPT. CONNOR, of the Steamer "Geukai Maru," Japan, Suffered from congestion of the kidneys and liver, losing four stone in weight, determined to give up his steamship, almost contemplated suicide. One day an American passenger recommended him to use Warner's Safe Cure. In two months he recovered his lost strength, and was the personification of health and strength. "God bless the day I took Warner's Safe Cure," he says.

GEN. W. F. NUTHALL, of 10 Edith Terrace, Brompton, S. W. London, Eng., who contracted Kidney and Liver disease in India, March 10th, 1887, wrote that he "was at times prostrated with the most agonizing attacks from passage of Gravel. I was firmly of the opinion that I should never recover my health, as the long residence in India had caused so much disease of the Liver and Kidneys that I was beyond permanent help. In this desponding condition I began Warner's Safe Cure, and in eight months I fully recovered my health, and to-day am in its full and perfect enjoyment, never having had a particle of trouble since my remarkable recovery. As this was five years ago I can safely say that the wonderful cure was permanent and is all to be attributed to Warner's Safe Cure."—[Author of "Staff Corps Guide."]

DR. WM. EDWARD ROBSON, Late Royal Navy, England, writes April 12, 1887, from New Echam, Stains, Eng.: "My attention was first called to Warner's Safe Cure about a year ago, when a patient of mine suffering from Bright's Disease was cured by its use. Since that time I have prescribed it in hundreds of cases, with the most gratifying results, and I am willing to acknowledge and commend thus frankly the value of this great remedy."

WILLIAM BEDE DALLEY, Q.C., Privy Counsellor of the Queen, Sydney, New South Wales, writes February 21, 1888: "I can bear witness to the very great improvement in my health consequent on the persistent use of Warner's Safe Cure." The Hon. W. B. Dalley is the most celebrated lawyer in the Colony and the most brilliant orator and greatest statesman in Australia; he is ex-Premier of the Colony of New South Wales.

H. H. Warner & Co. point with pride to the World-'Round Fame of Warner's Safe Cure. They offer the above as genuine in all respects and true, so far as they know with \$5,000 for proof to the contrary. Ask your friends and neighbors about.

WARNER'S "SAFE" CURE!

\$5 to \$8 a Day. Samples and duty FREE. Lines not under the horses' feet. Write BREWSTER'S SAFETY REIN HOLTER, HOLLY, MICH.

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BRICK AND TILE MACHINERY

Five different kinds of Brick and Tile Machines for Steam or Horse Power, manufactured at C. NORSWORTHY & CO'S, St. Thomas, the head quarter for clay working machinery for the Dominion of Canada.

Several Second-hand Stock Machines for from \$35 to \$55. PORTABLE THRESHING MACHINES A SPECIALTY.

Send for Catalogue. Also Engine Boilers, Saw Mills, and General Machinery.

C. NORSWORTHY & CO., ST. THOMAS, ONT.

Stock Notes.

Mr. Chas. Goat, Brooklin, has recently sold the recorded Clydesdale stallion, Joe. Roberts, to go to Dakota, U. S., and a Shorthorn bull to E. W. Vernam, Darlington. He reports the demand for Cotswolds and Clydesdales good.

The Shropshire Sheep Association of England offer at the next Toronto Industrial Fair, a cup valued at \$50, as a prize for the best pure bred Shropshire ram and seven of his offspring, namely:—Two ram lambs and five ewe lambs; all must be purely bred.

Thos. Wilson, Brooklin, has sold six imported Clydesdale mares within the past four months. Chas. Goat and John Vipond, of Ontario Co., bought two each, the other two were sold to Americans. Mr. Wilson intends importing a number of Clydesdales this season from Scotland, and will sail in a few days.

Mr. James Burns, of Greenbank, Ontario, has sold his Clydesdale stud colt to Iowa buyers for \$250. Mr. Burns has a very nice herd of pure-bred and grade Shorthorn cattle, numbering about forty head, at the head of which is an imported Cruickshank bull. He also has a large and good flock of pure Cotswold sheep, having recently bought the entire flock of Mr. James I. Davidson, of Balsam, Ont.

R. Rivers & Son, of Spring-hill Farm, Walkerton, report their stock as having passed through the long winter remarkably well. The crop of Durham calves, sired by their 1st prize yearling bull "Victory," of the Cruickshank strain, are inheriting the good qualities of their sire. They have also had good success with their breeding ewes; the lambs, both Leicester and Southdown, coming strong and healthy from 1st prize and imported rams. Just the place to select a good ram lamb for the coming season. Advertisement later on.

Messrs. Dundass & Gundy, of Yelverton, Ont., write us the following account of their Clydesdales:—Our 1887 importation numbers 13 animals, consisting of 6 stallions and 7 fillies. "Bold Knight" (4862), from the same mare (Nannie, 5200) as the noted "General Neil" (1143), which had few equals in the whole of Scotland as a show and breeding horse, goes to Mr. E. Trinder, of Atlantic, Iowa, U. S. Mr. Trinder also takes the grand filly "Maid of Glenshee" (vol. x), bred by John Park, Esq., Renfrewshire. "Brown Stout" (4985), sold to Mr. Levi Boles, of Springville, Ontario, is a grand, wide-made colt, of good quality. Mr. Boles also takes the promising filly "Nelly Taylor," vol. x; she has won prizes on both sides of the Atlantic. Mr. J. Whitfield, Cavan, Ontario, takes the noted prize-winner, "Lady Bird," vol. x; sire, "Gallant Lion" (3163); "Lady Bird" was first at Draymen, 2nd at Barhead, 2nd at Erskine, and 3rd in the Derby at Paisley last year. Her top is smooth, and her feet and pasterns are all that could be desired; qualities much looked for in Scotland. Mr. Wm. Philp, Yelverton, Ontario, secures the handsome filly, "Campbeltown Maid," vol. x, sired by the noted breeding horse, "Jacob Wilson" (2,178); he was first at Campbeltown, Agricultural Society's Show, in 1886. Mr. John Mounsey, of Fraserville, Ontario, made an admirable selection in the filly, "Gallant Lass," vol. x; her sire is "Gallant Lad" (2,781) winner of the Glasgow premium in 1885. He also took "Nancy Bright" (2,691) by "John Bright" (411); this filly stands on short legs and is a true specimen of Clydesdale breeding. "Lothian Gem," vol. x, perhaps the gem of the lot, was purchased by Mr. R. Grandy, of Manvers, Ontario. "Lothian Gem" was first at Kilmalcolm in the open class for yearlings and also first in the Derby class. "Jeanie Rae," vol. x, will be retained by R. D. Dundass, one of the firm; her sire was the noted breeding horse "Old Times" (579). The remaining four colts are "General Wolfe," vol. x; "Glenorchy," vol. x; "Mariner," vol. x, and "Macnair," vol. x. All good ones and deeply bred in the best Clydesdale blood of Scotland. They are prize winners themselves, and descended from prize-winning stock.

(Continued on page 155.)

THE JOHN ABELL ENGINE AND MACHINE WORKS, TORONTO.

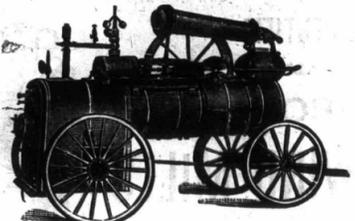
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STEAM and HORSE-POWER THRESHING OUTFITS, STRAW-BURNING, PLAIN and TRACTION PORTABLE ENGINES



"THE TORONTO ADVANCE,"
IS THE MOST PERFECT THRESHING
MACHINE MADE.

THE SIMPLEST.
THE STRONGEST.
THE LIGHTEST.
THE MOST DURABLE ON THE CONTINENT.



"THE TRIUMPH ENGINE,"
THE WINNER OF 13 GOLD MEDALS.

VALUABLE IMPROVEMENTS FOR 1888.

Send for Catalogue.
268-y

JOHN ABELL,
TORONTO, CANADA.

BUGGIES!



We make a specialty of
**PIANO BOX
TOP BUGGIES**

specially adapted for
farmers' use.

Our output for 1887 was
over 1,000.

Agricultural Agents will
find it to their advantage
to send for Catalogue
and Price List.

All work is guaranteed.

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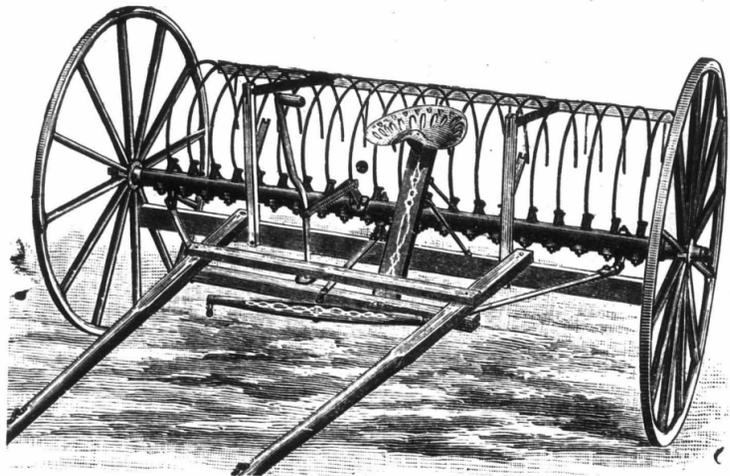
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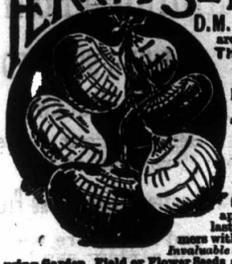


The Rake Head is one piece of Iron Tubing. Cannot rot and will never sag.

The **BEST** and **CHEAPEST** RAKE in the MARKET.
Write for prices before purchasing. **THE ERIE IRON WORKS MANUFACTURING CO.**
are the only manufacturers of this rake. We also manufacture Plain Tooth Harrows, Steel Flows,
Potato Diggers, Iron Frame Corn Cultivators, Trump's Patent Steel Cultivator Steel Drum,
Rollers; also Wooden Drum Rollers. See advertisement of Patent Lance Tooth Harrow in April issue.
Address, **ST. THOMAS, ONT.**

268-a

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FERRY'S SEEDS.
D.M.FERRY & CO.
are admitted to be
The LARGEST
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in the world.
Illustrated, Descriptive Priced
SEED
ANNUAL
For 1888
will be mailed
FREE TO ALL
applicants, and to
last season's custo-
mers without ordering it.
Invaluable to all. Every one
using Garden, Field or Flower Seeds should send for it.
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WANTED—Choice samples of Timothy, Red and Alsike Clover, etc. Correspondence invited. 267-a

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BEWARE, H. J. Open all the year. Best course of Business Training; best facilities; pleasantest location; lowest rates; shortest time; most highly recommended. Write for catalogue and be convinced. R. E. COLEMAN, Frost. 262-y

CANADA BUSINESS COLLEGE
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TWENTY-SIXTH YEAR.
Best equipped and most successful Business College in the Dominion. Over 250 students past year. Offers unequalled advantages to farmers' sons and others desiring a business education. For handsome illustrated catalogue write.
258-y R. E. GALLAGHER, Principal.



The "DOHERTY ORGAN"
maintains its supremacy over all others.
BUY THE BEST. 261-y

FERTILIZERS

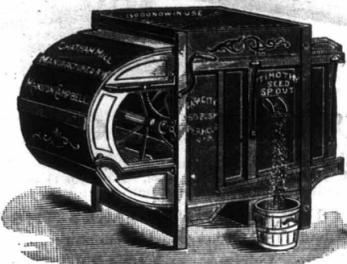
For Grain, Vegetables and Roots,
Fruit Trees and Small Fruits,
MANUFACTURED BY
The Standard Fertilizer and Chemical CO.
(LIMITED.)
SMITH'S FALLS, ONT.
The HIGHEST RECOMMENDATIONS from practical men. Descriptive Pamphlet free on application.
Address orders to
R. J. BRODIE, Manager,
SMITH'S FALLS.
Or BRODIE & HARVIE, Montreal. 267-c

BROOKS' CHAMPION FORCE PUMP
—AND—
FIRE EXTINGUISHER,
Patented Aug. 25th, 1882.
A BOON TO FRUIT GROWERS
By simply adjusting the sprinkler, which goes with each pump, it is adapted for spraying gardens, plants, trees, lawns, etc., also for throwing liquid solutions of all kinds, to destroy noxious insects on plants, vines or trees.
Metal price, Galvanized Iron, \$3 50; Brass, \$4.50.
Good Reliable Agents wanted in every locality. Send for Circulars. Sole Manufacturers for Canada.



BEECHER BROS.,
LONDON, ONT. 268-b

THE CHATHAM FANNING MILL



2,800 SOLD IN 1887.
The Improvements for 1888 are as follows: To the large number of screens and riddles furnished last year I have added four zinc screens, making 17 in all, with the following objects in view, which I am sure are important: 1st. Fast and good cleaning of wheat. 2nd. Special attention has been given to rapid cleaning of barley, removing all foul seeds and broken weeds. 3rd. Have added a long mesh zinc screen for taking chaff, oats or rye from wheat, and also an attachment for knocking or agitating the screens and not allowing the meshes to fill up.
Send for Circular.

MANSON CAMPBELL, Chatham, Ont.
MASSEY MFG. CO. of Toronto, 66 McGill St., Montreal, Sole Agents for the Province of Quebec.
VAN ALLEN & AGUR, Winnipeg, Man, Sole Agents of Manitoba and N. W. T. 268-g
Agents wanted in unoccupied Territory.

THE DAISY CHURN
was awarded the Silver Medal and First Prize over all competitors.
AGENTS WANTED
in every town in the Dominion. For Price List and Terms Address
WORTMAN & WARD MFG. CO.,
LONDON, ONT. 266-d



STOCK NOTES.

We desire to call our readers attention to Mr. M. H. Cochrane's auction sale of Hereford and Aberdeen-Angus cattle, which takes place at Compton, P. Q., on May 16th. This is one of the largest and most noted herds in Canada, many of which are imported and very choice animals.

Mr. Arthur Johnston, of Greenwood, Ont., who a short time ago imported from Scotland eight very fine young Shorthorn bulls, reports his herd as doing very well. He has sold probably within the last four months nearly forty head of pure-bred Shorthorns, all for breeding purposes. Their purchasers are scattered widely over the Dominion and several have gone to the U. S. His sales of Clydesdales have also been good. Although selling so many he still has a large and good herd.

D. & O. Sorby, Guelph, Ont., report the following sales since those mentioned in the April issue:—To D. Mooney, Tarkio, Mo., Gallant Boy (imp.) [303] (4387), foaled 1883, sire Top Gallant (1850), dam Jess of Boreland (2098). To John Davidson, Ashburn, Ont., Kate Hill (imp.) [215] (4129), foaled 1880, sire Young Surprise (1034), dam Garrel Mare, by Prince of Wales (674); Kate Hill is supposed to be in foal to Boydston Boy (imp.) (111).

Mr. James S. Smith, Maple Lodge, Ont. writes us that his recent sale was satisfactory. The cattle offered were good and well bred. The prices were not large, but satisfactory for the times. He has 32 head remaining in his herd, all doing well. Duke of Colonus (9282) is at the head of the herd. Following is a list of animals sold, with names of purchasers and the prices:—Cows and heifers—Rheina (Lauria), roan, calved March 31, 1884, Thos. Brand, Forest, Ont., \$120; Princess Constance Ninetzin 3rd (Daisy), red, calved June 24, 1885, D. McLaren, Cromarty, Ont., \$136; Princess Constance Ninetzin 4th, (Daisy), red, calved May 24, 1886, Alex. Smith, Lieury, Ont., \$75; Princess Constance Ninetzin (Daisy), red, calved Jan. 30, 1884, John Jardine, Forest, Ont., \$145; Rheina 2nd (Lavinia), roan, calved Oct. 25, 1886, Wm. Pagan, Lawes, Ont., \$72; May (Lavinia), roan, calved Jan. 4, 1884, David Brand, Forest, Ont., \$128; Lovely Queen 4th (Lovely), red, calved Feb. 6, 1886, Thomas Crawford, Widder, Ont., \$135; Princess Ninetzin 5th (Daisy), red, calved March 28, 1886, Richard Delbridge, Winchelsea, Ont., \$100; Duchess Jane 8th (Jane 3rd), roan, calved Jan. 25, 1887, Henry Knight, Mullifary, Ont., \$100. Bulls.—Baron Steule (Lavinia), roan, calved April 3, 1886, W. A. Alson, Frome, Ont., \$100; Baron Breakspear (Lavinia), roan, calved Sept. 2, 1886, J. McMurtry, Ailaa Craig, Ont., \$85; Tenth Prince of Steule (Lavinia), red, calved March 3, 1887, Wm. Pagan, for Howick Live Stock Co., \$165; Lemuel Barker (Lavinia), roan, calved Nov. 3, 1886, Wm. Wise, Clinton, Ont., \$140; Royal Barrington (Daisy), red, calved Feb. 13, 1887, John Scott & Sons, Christine, Ont., \$80; Ninth Prince of Steule (Lavinia), roan, calved Nov. 23, 1886, Wm. Handy, Michigan, U. S., \$175; Royal Barrington 2nd (Daisy), red, calved April 10, 1887, John Watson, Brinsley, Ont., \$100; Royal Barrington 3rd (Daisy), red, calved April 24, 1887, C. Pettit, Southend, Ont., \$116. Nine females, \$1,001; average, \$111. Eight bulls, \$956; average, \$120. Seventeen head, \$1,957; average, \$115.

"IMMIGRANT CHILDREN."—Mr. John T. Middlemore, the founder of the Orphan Children's Emigration Charity, London, Ont., left Liverpool on the 27th inst. in the S.S. L. Ontario with a party of 50 girls and 120 boys between the ages of 6 and 18 years, who are brought out to this country for adoption or hire, chiefly among farmers. They are expected to arrive at the Guthrie Home, near the city, on or about the 9th prox. This will be Mr. Middlemore's 15th annual visit to these shores with juvenile emigrants from Birmingham, England, since 1872. Already many applications accompanied with good references have been made for the children expected to arrive, but more are required. Further particulars may be obtained by addressing Mr. H. Gibbens, Manager of the Guthrie Home, London, Ont.

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THE NEW MODEL.

33 and 36-inch cylinder. Will thresh more grain of any kind, and cleaner, with less waste, than any machine in the market. The New Model is the best machine to be had for Flax.

HALL THRESHING MACHINES.

32 and 36-inch cylinder. Though this machine has been before the farmers of Canada and the United States for fifty years, it is still the favorite machine where horse-power is the motive power to drive it.

OSHAWA 12-HORSE PORTABLE ENGINES,

With Spark Arresters, Dalzell Steel and Wilson's Steel Tubes in the Boilers, the best Steel and the best Tubes in the world, ensuring absolute safety to all who look after their engines.

PITT'S 10-HORSE DOWN POWERS.

WOODBURY 12-HORSE MOUNTED POWERS.

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All of Iron. Safe to leave out in all weather.

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All of Iron. Safe to leave out in all weather.

In quality of material, good workmanship and finish these machines cannot be excelled. Repairs and parts of machines at all times on hand.

Joseph Hall Machine Works Oshawa

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—GOOD FOR—
Wheat, Buckwheat, Cabbage, Rye, Millet, Onions, Oats, Earley, Potatoes, Corn, Peas, Beans, Tomatoes, Turnips, Carrots, Hops, etc., etc.

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—GOOD FOR—
All Kinds of Grain and Root Crops.

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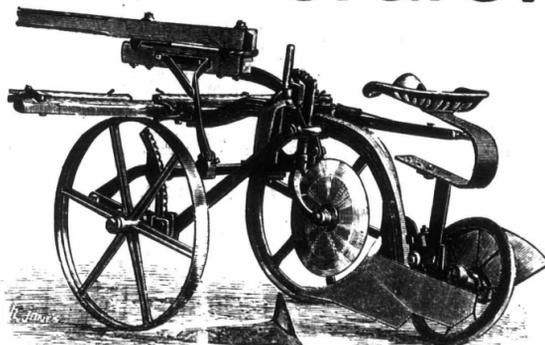
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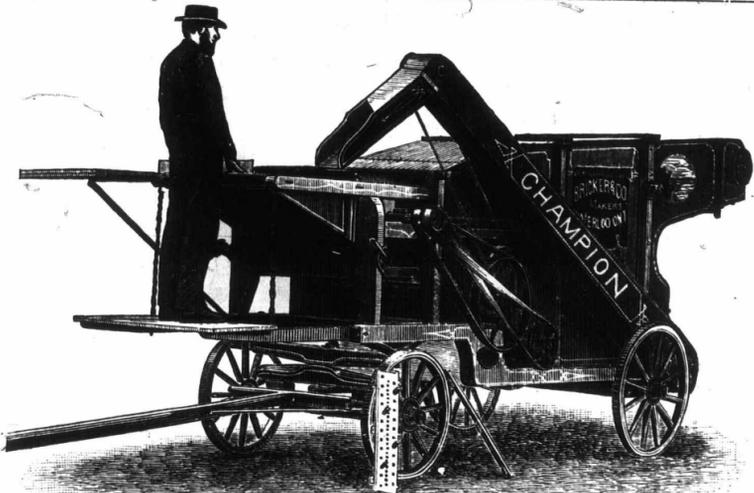
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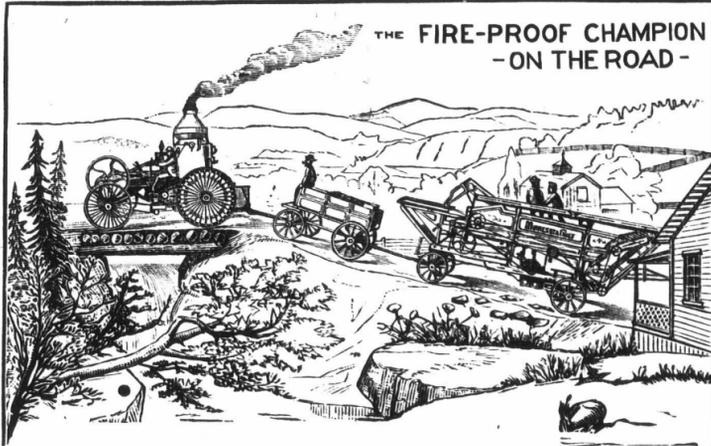
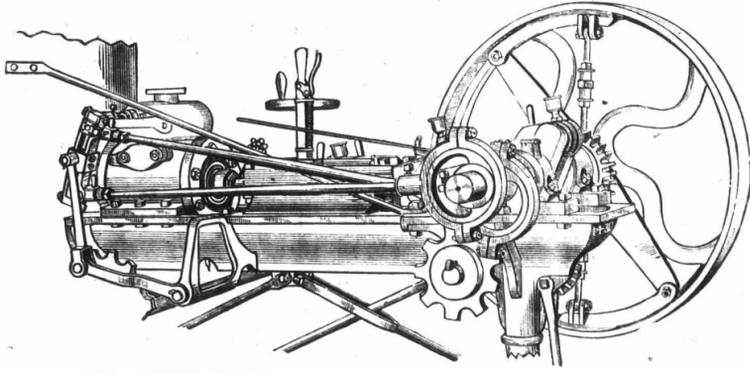
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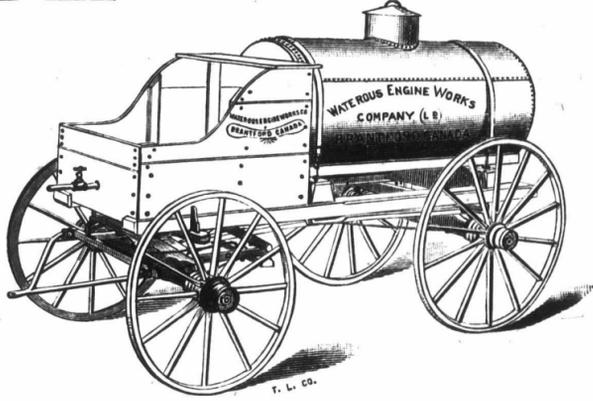
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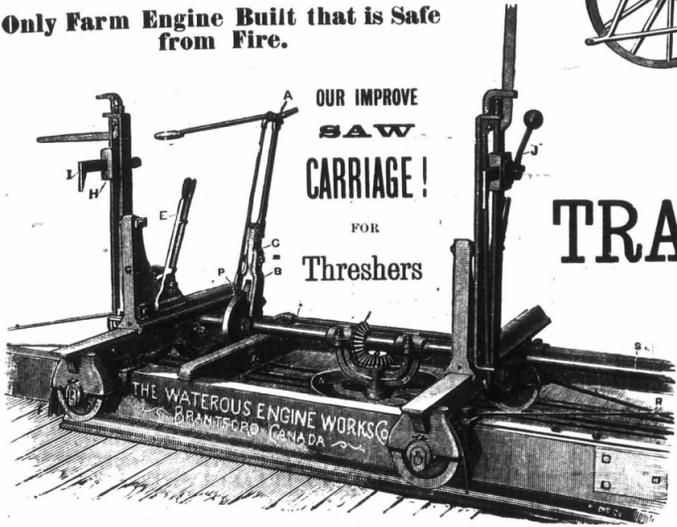


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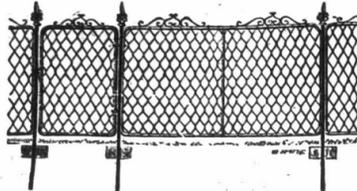


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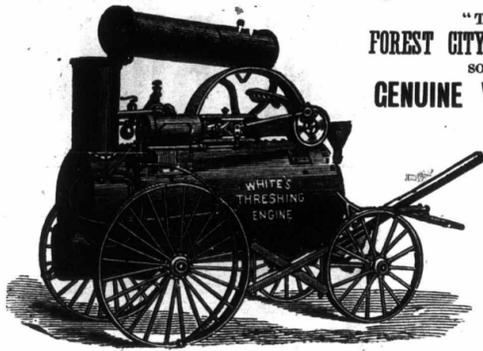
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