

The FARMER'S ADVOCATE

AND HOME MAGAZINE.

VOL. XV.

LONDON, ONT., APRIL, 1880.

NO. 4.

REGISTERED IN ACCORDANCE WITH THE COPYRIGHT ACT OF 1875.

THE FARMER'S ADVOCATE

—AND—
Home Magazine.

WILLIAM WELD, Editor and Proprietor.

The Only Illustrated Agricultural Journal
Published in the Dominion.

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

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The Month.

During the past month the weather has been open, fine and generally frosty, although there have been some mild days. We think there has been no material change in the prospect of the wheat crop; the plant is yet apparently in a healthy condition, although along the lines of the G. W. R. and G. T. R., between this city and Toronto, the top is badly browned by the frost. But there is sufficient vitality left in the plant to ensure a good crop, if nothing injurious to it occurs; much damage may be done should we have alternate frost and thaw for the next three weeks. We hear from the eastern part of Ontario that the crop does not promise as favorably. The clover is badly thrown out. Now the price of clover seed is so low, it will pay farmers to sow it liberally, even if not intended for meadow; a good body of clover that can be raised from early sowing on grain land, having only one season to lie, will be found a cheaper mode of increasing the fertility of the land than by drawing manure. We have had sufficient for a good cut in the fall from grain land seeded with clover in the spring. The cost of seeding an acre when clover is procurable at \$3.25 per bushel is very trifling. It will pay to go over the wheat fields with a good roller as soon as the frost is out and the land dry enough to bear the horses.

This year you should be more careful than usual in attempting to raise live stock of all kinds, particularly sheep, as they always have paid and we think must pay better than ever, as the rot is sweeping off the flocks in England. That disease is fortunately unknown in Canada.

The Board of Agriculture and Arts of Ontario.

This Association held its annual meeting on the 24th of March, at Toronto. J. C. Rykert, M.P., was elected President. Reports and communications were read.

The greatest amount of time was spent in discussing and devising some plan to prevent frauds with tickets, badges and passes, and attempting to arrange for counting, checking and recording the numbers issued. Mr. K. Graham, of Belleville, said that the belief that dishonesty and fraud were practiced was rapidly spreading. Mr. G. and many others worked hard to prevent the possibility of fraud taking place either in or outside of the Board in regard to either tickets, badges or passes.

We are pleased to state that the Hon. D. Christie has now altered his opinions in regard to admitting American stock that are liable to disease into Canada. He spoke very strongly concerning the danger to be dreaded from pleuro-pneumonia, and against the removal by the Government of the embargo which he ere now condemned. The Executive Committee also reported that they would not recommend the Council to petition the Government to relax the restrictions on the importation of cattle from the United States.

The following are the alterations in the prize list:—The Prince of Wales' prize of \$50 is to be given for the best heavy draught stallion, any age; a diploma and \$25 will be given to the best herds of Herefords and other cattle, and for the best Durham breed \$40. For the best five fat steers, a gold medal; and the best five fat heifers, a gold medal; for the best pen of Cotswold sheep, Canadian bred, \$20; Leicesters, Canadian bred, \$20; South Downs, \$20; Shropshires, \$20; four fat sheep, \$15; best improved Berkshire boar and two sows, \$20; do. Suffolk, \$10; stallion for agricultural purposes, of any age, diploma only; pair of matched horses, \$15. Five hundred dollars were voted towards the prizes in cheese and butter, on the understanding that the Eastern and Western Dairymen's Association grant \$500.

The subject of giving prizes for the best managed farm was brought up by Professor Brown, and a scheme adopted dividing the Province into six districts or groups, in one of which, consisting of fourteen electoral division societies, there is to be offered this year one gold, one silver and twelve bronze medals. The group selected this year is the one adjoining the place of holding the exhibition, and consists of the following counties and electoral divisions, the figures representing the number of societies in each county, viz.:—Niagara 1, Welland 1, Lincoln 1, Haldimand 1, Monck, 1, Wentworth 2, Halton 1, Waterloo 2, Brant 2, Norfolk 2; total, 14. Farmers desiring to compete must do so through their society, applying to the Secretary by the 1st of May. The Societies are requested to select three farms to compete and send names in by the 15th of May. The judges have certain rules laid down for their guidance, and will report the best farm in each electoral division society for a bronze medal, and the best and second best in the group for the gold and silver medal.

Calves.

There are many methods adopted in the treatment of calves; and when the calf is to be raised by hand one as good as any is to let it suck for a week or ten days, feeding afterwards with new milk for another week until it can drink easily, giving it three quarts of milk in the morning and as much at night; afterwards, for the new milk skim milk is generally substituted, and half a pint of finely ground oats for each meal per calf, mixed with hot water for several hours before feeding, the better way being to thoroughly boil it, then add the allowance each calf is to get with the milk, thoroughly mixing before feeding. Linseed similarly prepared may be substituted for the oatmeal.

Many who should know, think that when calves are brought up by hand to be afterwards reared and fattened, they should receive new milk constantly, the quantity being in turn gradually diminished by the substitution of dry feed, which they should be taught to eat as early as possible. This can be done at an early age by keeping a little good clover hay before them in a rack provided for the purpose; also it will be found of advantage to slice turnips or other roots very fine, and commence by putting a little in their mouths after giving them their milk. By this means they will soon learn to eat well, and should have as much hay and roots as they will eat up clean. Meal composed of coarsely ground oats two-thirds, and peas one-third, may be sprinkled on their cut turnips; no specified amount to be fed can be given, but by beginning to feed meal as soon as they will eat it, you can increase the amount from time to time, only feed as much as they will eat up clean at each time of feeding. Their quarters should be kept clean and dry, fresh straw being given daily. Many practical men consider it better to keep calves in all summer, supplying them with plenty of green food at all times; sufficient roots and clover hay should be reserved to feed them until the first soiling plant becomes ready to cut. After they are a few months old they should have free recourse to pure water, especially in the warm weather; when it is cold and they are getting plenty of roots or milk, they will not require much water, if any, especially the very young ones, which will not require any. Great care should be taken not to surfeit them of their feed, and pains must be taken to keep their feed boxes and hay racks clean and sweet, always removing any picked-over hay, which may be utilized by being fed to the older animals. The surplus feed, if any be left in their boxes after they have done eating, should also be removed and utilized as the hay. Care should be taken to feed them regularly three times per day with their green feed or roots, as the case may be, and when hay is fed, but twice; it should be morning and evening, and that which may be in their rack at noon should always be shaken up. It is a decided loss if a young animal is not kept in good growing condition from the time it is dropped until it is matured. One well fed calf is worth two or three that have been recklessly handled, and it is decidedly less trouble, and a source of more pleasure as well as profit.

English Letter, No. 12.

[FROM OUR OWN CORRESPONDENT.]

The past month has not been one of much interest in events specially interesting to your readers.

Apropos of Irish affairs, the extent to which the Green Isle is suffering through the untoward season last year, is shown by the statistics of agriculture just issued by the Registrar-General, which exhibit the startling fact that the money value of crops of Ireland last year was £10,014,788, or more than fifty millions of dollars less than in 1878; and £8,847,385 less than the annual average of the last ten years.

The English farmer is indeed to be pitied. Not only is he fearfully handicapped by heavy rents, taxes, and other burthens in his competition with trans-atlantic competitors; not only is he half ruined by disastrously poor crops, but now the rot is playing frightful havoc among his sheep, especially in the Midland districts. On some farms it amounts to complete annihilation. One farmer lost 600 right off; and many others count their losses by hundreds of pounds. The effect on the lambing season, now close at hand, will be most marked. However, "it is an ill wind that blows nobody good," and such of your Canadian farmers as have a good head of sheep, and prepare them judiciously for this market, ought to have a flourishing time.

As regards the cattle trade, prices are sure to improve as the season advances. Unfortunately for the interests of the trade, the exporters from Canada are pursuing the same system as last year, and by competing with each other for space on board the steamships to an excessive degree, are doing their best to place the bulk of the profit to be obtained in the hands of the steamship owners. This is the more vexatious because the steamship owners are able to run their vessels far more cheaply now than at any previous time. For instance, the Cunard steamer *Britannia*, the best vessel of her time, in 1840 obtained a speed of 8½ knots per hour and expended 48.3 cwt. of coal per ton of cargo obtained; whereas the *S. S. Britannic*, in 1879 ran at the rate of 15½ knots per hour, and expended only 4.3 cwt. of coal per ton of cargo delivered. Ought not the owners of cargo to have some share in this enormous saving of time and fuel?

An article in a leading agricultural journal in this country upon the export of pedigree cattle to the Australian Colonies, inspired by a letter from a gentleman who has recently visited the principal herds in those far off dependencies, reveals the fact that it is and will be necessary for Australians to import their pedigree stock, for the improvement of the native herds, &c., from time to time from the northern portions of the empire. It has been found from long experience that in the hotter climates shorthorns lose their hair, and those "handling" qualities so peculiarly prominent in this most noted breed. Canadians, therefore, have something to pride themselves upon in this fact, that whereas the southern colonies have to import their pedigree stock, owing to climatic disadvantages, the English breeders have found it to their advantage, in many cases, to import pedigree stock from the Dominion. In further acknowledgment of your great advantage in this respect, the Hon. David A. Wells, writing in the *North American Review*, some time ago, states of your Province, that it raises the finest cattle, with qualities specially desirable to make good the deterioration of stock in other sections.

It is with no little pleasure that I see it announced that the United States authorities have withdrawn the prohibition against the entry of

Canadian stock into the States; for owing to similar climatic conditions to those of the Australian Colonies, many of the States are obliged to have similar recouping draughts of our superior herds. Our pedigree stock raisers, who have hitherto enjoyed no mean trade in the United States, have every reason to be hopeful, for assuredly they will have as good and a more extended market in the States as Great Britain has in the Australian Colonies.

I have to note that Herefords appear to be rapidly gaining ground in the United States. Mr. H. C. Burleigh, of Fairfield Centre, Maine, has just made what is stated to be the most important selection of Hereford cattle, in point of numbers, from the leading herds of England, which has ever been made for shipment across the Atlantic. His selections are from the herds of Her Majesty the Queen and Messrs. Carwardine, P. Turner, W. S. Powell, T. Duckham, A. Rogers, W. Price, A. P. Turner, B. Rogers, &c., &c.

The English farmers in various districts are bestirring themselves actively in many localities with the view of obtaining a larger representation in Parliament; and of pressing on land tenure and other reforms, which are daily becoming more necessary if their position is to be at all retrieved.

Agricultural Societies.

THEIR ADVANTAGES.—THEIR DEFECTS.

Perhaps no institution has done more in the past for the advancement and progress of agriculture in our midst than the annual gatherings of the various agricultural societies. Here farmers living miles apart meet in friendly intercourse—here they vie with each other in the production of the best. At these exhibitions for the first time many a farmer has witnessed what may be done in the production of the best beef, mutton, pork, etc., etc.; and seeing what is accomplished by others, he has gone home to follow the example. At these gatherings erroneous opinion and foolish prejudices have been removed, and stimulus created by these meetings has tended to develop, to a very large extent, the agricultural resources of our country. Their object ought to be the gathering together of the largest possible number to compare their productions under the most favorable circumstances. We think a fair question for discussion just now is, "How shall this be best accomplished?" Shall we depend on the annual Provincial Exhibition for these advantages, and if not, what shall be supplemented? It will be admitted by all that we cannot reach the masses by the Provincial Exhibition, as comparatively few from any single locality will find their way so great a distance. But, if it be true that, in proportion to the larger number, and excellence of the exhibits, so is the advantage gained (and this, we think, cannot be denied), then it follows that the larger the territory included in these exhibitions—provided they are within the reach of the classes sought to be benefited—the greater will be the benefit. We have now in existence county and township organizations. To accomplish the greatest results is it necessary to continue to hold an annual county exhibition, to be followed by a smaller one in each municipality? We are decidedly of the opinion that the greater overshadows the lesser, and, while in early days, without any railway communication, without good roads, without the easy carriage now so common, it might have been necessary to hold these smaller shows, there is now no longer any necessity, except in very exceptional cases, for their continuance. Of course if the object be to pay a few dollars to the principal farmers and mechanics in each municipality, in the way of prizes, then continue—but we

have always understood this was but an incentive to accomplish the higher ends above. Again, if no real good is to be gained, the continuance of these gatherings becomes a real evil. They must be held at a time of year when labor on the farm means wealth—when the time ought to be occupied in preparing the soil for the following crops and in marketing that already on hand. Those who exhibit must spend ten or twelve days in preparation. All the farm-hands expect to go, and all work must be stopped, if not for the following day. Again, it is always more or less expensive attending these exhibitions, quite as much so attending a small as a large one. Surely no good can be gained by gazing at the same articles a second time within a few days, only on a smaller scale. In view of all this we hold that the gathering of the people annually to attend these smaller exhibitions is but a waste of time and money and not any longer to be tolerated. We think the time has come when, "their usefulness being gone," the Legislature should be asked to discontinue the amount annually granted for their support. Carrying out the same idea, we are of opinion that in some localities good results would be seen from the union of two or more counties in the holding of a District Exhibition; at all events let us have fewer exhibitions and better ones. In the increasing number of these gatherings the interest is divided. Let us have more concentration and union of effort, and we feel sure that good only will be the result.

Strawberries.

There is no fruit more successful in such a diversity of soil and climate as the strawberry, still many who have plenty of land deprive themselves of them. Many do not plant them from the idea that they are too much trouble, while in reality they can be grown with no more trouble each year than so many potatoes. If the ground is rich enough to grow good potatoes or corn, it will produce good strawberries, but if not in good order apply well rotted compost. Coarse manures should not be used, especially in light soils. The ground should be worked deep as soon as dry enough. Any soil will produce strawberries, provided it is sufficiently dry. The lighter soils are more easily cultivated, and will produce the earliest and best flavored fruit, while the heavy soils produce larger specimens. They should be set out in the spring as soon as the land can be prepared, and should be littered over after planting with well rotted manure, which enriches the soil, keeps it moist, and prevents it from becoming hard. Old beds may be treated in the same way with good results. The method of cultivating the vines in rows three feet apart is generally considered the most satisfactory.

There were shipped of last season's crop, from Kings Co., N. S., 237,004 bushels of potatoes. Pretty good for Nova Scotia.

It is proposed to start a Sugar Beet Factory in Nova Scotia. Capitalists are prepared to invest \$4,000 in the enterprise, and a gentleman is expected from France early this spring to commence operations. When farmers of Kings Co., Hants and Annapolis decide to grow a sufficient quantity of roots, the work will, it is said, commence.

Canada is rapidly progressing in her live stock trade with the mother country. In 1877 the exportation from the port of Montreal from the opening to the close of navigation in the St. Lawrence river, was: of cattle, 6,940; sheep, 9,509; swine, 430; in 1878, 18,665 cattle; 41,250 sheep; 2,078 swine; in 1879, cattle, 24,832; sheep 78,792; swine, 4,745. At this season of the year Canadian cattle are shipped from Halifax, but we have not the figures of this winter's trade.

From the United States.

[BY OUR OWN CORRESPONDENT.]

Washington, D.C., March 20, 1880.

Scientific investigation and practical experiments by the Agricultural Department of this Government are daily demonstrating the possibilities of our varied soil and climate in the production of plants, fruits and cereals not indigenous thereto, and pointing out to the intelligent agriculturist the usefulness and methods for increased yield, of those which have been struggling in stunted neglect for existence ever since civilization planted its foot on this continent. Take, for instance, the analyses recently made by the chemists of the department of the many varieties of grasses in the United States. One of the most important questions for farmers is, "What grasses shall I grow—what exclude from cultivation?" He sees two grasses growing in his field, and naturally concludes that the one of ranker growth is preferable. This conclusion is in many cases erroneous, as the chemical analysis shows that in many instances the less luxuriant grass is the more nutritious, and on other accounts the more to be desired. The analysis shows further that by the addition of this or that element to the soil, or the neutralization of some exciting element, the luxuriance of the rejected grass may be made to equal and even surpass that whose rank growth only caused it to be preferred. Some grasses produce more milk, others more muscle, and others again more fat. These investigations of chemistry, and the reports based thereon, instruct the farmer and stock man which grass to choose to produce any desired effect.

The experiments of Frau Von Lade in the cultivation of the nettle in Germany, given to the public through our State and Agricultural Departments, has called the attention of many of our agriculturists to that pestiferous and noxious weed, and the consideration of the practicability of utilizing the many excellent qualities which have been in seclusion so long. A practical farmer from the North-west, in referring to this subject a short time ago, said:—I have done more cursing, digging, mowing and burning over that pestiferous weed than any man in my county. Being unable to exterminate, I have concluded to utilize, and my experience and observation confirm much that is said by Frau Von Lade in her pamphlet. It will grow in any kind of soil, requires little or no care, yielding in abundance, and as a fodder is excellent. During the first two or three years it may be harvested two or three times, later four or five times, or as often as the plants are one or two feet high and remain tender. I am convinced from experience, also, that the nettle may be mixed with the cattle fodder or infused and served warm the next day, in which shape cattle are generally fond of it. Cows and goats yield more milk, the milk more better colored butter, even in winter. Swine fatten quicker and better when fed with this fodder. I find also by acting on the suggestion in Frau Von Lade's pamphlet, that a handful of nettle seed mixed daily with their oats, make horses plump and give them a glossy coat. My experiments for several winters prove that hens, when fed nettle seeds mixed with their food, with few exceptions, lay regularly all winter. The assertion that nettles, by long culture and proper mechanical treatment, will yield a much finer and more beautiful fibre than hemp, I cannot endorse until I live several generations to try it. Those farmers in the United States and Canada who have failed to exterminate the nettle, should, like our western farmer, utilize it, and the translation of the German pamphlet entitled; "Die Nesselne Gespirmstpflanze," will aid them to that result.

The Commissioner of Agriculture, in a communication just made to the Sub-Committee on Agri-

culture in the House of Representatives, states that the results achieved in the laboratory of his department by various tests, have conclusively proven that, at certain stages in the growth of the plant, and treated in certain ways, the juice of sorghum and common cornstalks will as invariably granulate into pure sugar as will that of the ribbon cane of Louisiana, and giving results quite as favorable per acre as the average there. The effect of this work in the department has been to awaken a wide-spread interest in this industry, and we already see preparation making for planting tens of thousands more acres the coming season than were planted last year. He further states that the people of the United States have consumed since 1849, when gold was first discovered in California, over eighteen hundred millions of dollars worth of imported sugar and its allied products. During the same years there have been taken from the mines of California and other western States and territories, seventeen hundred millions of dollars. We see, then, that it has taken more than all the gold that we have produced to pay for the foreign sugar we have consumed. How this vast sum may be saved to the country in the future is one of the problems taken for solution in the laboratory of this department.

The Commissioner also says, in relation to the benefits resulting to agriculturists from the distribution of seeds and instructions thereon, that the increased production, per acre, of wheat and oats alone, which has resulted from over distribution of those cereals during the past few years, should suffice to convince the most skeptical of the great value of this work. Taking the last three years as compared with the three previous years, the increase in wheat was two bushels per acre. He states that he does not think it at all impossible so to hybridize and improve wheat through the instrumentality of such forms as he has heretofore recommended to be established, as to increase the general production of this cereal five or six bushels per acre. In portions of the country the increase in oats—an increase clearly the result of our distribution—has been as high as from ten to twenty bushels per acre.

Congress has now before it a recommendation for the purchase of one thousand acres of land near this city, to be devoted, under the direction of the Agricultural Department, to the experimental cultivation of all the different plants, cereals, trees, &c., suitable for a climate similar to that of Washington, and especially to the hybridization and production of varieties differing from and better than those now in use. Also for a veterinary surgeon, and a farm hospital for the treatment of all diseases in animals, and a veterinary division of the Department, with such supervising power as would enable it to detect and deal with all diseases of animals throughout the United States, and make known to farmers and stock men the prevention and cure.

LOTUS.

OLEOMARGARINE.—The Iowa State Legislature passed a Bill prohibiting the manufacture and sale of oleomargarine in the State under heavy penalties and imprisonment.

The best soil for wheat is where clay predominates. A mixture of sand and clay is the best for a succession of crops, and sand for a bright, stiff straw, but too sandy a soil is too porous for wheat, although good spring wheat is frequently grown on sandy soils. Muck is not well adapted for the growth of wheat, but where the land is rich wheat will succeed on a variety of soils. There is no better preparation for a wheat crop than clover turned under. Nitrogen is needed for the growth of wheat, and if the urine of the horses or cows is applied to the growing crop early in the spring, you may look for a good yield of grain.

Caution.

We deem it our duty to our subscribers to advise them not to depend too much on all the printed circulars or pamphlets that flood the country, nor on every advertisement, nor on all the panegyrics you may see in papers. The world is full of deception, and every means devisable is planned to get your money and property from you. It is far better for you to read publications that you pay for than free, gratuitous publications of any kind, even though they may be paid for by a State or nation. Many a State in the Union has expended large sums for publications tending to deceive. Even Canadian expenditures for printed matter are not free from taint. We extract the following from the Globe, March 20th:—

"Last Tuesday morning an emigrant train left Ottawa, and by the time it reached Cobourg there were 447 persons on board bound for Dakota, and only three for the Canadian North-west."

This we may partly account for by the neglect of our Legislators to remove the just causes of complaint as shown in the articles on Manitoba commencing in July, 1879, and partly by the glowing reports about the mining in Colorado. Many purchase cheap tickets for Manitoba who wend their way to Dakota and Colorado. We publish the following letter from one of our subscribers, and we can depend on our subscribers being the most reliable, intelligent, unbiassed and unprejudiced class of Canadian farmers:

SIR,—You will do a good turn to many of the young men of Canada if you insert the following. A great many are flocking out here from Canada, trying to get employment, thinking they can pick up money out of the dust of the street. There is plenty of money here, of course, but it takes a long time for hired men to get much of it. Hundreds of men are here that cannot get work to save their lives, and hundreds are arriving every day without much money in their pockets nor any friends to help them. To such I would say, stay where you are. Dozens of men are working here for one dollar and fifty cents per day, and paying four dollars and a half per week for board. This county will be overrun inside of three months, and hardship will be the experience of many that could have lived well in Canada. I send this, as I am an old subscriber, in hope that you will give it a place in your valuable paper, and as it reaches so many homes, some may be wise enough to take friendly advice, thereby saving their friends from having to send for them by purchasing a ticket for them to get home.

T. A. R.

Denver City, Colorado, March 16, 1880.

If you have friends that you can depend on and are not succeeding where you are, you may find it advantageous to move to our own unoccupied lands in this Dominion. Many have done well in the States; good inducements are offered to those who can take the hardest oath to fight against their native country; in fact, were it not for such an oath, we might perhaps have been a resident of the States, but probably we may be fastidious. Our advice to the old and middle-aged is, if you can live where you are, use great care before risking a certainty for an uncertainty, although you may hear of gold and silver being obtained in large quantities. The success of one man is in the mouths of thousands; the frozen, the starved, the killed have no voice and are never heard of one mile from where they drop, either from the hand of want or the robber. We have not yet, and perhaps never shall publish the heartrending scenes that we have seen and heard of when in Kansas, Missouri, Arkansas, the Indian Territory and our North-west.

Virginia creepers are being planted by the Pennsylvania Railroad Company on the hill-sides along the tracks. It is done to prevent land-slides, and will add greatly to the beauty of the scenery.

The Horse's Punishment.

A horse appreciates a comfortable fitting harness as much as he does a properly fitted shoe. The latter when set too tight, or with a nail driven into, or too near the sensitive tissues, produces positive lameness. Under this condition of things he is promptly taken to the shop for relief. But he may suffer nearly, or quite as much from the chafing of a badly fitted collar or a hard narrow belly band, drawn too tight. Or from a check rein shortened up so as to form of itself one of the severest of punishments. Either of these conditions will produce restiveness in the dullest brute, and in the case of an animal of nervous temperament, and having a thin sensitive skin, he is liable to become frantic, the obtuse owner or driver seldom appreciating the origin of the difficulty.

No greater evidence can be advanced to establish a horse's entire submissiveness than his willingness to pull against the collar with a portion of the breast surface denuded of its skin, and showing the highest possible state of sensibility. The average horse will do this skringing at every step. A horse learns to dread the approach of the master or driver, with harness in hand, if this has previously been a source of torment, or even of discomfort. A horse properly handled for a period, in a well fitted harness, then chancing to fall into the hands of a bungler, will at once detect the undue tightness or looseness of the strap, and will not settle down to his usual gait, contentedly, while the irregularity remains. A spirited horse may, under such an irritating influence, do from downright fear what may be wrongly charged as viciousness. Heavy strokes of the whip may fall upon the irritated beast only to be followed by evil results.

Among the every day torments to which the horse is subjected, we will enumerate the following: 1st. Abraded breast. 2nd. Inflamed back from defective saddle or harness pad. 3d. Sore mouth from a too tight gag rein, a severe bit or both. 4th. A sore tail from too tight or illy made crupper. 5th. An abrasion under the body, caused by a too tight or badly fitted belly-band. 6th. Irritation of the eyes from blinders being strapped too close together, or on the other hand are allowed to swing around, first striking one eye then the other. 7th. Ears chafed by the brow band being placed too high, or by metallic rosettes with a sharp outer rim, the base of the ear pressing across this at every motion. 8th. The excessive fatigue of all the structures of the neck under the influence of the bearing rein. The bearing rein, if made taut, and kept so for any considerable length of time, is a source of great discomfort to all horses, and an insufferable torment to many. A taut rein can be used with entire propriety, on horses of fine easy up carriage, especially while in motion, but if the muscles and bony structure of the neck extend forward horizontally from an upright shoulder, rather than striking out from a slanting shoulder, then the most intense suffering will be inflicted by straining the neck up to an angle entirely unnatural to the animal, especially if this strain be long kept up. To strain a culprit up by thumbs, till only his toes touch the ground, is certainly one of the severest admissible punishments that can be inflicted upon mortal, and the check rein is undoubtedly akin to it, in its extreme application.—[Western Farm Journal.

Phosphates:

"Phosphates have been discovered in the rear townships (of Ontario), and large quantities conveyed to Brockville and Kingston, and thence shipped to Europe, but the price of the mineral having greatly declined, the enterprise has been suffered to languish, but it is hoped that better prices will soon be obtained, when phosphate mining will again be carried on with profit."—Report of Commissioner of Crown Lands.

The complaint should rather be that there is so little home demand for phosphates. The wealth bestowed upon our country in such fertilizers is shipped to Europe and the United States to enrich their lands, while if they were applied to the fields of Canada they would repay the cost many fold. Let us send our phosphates to Europe in wheat and barley and fruit, and in meat and cheese.

Dairy.

Ontario Dairymen's Association.

(Continued from March No.)

BEST METHOD OF MAKING CHEESE.

At the evening session, Feb. 19, Prof. L. B. Arnold, Ithaca, N. Y., gave an interesting account of Arnold's process of cheese-making. He said that in 1877, while at Little Falls experimenting to perfect a cheap and pure extract of calf's rennet, the fact was developed that both alkalies and acids affected rennet unfavorably, and that only neutral substances could be applied to it safely. He had often observed that when an acid was added to the steeping of a dried stomach coagulation was accomplished quickly, and more milk was curdled with a given number of rennets when used in connection with some acid than when used alone, and the inference was made that the two agents aided each other or worked well together. But upon careful investigation it turned out that the coagulating power of the rennet and acid counted together always fell below the sum of both, and that the strength of rennet had been injured by the added acid. The influence of acid upon the strength of rennet extract was different from that of the alkalies, as the latter was more rapid and destructive. A very concentrated extract of rennet would soon be entirely destroyed by making the liquid in which it existed even feebly alkaline. Acids, on the contrary, in most cases acted slowly, and a few wholly destroyed the rennet power by their presence. Generally they only abated its strength, but in no case, whether of animal, vegetable, or mineral origin, did they fail to weaken it. Several German chemists had noted similar results. Observations upon the use of acid cheese also made it very plain that the more acid there was employed in the manufacture the more difficult of digestion it was in the human stomach. The paper contained many scientific proofs of this assertion. Summed up in a few words the process by which he made cheese was to draw the whey before any acid appeared, and then throw the curds into the sink as quickly as possible, stirring until at a proper temperature to put to press. By this process the cheese could be made without any acid, and he claimed that it was better cheese than any other made.

Mr. Robert McAdam, of Rome, N. Y., spoke at length on the benefits derived from Dairymen's Associations, Boards of Trade and Dairy Fairs, by bringing together from time to time the dairy farmers and factorymen, and the buyers and sellers of their produce, to mutually discuss the qualities and conditions, the merits and defects of the dairy produce which is offered for sale. He proceeded to say that there was a difference of opinion as to the relative merits of the different kinds of cheese which are produced. Tastes differ in these points, but individual taste and preference cannot form or control the general recognized standard of quality. The criterion for arriving at a correct solution of this point must be the market value of the commodity. In the production of cheese there were different methods pursued with more or less success in each. He referred to the Cheddar, Dunlop, Lanchashire, Leicestershire, and other systems of making cheese. He strongly advocated the Cheddar system of cheese making, in which the acid was developed in the whey, and strongly opposed Prof. Arnold's theory of sweet cheese making.

Considerable discussion ensued upon the comparative merits of the Arnold and Cheddar systems of making cheese, when a committee was appointed to examine a cheese made under each process in order to see which was the best, and report thereon.

The following table shows the comparative daily rate of increase in the younger classes for steers in the Shorthorn, Hereford, Sussex and Devon breeds of cattle, exhibited at the Smithfield Club Show of 1879:—

Classes for steers not exceeding 2½ years old.	
Shorthorns, 7 animals average	2.06 lb.
Herefords, 8 " "	1.91 "
Sussex, 7 " "	1.88 "
Devons, 7 " "	1.52 "
Classes for steers not exceeding 3½ years old.	
Shorthorns, 15 animals average	1.79 lb.
Sussex, 6 " "	1.72 "
Herefords, 12 " "	1.70 "
Devons, 9 " "	1.27 "

The Production of Milk.

Mr. Sheldon, writing to the London Times, says:—"Not only does the quantity of cream vary in the different breeds of cows, but also in that of different cows of the same breed. . . . That the composition of milk will change with the changes in the composition of the fodder which the cow eats is a principle fully demonstrated, and within certain limits the milk may be made poor by inferior or over-succulent food, and rich by concentrated food; and it would appear that while the proportion of casein remains fairly constant under increased food, insufficient food having a tendency to decrease the casein and substitute albumen, the character of the food influences more or less the proportion of butter. But to whatever extent food may influence the butter in milk, so far, at all events, as quantity is concerned, the breed of the cow influences it still more. It would appear, as the result of some careful researches, that the composition of dry substance in milk remains the same for the same cow, whatever may be her food, so long as it is healthy food; but this conclusion is hardly correct, for extended experiments go to prove that an increase in the food of both nitrogenous and non-nitrogenous matters does, within limits, increase the yield of milk and the proportion of dry substance in it, yet at the same time the proportion of fat in the food bears no special relation to the proportion of fat in the milk, but an increase of fat in the food goes rather to increase the production of milk as a whole.

"It is no doubt true that milking three times a day influences favorably both the quantity and the quality of the milk, and the shorter the time that has elapsed since the last milking the richer and fatter is the milk; but it must be borne in mind that this result makes an increased demand on the strength of the cows, and must be compensated for by a corresponding amount of nourishment; and while it is doubtless an advantage to a deep-milking cow to be milked thrice instead of twice in the twenty-four hours, particularly in the early period of lactation, this additional milking employs additional labor—a factor which a dairy farmer cannot afford to ignore."

Oleomargarine.

I have examined a large number of specimens of oleomargarine, and have found in them organic substances in the form of muscular and connective tissue; various fungi, and living organisms which have resisted the action of boiling acetic acid; also, eggs resembling those of the tapeworm. I have them preserved, to be shown to any one who desires to see them. The French patent under which oleomargarine is made requires the use of the stomachs of pigs or sheep. This is probably the way the eggs get in. I have specimens of lean meat taken from oleomargarine. There can be no question that immense amounts of oleomargarine are sold and used as pure butter. I regard it as a dangerous article, and would on no account permit its use in my family. I do not dare to use the sirups commonly sold in our markets, and I use but little sugar, as I believe them nearly all adulterated. In regard to glucose, I am informed and believe that seven-eighths of all the sugar sold in Chicago is made of, or adulterated with glucose. I have made more than a thousand microscopical examinations of milk in this city. I think that not over ten per cent. of the milk sold here by dealers is wholesome and unadulterated.—[Cor. Rural World.

Thirty Philadelphians have been arrested for selling oleomargarine for pure butter.

KEEP YOUR SHEEP.—There is likely to be, indeed there is now, a sharp demand for store sheep which enables farmers to dispose of what they have at prices which they little thought of getting six months ago, but if we owned a thrifty flock we should hold on to them for the present. The wool business has picked up wonderfully of late, and the demand has practically cleaned out all the stocks on hand, so that the clip of next summer is sure to be taken as soon as sheared at good prices, not at inflation prices, but at those which will make sheep as profitable as any other stock. This will in turn make a good demand for store sheep and lambs next fall, and we can see no reason for fearing that present prices will not be maintained. At any rate, if we were in the business, we would risk it.—Ex.

Stock.**Spring Care of Dairy Cows.**

The winter season is now so far gone as to leave only four to six weeks of feeding before the milking season will commence, according to the various times of calving; and the dairyman who has not fed his cows as well as his interest required during the early part of the winter, should do what he can to recover his lost ground, by feeding judiciously during the few weeks left. It being so near calving time, he should be cautious about giving food of too heating a nature. Pea, or corn-meal alone should not be given, if that can be avoided; and, if nothing else is at hand, it should be fed upon cut hay, so as to have it thoroughly mixed with fibrous food before entering the stomach. Peas and oats, ground together—one bushel of peas to two of oats—makes one of the best foods for dry cows. The food most needed by the cow at this season is such as will build up her muscular system, and re-invigorate her vitality. The food should be rich in phosphate of lime; for she is often depleted of this during the milking period, so as to render her bones spongy; and the diseases that afflict cows in spring are usually occasioned by the poverty of the food given through the winter. Cows that are fed upon good clover hay during winter, usually recover their vigor, because clover is rich in muscle-forming matter and phosphate of lime. Oats, peas, wheat-bran and oil-meal are all rich in phosphate of lime, and are excellent to give the cow renewed vitality during her non-lactating period. Care must be taken to give oil-meal in very small quantity at this period, as the time of calving approaches; and especially if it has not been given through the winter; yet one pint per day through the whole period of going dry will assist very materially in keeping the cow in health; and it often prevents the evil effect of dry, innutritious fodder. When given through the winter, we have never known impaction of the manfolds.

Oats and bran, mixed together, will be excellent food at this period; and if this food is continued after calving, it will help to establish a good yield of milk. During the first week after calving the diet should be spare—not so necessary if the cow is thin—but if fleshy, she should be kept on hay, except a quart of oil-meal, which is laxative and cooling. After all danger from milk fever is past, the feeding should be most liberal, so as to start the cow on a large flow of milk. After ten days from calving, no better extra food can be given than oats and wheat-bran, with one or two quarts of corn-meal. Much will depend upon the feeding of the cows before grass comes, to insure a good yield through the season. From dairymen who withhold the feed now shall be withheld the season's profits.—*National Live-Stock Journal, Chicago.*

Preserving Harness.

The first point to be observed is to keep the leather soft and pliable. This can be done only by keeping it well charged with oil and grease. Water is a destroyer of each of these. But mud, and saline moisture from the animal, are even more destructive. Mud in drying absorbs the grease and opens the pores of the leather, making it a ready prey to water, while the salty character of the perspiration from the animals injures the leather, stitching and mounting. It therefore follows that to preserve a harness the straps should be washed and oiled at intervals as required. To do this effectually the straps should be all unbuckled, and detached, then washed with warm soft water and crown soap and hung by a slow fire, or in the sun until nearly dry, then coated with a mixture of neatsfoot oil and tallow and allowed to remain in a warm room for several hours, and when perfectly dry rub thoroughly with a woollen rag. The rubbing is important, as it, in addition to removing the surplus oil and grease, tends to close pores and gives a finish to the leather. In hanging harness care should be taken to allow all the straps to hang their full length. Light is essential to the care of leather, and when the harness closet is dark the doors should be left open at least half the time during the day. All closets should be well ventilated, and when possible be well lighted. To clean plated mountings use a chamois with a little tripoli or rotten stone, but they should be scoured as little as possible.—*[Harness Journal.]*

The Farrowing Season.

One of the things to be especially guarded against at this season is costiveness in the brood sow. If there is any tendency in that direction it should be counteracted by giving laxative food, and corn should be especially avoided. They should be separated from all other swine at least a week before the time of farrowing, and should be assigned quarters where she can remain warm and comfortable until the pigs are old enough to follow her. A very common mistake is made in giving too much bedding. A very little cut straw will suffice; corn husks are good, and dry leaves are best of all, if they can be had. If you have no bedding but long straw, give it to the sow several days before farrowing, and she will work it up short herself. Very many pigs are lost by being tangled in the long straw or smothered on account of an over-supply of bedding. If there should be a cold snap just at the critical time, many a litter of pigs may be saved, that otherwise would be frozen to death, by quietly covering the sow completely over with an old horse-blanket. By this means the heat of her body will be confined, and the pigs may come through safely with the thermometer at zero on the outside. After they have once taken the teat and have dried off, there will be but little danger from freezing, unless it is extremely cold.

With a large sow there is always more or less danger of the pigs being crushed by getting under her. This may be prevented in a great measure by a simple device. Place a sheaf around the sides of the pen six to ten inches from the floor. It should be about eight inches in width and just high enough that the sow's back, when she is lying down, will not go under it. The pigs can escape under the sheaf, instead of being crowded against the sides of the pen, as is often the case without this contrivance.

The sow should have but little food for a day or two—nothing more than a very weak slop or gruel, slightly warmed. After the pigs are from four days to a week old, the sow may safely be fed all the nutritious food she will eat; and the pigs themselves should be taught to drink by the time they are ten days old.—*[National Live-Stock Journal, Chicago.]*

So-Called Founder.

In a reply to a horseman, Huron Co., we give from the National Live Stock Journal the following article on so-called founder:

In the beginning of the disease remove the shoes, and rasp down the heels and edges around the hoofs, so that the bearing of the animal's weight comes entirely on the sole and frog; then place the forefeet in a tub of warm water, during half an hour, and repeat this three or four times daily during two days; thereafter apply hog's lard or some softening ointment to the feet daily. Leave the animal without shoes in a roomy box-stall or comfortable shed with plenty of bedding. To keep such an animal tied up in a stall with inclining or sloping floor is objectionable; he must have liberty to frequently change his position, which cannot be afforded in a single stall. As soon as the shoes have been removed, and the feet pared as directed, the horse should be given a laxative dose of medicine; for which purpose dissolve from one to one and a half pounds of Glauber's-salts in a quart of hot water, adding to the solution an ounce of ground ginger, and give the whole in one dose; then give every hour, during six hours, ten to fifteen drops of tincture of aconite; afterwards, during two or three days, give, morning, noon and evening, each time, four ounces of solution of acetate of ammonia with an ounce of sweet spirit of nitre, in half a pint of cold water. If after three or four days, much pain and tenderness should remain, a fly-blister may be applied round the coronet, to a space of three fingers' width. The horse should be tied so as to prevent his interfering with the blister (by rubbing it with his mouth), during six hours after the application of the blister. From the beginning he should be kept quiet, in a comfortable, well-ventilated place, and be well blanketed, to excite perspiration. The food, which should only be given in limited quantity, should be of a loosening nature, such as a mixture of steamed oats, bran, and flaxseed meal, together, with only very little hay, which should not be timothy. When the urgent symptoms have disappeared, the horse should be given liberty in the barn-yard during day time, when weather permits, and during summer be placed on pasture.

Feeding Horses—Sore Shoulders.

A correspondent of the Country Gentleman states he has found, by long experience, that the best grain feed for horses is corn, oats and shorts, of each one-third, the first two to be ground finely, and the shorts to be well mixed in. The hay, or hay and straw, were cut fine and wet twelve hours before feeding, and the meal was thoroughly mixed with the hay at the time of wetting, so that all could become thoroughly softened and prepared for digestion. His horses were uniformly healthy and in good condition at all times. The Adams Express Company feeds its horses a little oil meal once or twice a week in addition to the mixture of corn, oats and shorts. This is done to help the grooms keep the horses' coats glossy at all times, saving much time in rubbing and brushing.

The systems of feeding adopted by several street railway and carrier companies in Manchester, England, is as follows: The feed varied from 10 to 14 pounds of cut hay, or hay and straw, and 16 to 20 pounds of grain, for each horse, daily. Their horses are all heavy, powerful dray horses, and, of course, need more feed than the lighter ones used here. The grain feed was composed of maize, beans and wheat bran, in the proportion of three pounds of corn to one of each of the others, all finely ground and mixed. The hay and straw were chaffed and wet, and the meal mixed in some time before feeding. No horse beans are grown here, but oats and shorts are a good substitute for beans and bran.

An old stage-driver of long experience, who was noted for keeping his teams sound, always washed the shoulders and breasts of his horses as soon as the harness was taken off, using cold water in the summer and lukewarm water in the winter. After rubbing newly dry, he washed them daily with a decoction of smartweed, in the summer, when there was most danger of galled shoulders. In the winter the smartweed was used about once a week. His teams never had sore necks or shoulders.

THE CANKER WORM.—From the report of the Ontario Fruit Growers' Association we extract the following:—The insect has made its appearance in great numbers, doing great damage to the orchards by eating the leaves, often stripping the trees entirely so that they are as destitute of foliage as in the winter. J. J. Bowman had quite too much experience, having suffered severely from their depredations. The female moth is wingless; comes out of the ground in November, crawls up the trunk of the tree and lays her eggs. From these eggs the worms hatch in the spring, devour the leaves, and disappear about the middle of June, going into the ground, when they undergo their transformations, and come forth again as moths in the autumn. He had tried Paris green in water sprinkled upon the leaves, and it killed them. There are two species.

COUNTERFEIT EGGS.—It is well known that in America everything is counterfeited; the wooden hams and nutmegs sent from the New England States are well remembered. Eggs are now also counterfeited, and this manufactory is carried out on a large scale. On one side of a large room the reporter saw several large copper vessels filled with a thick, glutinous, yellow of the egg—the yolk. On the opposite side were similar vessels, in which the white was fabricated. The egg shells were made of a white substance resembling plaster of Paris, by means of a blowpipe, just as soap bubbles are blown. After being dried in an oven, the egg shells were filled, first with artificial albumen. The small opening at the end of the egg was closed with white cement, and the greatest achievement of modern civilization, the artificial egg, was ready. In appearance it resembled a natural egg, but, whether cooked or raw, it was indigestible and injurious to health.

CATTLE TRANSPORT.—The Government has adopted an improved cattle car for the Intercolonial and Pacific Railway, by means of which five days' feed and 325 gallons of water can be carried.

For shepherds it may be a useful hint to tell them that after a cold and rainy night, if they would dip the sheep one by one for five minutes into a tub of water, at the temperature of an ordinary warm bath, they will find them restored to life and activity at once.

Agriculture.

Sowing Grass Seed.

The production of domestic animals and manures depend so largely upon our grasses that the necessity of their cultivation is universally recognized.

In England over thirty distinct species are employed for different soils and purposes. In this country the number sown scarcely exceeds half a dozen. The advantages of the larger number are, that mixed grasses are found to feed animals more profitably than one kind, and that a greater weight can be produced per acre. Some kinds are of temporary duration, while others are permanent; the period of maturity differs, so that when mixed, some are always in the best condition for pasture, and some for meadow, and some prosper best in one kind of soil and some in another. These, and other considerations which might be mentioned, show the advantage of cultivating a greater variety than is usually found in the pastures and meadows of the United States.

The time for sowing seed is here. Although very much has been said by the advocates of fall seeding to prove that that period possesses advantages over any other, the fact remains that spring seeding is preferred and practiced by far the greatest number of farmers throughout the country, and, as we believe, with them rests the weight of the argument. A wide difference of opinion also exists in regard to the quantity of seed per acre. Extreme opinions obtain on either hand; but the proper quantity to sow is governed largely by circumstances. Thin seeding, when the seed is fresh, may succeed well on rich and deeply pulverized soil, while with poor seed on light, thin land, failure and disappointment would be the result. Safety in any case lies in a sufficient quantity of seed to ensure a catch, else weeds will be likely to usurp vacant places and injure the grass. Early seeding is important in obtaining a good catch. Fall preparation of the land enables the farmer to sow early and obtain a good crop of hay. None but fresh, bright seed should be sown, whatever may be the kind or mixture. Much of the failure that attends this branch of farming is the result of using immature, foul and comparatively worthless seed, a large portion of which fails to germinate while the land is overrun with noxious growths. Clean culture is a pre-requisite of good farming, and the use of foul seed generally results in requiring, at the farmers' hands, a vast amount of additional labor year after year in efforts to exterminate the pests thus introduced. However good the appearance of seed may be, it may be expected that all of it will not germinate because of a lack of vitality, and besides this some that is good will not come, on account of being covered too deeply, hence the utility of sowing a sufficient quantity to insure a catch. As a rule, the depth at which the most seeds of different grasses germinate is half an inch. Circumstances, however, of season and soil, exert more or less influence in this matter.—[Prairie Farmer.

Onions

Need an abundance of manure that contains plenty of potash. Hard wood ashes are good for them. If the manure is not applied in the fall, it should be composted then, so that it will be fine in the spring, as green manure makes poor onions. The Danvers is the best onion for market. Ten to eleven hundred bushels per acre can be obtained, but 500 is a good crop. The land is prepared in early spring as for other seeds, and when sowing, four or five pounds of seeds per acre have to be used. Afterwards, he uncovers with the same machine, and these two weedings are sufficient. Harvesting begins when the tops begin to fall, and when for any reason they don't drop at the proper season, they can be made to do so by rolling a barrel over them. Then, after pulling several rows, the space thus left is cleared of weeds and the onions thrown back upon it, and the process is continued until the crop is all pulled. After remaining on the ground long enough to dry, they are carried to the barn, deposited in pits not more than three feet deep, and topped at leisure. In topping, a knife is not necessary, nor should the tops be pulled off close, but rather leave a little.

Wheat is reported to be injured in several counties of Illinois, and much is winter-killed on the Wisconsin prairie.

Quack-killing Without Cost

The strongest hold of this grass is its rank, jointed root-growth, which, however, it does not have until the second year from seeding; the first year it only has small fibrous roots, like any other grass, and is then quite as harmless; but if left to occupy the land it increases until the soil is filled with a tough network of strong horizontal branch roots and is always found to be such a persistent grower that persistent work is required to exterminate it. But the farmer can do this without much loss of time or labor by ploughing the ground in the fall, then tilling it thoroughly—as it will pay to do for any good crop. Quack is generally found occupying the best land on the farm, and the best crops can by proper management be substituted for it.

Some twenty years ago I found the first quack on my farm; one small patch in the crook of the fence, and another in the middle of the wheat field, just heading out. These I effectually killed the first time trying, by removing the fence and packing two or three feet of old straw from the barnyard over it, and extending it several feet beyond the bounds of the quack, to remain so for nearly a year. Twelve years ago I bought six acres filled with growing quack; this I ploughed early, and by cultivating or gang-ploughing once in a week or ten days, did not allow a green spear of it to grow above ground, until in the fall, after every one said it was dead, it was left about a month, when, showing some signs of life, I continued its tillage; then finally (and this really gave it the death-blow) I ploughed it up just before winter, when I was surprised to find the roots all there, but quite tender and bleached, though not dead; but by exposing them when in that condition to the frosts of winter and a thorough tillage in spring, before planting to corn, and by taking off perhaps a dozen stray roots I found growing among the corn, it was killed out, and the field has been clear of it ever since.

By what I had thus learned about the treatment of quack I believed I could kill it while tilling a hoed crop, instead of losing a year's use of land and the year's work while killing it; so I hired twelve acres of as old and tough quack turf as was in town; ploughed it in the fall, which subjects the roots to the action of the frost, which partially deadens and loosens the soil, so that the spring tillage will be much more effectual than it could be in a fresh-turned turf; then with my wheel drag, with its long steel teeth projecting forward, hatched out the quack roots, often at the rate of about half a ton from an acre; these, after a few days, were enough dried and reduced to allow of repeating the operation, when the drag was run a little deeper, so that the second or third time it went about as deep as the soil was ploughed, and got the roots pretty well on top, besides getting the land into very fine tilth for planting.

I planted the whole field to corn, cultivated it out once by the marker-tracks, before the corn was up; cultivated twice more and hoed the corn; then used shovel-plough (which would cut and cover any quack attempting to grow as it hilled up the corn), continuing this first one way of the field, and next crossing it, until the corn was too large to go through it. The result was the best piece of corn in the neighborhood, and quite a clean corn stubble, except occasionally a spear of quack. This corn stubble I cultivated once over in the fall, then ploughed and planted to potatoes the next year, tilling and growing a heavy crop, which effectually killed the crop. And this I call the most practical and economical, as well as the most thorough and profitable, way to kill quack, for I contend that I did no more work in cultivating these two crops, while killing the quack, than it was profitable to do for the best growth of the crops themselves.—[H. Ives, in the New York Tribune.

It is reported that the wheat crop in Middle Tennessee is badly damaged by a worm resembling the army worm.

The tax imposed in Germany on American provisions has had a depressing influence on the American markets.

In the Estimates presented to the House of Commons of the Dominion is the item \$217,206 for arts, agriculture and statistics.

Boston street-car horses are attacked with a strange disease which baffles the efforts of the veterinary surgeons.

Last year 1,028,368 acres of Dominion lands were allotted in Manitoba and the North-west Territories.

Successful Farming.

At a meeting of the Vermont Dairy Convention, Mr. Whitney, who had abandoned mercantile pursuits for agriculture, tells of his successful farming:—

Arrived here, he bought his mother's run-down dairy farm, going in debt for the whole, and in course of time restored it to its primitive productiveness solely by means of the resources of the land itself. This success is due in the main to two principles, which he has persistently adhered to—namely, to sell nothing except in the most concentrated form, which in his case has been butter and meat; and to save every particle of fertilizing matter, and put it where it would do the most good. While he does not object to heavy manuring, he finds his profit in broad manuring; and while he does not object to deep plowing, he finds shallow pays him better. He has more faith in frequent than in deep plowing on his soil, though he is not willing to say that the grass does not hold out longer where he has plowed deeper and manured heavier. Evidently tillage with him is manure, though he does not say so. He takes up every year a large piece of his poorest meadow and plows it, and harrows it with a disc-harrow till it is thoroughly pulverized, and then he harrows it more, working in the manure he has to spare for it meantime. He raises large crops of corn, cuts it while yet in the milk, and feeds the stalks at a large profit over letting it stand till the husks become white, as is the custom generally. He has eschewed pumpkins because they are in the way of the cultivator, which he uses freely. This "superficial farming," as it was characterized by the genial Colonel Sprague, received the indorsement of by far the larger part of the assembly.

Cattle and sheep are dying for want of food in some sections of Canada.

PLANTING.—So soon as the ground is settled, plant the trees, shrubs, etc., that they may get an early start, and be well established by the time droughts come. Like animals, much depends on early growth.

All scars made by pruning off large branches of trees should be painted or tarred, or otherwise protected from the rain. Many fruit trees become hollow, or fall into premature decay, from the rain penetrating through the cuts made in pruning.

Never put a hatchet with which you have cut a sickly tree, or you will inoculate the healthy tree with the disease.

In New Zealand oats are sold at 10s. 6d. per quarter of 320 lbs.; wheat, 32s. per 480 lbs.; barley, about the same, and at these prices the farmers are growing rich, such is the productiveness of the soil. Cattle there are sold from £5 5s. to £4 10s., and sheep at 7s. 3d. to 12s. 3d.

THE NORTHERN CLIMATE PRODUCES THE BEST SEED.—The N. Y. Tribune says: "Wheat is unable to bear our torrid summers. It must mature before the heat of July. We are obliged to get seed of new varieties as the old ones become worn out, from localities where the season is shorter and more pinching than our own. So with other cereals."

There is especial reason for carefully selecting seed corn this year, as on account of the lateness of the last crop, but little ripened before frost. Corn saved before freezing and stored in a warm, dry place, will almost certainly thrive. The place must be dry and warm. The finest ears must be selected, and it would have been better if the earliest ripened had been saved at the time of gathering.—[Farmer's Review.

James Wolverton, Grimsby, had considerable experience with the Cankerworms, and tried three ways of combatting them. He found the use of pitch-tar—not coal-tar—the easiest and very useful. After a few days the tar hardens and it becomes necessary to make a fresh application. He also used Paris Green mixed with water, applying it with a garden pump. This must be put on very early in the season, as soon as the buds burst, else the mischief will have been done. He also tried fall plowing—say in the end of October—with a view of opening up and exposing the chrysalids, and thought this had a beneficial effect.

Ingersoll.

This town is situated in the County of Oxford, Ontario. A branch of the river Thames, and the main line of the Great Western and Credit Valley Railroads pass through the town. Perhaps no town in Canada deserves more attention from the agricultural historian of this Dominion than this, as in and around this town the great interest of cheese production has been fostered and spread from this centre to all parts of this Dominion, and the instructions that have been given here have done much to improve the prosperity of farmers and the wealth of this Dominion.

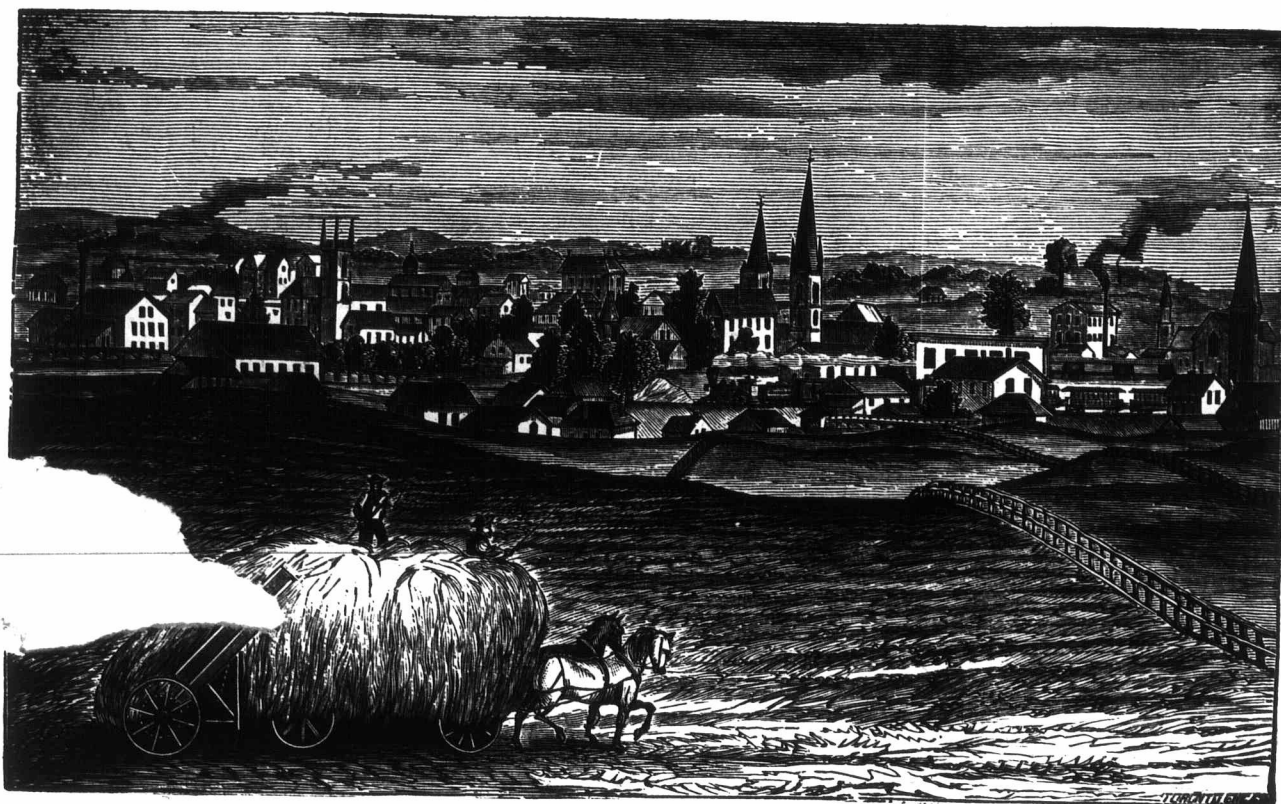
Mr. Raney was the first to make a specialty of cheese making. He succeeded, and left a very fine estate to his only child, a daughter, who married Mr. Jas. Harris. Mr. Harris made the celebrated mammoth cheese that weighed 6,500 lbs., and was exhibited in the States and in England.

Our dairymen have now established a reputation for cheese making that is unequalled on this continent. The land in this locality is well adapted for dairying purposes, being of excellent quality, producing a luxuriant growth of grass of fine qual-

The Advantages of Changing Seed.

Farmers, like doctors, differ in opinion on many practical subjects, but there is one subject upon which they are all united in opinion—viz., in the advantage of change of seed for every kind of crop. Now, the benefits of change of seed, which I have proved again and again, are these: First of all, earlier maturity. But, of course, to obtain this, the seed must be brought from an earlier district than where it is to be grown. Second, change of seed imparts greater vigour to the plants; and the third advantage is in the probability of getting grain of an improved description. I have heard it argued that the finest quality of grain may be grown from light or very inferior soil. Now, this is quite possible, but not very probable. "Like begets like" applies as much in cereals as in animals. We do not observe it in cereals so very distinctly as in roots. There are a great number of very superficial observers of specialties in cereals, and so long as the absurd system of awarding prizes for seed grain merely from its appearance in the sack, instead of being also judged by its appearance in the field, and yield per acre, so long will a great hindrance exist with regard to the benefits to be

addressed the club concerning the most profitable varieties of wheat to grow, and in which they coincided in the following, viz.:—If fall wheat can be grown they recommended the old Genesee, formerly grown in Ontario, and which made the best flour that ever left Canada. Clawson yields a weak flour; the Treadwell is better; the Soules is worth 10c. more per bushel than the Clawson, but on the whole the fall wheats are good. Among the spring wheats the Old Fife was unequalled as a producer of good flour, and they advocated the importing of fresh seed from Scotland. The Golden Drop, Odessa and Redfern rank next. The Poorland wheat makes a weak flour. The Arnecta they would scarcely class as wheat; its flour is midway between cornmeal and flour, and they regretted to see the farmers growing this variety so extensively. Shippers would buy it now, but they did not think it would find a market after its quality became generally known. Farmers should grow a wheat that would produce a good flour. Canadian spring wheat once commanded a high price in England, but latterly it has been declining, and growing poor wheat will doubtless reduce the standard. The farmers then took up the discussion and drew the following conclusions:—Wheat, to make a strong flour, must be abundant in gluten nitrogen, so that land lacking nitrogenous elements would not grow strong wheat. Thin



TOWN OF INGERSOLL, COUNTY OF OXFORD, ONTARIO—THE CENTRE OF THE DAIRY INTEREST.

ity, the farms being well watered with pure spring water or running streams. The air being free of malaria and the land rolling, man and beast are always as healthy in this locality as in any part of this continent.

The extent of prime dairying land on this continent is very small in proportion to the extent of country. But fortunately Ontario possesses a fair share.

The wheat farms, buckwheat farms, and oat farms, and even beef farms, may be thrown into the market at low rates, from a desire to raise larger crops in the Nor'-West, but the real prime dairy land will always maintain its value.

We would strongly advise English emigrants, with capital, to spend a few days in the country around Ingersoll. Here they can see farming in all its branches conducted, and they will have a better opportunity of judging and knowing what would suit them, much better than by going direct to the prairies.

There are two implement manufactories, one carried on by Noxon Bros., and one by T. Brown & Co.; the latter manufacture the only Hay Loader made in Canada; these implements were formerly imported from the States. Many large farmers have saved the price of the implement in one year by saving their hay in better order and at less expense, as the loader is quickly hitched to a wagon, and a load is put on in a very short time.

derived from seed grain competitions. For example, purity is the great desideratum in awarding a seed prize. Who can accurately judge of this from merely looking into a sack? I have known farmers of much experience who were puzzled to name even the variety, when shown samples of difficult varieties of wheats. In the field wheats have a totally different appearance. In these times, when a rigid economy is required in every department of farm management, a farmer may supply himself with good seed for the following year by sowing only a part of a field with pedigree grain, and use the produce next year. It is quite possible the change may be found more beneficial in regard to quantity the second year.

In regard to cereals, especially wheat and barley, the advantage of change of seed from the very best soils and climate to a poorer and later, has been proved over and over again. Now, with potatoes it is quite the reverse. Seed potatoes should always be changed from a later district to an earlier, and also from inferior soil to a better.

Meeting of the South Ontario Farmers' Club.

Since our last issue the Hon. T. N. Gibbs and J. B. Bickell, Esq., both eminent millers, have

sowing was advocated; it gave plenty of air and light to the grain, which grew stronger and did not crumple down as much as thick-sown grain; also that early sowing should be practiced in all grain; better crops had been secured by the majority when sown early; did not think frost was the cause of barley turning yellow, but on account of the poverty of the land. Many considered it better to sow Club wheat among fall wheat when the latter was partially killed out, thoroughly harrowing and rolling after sowing. Care should be taken to sow it very early, so that they may both ripen together. Some of the members had found it very profitable to soak their seed wheat in strong brine and skim the light and foul grain from the top; they used lime to dry the grain with. Other members contended that oats did not take as much from the land as wheat, rye, corn, roots or hay, and all considered ashes an excellent fertilizer. They also concluded it essential to top dress the land sown to grass seeds; catches could be obtained in this way, when every other plan has failed; land should be in good heart when seeded down, and a variety of grasses sown. Sowing grasses alone, that is without a grain crop, is decidedly the better plan. Summer fallowing was urged by some, but others deemed it better to give a partial summer fallow and plow under a green crop. Clover, buckwheat or pea vines are good as green manures.

Farm House and Outbuildings.

We give the accompanying illustration to show a plan of farm buildings which are very conveniently arranged, although we do not commend erecting the dairy or farm buildings so close to the dwelling-house; but opinions differ.

Seeds for Farm and Garden.

The first important step taken towards the cultivation of a crop is the obtaining of good seed. Next come considerations of soil and depth of planting. The temperature and moisture of the ground have more to do with the successes and failures yearly recorded than is generally acted upon. Wheat and barley for instance, while they struggle through the ground at the extreme temperatures of 41 degrees and 100 degrees, germinate most rapidly—other conditions being equal—at about 84 degrees. Corn does best at say 90 degrees, though it will germinate at from 50 to 115 degrees. The squash, bean and pea all germinate

Garden and Orchard.**The Yellows in Peaches.**

The indications of yellows are unmistakable, and when you once know them, you ought never to fail to be able to detect them. Usually the first manifestation of the disease is the premature ripening of the fruit, or some of it, from no apparent cause. Generally a few peaches—sometimes only one or two—will a few weeks in advance of the proper time become greatly enlarged and high colored, perhaps, while the remaining fruit upon the tree is still green; the skin of these abnormal specimens, instead of being uniform and natural in appearance, will be thickly covered with small spots of darker hue than the color of the remaining surface. Upon opening the peach the color surrounding the pit will also be seen to be unnaturally bright and high. When the peach becomes mellow its entire flesh will be of the same unnaturally high color, and the spots upon the surface will appear to be connected with the pit by

Tobacco Powder for Insects.

Numbers of new remedies for the destruction or prevention of insect pests have lately been introduced, with the merits of some of which I am not acquainted. Tobacco, however, in some form or other, has long been recognized as one of the best things for destroying all kinds of insects, especially out of doors. It is long since I first saw snuff used for destroying both green and black fly. An old enthusiastic gardening friend, who was fond of a pinch of snuff, would often take out his box and dust some of its contents over his insect enemies whenever he saw them on his favorite plants. It was at that time too expensive for general application; but it gave the man who regularly carried a box in his pocket many an opportunity, at this season of the year, of taking signal and prompt vengeance upon his enemies. In destroying insects, the old maxim, "A stitch in time saves nine," holds more than good; for, when aphides have thoroughly established themselves on a plant or tree, it is a difficult matter to destroy them all. If on the first appearance of insects, a



PLAN OF FARM HOUSE AND OUTBUILDINGS.

quickly at about the same temperature as that given for corn. Clover seed often fails because sown at a time of insufficient moisture, while millet, for instance, under similar conditions of dryness will secure a good catch.

Every one who plants at all understands that the size of the seed has much to do with the depth of covering required, and farmers with one accord place corn deeper than the small grains, and the small grains in turn deeper than the grasses, but all farmers do not vary these respective depths to suit the different soils into which the seed are placed, and yet it requires only a moment's consideration to see that a heavy soil which lies close to the seed admits of slighter covering than a shifting, sandy one. Many interesting experiments have been made from time to time in testing the germinating powers of seed under different depths of covering. In a table prepared by Professor Petri, showing the germination of wheat at certain depths in the ground, it appears about three-fourths of the seed planted will come up at a depth of three inches, and nearly all at from one to two inches.

These and similar facts point to the importance of every planter's acquainting himself with the requirements of the seeds to be planted, and regulating time and depth of sowing to suit the same.

a sort of stringy, high colored condition of the flesh. The flavor of such diseased peaches is insipid to the taste, very far inferior to that of perfectly ripened fruit of the same variety.

Another unmistakable indication of the yellows, which always appears sooner or later, consists of the appearance among the limbs or on the body, or about the roots of the tree, of narrow, pale green leaves, which generally elongate into small, lightish colored shoots, with narrow leaves of the same color. Sometimes these shoots will indicate the disease in trees that have not come into bearing.

These shoots or sprouts are readily distinguished from such as are natural and healthy by their wiry, sickly aspect, by the narrowness of their leaves and by their unnatural place of occurrence. They sometimes appear as simply a few leaves, or a single stem or shoot, sometimes two or three together and sometimes in a cluster or mass; but always they present the same aspect—the same narrow leaf and lightish green, sickly color. In other respects the tree may be apparently thrifty and vigorous, but if left the tree is sure in the same or the succeeding year to manifest itself in all the fruit, and to affect the foliage and entire appearance of the tree, and finally to destroy it. There seems to be no remedy or cure for the disease, and therefore the only safety is the immediate destruction of diseased trees.

puff of powder be dashed among them, it settles them directly; and a good syringing in three or four hours afterwards washes off both snuff and dead bodies. A man armed with a distributor and a supply of dry powder will in a short time go over a large collection of roses or a number of wall trees; and, as far as my experience goes, I consider that the use of tobacco powder in the open air is better and cheaper than any dressing which I have hitherto used in a liquid form. It penetrates readily every portion of the tree, carrying destruction in its course; for it is astonishing how soon death ensues after the powder is sprinkled over them. The best time to apply it is when the trees are slightly damp, just before the dew clears off early in the morning; when the trees, however, are thoroughly charged with moisture, I do not think the powder is so effectual. The distributor that I use is a bottle-shaped india-rubber apparatus, which is taken in the palm of the hand, and whenever pressure is applied, the powder is sent flying in a cloud of finely-divided particles in any direction the operator wishes. All nurserymen supply the powder in either large or small quantities.

PHOSPHATE SALE.—A sale of 2,000 tons of phosphates, from the Portland and Templeton mines, was made to a Montreal firm recently, by Mr. Garrett, of Ottawa, at \$10 per ton.

The Raspberry.

Canadians seem not to know the natural resources of the country, and the products indigenous to our soil. Probably no country in the world is better adapted for the raising of all kinds of berries, more especially the raspberry, which is indigenous to the country, than Canada. And there are few fruits more highly prized in many countries than the berry which grows wild in our bush and wood lands. In Silesia, Germany, the cultivation of the raspberry is an important part of the industry of the country, and raspberry juice is shipped in large quantities to England and other countries. The supply is not equal to the demand, the juice being needed for raspberry vinegar and other purposes. Raspberry culture is by no means difficult, and the crop is pretty certain. The ground is prepared in the fall, dug, or, if on a large scale, ploughed very deep, harrowed well and let lie a month or so; then dug or ploughed again and harrowed well. The ground is then marked off in rows, six feet apart, and the plants set four feet apart in the row. The following spring, when the weeds begin to appear, cultivate between the rows in order to keep them perfectly clean. This must be attended to if you are to have strong fruiting canes for the coming season. The old canes should, when the plants are set, be cut off very low, so that all the strength will be given to the young canes. These young canes should, the following spring, be cut back to within six inches of the surface. The plants, being well established the second season, will send up strong canes for fruiting the third year. Two plants may be allowed to stand in the space between the plants set, and there will be a thin row with canes about a foot apart, and let not more than two or three hills remain in a row.

When the plants are high enough pinch them back to about two feet high, to induce them to throw out laterals and side-branches and become stocky. This will give them increased strength and will add to their productiveness. It will also enable them to bear the winter better. In all the lighter lands of Ontario and in the Maritime Provinces, if we are to judge from their climate and products, raspberry culture will be found a valuable addition to the other departments of the farm. A beginning should be at first made on a small scale. This we advise in every experiment. We are convinced there is profit for the work in mixed farming.

LEAVES OF RHUBARB.—Ever since I tasted in Brussels seven years ago, the delicious dish which can be made from rhubarb leaves, I have urged upon all my friends to try it, and it has been almost universally appreciated by those who like spinach, as, when properly prepared, rhubarb leaves resemble that delicate vegetable very closely, only possessing a slightly more acid flavor, which, however, is most refreshing. To prepare the leaves for the table, the younger ones only should be used; after taking out the ribs and coarser parts, the leaves should be treated similarly to spinach. After boiling, they must be passed through a fine sieve, and then served up either with a little butter on toast or with rich brown gravy.

A correspondent of the "Rural Messenger" gives the following as a wash for mossy trees: Heat an ounce of sal-soda to redness in an iron pot, and dissolve it in one gallon of water, and while warm apply it to the trunk. After one application the moss and old bark will drop off, and the trunk will be quite smooth.

Much of the grape-grafting, which is at this season in order, is best done by sawing into the low-down stock—almost root—and fit in the graft or grafts closely and as perfectly as possible. It is perhaps the best way, it seldom failing when done right.

Squashes

Need an abundance of manure, six or eight cords to the acre, harrowed in. Run furrows eight or nine feet apart, both ways, making the hills at the intersection. At this width you can use a wheel harrow to good advantage in cultivating them. Plant the latter part of May, though many think that by waiting till later the ravages of the squash bug may be avoided. In planting, each hill is made mellow and smooth and a little fertilizer is used in each one. The seeds—five in the hill—are stuck into the soil little end downwards, by the thumb and finger, need no further covering, and come up two or three days sooner than by the old way. As they appear above ground, the bugs must be watched for, and air slacked lime dusted on to the plants as soon as the bugs put in an appearance. The big black bugs that attack the vines later in the season may be guarded against by sticking a shingle into the ground at each hill, and the bugs will each morning be found clustered on the under side of the shingle, and can easily be exterminated. It is said that coal ashes about the hills will keep off the maggots. Boston marrow, American turbine and Hubbard squashes are considered best for the market and eight to ten tons per acre are a good crop. The squash is one of the best crops to prepare land full of witch grass for other crops. For, the rows being wide, thorough culture to a slight depth can be carried on to cut up the grass roots until the plants have so grown as to entirely shade the soil, when the roots will rot. By such means one could effectually rid his land of this terrible pest, which is probably worth as much as a clover crop for fertilizing purposes.

Carrots.

The land for them should be fine and liberally fertilized in the fall or early spring with well composted manure. Plant the latter part of May, using 1 to 1½ pounds of seed per acre, and sowing it with a seed sower, mixing in a little fertilizer with the seeds to give them a start. Prepare the land for the sower by going over it with a large smoothing drag, after a thorough harrowing. The rows should be 14 to 18 inches apart. They must be carefully weeded twice, but no thinning is necessary when the seed has been carefully planted. Use only the best seed. At harvesting, which for most root crops cannot be later than November 15, first go over the field with a shovel sharpened at the upper flanges, and by pulling it toward you, the tops can be easily cut off. By using two horses and a subsoil plough and running it just under the rows, the roots are lifted some two inches out of the ground, so they can easily be pulled out by the hands behind. It takes four men to keep up with one such plough, and the five can pull enough in the forenoon to keep them busy all the afternoon picking up and carrying them away. The carrot crop is a good one to feed out or to sell. They are estimated to be worth \$8 per ton to feed when hay is worth \$18, and when sold for \$10 or so a ton are very remunerative. Thirty-eight to thirty-five tons should be raised per acre.

Sanitary Effect of Pine Forests.

The N. Y. Tribune, in reference to an address by Mr. Kingzett on the sanitary effects of the Australian tree, Eucalyptus, writes as follows of pine forests:—

To be sure we have about us no Eucalyptus forests, and all these facts, interesting as they may be to Australians, seem to possess little practical importance in this part of the world; but the oil in the needles of the pine is identical with the Eucalyptus oil, although the quantity of it may not be so large; and if we consider the much wider and more abundant occurrence of pine forests, the sum total of their sanitary effect may be much greater than that of the more circumscribed Eucalyptus. Do not, therefore, cut down the pine and other evergreen forests too ruthlessly where they may help to keep off the poisoning exhalations from neighboring lowlands. Exemption from miasmatic disease might be cheaply bought in many places by the observance of this simple precaution.

It is better not to sow cereals in an orchard, as they attract the mice.

American Preserved Fruit.

If Americans are at all "smart" they can do a wonderful business in supplying Europe both dried and canned fruits. The demand is unlimited. We have eaten canned peaches in about every corner of Europe, but our dried fruits seem to be attracting general attention. A correspondent of the London Garden says: "I have just seen some dried peaches (American) which are very good, and which suggest how much might be done in this way in countries where there is an over-supply of fruit. The drying process, which is now carried out to such perfection in America, is certainly much better than the 'canning' one as regards wholesomeness of the products, while it avoids the expense of cans and the carriage of much liquid matter, which is probably more liable to injury than the dried goods. The practice of drying fruit is carried on to a great extent in many parts of Germany and Switzerland for domestic use throughout the winter, but does not seem to be in use with us. The dried apples now sent from America are excellent."

Some Americans do not realize the necessity of care in putting up fruit and have not learned that putting the best at the top is poor policy, and not half as good as honesty. We know of one who every year sends a barrel of choice Northern Spy apples to a friend in England. He selects the very largest and most highly colored, wraps each in tissue paper, packs them in a barrel as solid as possible, the interstices being filled with chaff. On one occasion the receiver was offered \$25 for the barrel of fruit as soon as it was opened. American apples were quoted in the Covent Garden market, London, January 3d, at \$4.50 to \$7.50 per barrel. The great difference being in the quality of the fruit and the care with which it was packed.

The trade of this country with Great Britain in canned goods is becoming of great proportions. A large part of these goods are from Baltimore, where millions of cans of peaches and other fruit, tomatoes, corn, &c., are annually put up. Not only Great Britain, but other parts of Europe, India, Japan and China, are purchasers of this merchandise. A leading London dealer states the trade in canned goods is now ten times as great as it was four years ago, and this has been occasioned by the addition to the business of new articles of both fruit and vegetables. A single Broad street firm, in London, sold, last year, six hundred thousand sealed cans of tomatoes alone, besides shiploads of Boston baked beans, peas, corn, &c., not counting the goods usually sealed in glass jars and bottles, under the head of catsups, sauces and preserves.—[Vick's Monthly.]

The Asparagus Bed.

In localities where the winters are long and severe, spring is considered a more propitious season for starting an asparagus bed than is the fall. A rich, sandy loam presents the bed in which asparagus thrives most successfully. The growth of this vegetable depends largely on the depth and richness of the soil, therefore the necessity of trenching or digging it over at least two feet deep, burying in the process plenty of well decomposed manure, with a small admixture of salt.

The most expeditious mode of obtaining an asparagus crop is to set two-year-old plants, though those that are only one year old serve well. Cultivators differ in practice concerning the distance apart the plants are set. For culture on a large scale, where horse-hoe and cultivator are employed, three feet by two will prove a convenient distance. In the garden, where space is a consideration, the plants may be placed closer. For instance, if the rows are three feet apart the plants can be set one foot from each other in the rows, where the cultivator is used. If hoe and fork only are called into action they may be set as closely as one foot each way. Vick advises, in setting plants, that a trench be dug about eight inches wide and six inches deep along the line, and in this line the plants be carefully placed so that the roots shall spread out freely in every direction, and sufficiently deep to keep the crown or top of the plant three or four inches below the surface when level. Cover them in with fine mellow soil. After planting, a top dressing of old manure is beneficial.

Old asparagus beds give rich returns for a top dressing of salt in the spring and manure in the fall of every year.—[New York Tribune.]

PRIZE ESSAYS.

Settling in Manitoba.

SIR,—In last month's number of the *ADVOCATE* you ask for instructions to new settlers in Manitoba or our Northwest Territory, commencing on turning the first sod.

I farmed in Manitoba last summer, and raised fifty acres of different kinds of grain and roots, and I will endeavor to give my experience as far as I am able for the benefit of those commencing to farm in Manitoba this season. Turning the first sod is called breaking, and parties desirous of growing a crop on a portion of the new breaking this season should commence to plow as early in the spring as the ground will admit, and plow not less than four inches deep; if a little deeper all the better. Sow as early in the season as possible, and harrow thoroughly. I have known oats to yield fifty bushels to the acre, grown on new breaking treated in this manner; but I do not advise new settlers to risk sowing much on the new breaking. Much depends on the season and the time of sowing, and the crop is often a failure. By plowing deep, to get mould enough to cover the seed, the sod does not rot as good as if the ground had been broken only two inches deep—the proper depth to break, consequently you can not get it into as good order for next year's crop. June and July are good months to break in, but May is the best month; the grass is not so long and the sod is not so tough, which make it easier work on the team, and the sod rots quicker and better than it does if broken later in the season. Break not more than two inches deep, and I strongly advocate rolling; it hastens the rotting of the sod and leaves a fine even surface, which is a great advantage in turning back, i. e., plowing it a second time. To do good breaking a good deal depends on keeping the plow-share in proper shape, and good and sharp, not by filing, but by beating it out with a hammer—a method that will appear odd to many of our Ontario plowmen. The grass roots are tough, and if you do not keep the plow-share sharp it will slide over a portion of the sod and make poor, uneven work. To beat or sharpen the plow-share, turn the plow over on the land side, with a common-sized hammer in one hand and a beating-iron about the size of an iron wedge in the other. Place the iron on the under side of the share near the edge, and strike on the upper side with the hammer, and draw it out to a thin, sharp edge, almost as sharp as a knife, which is easily and quickly done after practicing it a few times, and should be done three or four times a day when in use. The plows used in breaking are light and all steel, except the beams and handles, made on purpose with light gauge wheels in front and revolving coulters, and are cobble breakers. The American plows are the best. Those made in Ontario are not as good, and do not work equal to the American plows. The Ontario plows that I used and saw used in Manitoba last season gave very poor satisfaction; in fact, a good many of them were useless. All plows and implements used for stirring the ground in Manitoba should be made light and of the best steel, and well polished. All other material used that comes in contact with the ground is useless. The soil is so rich and adhesive that it sticks even to steel in wet weather, more so after it is broken and cultivated. The plows are of different sizes, and the size of plow to use depends upon the size of the team. For a common-sized pair of oxen or horses use a ten or twelve-inch plow, and a pair of thirteen hundred horses will handle a fourteen or sixteen-inch plow, and will turn two acres a day if properly fed and cared for. Oxen have advantages over horses to many new settlers who have their feed to buy the first season. They will do more work on less feed than horses, and are far less liable to disease. Horses require better feed, better care and plenty of oats to keep them up in condition, and all new settlers are not in a position to furnish those necessities. A good many die the first year they are taken into the Province.

As the breaking season draws to a close the new settler will have to see to providing fodder for his stock during the winter. Grass grows in abundance in the slues and hay marshes dotted here and there over the prairie. The best time to cut it is in the latter part of July or the beginning of August, although any time before the fall frosts will do. But the early cut hay is the best and most nutritious. If not previously provided, he will now have to turn his attention to furnishing

suitable buildings for the comforts of his family and shelter for his stock. So much depends on the means that the settler has at his command, and the locality that he is located in, that I can give but little information as to what kind of material to use, and the mode of constructing them. Each settler must use his own judgment in that respect, and build according to his means, and of the material that lays within his reach. Little or no fence will be required the first season, or until a crop is raised to be protected. The cheapest and best fence is made of barbed wire and costs about 30c. a rod for wire when only two wires are used, and that is all that is necessary for turning cattle and horses. The posts do not require to be as large as those used for a board fence, and the cost of posts depends on the access to timber. I set my posts 24 feet apart, and found that distance to answer very well, but in the future I will put one to every rod. Two men will easily put up over half a mile of fence in a day, if the posts are properly cut and sharpened, and the fence row marked out. My method of erecting the fence is as follows: Take the plow and throw two furrows together, which form a ridge; then take a team attached to a wagon and drive along the fence row; stand in the hind part of the wagon, and with a heavy sledge or maul drive the posts in the centre of the ridge the required distance apart, two feet into the ground, or deeper if required. After the posts are all driven, fasten one end of the wire to a corner post, which should be well braced; put the spool into the wagon and drive gently along until four or five rods of the wire is run off the spool; hitch a chain, which should be fastened to the hind end of the wagon, on to the wire, and start the team gently, which will tighten the wire perfectly, and the other hand comes along and tacks the wire on the posts in its proper place. Finding the use of wire tighteners to be slow and inconvenient, I adopted this plan, and prefer it to any other. The cost of erecting such a fence as described should not be more than 35c. a rod; mine only cost 34c. a rod, allowing one dollar a day for labor; the timber was my own and grew convenient to the fence, which would reduce the price of the posts.

The next step to be taken with the ground previously broken, to prepare it for a crop, is to turn it back, i. e., plowing it a second time, and it should be plowed the same way as it is broken—that is, lengthwise, not crosswise, and two or three inches deeper than the previous plowing. A breaking plow will answer for turning back; after that a stubble plow will be required—a light plow similar to a breaker, made for using in loose ground. A good many turn back shallow, being under the impression, when the ground is new and rich, that it does not require to be stirred deep. But that is a mistaken idea. The ground will be more or less soddy at this stage, especially if the breaking was not properly done, and early in the season. When seed time arrives you cannot cover the seed a proper depth, and in a dry time it does not come up even. The weeds take an even start with the grain, and a poor crop is the result. When I was turning back last spring a neighbor of mine said that I was pulling my team for nothing, plowing so deep; that he was turning back quite shallow, and considered it just as good. When the grain began to grow and harvest time approached, he saw his mistake, and in the fall when he commenced to plow again he turned over a good solid furrow, fully satisfied that skimming the ground was not the thing, even in Manitoba. All new settlers should endeavor to turn back or plow as much of their breaking in the fall as possible, and the same rule holds good for old settlers as well as new. Fall plowing has many advantages over spring plowing. The ground plows better in the fall; it is drier and does not stick and clog the plow so much as it does in the spring, lessening the draft. The team has firmer footing, making lighter and easier work for them. If the land is plowed in the fall, you can commence seeding in the spring as soon as the frost is out of the ground a few inches; if the plowing is delayed until spring you cannot do this. The early sown grain is the best, with the exception of barley, and I think that it does equally as well sown the last week in May as if sown any other time. Sowing by hand is not practicable only on a small scale; the rounds are generally long, making it tiresome carrying the grain over the loose ground, and in windy weather you cannot sow even and regular. A broadcast seeder is the best machine for sowing on the turning back, or until the sod gets thoroughly rotten. Then I think a drill would be preferable in many cases.

A number of different kinds of wheat were grown last year in the Marais Settlement, situated on the Marais River, six miles north-west of Emerson. The Fife turned out well and appeared to take the lead of many other varieties. A wheat brought from Russia by the Mennonites yielded good, and will be much sought after this spring for seed; it grows a fine, bright, stiff straw, red chaff, and a short, plump, bright berry. The miller at Emerson spoke highly of it as a milling wheat. I sowed a bushel of the Tee wheat, and that promises to be a good wheat to grow in that locality; it grows a large head, large plump grain, very much resembling our Scott fall wheat. Owing to it getting mixed in threshing I was not able to ascertain the yield to the bushel sown. The Golden Drop was well spoken of in the Pembina Mountain Settlement, around Mountain City and Nelsonville, and the sample that I saw of it was plump and fine. The Redfern did not yield equal to the other varieties named. It grew abundance of straw, but soft, and lodged badly, and the grain was small. Any of the above named varieties I can safely recommend to new settlers as profitable wheat to sow, except the Redfern, and I would not advise them to sow much of it until they see how it turns out in their own locality. Oats will be a profitable crop for all new settlers to grow; they will find a home market and ready sale for all they have to spare at a paying price, to supply the wants of emigrants who are constantly settling in the Province and Territory. The Black Main oats appeared to take the lead of any other variety grown on the Marais last year, although other common varieties yielded well. The worst drawback to growing oats, especially in the timbered sections, is the black birds; some seasons they are very numerous, and destroy a good many at the time they are in the milk. To guard against this as much as possible, sow the oats as early in the spring as you can, so that they will ripen before the birds hatch out their young; in the setting season they are not so destructive. In timbered sections sow the oats as far from the timber as possible; on the open prairie the birds are not so troublesome. I tried both thick and thin seeding, and am satisfied that moderately thin seeding is the best, providing the ground is clean and well cultivated, and the seed sown in good season. I sowed a bushel and a peck of wheat to the acre, and found that it grew too thick and rank, and I think that a bushel drilled in to the acre would be quite sufficient in most cases. The soil is rich and the seasons favorable to the growth of the plant, so that it stools out to a far greater extent than it does in Ontario.

Turnips, potatoes and other vegetables are best sown or planted early. They then have a longer season of growth, and mature better than if planted late, and may be secured from frost during the winter with less trouble and expense than many imagine. I raised a thousand bushels of turnips last year, and wanting to keep them so that they could be fed regularly to the cattle during the present winter, pitting would not answer, and not having time to build a root house, I was almost at a loss to know how to proceed. I made a bin in the stable behind the cattle, and put six inches of straw all round between the turnips and the sides of the bin, and before the cold weather in the fall filled the space between the turnips and the roof with chaff, and banked a portion of the north and west sides of the stable with horse manure on the outside. I am pleased to be able to say that they are keeping fine, and are quite handy to feed to the cattle. Potatoes are keeping nicely in a cellar under the house.

I would strongly impress upon the minds of all new settlers the necessity of making a fire break round their stacks and buildings, to prevent the ravages of the prairie fires in the fall. Keep all grass and weeds cleaned away near the buildings, and plow a strip eight or ten feet wide round them; this, if properly done, will afford ample protection. Hundreds of dollars worth of property was destroyed by prairie fires in Manitoba and the Northwest last fall; and I know several families that lost their entire crop and buildings by neglecting to use these precautions.

J. S. I.

The remarks made about Canadian plows should cause our manufacturers to look well to their reputation. We have made some enquiries about the imputation, and find L. Cossett, late of Guelph, made a large number and sent them to Manitoba. The shares, on account of an improper bend, cut too deep, and all made after that pattern gave dissatisfaction, but the error was afterwards corrected. Some of our manufacturers are making plows that are equal to the American plows. Our manufacturers must speak for themselves.]



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

Our Manitoba Correspondence.

SIR,—We had a very wet season last year and an abundance of mud, and, as a consequence, we had a very poor harvest. Where the crops were not drowned they grew too much straw, and the result was we had about $\frac{1}{2}$ of our usual crop. I had 175 acres under cultivation last harvest, and the yield per acre was as follows:—Wheat 20 bushels; oats, 40 bushels. I have as good land as the majority, and consider my crop about the average yield. I hear a good deal about 100 bushels of oats and from 40 to 50 of wheat; but such crops are generally grown in some land speculator's head, or by some boasting person who wants to see his name in print or to deceive people in other countries. This is no doubt a fine province, infinitely better than the older ones for the farmer, but there is a great attempt to make it appear too good by those who know least about it. A. M., Springfield, Manitoba.

SIR,—A year ago this April I went to Manitoba, having read so many glowing accounts of the country. I landed in Winnipeg on the first of May, and then went to Portage La Prairie, and then started by the southern trail with oxen and cart to Rapid City, where we found nine small huts. We waded through mud and water up to our knees and sometimes to our waists, until we reached the sand hill and beautiful plains. We were told there were belts of timber on each lot or growing close by, but all we saw after we left Portage were not six inches through, and they were poplar. Sometimes we had to go ten miles to get enough to cook our meals. The northern trail was impassable at that time. All I could see that was flourishing there were hotels and boarding houses. At McKenney's, a place they call Pine Creek or bog, we had to pay 25 cents for each cart to cross a bridge, and other places the same. The ferry across the Little Saskatchewan at Rapid City consists of a boat like a wagon box, and it cost \$2 for a cart and load to cross; 25 cents for a person. You stated some time ago in the *Advocate* that you would give the bright side of Manitoba life. It is my opinion you will find it hard to do, as I do not think it has got one. I concluded that five acres in Ontario were better than 160 acres in Manitoba, so I returned and have settled in Norfolk County. D. G. S., Ronson, Ont.

Manitoulin Affairs.

"Manitowaning" writes complaining that Manitoulin Island does not get that amount of attention from the Provincial Government and Legislature that its importance as a field for emigration and agricultural improvement entitle it to receive. "The vote for colonization roads on the island this season has been only \$4,500. No other section of the province needs more the laying out of public money on roads and increased postal facilities than this and the neighboring islands, and such is the fruitfulness of the soil, and so great its natural resources in every respect, that it would well repay any governmental expenditure."

SIR,—What would be the best to sow on a muck swamp plowed first time last fall—muck from one to four feet in depth, clay bottom, well drained? Would mangel wurzels or Swede turnips do well, or if grain, what kind?

T. C., Skead's Mills, Ont.

[Mangel wurzels would no doubt produce the best crop; Swede turnips or carrots will not do well. It would produce a heavy crop of millet or corn for soiling; would not advise you to sow cereals, but if you do, apply salt heavily.]

Plowing Matches.

SIR,—In reply to an enquirer in the *Advocate*, wishing information concerning plowing and plowing matches, I will give him my views. There is no doubt good plowing is necessary to good farming. Township plowing matches are very useful, especially for the youth of our country, although they have been carried to such an extent in some localities as to be a loss to those who followed them up; although there might be higher prizes given, for the reason that an excitement gets up among plowmen as soon as a plowing match is announced. Some think their plow is not fit for the occasion, so there must be a new plow or a borrowed one of high reputation, and perhaps a team; in fact, they are somewhat like the Highland man when he wanted a smoke, he had to borrow all; his neighbor said, "Guid man, you have nothing but the mouth." This should not be, as every farmer worthy of the name should have a team and plow that would be ready for a contest any day. In our young but favorable country there is a great tendency to get through with plowing too fast, so many of these wide plows have been introduced which are good for nothing unless for a summer follow or loosening the ground in spring. Many farmers advocate that they are good for cutting thistles, &c.; but we say a good Scotch plow is better for the reason that you can plow deeper; but be sure your share is wide, so that you cut your furrow right through. The majority of farmers plow too light; they say it is heavy enough for their team, &c.; but there is another reason; my boys say it is a good bit easier held to. Now, I could give you many instances to show that deep plowing in the fall of the year pays, but for the present I will only give you one. One year our society had the crop judged in a field where a plowing match was held, to see which plowing gave the best crop. I think this should be every year. Well, I had a team there and a hired man, but the plow was new from the forge and rough; so I told my man there was no sight for a prize; but the horses being strong, to let the plow run deep, and that he did; and at the judging of the crop it was much the best. Much could be written about good plowing; but what is necessary at the offset is to have good strong horses; train them to attend at once to what you say to them, have a good Scotch plow, a straight eye in your head, and good bone and muscle in your arm. H., Wilbert.

Absence of Milk.

SIR,—I have a heifer which has recently calved and has no milk to support her calf. What is best to do for her? A. F., Cobourg, Ont.

[We copy the following from the *National Live Stock Journal*:—A scanty secretion or entire absence of milk at the time of parturition occasionally occurs in domestic animals. It is due to various causes, among which may be mentioned constitutional debility, insufficiency of nutrient food previous to parturition, organic disease of the mammary gland, wasting of the same, etc. According to the cause, treatment is more or less successful. If not due to a partial or complete degeneration of the gland or to other permanent causes, a more or less complete restoration of the milk secretion may be established by the use of local and constitutional stimulants. The food should be of the most nutritious kind, given in an easily digested form, such as steamed or boiled. With each ration should be mixed some alterative, stimulant and stomachic, such as a powder composed of five ounces each of powdered fennel seed, aniseed and common salt, and three ounces of black sulphuret of antimony. Of this two tablespoonfuls may be given morning, noon and evening. Frequent friction of the udder with the palm of the hand, and application of some brandy, high-wine, or liniment of ammonia will be beneficial. When a heifer or cow, previous to calving, shows a want of natural increase in size of the udder, some annoyance may be avoided by following the above directions before calving, together with frequent stripping of the teats.]

A correspondent of the *New York Tribune* says:—Having raised many calves in the last twelve years and found their thrift checked by loose condition of the bowels, I this fall gave hardhack tea in their drink by advice of an old army surgeon. These were cured in twenty-four hours, and have since grown beautifully with no recurrence of the complaint.

Quantity of Seed Oats per Acre.

SIR,—I am about to ask you a question that may seem very easily answered—what quantity of seed oats is required to the acre? On asking experienced farmers the question, two of them seldom give the same answer. Some are in favor of sowing "plenty of seed," as they say; others, again, practice and advise sowing as little as one bushel per acre. YOUNG FARMER, Simcoe, Ont.

[The quantity of seed per acre varies according to circumstances. If the seed be of a very good quality and well cleaned, less will be required than if the seed were otherwise. Much also depends on the soil. A heavy clay soil requires heavier seeding than a sandy loam. There are well authenticated instances of fertile, well-prepared loamy soil being sown with one bushel of seed per acre, good, well-cleaned oats without any inferior grains, producing from seventy to eighty bushels of good oats. Two bushels per acre is the more general seeding, and from the state of the land at the seeding two bushels is not too much. Some report having sowed three bushels of seed, and having good crops. But this was on stiff, heavy clay. They say that they find the heavier seeding produces the heavier crop. Fresh seed, newly imported from good seed-growers, may be sowed thinner than that which has been raised on the same land. The variety of oats has also to be taken into account. Some varieties, the Norway oats, for instance, will, if well saved and well cleaned, need less seed than other varieties.]

The Care of Sheep.

In reply to "Shepherd" we give the following from an American paper:

A sheep to be well and hearty must not be half starved at any period of its growth. It must be personally comfortable to grow wool every day of its life. Three hundred and sixty-five days make a year. If from any cause a sheep is uncomfortable a single day, he will grow wool only 364 days in a year. If for four months at a time from ill health or lack of food or water it produces wool only eight months in a year, there is a loss of one-third of the profits he would have given his owner.

A sheep out of condition is subjected to ailments that in good condition would not have affected him. Sheep fat in the fall will go through the winter and the ordeal of lambing with safety and success. If in thin, weak condition, the relaxing of the system in spring and the extra demands on the system of the ewe at lambing time, bring a series of diseases quite disgusting to the flock-master. No animal rewards its owner so for liberal feeding and painstaking care as does the sheep. The idea has so often been expressed that a sheep can do without food and water, that many have concluded it was true. It may live on less food (and do well) than any other animal in proportion to its live weight, but that they live by eating is sure, and the more they eat and the better hygienic treatment, the better results they give in fleece and lamb, and vigorous, long-lived usefulness.

A Quebec correspondent who desires to know something of the value of soot, will find this extract from the *Prairie Farmer* of interest:

SOOT IN THE GARDEN.—Those who have soot, either of wood or bituminous coal, should carefully save it for use in the garden. It is valuable for the ammonia it contains, and also for its power of reabsorbing ammonia. It is simply charcoal (carbon) in an extremely divided state, but from the creosote it contains, is useful in destroying insects, and is at the same time valuable as a fertilizer for all garden crops. It must not be mixed with lime, else its ammonia would be dissipated, but if the salt is dry and hungry a little salt may be used with it. Soot steeped in water and allowed to stand and settle for a day or two is also most excellent fertilizer for house plants, possessing precisely the same qualities that the parings of horses' hoof do. For flowers out of doors it is especially valuable, since it may be easily applied and tends to increase the vividness of the bloom, and mixed with salt it is a most excellent fertilizer for asparagus, onions, cabbage, &c., in connection with compost, in the proportion of one quart of salt to six quarts of soot. For two bushels of compost this quantity makes a heavy dressing for each square rod, to be worked in next the surface of the soil.

Preparing Seed Grain.

SIR,—The most important step to be taken by the farmer at this season of the year is the preparing of seed grain for sowing. Many farmers leave this until the hurry of seeding time, and then give their seed a very inadequate cleaning. Seed grain of all kinds should be put through the fanning mill several times, and none but the best mills should be used. A coarse screen should be placed above the chess-box of the fanning mill, and must be coarse enough to separate the first class grain from the second class and fowl seeds, and should vary in size according to the kind of grain you wish to clean. By repeating this process at least three times, you will thus avoid sowing weed seed and will procure none but the best kernels of the various kinds of seeds, which is no doubt of as great importance as procuring the best live stock to breed from; in fact, some practical and very successful agriculturists think the matter of such importance that they hand-pick considerable of their seed grain, but, as this is exhaustive, we would prefer careful cleaning with a good fanning mill, except when different families of the same kind of grain are mixed.

Not only in cleaning their seed grain are many farmers careless, but also in obtaining their garden, vegetable and root seed, which is also put off until the last moment, when they run to the nearest store and procure their seed; in fact they will buy of anybody, and next fall they wonder why they can never raise as good vegetables or roots as their neighbor, who obtains his seed fresh from a first class seedsman. We have tried both ways, and have uniformly had the best results when we dealt with an established seedsman who has a reputation at stake, and therefore cannot afford to sell you poor seed; beside this, being a specialist, he has the required knowledge of his business which renders his statements reliable.

PRACTICE, Ontario.

Prussian Blue Peas.

SIR,—In reply to the question which I observed in last month's issue of your paper, "Is the Prussian Blue Pea Bug-proof?" I think the following experiment gives a very satisfactory answer: Last spring I sowed two acres of Prussian Blues and two acres of Golden Vine side by side, and on the same day. The former were absolutely free, and of the latter it was impossible to discover a single perfect pea.

A. J. G., Thorold, Ont.

Statute Labor.

SIR,—I live near a side-line that is bad for drifting snow in winter. Can the Pathmaster compel me to go out and shovel snow on said line? Can I claim any remuneration for shoveling snow on said line? Is it lawful for parties to open fences on said line against the owners' will, when the roads are blocked in, and have they a right to close the fence after them?

McF., Shakespear, Ont.

[The Pathmaster can call out the men in his beat to open roads. You must go or pay for a man in your place, or you may be fined for refusing to work; but you are not compelled to work over one year's labor in advance. No man has any right to throw down your fence or go on your property without showing you a legal authority. A snow drift or broken bridge is no legal excuse; you may eject by force or recover damages. No one has any right to molest your fence if it is on the proper line.]

SIR,—Do you know if there is a scarifier equal to T. S. Perry's, Canandaigua, N. Y., made in Canada?

A. L., Garafraxa, Ont.

[Not being informed ourselves on this subject, we wrote Copp Bros. & Co., of Hamilton, Ont. Below is their answer: "We can not safely compare our scarifier with Perry's, as we have not yet seen his and have been unable to obtain any information about it. We would, however, say that we have not yet seen a single person who is not highly pleased with ours after using it. We have already enquiries for a large number, and these have been sent principally by farmers whose neighbors bought last year. We know of no implement which will break up hard ground more thoroughly and easily than this will, and where it has been used on the stiff clay on the mountain land the improvement in the crop was remarkable. They are used here for putting in grain, or rather cultivating in, as well as for breaking up the summer fallows. Cut is shown in the ADVOCATE for 1879 (April and other numbers)."]

Sweet Corn.

SIR,—As the season for planting corn will soon be upon us, I thought it would not be out of place to let your readers know my experience as a farmer in growing what is called sweet or sugar corn. I have for several years past received catalogues from different seedsmen, and seeing different kinds of corn advertised as being the most nutritious for family use, I sent for a small quantity for a trial, the names of which were Crosby's Early and Stowell's Evergreen, and after growing the two varieties side by side I found, to my surprise, that I had splendid green corn from the time it came in until frost set in, and a corn far superior in quality to our old common yellow corn. As soon as I had no more use for the corn I gave the stalks to my cattle, which they relished immensely—in fact, they turned their attention to them in preference to American or Western corn-stalks, so long used in Canada for fodder. The next season I added a new addition to the above varieties, called the "Tuscarora," and found that it succeeded equally as well with me as either of the others, as regards a green corn for eating purposes and also for feeding stock. As I had by this time accumulated quite a lot of seed, I resolved to try it broadcast as a fodder corn, and which fully realized my expectations, and I consider its fattening properties far exceeds that of any other corn. I may say that some of my neighbors said that Stowell's Evergreen would not ripen, but I have proved to the contrary, and last season sold my surplus seed to a seedsman for \$2 per bushel. My seed the first season cost me 30c. per quart, but I soon overcame that difficulty by raising it myself, and now the duty on Western corn don't trouble me, as I can do much better by raising my own seed. I have found raising corn so far a success. As we can't raise Western corn in this country, the Americans can charge us what they please, and they think we must grin and bear it. For the benefit of those who like to try raising sweet corn, I will explain how I cure it when the stalks begin to dry. I cut and bind them in shocks the same as field corn, and husk the ears out afterwards, and spread in a loft to dry through. The nicest way to save sweet corn is, when the stalks are partially dry, to break the whole ear off, and with one or two of the outer husks tie six or eight ears together, and hang them in a loft until they become perfectly dry, when they may be husked out. Sweet corn retains moisture for a long time, and must not be hastily stored away in bulk.

EXPERIMENTER.

SIR,—I propose buying 12 or 15 acres of land between Oakville and Toronto, on the shore of Lake Ontario. I intend putting—say, \$2,000 cash into the whole thing—land, stock, house, barn, etc. etc. (say \$500 on account of land for the present). I want you to give me your opinion as to the advisability of going into this thing. Now, Mr. Editor, what I wish and hope you will do is to put down the amount that you think about the thing opposite the following items, which strike me as being about the most needful things necessary to carry out my scheme:—

- Twelve or fifteen acres of land cost, say...\$
 - To build house (say 3 rooms and kitchen..)
 - To build barn and stable (same size).....
 - Pig-pen.....
 - Poultry-yard and house.....
 - Necessary fencing.....
 - Plough.....
 - Harrow.....
 - Horse.....
 - Harness.....
 - Light wagon.....
 - Ten heifers (say 1 year old).....
 - Twenty pigs (say 6 months old).....
 - One hundred hens (including roosters)....
 - Thirty turkeys (including gobblers).....
 - Ten sheep (if you think there will be room for a little "sheep farming").....
- And if you can suggest anything else (besides house furniture) that you, with your experience, will see will be necessary. (Don't count in a wife, as I am a confirmed bachelor). I have had no experience in farming or stock raising of any kind.

C. H. K., Listowel.

[We would strongly advise you not to invest your money in the manner you propose. You will be pretty sure to meet with a heavy loss, perhaps lose the whole, and more if you can command it. You should employ one year at least in learning more about the requirements of the country. If you wish to succeed hold on to your money and go to work in earnest with some good practical farmer.]

The Cut Worm.

SIR,—This insect is fast becoming a great pest in some of our gardens and farms. Can you give us some description of its habits and any method of preventing its ravages.

N. O., Arva, Ont.

[From the recent report of the Entomological Society, we reprint the following extracts on this subject:—There is scarcely any land free from the wire worms, or any crop that is not subject to their voracity. They occur wherever grass will grow, being particularly harbored among clover roots, and are always prevalent in meadow and pasture lands, seeming to thrive best in the vicinity of swamps and woods. Young oats, wheat, rye and barley suffer much from being partially or entirely cut off below the surface. Cabbages and many root crops are also injured; turnips, perhaps, more than any other, as they are cut off when young, and have the roots badly eaten into when larger. In gardens they are very destructive. It appears that Indian corn is the greatest sufferer, especially when it is the first crop planted in new land, or when the season is cold, wet and late. Upwards of thirty have been planted in a single hill, and nearly the whole of the seed planted is sometimes destroyed. One of the most successful remedies on a large scale is a mixture consisting of two parts of quick lime, three parts of soot, and one part of coarse or refuse salt. This is used as a top dressing, being applied immediately after compounding, and should be well rolled in. It has the advantage of being perfectly harmless to the crops. Indeed, it is a most excellent and powerful fertilizer, as well as a destroyer of all kinds of insects and many weeds. Refuse from gas works, nitrate of soda, rape-cake and chloride of lime mixed and spread with manure are highly recommended, and the sowing of soda ash or guano broadcast when planting. A previous crop of white mustard is claimed to clear the land of them, presumably by starving out, for the roots of the mustard are extremely acrid and occupy the soil to the exclusion of any more nutritious ones. A close grazing with sheep seems beneficial when pastures are badly infested. The same result is also obtained by compacting the surface with heavy rollers.]

Stock in the Maritime Provinces.

SIR,—Thanks for the benefit of your Liverpool correspondent, who is an admirable writer and stands by Canada like a "son of the soil." The company he refers to as having been formed in the Maritime Provinces to ship beef to England has its headquarters at Amherst, situated almost in the centre of the "wonderful pasture land" that your correspondent says was found by the British agricultural delegates in their visit to Canada last fall. The advice given as to the kind of cattle required for the English market is appreciated here, and farmers have been trying to act upon such principles for some time. Importations of pure-bred Shorthorn stock have been made at intervals for a number of years back, and as a result of these importations there is now within a mile of this place a pair of three-year old steers that measure seven feet eight inches in girth, and are estimated to weigh 4,000 lbs. Another pair of steers, 18 months, weighed last fall at that age 2,360 lbs. Fifty-two head have been sold in one stable, to be delivered next month, that will average from 3,200 to 3,400 lbs. a pair. This company was not the first in the Maritime Provinces to ship cattle to Britain. A company in St. John last summer shipped several lots via Quebec, and since the formation of the Amherst Co. there has been one formed in Halifax with a capital of \$15,000, that has just shipped 250 head by the Anchor Line and they propose to make several more shipments before the Gulf opens. You will see by this that the Maritime Provinces intend to have a hand in the business of supplying beef to John Bull.

March so far has not sustained its reputation for wind and storm, but for cold, severe frost it takes front rank, the mercury having gone down one night as low as 23 deg. below zero. The traveling, however, in this district has been excellent, enabling farmers to finish up their winter's sledding in good shape; and as a cold March is no indication of a late spring, all seem well pleased with the March of 1880.

H. T., Point de Bute.

SIR,—Will you tell me the best time to sow plaster on clover or wheat.

J. R., Ops, Ont.

[We like to sow plaster as soon as vegetation starts. What are the views of others?]

Tile Draining in Indiana.

THE INDIANA TILE-MAKERS' ASSOCIATION.

DEAR SIR,—About one hundred of the Tile-makers of Indiana were assembled in convention at Indianapolis, March 17th and 18th. Your correspondent had the pleasure of meeting with them and the honor of being elected an Honorary Member of the Association. Lively interest and earnest discussion were maintained throughout the session. The proceedings were more regular than those of most public meetings, and while the speakers expressed earnestly differences of opinion, they manifested no lack of courtesy.

The programme of subjects discussed was as follows:

1. How can we best promote the interest of farm drainage?—J. T. Stringer.
2. What constitutes thorough work in drainage—S. J. Woolley.
3. The cost of fitting up an ordinary tile factory—John Fernald.
4. The best and most economical kiln for burning tile—Sheldon, Urbana, Ill.
5. The use of artificial heat in drying tile—J. K. Reader.
6. The cause of tile cracking—Samuel Cowgill, Cadiz.
7. The benefits of drainage—J. B. Nickerson, Dunkirk, Ind.
8. The porosity of the tile practically illustrated by having three-inch tile from different clay securely sealed at one end and filled with water, for observation during the convention.
9. Points necessary in a successful ditching machine—J. W. Penfield.
10. The use of crushers in preparing clay—J. R. Kemp.
11. The importance of an experienced burner to insure success—R. Thomas.

I intended to take notes for the *ADVOCATE*, but becoming actively engaged in discussion I entirely neglected my pencil. Reports and essays will be published. I will only attempt to give your readers the views of the Association on a few of the subjects discussed. Did not arrive in time to hear Mr. Stringer's address on question No. 1. Think it must have been good, for he is the President of the Association and makes an excellent presiding officer. One of the means proposed is to apply to the State Legislature to enact a law to encourage tile draining, similar to the one you have in Ontario. It is wonderful how tile drainage and tile manufacture have increased in this State without anything but personal interest and enterprise to promote them. The first tile factory was started about twenty-two years ago. There are now five hundred factories which produce annually 125,000,000 tiles. Can you estimate the value of this manufacture to the State of Indiana?

The essay of Mr. Woolley, on question No. 2, was very good, excepting that he advised laying the tiles at a less depth in clay than sandy land. Believing that this was bad advice, I offered the following resolution:

"It is the opinion of this Association that clay land should be drained as deeply as sandy land."

After a very interesting discussion it was adopted almost unanimously. Many statements were given of the drainage of clay lands. Several said that it would even destroy "hard pan," to the depth the tiles were laid. Some said the effect would not be so immediate on clay as on sand—which I doubt—but I think all but two or three voted for the resolution.

The discussion in regard to No. 4 resulted in favor of the down draft kiln.

No. 5. This subject is receiving a good deal of study, and many attempts are being made to dry tiles successfully by artificial heat. On account of the short seasons of Ontario this subject will soon engross the attention of your tile makers. I durst not speak confidently of any plan proposed. You hear of experiments with drying rooms, tunnels, fans, furnaces, exhaust steam, &c., &c. I believe that a good many will make tiles all next winter, and before long the manufacture of tiles will be as constant and systematic as any branch of manufacture.

No. 6. The answer to this is unequal expansion and contraction, caused by unequal heating and sudden cooling. The remedy is the down draft kiln.

No. 8. This trial showed conclusively that but very little water passed through the shell of the tile, so little that it need not be considered in the work of drainage. The tiles were wet on the outside, but it was maintained that this arose from condensation of moisture in the air. The water

did not come through the shell faster than it evaporated from the surface, for there was no flowing downward on the surface.

For further information I must refer you to the reports which will soon be published.

The value of such an Association to the State can hardly be over-estimated. The members do not appear to be competitors, but co-workers for the advancement of their common interests. Many of the questions that come before them call for scientific knowledge, and as an organization they will secure the services of scientific men. The workers and manufacturers in nearly every branch of industry in the States are organized. Some of these organizations have libraries, reading rooms, and rooms for social enjoyment. Such, no doubt, have done a great deal to advance the manufacturing interests of the country. There are others whose object is more for the purpose of obtaining some advantage over others, and these are productive of evil. It will do no good to denounce them, for their members feel that all the world is in arms against them. They must be taught the lesson which appears to have been well learned by the Tile Makers' Association of Indiana, that by seeking to advance the general interests of the State, and their own improvement in knowledge and art, they will best promote their pecuniary interests.

G. S. T., Buchyus, O., U. S.

"Wolf in the Tail."

SIR,—We have several cows suffering from the effects of what is commonly termed "Wolf in the Tail." They are thin and fail in milk. From what cause does it originate? Is there no preventive? We have previously treated the case by making an incision at the extremity of the tail, destroying the "wolf," and applying pepper and salt, binding it up immediately; at the same time rubbing in spirits of turpentine behind the horns. Will you kindly give me your opinion as to how it should be treated, and oblige.

J. W., Burnhamthorpe, Ont.

[This, as well as the "Hollow Horn," are not often found treated by veterinarians under those names. We know not what the technical name of the derangement is. Well, we will give it a name: "Sans Nutro Satis." When we first settled in the back woods, the "Hollow Horn" was very prevalent in the early part of spring or the end of winter, but only among farmers who had not sufficient food or shelter for their stock. Some of those who were most proficient in the veterinary art at that time would slit open the extremity of the animal's tail that was affected, and insert pepper and salt. This would wound and pain; nature would try to stop it by sending more blood to the parts affected. Better nutriment would be also prescribed, and recovery would take place if the beast was not too far gone, the weather not too severe, and sufficient nourishment given. In addition to this "Wolf in the Tail"—which merely means the shrinkage of all fat and flesh of that appendage—the animals' horns would be cold, and the cavities of the horns would be deficient in blood and marrow or their usual contents. The horns would be bored with a gimlet, and a mixture of salt, pepper and vinegar would be poured into them; this would give the animal pain and cause it to shake its head. Nature would then come to the rescue. It was not uncommon in poor sections for farmers to go in the mornings and help their neighbors' cattle to get up; a strong man could help up a beast if not too far gone. This was done by a good lift by the tail. When animals were too weak it required three men, one at the tail, and the other two could lift on a rail that would be put under the chest of the beast, just behind the shoulder; a fourth person might be seen with a switch thrashing the poor brute. There are farmers in Canada now who may be as audacious as a certain Member of Parliament west of this county, who denied the correctness of our report about Manitoba; also another Member east of this county who denied that Foot and Mouth Disease existed in Canada. These vile disparagers dare not openly and boldly deny, but act cunningly and privately. There are farmers still existing who have seen the picture above described, but farmers' circumstances have improved in Middlesex; "Hollow Horn" and "Wolf in the Tail" are not often to be found, and never were found when cattle were properly fed and cared for; and if any such barbarous practices were now followed in Western Ontario, the farmer resorting to them should be punished. It is said that this disease is sometimes caused by indigestion, though not so frequently as it was by bad treatment, as we have stated.]

Cattle Gnawing Wood.

SIR,—I would like to ask you a question, and would be much obliged if you would answer it in your next issue of the *ADVOCATE*, not only for my own benefit, but for the benefit of others as well. I keep a large stock of cattle and feed them in winter on good upland hay, but they do not seem to do well. They are all the time eating and gnawing sticks and boards, and wood of any kind that they can get at. They neither grow nor thrive, and the reason I cannot account for. If you or any of your readers can inform us of the cause and give a cure, I will be very much obliged.

A. W., Clarence.

[The continued gnawing of wood by your cattle is a sure indication that they lack some condiment not contained in their food. Your pastures and meadows must be deficient in lime; if so, application of lime would be very serviceable. Phosphates are an indispensable article of cattle's food, such as the craving of your cattle for other substances than their fodder shows they need. The elements so needed must be supplied in some form. Your land may have contained lime, and the continued cropping or pasturing have exhausted it. It is necessary for the health and thrift of your stock that they have a continued supply of phosphates. A milk cow takes yearly from the soil not less than ten pounds of phosphate of lime; if this be supplied in her regular food, as grass, green or saved, she will not be gnawing wood. To supply the needed phosphates a top-dressing of lime, lime compost, wood ashes, phosphate of lime, or even gypsum (land plaster), should be given. As a more immediate remedy in cases similar to yours, a small quantity mixed with wheat bran has been given to cattle by some feeders.]

Ploughing Matches.

SIR,—I see a communication in the *ADVOCATE* urging you to encourage good ploughing, and suggesting rules for guidance at ploughing matches. Mr. Editor, I would first ask, What is good ploughing? Answer that question and the other rules will be easily made. My answer to it is this:—Straight, uniform furrows, 10 inches deep, 9 inches wide, ploughed with a jointer plough. My reasons for using the jointer are:—1st. Will stand the drought best. 2nd. Will be easier harrowed. 3rd. Will cover the sod best; and 4th. Prevents weeds from growing, as all the weedy surface is turned under, therefore more subject to rot. I have little fancy for the ploughing in general that is done at ploughing matches. My reasons are:—It don't stand the drought, as the furrow is on edge and a little hollow grass grows between the furrows; takes more harrowing, and harder to reap on in the harvest, as the horses' feet and the wheels of the reaper get in between the furrows sometimes. If my reasons are not correct, prove them otherwise.

J. L., Westminster.

SIR,—Could you give some information in an early number as to the best means of treating the ox-eyed daisy, which has of late become a nuisance in this place.

W. J., jr., North Wakefield, Q.

[The ox-eyed daisy, though an annual, is a pest in some parts of the country. If the land is in crop, plow it light, scarify it as soon as the crop is removed; this will cause the fallen seeds to germinate in a few days, when the cultivator will extirpate them thoroughly. If they are in the pasture the only remedy is to pull them out by the roots—a rather tedious process.]

SIR,—A great deal has been said respecting salt as manure. Last year I sowed superphosphate at the rate of 400 lbs. per acre on my wheat; I also sowed salt alongside, at the rate of 12 bushels to the acre, and all the difference I could see was the phosphate started the seed a little at first; at harvest I could not see any difference at all. The soil was gravelly. I intend to sow salt on all my wheat next spring. J. T. M., Roger's Hill, N.S.

We have recently received several anonymous communications, one from "A Young Subscriber," Chippawa, and one from Dartmouth, N. S. We cannot answer any enquiries unless the full name and address of the writer be given.

Farmers' Clubs:

SIR,—It is with pleasure we notice the agitation in many sections of the country in favor of forming permanent farmers' clubs, their object being to forward the farmer's interest, by free discussion on all topics which concern his business. Now, this certainly is a step in the right direction, and cannot be otherwise than productive of great good directly to the agriculturist, and certainly to the country. 1st. In bringing the farmer and all interested in farming together at regular intervals, and thoroughly ventilating each department of the farm in their various seasons. Thus will unexperienced and unsuccessful men be directly benefited by coming in contact with and hearing the views of the experienced and successful. 2nd. It will cause all to be more watchful as to results of various farm processes previously practiced, and thus errors which, unnoticed, creep in everywhere, will be more readily detected and remedied. 3rd. It will be the means of causing farmers to read and study more, seeking the cause of various results, and will then be a grand and practical educator and a vigorous promoter of scientific farming. I know that many farmers have a contempt for so called scientific farmers, but this certainly is a mistake on their part. As the true meaning of word science is the knowledge of things grounded on demonstration or that reducible to practice, the very reverse to the hap-hazard and careless style many of our Canadian farmers follow, and these hard times have revealed the fact that the farmer who has followed the most scientific and systematic modes in all cases have suffered least; in fact I know of several such men who have succeeded in presenting a good balance on the right side of their accounts, even in the worst years, when careless and old style farmers were actually failing on all sides. Science and strict system also does away with much useless, profitless labor which does occur under ignorant and unsystematic farming. 4th. By the proper improvement of the advantage offered in a well attended club we can become better acquainted with the requirements of the markets; also be a powerful means of opening up new ones to our own benefit and that of the country. 5th. Intercourse of the above kind is a great stimulator in business, as well as a powerful promoter of mental cultivation. In view of these facts it is of great importance that a well-organized club shall exist in each county, composed of agriculturists and those interested in agriculture, and hold periodical meetings for the discussion of agricultural topics and all connected with agriculture. And beside the regular meetings the services of competent agricultural lecturers should be secured from time to time. Should each of the different counties put forward for such an organization, a Dominion Farmers' Club could be easily formed by sending delegates from each society. Thus the farmers of the Dominion would be so united that each member, if desirous, could almost immediately become acquainted with any improved system in any department of his calling. In fact such an organization is fraught with benefit without any apparent evil, and is just what the country wants.

PROGRESS, Myrtle, Ont.

SIR,—Is gypsum really valuable as a fertilizer? There are farmers here who say it is worth nothing? Some of them have applied it to crops and they say their crops were not a whit the better for it. There are large deposits of it in the Dominion, and some of it being shipped to the States, but little of it is used here.

E. M. C., St. Johns, Q.

[Gypsum (land plaster) is very beneficial to crops requiring ammonias. It attracts ammonia from the atmosphere and retains it for the use of growing crops. Four hundred pounds applied broadcast early in spring will, it is said, double the crop. It is valuable to scatter over manure heaps and about stables to fix the ammonia. The reason of its marked benefits upon the clover is the large amount of ammonia necessary to feed it, and must depend upon the atmosphere for its supplies. The reason of plaster being so beneficial is that rain water is supposed to bring down with it carbonate of ammonia, which acts upon gypsum in such a way as to abstract its sulphuric acid and form sulphate of ammonia; and exchange, therefore, its carbonic acid, and convert the gypsum into carbonate of lime; then the carbonate of ammonia, which is brought down by the rain, if it does not meet with sulphuric acid in the soil, it really becomes volatile and rises again into the air, whereas the contrary is the effect with sulphate of ammonia.]

Hedges.

SIR,—I would like very much to see an article in your valuable paper on hedges, how best to plant them, and what is the best tree to use for the purpose? Are evergreens better than other trees? and what evergreens are best?

BLANSHARD, St. Marys, Ont.

[For planting a hedge the first thing is to prepare the ground where the hedge is to be planted. Plow a ridge deep in the autumn. This will give a mellow, friable sod, such as is desirable in all tree-planting. The best season for planting is an open question. Some advise planting in spring and others in the fall. We have planted trees, both evergreen and deciduous, in autumn, fall and spring, and with scarcely a failure. If in spring, plant as early as the soil has acquired some heat, and not earlier. The roots will not take in and convey to the tree the necessary food when newly planted in a very cold soil. In the prepared ground open a furrow with the plow to the required depth, and in it cover the roots carefully, firming the earth on them with the foot. For a strong, durable fence, separating fields, or along a road or lane, there is nothing equal to the buckhorn for hardiness, endurance and resistance of stock. Its only fault is its slow growth. For shelter a hedge of Norway Spruce, if planted when young, not over two years old, is generally recommended. So are the Canadian Balsam, Scotch Pine and White Cedar. The Spruce, though spoken highly of, is objected to by some, as it will not bear pruning with the knife, and must be kept in order by trimming with the hand and shears in spring and fall. Cedar, on the contrary, bears pruning well. In order to have the hedge close down to the earth it is necessary that it have free air. A close fence along it will make the lower branches die—a most serious drawback to the utility of the hedge. As a fence is necessary for the protection of the hedge when young, let it be one that will not obstruct the free passage of the air. Many rows of Spruce that would, if they were properly cared for, be good hedges, are merely bare poles, very far from being ornamental. A wire fence would allow the free circulation of air better than any other, but an open picket fence will answer the purpose.]

SIR,—I wish to know if coal ashes from locomotives, having a strong smell of coal oil, are good for top-dressing hay land, or if considered good manure for light land or any kind of crop.

M. P., Campbellton.

[Coal ashes are generally considered a wholly worthless material, having no value as manure. Some persons, on the contrary, say they are not at all so worthless as represented. At least they are of use applied to stiff clay, making it more friable. They are also of use as a top-dressing around fruit trees. The American Cultivator says: "Have a place fixed for your coal ashes under shelter, where you can throw on them night slops and wash water—especially the former—and you will be astonished to see what a quantity of fertilizing material you will have next spring, equal, in fact, to its bulk of any of the commercial fertilizers. Also have your privy so arranged that a slide-box can be run in under the seat, and into this throw coal ashes every day or two, and you will thus save a fertilizer that is of great value, besides preserving health in your family." For light land coal ashes are not so beneficial as on heavy clay. The smell of coal oil is no serious objection.]

SIR,—I have a valuable brood mare, now in foal, troubled with worms. I feed her well, but she does not thrive; her coat is rough and she has a poor appetite. Numbers of worms from $\frac{1}{2}$ an inch to 3 inches in length pass from her. Can you tell me a preventative and a cure? W. N., Whitby.

[If your mare had not been in foal it would have been well to give her a light purgative ball, then follow up each night with dr. doses of sulphated iron in a little boiled barley; but since she is in foal you must omit the purgative ball and give the sulphate of iron as above directed.]

FOR LICE ON CATTLE.—We have received from P. S., Wilfrid, P. Q., the following recipe:—"Equal parts of coal oil and hogs lard an effectual and safe cure." A few applications in warm weather, about a week apart, will destroy the vermin. A very simple, and, it is said, a sure remedy for lice on cattle, is the application of water in which potatoes unpeeled have been boiled.

Water Filter—How Made.

SIR,—Rain water is much healthier than hard water as a beverage, and the following will be found an easy and cheap way to fit it for drinking purposes:

Have an oak tub made, holding from half to a barrel, according to the amount of water needed in the family; let it stand on end with a faucet near the bottom—or I prefer a hole through the bottom near the front side, with a tube in it, which prevents the water from rotting the outside of the tub. Then put clean pebbles three or four inches in thickness over the bottom of the tub. Now have charcoal pulverized to the size of small peas (that made from hard maple is best), and put in half a bushel or so at a time; pound it down quite firmly, and then put in more and pound again until the tub is filled to within eight inches of the top; again put on two inches more of pebbles, and then put a piece of clean white flannel over the whole top as a strainer.

The flannel can be washed occasionally to remove the impurities collected from the water, and it might be well to put a flannel between the pebbles and at the bottom also. When the charcoal becomes foul it can be renewed as before, but will work a whole season without renewing. Put on your water freely until it becomes clear, when you will be as well satisfied as you would be if it ran through a patent filter, costing six times as much as this. A large jar to hold the filtered water can be set in an ice box if preferred, or an occasional piece of ice can be put in the water; but if the filter is set in the cellar, as it should be, the water will be sufficiently cool for health. This makes a good cider filter, also, first straining the cider through cotton to free it from the coarsest pomace.

R. W. K., London, Ont.

[This valuable communication may be of service in places where the water is impure.]

SIR,—I have a foal which I noticed was swelled a little below each stifle when I took him off the grass. You can now hear his joints crack when he moves, and there seems to be a bone loose on the side of each stifle. What is the cause, and how can I cure him? J. M., Panmure.

[Your colt has what is termed luscation of the stifle. It is rather a common affection among young animals of the coarser breeds (heavy draught or Clydesdale breeds are more subject to it than the coach horse or the thoroughbred). It may be accounted for in this way:—The coach or the thoroughbred is more compact or solid in the joints, while the coarser bred colts grow faster and are looser made. In some of these cases the ligaments which bind the stifle in its proper place become relaxed either from too rapid growth or from hurt, or from being reduced in condition by disease.

Treatment—apply cold astringent applications, such as cold oak bark tea or saltpetre and strong vinegar, one ounce to pint of vinegar; or a better one is sal ammoniac two ounces, saltpetre two ounces, vinegar one quart; apply night and morning. Keep it in a roomy box stall with level floor, or when he is turned to pasture see that it is a level one; feed well, and in a great many cases they will get better; sometimes it takes a long time.]

SIR,—What is the cause of sweeney in horses? How may it be told, and what is the cure? H. H. S., Brooklin.

[It occurs mainly among young horses when first put to heavy work, or in others when working on uneven ground and stepping suddenly into a hole, and in endeavoring to recover equilibrium the muscle which forms the outer support of the shoulder is injured, and the result is heat, swelling and tenderness on the outside of the joint. Soon the muscle of the shoulder begins to waste away rapidly, and in bad cases the shoulder-blade may be denuded until it appears to be covered by nothing but skin. (Treatment.)—In the first stages treat as for a strain, and when the swelling has subsided allow moderate exercise, on smooth ground. Be very careful to have the collar fit closely, and increase the circulation over the wasted muscle, by active friction with straw or a piece of wood or by a mild blister composed of ammonia 1 pt., oil 2 pts., or Spanish flies 1 part, alcohol 25 pts.; steep 24 hours. Strain and apply. Perseverance and continued application is required to effect a cure.]

Miscellaneous.

ERRATUM.—Page 79, line 36, "some sections of Canada" should read *some sections of Colorado*.

Implements.

PATTERSON'S SPRING TOOTH HARROW.

When we first saw this harrow at an exhibition we thought it hardly deserving of attention, as it appeared an awkward looking thing in comparison with our gang plows, cultivators and harrows. But we are often apt to be deceived with appearances. We know of no implement in Canada that manufacturers and farmers have been so much surprised with. It is an American invention, and was at first disregarded, but after several trials our manufacturers found that it was a very valuable invention, and now we hear from reliable farmers and manufacturers that it is satisfactorily taking the place of many old cultivators, and is giving great satisfaction. It is claimed that it will pulverize land better and easier than any of the cultivators now in use. The novelty of a spring on a cultivator, plow or harrow appears at first sight ridiculous, but on trial it is found that the continued spring and jerk tears up the ground much easier than is done by a steady pressure. It can be set to any depth required. Many of the best farmers we know speak most highly of the implement, and the manufacturer informs us that every man who has one is satisfied with it. Mr. Patterson is advertising for more hands for his foundry, as the demand is so great for these implements.

J. O. Wisner & Son, of Brantford, Ont., have already sold their spring stock of grain drills, and are working with full force at their horse rake, which they claim to be the best in this Dominion. They say that several parties have attempted to adopt its principles, but they have detected and stopped them.

Harris, Son & Co., of Brantford, Ont., are manufacturing a large number of self-binding harvesters this year. They only made a few last year, but the satisfactory results from these have justified them in extending in that line. It is a great saving to use a self-binder when farming extensively and the ground is adapted to their use. To show the extent of these works, there were 16 painters at work last week when we passed through the manufactory. These were all employed at that time in painting the Kirby reapers and mowers.

Messrs. Massey & Sons, the gentlemen who erected the extensive implement works near the Exhibition Grounds, Toronto, have now their works in full operation. They employ nearly 200 hands; they are turning out reapers, mowers and horse rakes at a rapid rate. They claim that they have the best steam engine in Canada to run their machinery. We have no reason to doubt it, as we have never yet seen one that has pleased us better in appearance. It is worth a visit to the place to see this engine. It runs so nicely; is so scrupulously neat and clean; it is polished, painted and varnished in the neatest manner, and the engine room is carpeted. It appears like a piece of drawing-room furniture in a glass case, but the least motion of its arm starts into life the whole of the trip hammers, punches, lathes, saws and grindstones of the whole establishment. The engine was imported from the States, and cost \$3,000, but Messrs. Thompson, of Stratford, Ont., have procured the right to make them in Canada. If you go to Toronto and are interested in machinery go and see this engine.

The Waterous Manufacturing Company are sending their world-renowned saw mills to several foreign countries, and claim that they would establish a far more extensive manufacture than any yet established if the Dominion of Canada had a person to represent her interests in those countries. The United States and Britain are represented, but Canadian interests are not. We consider that our commercial trade and intercourse may profitably extend to countries perhaps unaware that such a place as Canada exists; many foreigners think that Canada belongs to the United States.

Experiments prove that there is no feed for cows so well calculated to produce gilt-edge butter as red clover in bloom.

Laudanum in ten-drop doses will be found a cure for cholera or poultry intestinal fever, the destroyer of so many fowls.

A stock-keeper reports curing many bad warts on cattle and horses, during several years, by application to each of "one good daub of tar."

Many amateur window gardeners have little success in growing plants, because, although they water them daily, and keep the earth in the pots well stirred up, they pay no attention to the cleanliness of the leaves.

A correspondent at Keene, N. H., recommends boiled potatoes as a remedy for diarrhoea in cattle. He says that three pecks a day, fed warm, cured in two days an ox of his that was affected in that way.—[Connecticut Farmer.]

Sulphur has been found to cure roup in fowls, when applied as follows: Open the affected fowl's beak, and with a tube, which may be formed of paper, blow half a teaspoonful of sulphur down its throat. Three applications have been known to cure.

APPLES.—If we could foretell the future prospects of the market how soon we should be rich! Some apples were sold in England at a loss last autumn. The present price is from \$6 to \$8 per barrel in Liverpool.

Beauty on our farms, as exemplified in handsome shade trees and shrubs, is a marketable quality. One hundred dollars' worth of suitable hardy plants, judiciously planted, the Rural New Yorker thinks, will add not less than \$1,000 to the value of a farm in five years.

Four years ago St. Joseph's Island, near Manitoulin Island, could not boast of more than eighty-seven inhabitants, half-breeds included; but now there are between 2,000 and 3,000 people, and the majority of them settled within the past two years. It is expected there will be a great rush in the spring.

SHIPPING BEEF TO ENGLAND IN CARCASSES.—A Quebec merchant has experimented successfully in shipping beef to England in carcass. The animals are beheaded, the entrails are taken out, and the bodies pressed into a small compass and frozen. The hide is not removed until the voyage is over, and it is claimed that the meat is superior in appearance to other imported beef, and keeps longer.

THE QUANTITY OF FOOD NECESSARY FOR A HORSE.—The required amount of food for a horse for ordinary work is 12 pounds of oats or any other kind of grain food, and 14 pounds of hay. A horse weighing 1,000 pounds, and fed 8 quarts of grain or oats, which is equivalent to 8 pounds, should be fed 18 pounds of hay. Hay is the nerve food for a horse, cattle or sheep, and grain is the muscular and adipose of fat-producing food.

GRAPES.—Every farmer's family should have all the grapes they can eat, from September to January. It is not necessary to have a large vineyard for this; a few vines, each of the best sorts, and properly treated, will give a great amount of fruit. There are hundreds of out-of-the-way places where a vine may be set, such as along the fence, or it may be by the side of a shed or barn; with good soil, and care in pruning, satisfactory returns may be expected.

It is folly to keep old sheep. They should be turned off to the butcher while they are in their prime. It does not take half so much to fatten them then. When they get old and thin, in order to put them in condition to slaughter, the whole superstructure must be rebuilt. Four sets of lambs are all an ewe can bear; this will bring her to five years, and this is an age when, with little extra care, she will round up to a fine carcass. Exceptions may be made when the breed is scarce, and the blood is more valuable than anything else.—[Rural World.]

The Gardeners' Monthly gives a most useful hint in regard to pruning evergreen hedges, remarking that the only way to trim them so that the foliage will keep green from bottom to top is to trim each side slopingly from base to apex. In trimming the top of a hedge flat and the sides upright, the sun is kept from the foliage at the base of the plants and the lower branches will become bare of foliage and dead. But trimmed in the manner indicated, the sides will present a uniformly green, thick, healthy appearance. This method applies to hedges of Norway spruce, hemlock, arbor vitae, and, in short, all evergreens. The square and upright method of training has long ago been discarded by all who have tried the form recommended.

PRIZE ESSAYS.

The sum of \$5 will be given for the best essay on the following question:—Which is the most profitable for Canadian farmers to raise for fattening stock in winter, roots or cereals? The essay that gives the most valuable information to the farmer to be awarded the prize. Space, two columns or may be continued; the essay to be in this office by the 15th of May.

The prize for the essay in this issue on Manitoba, was awarded to Mr. J. S. Ireland, of Chatham, Ont.

More Cattle Disease in the U. S.

A mysterious disease has broken out in a herd of cows in Litchfield, Connecticut, N. E. The disease shows itself first in a frothing at the mouth, after which the animal grows weak and dies. What the disease is is yet a mystery, but it will be investigated, and due care taken to prevent its spread, if contagious, to other herds.

Greenwich, Connecticut, which has suffered so much from pleuro-pneumonia, is now in trouble with a new horse disease, which has appeared in some of the stables there. The attack results fatally within twenty-four hours, and the Cattle Commissioners have been called upon to give it their attention.

Better Meat.

Mr. E. B. Morgan, the principal fat stock exporter from Ontario and surrounding counties, recently returned from England. At a dinner given in Columbus, he stated that the difference in the price of our Canadian cattle is very great; that English butchers will pay two pence more per pound for a smooth symmetrical animal than for a rough one. He states he can buy better cattle in Ontario than in the United States, and finds them free from disease.

Gooseberries.

I am reminded that I have said nothing about gooseberries by a letter from a lover of that fruit, in which he asks how he can prevent his from mildewing.

I have not been troubled with mildews. I think the reason may be, that I keep my bushes thinned out so that they are quite open to a circulation of the air. I leave only five or six stalks to each clump. My bushes bear well, and have never troubled me in any way, except once; then they were infested with small worms. I sprinkled them in the morning before the dew was off, with fine ashes, and the worms took their departure. Unless gooseberry bushes are thinned out every year, they become a jungle on a small scale, and it is almost impossible to gather the fruit from them.—[Review.]

A balky driver makes a balky horse. In breaking in colts, the trainer should never lose his temper. A firm hand and gentle manner will bring any colt, however spirited it may be, into subservience to the driver. The animal must be made to rely entirely upon its master. It cannot be made to do so by brute force. The same means should be used as with a child.

There are about thirty species of insects which subsist on our garden vegetables. The grape vine has about fifty insect enemies; the apple tree seventy-five; the different shade trees have over a hundred; wheat, barley and oats fifty. The estimated annual destruction of property by insects in the United States is as high as \$400,000,000. A great portion of this loss might be prevented by the preservation of many different kinds of birds.



The Family Circle.
"Home, Sweet Home."

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

BY FRANCES FREELING BRODERIP.

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

CHAPTER III.

"Now, uncle," said Alice, "you have shut yourself up too much since you have lived here; and if you go on vegetating like this, you'll turn into a human turnip, or carrot. Now I am come to stay with you and cheer you up, you must go out a little, and see more society—it will do you good, and rub all the rust off you."

"Oh, my dear child!" cried poor Mr. Poppleson, quite aghast, "don't talk of such a thing; I could not bear it—indeed, I couldn't. Just fancy being on intimate terms with that terrible Mrs. Boyce, or Mrs. Bond! Ugh, Alice! you wouldn't be so cruel!"

"Even if I were so, it would be cruel to be kind. I daresay all the ladies here are given to gossip and scandal—they look like it, most of them; only, then, there are so few things to do and think about for the generality of women in these small country towns."

"What, Alice!" cried her uncle, still more appalled: "you becoming an apologist for gossip and scandal! Good heavens! I hope you have not come here to be spoiled by all that coterie or envious, malicious busy-bodies! You don't gossip or slander your neighbors, do you? I have not heard you do so yet."

"No, my dear uncle," answered Alice, smiling; "you know such things are very foreign to my habits and opinions. But it is hard to condemn all for the faults of a few; and if we are patient, with a little chaff, we might find a few grains in the midst. And so, when we return the calls of all these good folks, let us do it in a sociable spirit, dear uncle."

"Oh!" groaned poor Mr. Poppleson, "if you are going to take that course, Alice, I see it's all over with my peace of mind, and I shall be victimized after all my precautions!" Alice laughed at her uncle's comical dread of the invasion of his peaceful hermitage, and promised to be merciful, finally proposing, as a peace-offering, to return all the calls alone, and apologize for him.

"Indeed, my dear uncle," she said, slyly, "I don't know why you should be so vain as to imagine they will persecute you, when they can get me. I shall serve as a safety-valve for you!"

Her uncle did not feel greatly consoled at this; but he was very kind-hearted, and thinking that she might naturally wish for a little society, he told her to please herself, for he trusted to her discretion, only he bargained that she would keep the drawing-room for her visitors, and let him keep his own room and garden unmolested.

And so Alice became initiated, by degrees, into all the sayings and doings of the wonderful small world of Chatterbury, and a pitiful little affair she found it. Go where she would, she heard nothing but idle gossip or scandal; everybody's affairs being discussed, and thoroughly ventilated. She tried to check it, in vain, by introducing other topics of conversation, such as art, or literature; but she was only sneered at for her fancies, or impertinently answered. She often wished like the princess in the Arabian tale, she could stop her ears from the voices of those stony hearts, and could now quite understand her uncle's seclusion. She then tried, by degrees, in a lady-like manner, to drop out of the round of visiting again; but a new victim was too precious to be easily let slip, and she found that if she entrenched herself in her own domains, and did not call, she was still open to being called upon, and in her own home was more open to attack.

One morning, she was sitting at work in the sunny drawing-room, when Mrs. Boyce and Mrs. Bond were announced, and unwelcome visitors as they were to both Alice and the faithful old Dorothy, they were ushered in.

"Good morning, Miss Earle," said Mrs. Bond, in her usual patronising style; "we have called upon you at this unusual hour, for a purpose that I hope will plead our excuse. We have all been for some time working, as you know, with a view to obtain a sum of money to enlarge the infirmary. Dear Mr. Carttar is so energetic, and so praiseworthy—and we know it is a pet project of his to increase it—and so we have decided upon having a fancy bazaar, under the direction of a committee of ladies, each of whom will have a stall. As we have a good deal of space to fill, we thought you would like to help us in the good work."

"I shall be very glad to help," replied Alice, quietly. "I have a little fancy work by me, to which you are heartily welcome, if it is of service."

"We shall be very glad of it indeed," replied Mrs. Boyce; "and as it will not be required till next month, there will be plenty of time."

"I have no doubt," said Mrs. Bond, "as your uncle is so rich and so charitable, and as he has been hitherto so little taxed with our local charities, he will add his contribution to our stores. Choice prints or books would be acceptable. And surely, my dear Miss Earle, we may depend upon you for a good supply of bouquets, with all your choice flowers? In these good objects one must sacrifice oneself a little, sometimes."

"I will tell my uncle your message, Mrs. Bond," replied Alice; "he is so good and unselfish, especially in behalf of a good object, that I daresay he will help in some way, though, of course, I cannot speak positively for him."

"Oh, dear, no!" replied Mrs. Bond, with her most acidulated smile; "we are well aware of the imprudence of pressing

requests in some cases, and charity must begin at home, you know."

"I am not afraid of annoying my uncle," answered Alice, calmly. "We are so entirely unreserved with each other, that I should not think of withholding anything from him, even where we differed in opinion."

"Ha! indeed!" replied Mrs. Bond, satirically. "Very nice—very disinterested, indeed! But, my dear Miss Earle, you may carry that too far."

Mrs. Boyce saw Alice's color begin to rise a little, and therefore hastily broke in before she could reply.

"Well, my dear, I am glad we may reckon on your good offices. I would not ask you in any other cause but that of our dear Mr. Carttar, to whom we are so deeply indebted. I must say, a little bird did whisper in our ears that Mr. Carttar had found a haven of rest here, but I don't know if it's true."

"Mr. Carttar is a great friend and favorite with my uncle," said Alice, haughtily, though she could not prevent her cheeks from burning in a most unpleasantly conscious way.

"No doubt," said Mrs. Boyce, looking very knowing; "we Chatterbury folks are well aware of that; but his former visits to poor Mr. Poppleson were much more like 'angel visits, few and far between,' until lately. Don't blush so, my dear; I hope the rumor is true, for you must allow a partial admirer of our dear Mr. Carttar to say you would be a fortunate woman."

"Very fortunate, indeed!" chorused Mrs. Bond; "such a nice, independent position, too!"

"Really ladies," said Alice, rising indignantly from her seat, "you must allow me to say you take unwarrantable liberties with both my name and Mr. Carttar's, as I have no doubt he will also tell you."

"Well, well, my dear," answered Mrs. Boyce, rising, and evidently apprehensive of an outbreak, "you need not be angry with your friends for rejoicing at good news about you. However, we will leave it till another time. Good-bye, my dear; you can send your work to me, you know, and I daresay we shall be able to make room for you in one of our stalls."

"Thank you," replied Alice, coldly and haughtily. "I have a great objection to becoming a saleswoman; I will send you the work to-night." And she rang the bell for Dorothy to show out the visitors. But malignant Mrs. Bond could not resist a parting shot at the door, and said, "Good-bye, Miss Earle; I am truly thankful, for our old friend Mr. Carttar's sake, to hear you deny the report; for it is such a drawback to a young man just rising in his profession to marry early—unless with very great certainty of advantage on the other side."

Alice was too roused to reply with any amount of patience, and her tormentors left her, but not to the untroubled peace in which they found her. Alice was a very high-natured, proud girl, and was now mortified to her inmost soul by the way in which her name had been bandied about by these mischievous people. She was quite aware that Mr. Carttar's attentions had become marked, and in her heart felt that he admired her—nay, more than that. But he had not spoken yet on the subject; and, therefore, such allusions and remarks were not only disagreeable, but deeply mortifying to her. She had been so happy with her uncle when she first came, and before she had so rashly mixed herself up with these gossiping coterie.

Meanwhile, the two mischief-makers had not finished their morning's work; for as they returned, they agreed to call on Mrs. Sparks, and here they found Mr. Carttar, on a professional visit to that much enduring woman.

"Oh, Mr. Carttar," said Mrs. Bond, "what have you done to Miss Earle, to lose her good graces so entirely? We merely joked her in the slightest way upon the very common report, and she drew herself up like a duchess, and disowned all interest in you!"

Mr. Carttar was almost as angry as Alice had been, and his patience and good temper were sorely tried in making a calm reply; but he was not to escape so easily.

"Poor people are always the proudest," said Mrs. Boyce. "But really these airs that that girl gives herself are rather absurd; because, of course, if she quarrels with old Poppleson, he'll leave his money to a charity."

"Yes, and then she'll have to fall back on her fancy work," said the "Acidulated Drop." "Of course, that's how she comes to have such a good stock by her, for I dare say she worked for some bazaar or society. There are so many genteel ways of making money."

Mr. Carttar could stand this no longer. He got up, and taking his hat, said, "I think you have little right to use Miss Earle's name in the manner you are doing. Moreover, I must say you do me too much honour in connecting me in such familiar terms with her. I have a most earnest and sincere respect for Miss Earle's sterling goodness, even apart from her other charms; but I am not presumptuous enough on that account to feel even flattered by hearing her name bandied about so roughly with mine. I would commend you all, my good friends, professionally to look after your tongues; such feverish action is quite abnormal, I assure you!"

"Oh, Mr. Carttar!" cried Mrs. Sparks, pitiously; "don't go away in anger like that! I am sure neither Mrs. Boyce nor Mrs. Bond meant the least harm; it was only a joke among a few friends. And I assure you I don't agree with them. I do think that Miss Earle would be a capital match for you. She's sure to have all old Poppleson's money—and that's worth making it all up, before some one else picks up the heiress!"

This was the last drop to the cup, and Mr. Carttar took safety in flight, not trusting himself to a reply. And although the two persecuted parties had held their own so gallantly "before folks," and had bravely tramped on these miserable nettles of life, the stings still remained to torment them. John Carttar was as proud as Alice, and resented the idea of fortune-hunting deeply; but he was also, most fortunately, of a thoroughly frank, upright nature; and though he put aside the first impulse of the haste of his anger, second thoughts came to his aid, and he went straight on to the Haven, asking to see Miss Earle. During the few moments of waiting, his heart failed him a little; but he resolutely put it aside, and was in the room before Alice could resolve whether to see him or not, and their salutation was mutually embarrassed. But directly Dorothy had closed the door, John plunged headlong into the matter. "Miss Earle, you have already been told by idle tongues what I had hoped would have reached you from no lips but my own. And I have only to thank my own foolish diffidence for it; for I could hardly flatter myself that you had known enough of me to tolerate further encroachments. But no words, even of my own, could give a true idea of my deep feelings for you."

"Pray, Mr. Carttar, don't vex yourself and me with all these

idle reports," replied poor Alice, with a heightened colour. "I cannot say I have not been annoyed; but, after all, it is the idle chatter of silly women. I think we can afford to be friends, in spite of them."

"You may, perhaps," answered John, rather hoarsely, "but I cannot; for I have felt, for some time past, that you were more to me than any one I had seen, only I was foolishly afraid of tempting my fate too soon!"

Alice had taken it into her head that Mr. Carttar felt bound in honour to make her an offer, as his attentions had been pointed enough to draw so much observation upon them; and, therefore, woman-like, was sternly resolved to refuse a love that was really dear to her, rather than run the risk of being wooed in pity, and from honourable feeling. Accordingly, she was not her own sweet, ingenuous self yet, and answered somewhat coldly.

"I must, of course, feel flattered, Mr. Carttar, as every woman should, by your proposal; but I think you are hasty in your conclusions, and, for myself, I have no wish to enter into any engagement at present."

It was now John's turn to feel rather rebuffed, and, calling to mind the remark he had heard, that he was courting old Poppleson's heiress, and half fancying that Alice was imbued with the same notion, he drew up rather hastily, and replied, "Very well, Miss Earle; I will not trouble you further. You need not put your refusal into more decided language. I will not intrude my hopes and wishes on you again."

And, so saying, John Carttar left The Haven, with a heavy step and defiant air, but bearing a very sore heart with him; while Alice, for all her proud bearing, was not one whit happier. And thus, by the mischievous chatter of a few idle tongues, the promise of two lives ran no small danger of shipwreck. However, happily, in this case their good genius, in the shape of old Poppleson, came to their aid. Just as John Carttar was going off, in hot haste, with all the vexation of his repulse still glowing in his face, he came across his old friend, just coming into his own garden gate, and was, in spite of himself, dragged off to look at a splendid specimen of the "Cloth of Gold" rose, which had just come into superb flower, and was the very pride of its owner's heart. How it came about, neither knew or remembered; but somehow, before they reached the standard beauty, John's hopes and griefs had been poured into the sympathising ear of his old friend, and the glorious flower's show was passed unheeded by.

"Tiddy faddy, tiddy faddy, Carttar!" replied old Poppleson in his characteristic fashion. "Don't you think for a moment of anything those dreadful women said! Oh, they've been the terrors of my life; and I warned Elsie what would come of it if she only let them meddle with her. Talk about vipers and adders!—ugh! there a deal worse than snakes! However, cheer up, man; women are 'kittle cattle' at the best of times, and I've always kept out of their way. But you're young, and there's no accounting for tastes; and, really, I always thought Alice liked you very much. I tell you what it is: I'll talk to her myself, and we'll see what she really means. So don't you fret your heart out over any of them, but wait till you hear from me!"

(To be continued.)

The Mother's Favourite.

One of the most touching stories ever set in circulation is that of a little girl who, on account of lack of beauty, was slighted by a vain mother who lavished all her love and pride on the poor child's lovely sister. One day, when madam lay on a lounge in her own room, languidly reading a novel, a knock sounded on her door.

"Is that you, darling?" asked the lady. "No—it's only me, mamma," timidly answered the poor little neglected one. "Only me!" What a story of slighted love and meek humility those two words expressed! The mother's heart was touched, and from that time she strove to divide her love more equally between her children. There should be no favourite in the family; such an arrangement is a blot and a curse upon its perfect happiness. In the first place, the favoured child is harmed by favoritism. If a boy, the chances are that he turns out very badly; if a girl, she is spoiled in her temper, and if she does not become a vixen, develops into a young woman as soft and impressionable as a bit of wax, and without some severe after training, too likely some stinging chastisement, quite unfitted to be a wife and mother. Then the mischief done to the other children is incalculable. In our own experience we have seen many families shipwrecked on the fatal rock of favoritism, and in most cases the chief offender was the mother.

So that a mother with a family of daughters should strive to her utmost to be a mother to all of them, bestowing the same warm kiss and hug upon the plain-featured Kate as upon the outwardly more attractive Ethel, her supreme thought being that the mind and future of the one were as precious in the sight of duty—motherly Christian duty—as of the other. A mother having a favourite child, and showing her partiality, unconscious though it may be, sows the seeds of envy, jealousy, rage, mortified vanity in the minds of the rest of her offspring; and so, in after days, when self-reproach is mere idle snivelling over the delinquency, brings on them and herself the blackest of clouds. A mother should spread her love as evenly as she spreads butter on bread, not squander its whole wealth on one, and that, too, a daughter among daughters; for slighted sons can rub off the impression in contact with the work-a-day world, but in daughters it is ineffaceable. The memory of kisses and presents in which they did not share clings to them through life, and must, to a lesser or greater extent, weaken the texture of their moral nature.

Minnie May's Department.

MY DEAR NIECES,—There is one important accomplishment which not one girl in a hundred is ever taught, and that is mending. To keep the house linen and wardrobes in neat repair, properly darned and mended, is one of the rudiments of real economy. Plain sewing, including beautiful darning and good mending, should be taught as accomplishments of the needle; it saves in home expenses, grumbling and ill-nature. Fancy sewing is well enough when it is artistic in finish as well as in pattern, but do not learn it before you are taught plain sewing, particularly mending, if you want to be a good housewife. Some may say sewing on a patch is easy, but even patching requires skill, and certainly judgment. What looks worse to the eye than a crooked patch or one crookedly set on? and not only is it an ugly sight but it fails to do all that it is intended for; for if the threads in the material are not allowed to run straight, but are pulled crooked, they will break much sooner than they would were they arranged in the straight lines in which they were woven. The smallest break in the threads or the tiniest hole should be at once repaired, and further mischief stopped by a neat darn, for the longer repairs are left undone, the larger will have to be the darn; therefore, I suggest to take that stitch in time which often saves more than nine.

MINNIE MAY.

Answers to inquirers.

J. W. N.—“Will you please furnish a list of flowers that will grow in a yard pretty well shaded with large trees, where the direct rays of the sun may be said to hardly ever reach the ground? Are there any plants that will thrive in such an exposure?” But few plants will develop their flowers if denied the sun's rays entirely. Fuschias, pansies, forget-me-nots, violets, lobelias, lilies of the valley, phloxes and other herbaceous plants, whose native habitat is a shady wood, will do best.

A. C. L.—To freshen up the colors in your carpet that has become faded and dingy, thoroughly clean it of all dust by good beating. When again laid on the floor, scrub it, a yard or two at a time, with warm soap suds containing one pint of ox-gall to four gallons of water; this will not only brighten faded colors, but will remove soils and stains of many kinds.

RECIPES.

WINDHAM CUTLETS.—Five mutton cutlets from the back rib, one gill of second stock, one carrot, one turnip, one small piece of celery, one onion, one pound of mashed potatoes, yolks of two eggs, one ounce of butter, one-half ounce of flour, one and one-half gills of cold water, one-half tablespoonful of Worcestershire sauce, one-half tablespoonful of catsup, six drops of caramel, one teaspoonful of salt, one-half teaspoonful of pepper, one pint of green peas.

Trim all of the fat from the cutlets and leave a half an inch of bone bare at the top of each one. Place them then in a copper frying-pan, and slice over them the carrot and turnip, onion and celery, adding also the pepper and salt. Pour over all the second stock and put the pan over a slow fire, allowing the contents to cook for twenty minutes, turning the cutlets meantime in order that they may cook evenly through. While they are cooking, rub the potatoes through a sieve to make sure that they are perfectly smooth, when they must be put into a saucepan, the yolks of eggs dropped into them, and stirred over the fire until the eggs are rendered dry by the action of heat.

When the cutlets are ready take a fifth part of the potatoes so prepared, and flattened with a knife upon a mixing-board to the thickness of a quarter of an inch, and roll in this one of the cutlets, leaving the bone bare as a handle. Envelope each of the cutlets in its blanket of potato prepared in this way, and when this is done lay by all of them upon a baking-tin lightly greased, brush them over with a little milk or egg, and brown them in a very quick oven.

While they are browning, stir into the frying-pan the butter, place it over the fire, and add thereto the flour, when the cold water should be put in and all stirred until boiling. Put then with this the catsup, Worcestershire sauce and caramel, and allow the whole to cook for two minutes.

Arrange the cutlets now in a circle upon a hot platter, fill into the centre a pint of boiled green peas, and pour the brown sauce around the whole through a strainer to keep out the vegetables that have been used to flavor it.

CORN BEEF HASH.

One pound of chopped corned-beef, three quarters of a pound of boiled potatoes, two ounces of butter, one gill of stock, one teaspoonful of pepper, one-half teaspoonful of salt, one Spanish onion.

Before chopping the meat, trim away and remove all the skin and grizzle, that all substance likely to present hard lumps may be taken out. Chop then the potatoes, taking care that they do not become too fine or a mashed paste, and mix them together with the meat in the chopping bowl. Chop the onion then finely and brown it to a pale brown in the butter. When brown, add to it the stock, and, when this is hot, the chopped corned-beef and potatoes, season all with the pepper and salt, and stir over the fire until very hot.

Serve this hash baked up in a hot vegetable dish with a piece of butter let into a hole made by the print of a spoon bowl in the top.

PUFF PASTE.

One-quarter pound of butter, one-quarter pound of flour, yolk of one egg, one-gill of cold water, six drops of lemon juice.

Sift the flour through a fine sieve upon a mixing board. Put the yolk of egg into a small bowl and add to it the lemon juice and cold water, beating these together with a fork.

Make a well then in the centre of the flour, pour into it by degrees the mixture from the bowl and mixing in the flour from the sides, knead all firmly together.

Flour a rolling-pin and roll the paste out very thinly, place the butter in the corner of a towel, and covering it with the opposite corner, press out in this any moisture that the butter may contain, spread it upon half of the crust, fold the other half over it, and press the edges tightly together.

Roll this out again very thinly, taking care that the butter does not escape between the edges.

Fold the crust again in three layers, and again roll it out, but rolling across instead of lengthwise, in order that the butter may not run in streaks by being always rolled the same way, and repeat this process of folding and rolling seven times, remembering to let the crust cool between the rollings, otherwise the butter will oil.

The paste may now be used for vol-au-vent, or whatever purpose required.

AUNT MARY'S PREMIUM YEAST.

Peel six large potatoes, boil and mash; put two handfuls of hops in a bag, boil well in a quart of the water that the potatoes were boiled in; add the hop-water, a half-pint of baker's yeast, two tablespoonfuls of sugar; mix. Let rise over night, then bottle for use.

TO KEEP CHEESE MOIST.

Many housekeepers complain that their cheese becomes dry, and some use a kind of bell-glass to put their cheese in. A very simple expedient will keep cheese in the best condition. Take a linen cloth or cheese-cloth, dip it in white wine, and wrap up the cheese in it. By doing this the cheese is not only kept moist, but its flavor is improved.

FLOATING ISLAND.

Sweeten a pint of thick cream with white sugar, grate in the peel of one lemon; whip it to a froth; pour a pint of thick cream into a china dish, lay sponge cake in thin slices over it lightly, then a layer of some kind of jelly, then pour the whipped cream on top and pour what remains into the bottom of the dish. Garnish the rim with sweetmeats.

TO WHIP CREAM.

Sweeten a bowl of cream with loaf sugar and flavor it to taste; set another bowl near the above with a sieve over it; then whip the cream with a whisk, and as it rises in a froth, take it off with a skimmer and put it into the sieve to drain; whip also the cream which drains off, and when done ornament with lemon raspings. This cream may be used upon custard or syllabub.

Carving.

Though carving is by many considered a masculine accomplishment, yet no lady is fully qualified to preside with grace at her own table unless she knows how to carve. As knowledge and not strength is required by the carver, there is no physical reason why women should not carve as skillfully as men. All display of exertion on the part of the carver is in bad taste, and shows either that skill is wanting, or that the dish to be carved is of inferior quality.

The knife for carving meat should be of good size, with a handle sufficiently long, and very sharp.

The knife for poultry is smaller and lighter than the meat carver; the point is more peaked and the handle longer. Fowls are very easily carved, and joints, such as loins, breasts, and fore-quarters, if the butcher has separated the joints well. This he should have strict injunctions to do, and if he understands his business thoroughly, he will do without injunctions.

The dish upon which the article to be carved is placed should be sufficiently near to enable the carver to reach it without rising, and the seat should be elevated so as to give command over the joint.

Fish requires very little carving; it should be carefully helped with a fish-slice, care being taken not to break the flakes. A part of the roe, melt, or liver, should be served to each person. The heads of carp, part of those of cod and salmon, and the fins of turbot, are considered delicacies. The choice parts of salmon lie next the head, the thin part next; the tail is considered less savory. In carving mackerel, cut off first the head, then divide it down the back; the part near the head is considered the choice part. Haddock, herring, perch, and carp should be carved in the same way as mackerel, remembering that the head of the carp is considered a delicacy.

The platter on which any article is served should be, at least, a third larger than the size of its contents. Nothing is more awkward than a large fowl or joint on a small platter. In carving a fowl, first place the fork firmly in the middle of the breast, then cut off the wings and lay the joints neatly on the dish, then cut off the legs, giving the blade a sudden turn, and the joints will break if the fowl is not old. Divide the leg at the knee joint, and lay the parts on the dish. Then cut thin slices from the breast on both sides, remove the merry thought or wish bone, then with the left hand turn the fork down with a little force, and the breast bone will easily come away from the rest of the framework, leaving the stuffing exposed. The second joint, or that part of the leg nearest the body, is by many considered the choice part, and is given with a piece of the breast, some of the stuffing and of the gravy. Each guest is usually solicited to make choice of the part of the fowl he prefers, and it is good manners and a relief to the carver to have the choice clearly expressed. Other fowls are carved in a manner very similar to turkeys. Pigeons and small birds may be cut into quarters and served.

In carving a haunch of venison, first cut in the bone across the joint, about half way from each end, then turn the broad end toward you and make as deep an incision as you can at right angles to first cut, and the length of the haunch. Cut thin slices from each side of this incision, and serve also a portion of the fat to each guest.

Roast pig is usually divided before being sent to the table; that is, it is cut down the back bone, the head is cut off, divided, and laid on the side of the platter and the ears are cut from the head. The carver should first separate the shoulder from the body, then the leg; then divide the ribs into convenient portions, and send round with plenty of stuffing and gravy. The ribs are considered the finest part, though many prefer the neck end, between the shoulders. The brains must be taken from the head and served with the gravy and stuffing. The ears reckoned a delicacy. In a leg of mutton the finest part is situated in the centre, between the knuckle and the farther end. The knife should be inserted there, and thin, deep slices cut each way. There are some good cuts on the broad end of the back of the leg.

In carving a sirloin of beef cut long, smooth slices running parallel with the bone, and serve some of the fat with each piece. Ribs of beef are carved in the same way as sirloin, always commencing at the thin end of the joint, and cutting long slices.

The usual mode of carving ham is by long, delicate slices, beginning in the middle and continuing down to the thick fat, at broad end.

If the first slice taken out is wedge shaped, all the others may be cut slanting, which improves their appearance.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES, — Looking over my diary, I was surprised to find that something concerning which had I been questioned, I should have said happened, but a few months ago, had really taken place a year ago, so quick is the flight of time. A year seems a long time in childhood, when we can remember but few of them, but as we grow older time passes like a dream. The mischievous school boy is a thoughtful man of business, and the little girl we played with is a wife and a mother. Yes, time flies, and once more it is spring. True we have not had much winter, and had it not been for the dark evenings and leafless trees, we might have fancied many days were like those of spring. But though we have had little frost and less snow, we are glad to see spring once more, because it is the season of freshness, hope and renewed life. With the advent of spring, amusements and little rounds of duties that served to render enjoyable the winter evenings become irksome; nature is waking from her ice-bound sleep, buds and flowers once more appear, the gladsome notes of the wild wood birds are heard, and we begin to think of outdoor occupations and amusements. In spring time many an object of interest is to be found in nature's revealed treasures. The pleasant search for early wild flowers has a peculiar fascination that might serve to awaken an interest in botany.

In speaking of flowers, I once knew a large family of which every child had its own garden cultivated by itself. This imparts a charm of possession and gives a sense of responsibility; it also excites a hearty and gentle rivalry. Each child might be allowed to choose a certain number of flowers or vegetables, and find more than ordinary delight in their service; but always make it a rule to attempt no more than can easily be performed, that whatever is done may be done well. The love of plants is one of the noblest and purest of all human loves, and then the exercise is so good; there is no athletic sport that exercises so many muscles as the art of digging, raking, watering and planting.

UNCLE TOM.

PUZZLES.

- 31—BEHEADED WORDS.
1. My whole is a brittle substance; behead me and I am another word for a girl; behead me again and I am an animal.
 2. My whole is a movement made with the eyes; behead me and I am something which serves to connect; behead me again and I am a liquid; curtail me and I am a preposition.
 3. My whole is an article of apparel; behead me and I am a gardening tool; curtail me and I am an exclamation.
 4. My whole is a piece of furniture; behead me and I am a part of the head; behead me again and I am sometimes felt and never seen.
 5. My whole is a very dangerous fish; behead me and I am an exclamation; behead me again and I am the emblem of safety. LOUISA BARRETT.
- 32—PUZZLE.
- Take five hundred and fifty and one, and add a thousand to that; if you place them in order [required you'll see something good, kind, or "flat."]

33—NAMES OF BRITISH TOWNS.

1. What things are when you buy them at shops, and what you generally see when you go to the town of Dover?
2. Part of a great ship which was built by Brunel.
3. Animals which possess horns and a part of a fortified town.
4. What England possesses a great many of and a part of the human body. W. SHORE.

34—DOUBLE ACROSTIC.

The initials of the following name, a country of Europe and the finals; one of its seaport towns:—

1. An island in the Mediterranean Sea.
2. A river in the north of Asia.
3. A river in England.
4. A cape on the coast of Spain.
5. A county of Ireland.
6. A town in Turkey.
7. A river in Africa.
8. A river in Russia.

35—NUMERICAL ENIGMA.

I am composed of 16 letters:
 My 6, 2, 10, 3, 12, 14 is an article of dress.
 My 1, 7, 8, 15, 13, 5 is a contemptible trait of character.
 My 16, 4, 1, 9 is a bird.
 My 11, 2, 16 is a fish.
 My whole is good advice. T. W. T.

Answers to March Puzzles.

- 22—Pelargonium.
 23—C a n t o
 w h i c h
 c h i l d
 a r e N a
 p a v i A
 24—Nelson; Rodney:—N i c o b a R
 E b r O
 L o m o n D
 S n o w d o N
 O t a h e i t E
 N o r m a n d y
 25—Sturgeon; Flounder; Whale; Turbot; Oyster; Eel.
 26—Beaver; Sable; Gazelle; Camel; Dog; Rat; W
 27—The letter O.
 28—Clove, love, glove, clover.
 29—Who does the best he can does well.
 30—Mad-den, Den-mark, Mark-et, Et-na, Na-val, Val-ley, Ley-den, Den-tal, Tal-on, On-set, Set-tee.

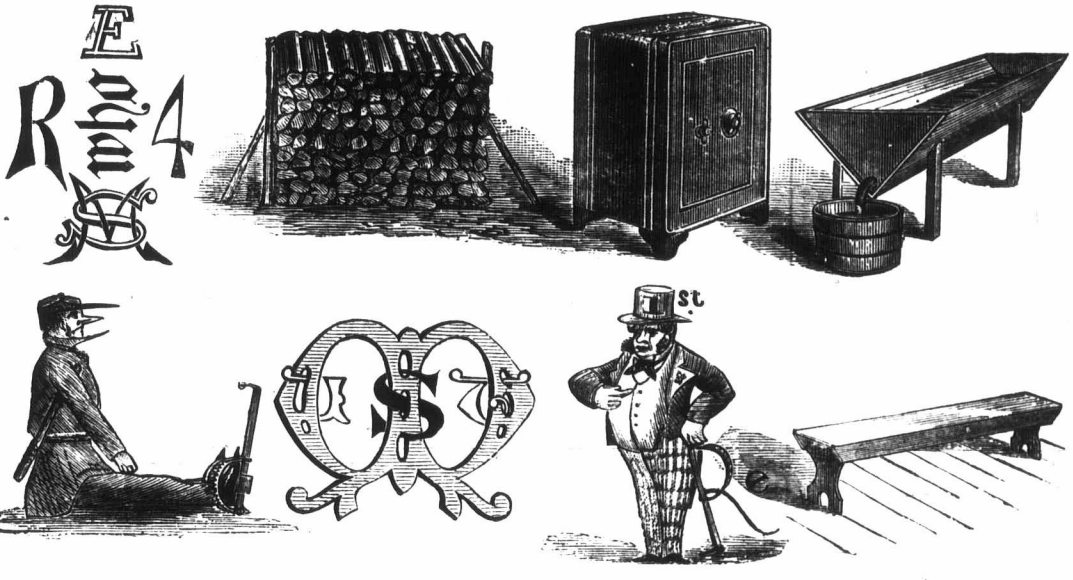
Names of Those Who Sent Correct Answers to March Puzzles.

H A Woodworth, Freddie O Flewelling, Emma Meyers, David F Every, Robt Wilson, Louis Contsworth, Netta Vanallen, Maggie A Blair, John Spring, Alice Cross, James Delaney, Albert Manning, Francis McBean, Robt Fleming, Carrie Muirhead, Mary Johnson, Ethel Roberts, John McIntosh, Ella Westmeath, E A Donnel, M J Orwell, Jas Jarvis, D G Crossin, O W Mercer, Jos Sharp, Edwin West, Henry Osbourne Samuel Weekes, Sarah Brant Jas Sheppard, Leo Powell, Wesley Everts, Jos Hausley, J J Jones, A O Long, M U Emery, Gertrude Phillips, John Cameron, E A Meritt, Jos F Fraser, I O Harnes, G Webster, Lucy Chisholm

"I wonder how they make lucifer matches?" said a young lady to her husband, with whom she

was always quarrelling. "The process is very simple—I once made one," he answered.— "How did you manage it?" "By leading you to church."

"Thomson! ye maun be a Scotch Thomson, I'll warrant," said Wilkie to Henry Thomson, as they sat for the first time at an Academy dinner. "I'm of that ilk, sir," was his reply; my father was a Scotchman." "Was he really?" exclaimed Wilkie, grasping the other's hand quite brotherly; "and your mother was Irish!" "Aye, was she really?" the hand relaxed its pressure; "and I was born in England." Wilkie let go Thomson's hand altogether.



36—ILLUSTRATED REBUS.

The above rebus was made from an expression of the Hon. Harris Lewis, President of the New York Dairymen's Association, when said gentleman was in London. Fifty cents will be given to any dairyman or any old paid subscriber that will send in the correct answer before the next paper is issued, if they send in one new subscriber for the ADVOCATE for one year, accompanied with the price of subscription.

37—SQUARE WORD.

1. An animal.
2. A girl's name.
3. An exclamation.
4. A tool.

38—DOUBLE ACROSTIC.

The initials and finals form two French cities.

1. A range of mountains in Europe.
2. A city of Australia.
3. A river in Texas.
4. A lake in Minnesota.
5. A country of Africa.

39—NUMERICAL PUZZLE.

I am composed of 8 letters:
 My 8, 4, 5 is an animal.
 My 8, 6, 3 means no.
 My 7, 1 is a pronoun.
 My 2, 6, 1 is a troublesome animal.
 My whole is a proverb. NETTA VANALLEN.

40—BEHEADED WORDS.

1. My whole is a precious jewel; curtail and I am a fruit; behead and I am a part of the head; transpose and I am a verb.
2. My whole is a boy's name; behead and I am a color; behead again and I am a nickname; curtail and I am a vowel. FREDDIE O. FLEWELLING.

DERBY.—Lord Derby is enormously rich; one of the very wealthiest subjects in Europe, and his income is steadily increasing. It is calculated that in a few years he will be in receipt of some two-thirds of a million per annum. This is one great secret, of his success, or rather of the profound veneration with which the majority of Englishmen regard him. The second fact to be taken into account is that this man of £600,000 a year is the head of the Stanleys, a name which has shown again and again with singular brightness in English history, and has been inscribed by immortal writers in the pages of English literature. The Earl of Derby, the oldest on the roll excepting that of Shrewsbury, dates from 1485, when Henry VII. conferred it on Thomas, Lord Stanley, as the meed of his treason to Richard III. For even a Stanley may fall short of absolute perfection.

Flow of Conversation.

A young lady writes to us that she finds it difficult to keep up a flow of conversation. After an evening is over she often thinks of things which she might have said, but they did not occur to her at the opportune moment.

The first requisite towards becoming a really good talker is to think clearly. Form definite and accurate ideas on subjects. Be sure that your information is correct and complete. Then there is but little difficulty in talking.

There is a kind of hesitation or embarrassment which results from nervousness; but that is soon overcome, and a clear-headed person seldom experiences any permanent impediment in conversation. Of course, there is in his as in everything else a great deal in habit. Conversational powers are susceptible of great improvement by cultivation.

To Our Subscribers.

We have almost always advised you to sell your produce early as soon as it is ready for the market.

YOUR NAME ON PAPER IS SALEABLE, and words or witnesses often are but of little avail to save you from designing men if they have your name on paper.

It is the general opinion that the Ontario Board of Agriculture and Arts is too large and too expensive.

Stock Notes.

In the case of Alsopp vs. Hopkins, being a suit by an English Short-horn breeder for damages, from a farmer and breeder for selling him a Short-horn bull with a false pedigree.

We believe similar transactions are often done in Canada, and should be as vigorously dealt with.

Col. Taylor, of London, has sold his Princess herd.

John Dryden, M. P.P., of Brooklin, Ont., has recently made some very advantageous sales of Short-horns, and reports the demand for bulls better than for years past.

Mr. Wm. Smith, of Columbus, Ont., recently sold to Mr. Ludlow, of Wisconsin, for \$1,000, the 2 year old draft stallion "Ivanhoe," bred by Mr. Smith, who writes us there is a very strong demand for young, pure bred Clydesdale horses.

KENTUCKY.—Our correspondent from this locality speaks in the most glowing terms of the upward tendency in all lines of business.

We believe the above to be an omen of good to us, inasmuch as our American neighbors suffer from depression before it reaches Canada, and a revival of business and trade on their part has always preceded better times in Canada.

Commercial.

FARMER'S ADVOCATE OFFICE, London, Mar. 27, 1880.

The steady, cold, clear weather of the past two or three weeks has improved business somewhat.

WHEAT.

Some are of the opinion that the wheat plants are suffering; others that they will come out all right, with some exceptions.

J. H. Drake, Esq., of Minnesota, writing to Dornbusch, says that the increase of acreage in spring wheat in the Red River Valley will be enormous.

For the first half of the cereal year, ending Feb. 29th, 1880, the farmers' deliveries in the United Kingdom were 20,776,000 bushels less than those of the corresponding period of the preceding season.

The tendency of prices is downward, which is having the effect of making the "bears" very courageous.

CLOVER SEED.

The trade in this article is over for this season. There is still a good deal of seed in the hands of the farmers, who will in all probability keep it over for another season.

CHEESE.

With the bare markets of England, and a very small stock in this country, there seems to be no reason why, with the improved times now prevailing throughout the United States and Canada, and with no old stocks to interfere by the time new is ready for shipment, we see no reason why cheese should not average considerably higher in 1880 than it did in 1879.

salvation for the trade, for only at low prices will these heavy makes go into consumption.

BUTTER.

It has been demonstrated by the advocates of butter-making over cheese that fine creamery butter will be taken by shippers at 20 cents per lb.

London Markets.

London, March 29, 1880.

GRAIN.

Table with 2 columns: Grain type and price per 100 lbs. Includes Deihl Wheat, Treadwell, Clawson, Red, Spring, Barley, Peas, Oats, Rye, and Corn.

FLOUR.

Table with 2 columns: Flour type and price. Includes Flour, fall wht., mixed, spring, Oatmeal, coarse, and Bran.

HAY AND STRAW.

Table with 2 columns: Hay and Straw type and price per ton.

PRODUCE.

Table with 2 columns: Produce type and price. Includes Butter, Cheese, Potatoes, Turnips, Mutton, Carrots, Onions, Beef, Veal, Honey, Cordwood, Clover Seed, Ducks, Chickens, and Milch cows.

Liverpool Market.

Liverpool, March 29.

Flour, p. c., 11s 3d to 13s. Wheat—Spring, 10s 4d to 11s 2d; red winter, 10s to 11s 10d; white, 10s 6d to 11s 2d; club, 11s 1d to 11s 9d.

Montreal Market.

Montreal, March 29.

Flour, superior, \$6 10 to \$6 15; extra, \$6 to \$6 05; strong bakers', \$5 50 to \$6 75; fine, \$5 to \$5 10; Ontario bags, \$2 90 to \$3; city bags, \$3 15 to \$3 20.

Toronto Market.

Toronto, March 29.

Wheat—Fall, \$1 25 to \$1 31; spring, \$1 24 to \$1 29. Barley 50c. to 74c. Peas, 70c. to 75c. Oats, 36c. to 37c. Corn, 54c. to 55c.

New York Markets.

New York, March 29.—Wheat—Spring dull and lower; winter heavy and 1/4c. lower; No. 2 May at \$1 30. Barley firm and unchanged, with sales of 120,000 bushels Canada at 94c. to 96c.

Chicago Markets.

Chicago, March 29.—Wheat—No. 2 red winter at \$1 17. Corn lower, fresh at 35c. Oats, 35c. Barley, 75c. Pork strong at \$10 75.

ERRATUM.—The embargo is not removed against the importation of American cattle, as was reported at the time of last publication.

An Indiana correspondent writes as follows, under date of March 5th. Also one from Kentucky:

INDIANA.—We have had a very mild and open winter, with frequent rains but little snow, and no ice to put in store. The growing grain is excellent and prospects for the coming harvest both in fruit and grain are good.

Vertical advertisements on the right margin, including 'NEW', 'AT', 'Send the Implement', 'A stock', 'London L', 'Yard on', '172-a', 'Great', 'Thousand', 'SETT', 'All East', 'Barling', '17,000 h', 'yet for sal', 'make', '10,000', 'Send post', 'LANDS FO', 'Ad', '172-B', 'TH', 'HA', 'It carried', 'Be sure', 'Send for cit', 'J. C.'

NEW ADVERTISEMENTS.

ATTENTION.

We are frequently asked who makes the best Farm Implements. To one and all we say: If you want a Reaper, a Mower, a Hay Rake, a Grain Drill, a Gang Plow, or a Plow, or in fact any Farm Implement of practical utility, and one that will give you perfect satisfaction and full value for your money,

CRAWFORD & CO.,

Of the Globe Works, London,
CAN SUPPLY YOU.

Send them for catalogue, state what Implement you require, and they will give you full information and particulars.
172-cm

DRAIN TILE.

A stock of good five and six-inch tile for main drains at

London Drain Tile Works & Pottery

Yard one mile south from Clark's Bridge.

172-a **CHARLES PRATT.**

1880

THE

Great Immigration Year!

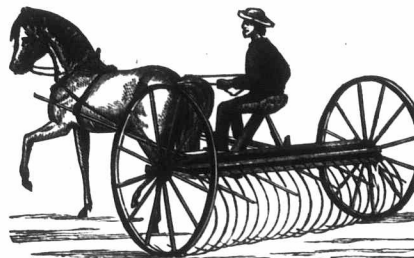
Thousands are going west, and the majority SETTLE IN NEBRASKA

All Eastern Farmers when coming West are pleased with the

Burlington & Mo River R.R. Lands

17,000 have already purchased, and there is yet for sale by this Company enough land to make 10,000 Eighty - Acre Farms.

Send postal card for a CHART showing all the LANDS FOR SALE, January 1st, 1880.
Address GEN'L AG'T B. & M. R. R.,
172-B OMAHA, NEB.



THE CENTENNIAL HAY RAKE

THE BEST IN USE.

It carried off all the most important Prizes last season.

Be sure and examine it before purchasing. Send for circular. Address,

J. O. WISNER & SON,
Brantford Ont

CUTHBERT RASPBERRY

E. P. ROE Has the largest and finest stock in the country of this unequalled market raspberry. The wide and varied test of the past season proves it to be the FINEST, largest, hardest bright red raspberry before the public. A third larger and twice as productive as the Brandywine, and so remarkably firm that it can be shipped by rail to market. It has yielded at the rate of \$800 per acre. For portrait see April No. of "Scribner's Magazine." Also all the other new and standard Small Fruits and Grape Vines in large and varied stock. Also a superbly illustrated book, "Success with Small Fruits," with a very liberal offer. Catalogue free. Address **E. P. ROE, Cornwall-on-Hudson, N. Y.**
172-a

WE would advise farmers and others not to purchase until they have seen White's Improved Portable Farm Engine, made at the Forest City Machine Works, London, Ont.

Grands' Repository



47, 49, 51 & 53 Adelaide-St., Toronto
GREAT SPRING SALE

300 HORSES.
April 27th, 28th, 29th, & 30th.
FARMERS, BREEDERS,

And others having sound young draught horses, drivers, and well bred carriage and saddle horses to dispose of will find this an excellent opportunity, this sale being extensively advertised throughout Great Britain, Canada and United States

ENTRY BOOKS NOW OPEN.
W. & D. GRAND,

172-a Proprietors and Auctioneers.



E. L. CHURCH'S HAY ELEVATOR
And Carrier.
THE BEST IN USE.

WORTMAN & MORROW
MANUFACTURERS,
LONDON, ONT.

Send for descriptive Circular and Price List.

Responsible Agents Wanted
For particulars see December No. of ADVOCATE.
172-c

J. A. SIMMERS' RELIABLE SEEDS

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

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

147 King St. East, nearly opp. Cathedral; 170-D

"BELL" ORGAN

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

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

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

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

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

Signed, **G. HAGUE,**
General Manager Merchant's Bank of Canada.
Montreal, January 24th, 1878.

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

W. BELL & CO.

41-47 E. MARKET-SQ.,
QUELPH; - ONT.
71-1f.

Prickly Comfrey.

Roots per lb., by mail, \$1.00. 1 lb. will make 100 strong cuttings. Full instructions as to planting, &c., with each package sold. Warranted the true SYMPHYTUM ASPERRIMUM. Money may be sent at my risk, either by enclosing notes in a registered letter, inserted in presence of Postmaster where mailed, or by P O order.

Address all orders to
THOS. A. McDONALD,
171-1f Durham, Nova Scotia

TREES The most complete assortment in the West. A particularly fine lot of Standard Pear Trees. Full stock of Apple, Plum, Pear, Peach, Cherry, Quince, etc. A select lot of Grapes, Gooseberries, Raspberries, Currants, Strawberries, etc., etc. An immense stock of both common and NEW AND RARE, at bottom prices. Ornamental Deciduous Trees, Shrubs, Vines, Roses, etc., etc. Large lot of Greenhouse Plants. Trade-List and Greenhouse Catalogues free. Descriptive Catalogue, 10 cts. 27th Year. 400 Acres. 15 Greenhouses.
STORRS, HARRISON & CO.
PAINESVILLE, LAKE CO., OHIO.
172-e

TREES ROSES SHRUBS

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

HENDERSON'S

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

THE SORGO HANDBOOK

A Treatise on Sorgo and Imphee Cane, and the Minnesota Early Amber Sugar Cane. The EDITION FOR 1880 is now ready, and will be sent free on application. We can furnish PURE CANE SEED of the best variety.
BLUYER MANUFACTURING CO.,
Cincinnati, O.
Manufacturers of COOK SUGAR EVAPORATOR, VIOTOR CANE MILL, Steam Engines, &c.
172-b

HOPE FOR THE DEAF

Garnore's Artificial Ear Drums
PERFECTLY RESTORE THE HEARING and perform the work of the Natural Drum. Always in position, but invisible to others. All Conversation and even whispers heard distinctly. We refer to those using them. Send for descriptive circular.
GARNORE EAR DRUM CO., CINCINNATI, O.
172-a

FIRST-CLASS ENGRAVING
DESIGNS SUPPLIED ON WOOD.
TORONTO ENGRAVING CO.
KING ST. BRIDGEN & BEALE COR. JOURNAL

DR. W. E. WAUGH. Office—The late Dr. Anderson's, Ridout Street, London.

PIANOFORTES.

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

A complete assortment of the above makers, as well as a large variety of
SECOND-HAND PIANOS
will be offered by us on the most liberal terms.

PIANOS FOR HIRE.

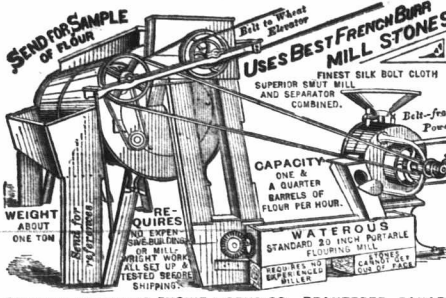
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MONTREAL, OTTAWA, LONDON, KINGSTON,
QUEBEC, ST. JOHN, ST. CATHARINES,
A. & S. NORDHEIMER,
15 KING STREET EAST, TORONTO, Ont.

250 Champion Engines Sold in 3 Seasons. Send for Record.



ADDRESS WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.



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FARM ENGINES, PORTABLE SAW AND GRIST MILLS OUR SPECIALTY.

TEN LEADING INSURANCE COMPANIES license the CHAMPION to be used within twenty feet of barns or stacks insured by them. We are testing and finishing six Champions per week. Threshmen should come and investigate for themselves. Send for circulars.

George Book writes, St. Ann's, Ontario, June 17 1879, regarding his 16-horse power Champion Sawmill: "Last week, on Monday morning three men of us commenced to tear up mill to move it. We tore up, moved three miles, set it up and on Tuesday at three o'clock sawed a log with it. Not quite two days. In one week we moved and set it up as mentioned, and sawed twenty thousand feet. I will write full particulars soon. We sawed six hundred feet in twenty-nine minutes—inch lumber." 2 sizes built—12 H. P. using 4 1/2 in. saw, Capacity 3 to 4,000 per day. 16 H. P. using 4 1/2 in. saw, Capacity, 4 to 5,000 per day. 20 H. P. using 6 in. saw, No 3 saw irons, Capacity, 5 to 8,000 per day. Most simple, efficient and portable mill of its size in the world.

PRINCESS BAKING POWDER.



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

Address the proprietors, WM. LUNAN & SON, Sorel, P.Q., Canada 171-tf

Seeds! Seeds! 1880.

FREE by MAIL.
Our Splendid "Seed Catalogue & Gardeners' Guide" for 1880 FREE by mail to all who send us their address.

SEND WHEATS, SEED OATS, SEED BARLEY, Best kinds at low prices. Samples free, with description of leading kinds. Seeds forwarded free to any part of Canada.

McBroom & Woodward,
PRIZE-MEDAL SEEDSMEN,
MOLSONS BANK BUILDINGS,
171-tf LONDON, CANADA.

1880. 1880. SEEDS!

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

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



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

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

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

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

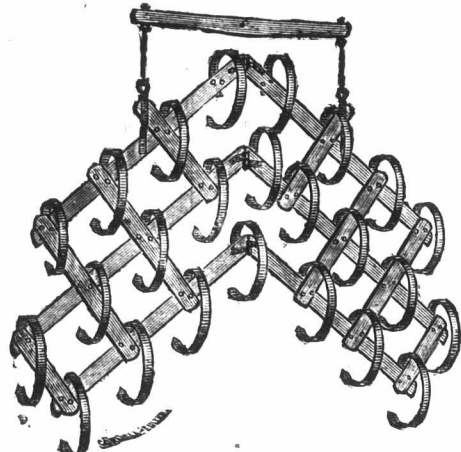
—ALSO OF—
Green-house & Bedding Plants
Mailed FREE to all Applicants.
NEW COLEUS PLANTS!
On receipt of ONE DOLLAR we will send by mail to any address ONE DOZEN Coleus Plants, including our choice new sets, GEORGE BANYARD, EXQUISITE, KENTISH FIRE, FASCINATION, GARNET, SOUVENIR DE LERVIL.

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

Eggs for Hatching
From our prize birds, consisting of Light and Dark Brahmas, Buff and Part. Cochins, Plymouth Rocks, Colored Dorkings, Houdans, Black Spanish, Black Hamburg, White Leghorn, B. R. Games, Golden Poland, B. R. Game Bants, and Aylesbury Ducks. Eggs warranted fresh, and shipped to any address at \$1 per dozen. Address, W. & A. WRIGHT, Richmond Hill, P. O., Ont. 172-a

DON'T FAIL TO SEE

The Best Cultivator



Ever Produced.

THE Spring-Tooth Harrow

—MANUFACTURED BY—
PATTERSON & BRO., Patterson, Ont.,

Patentees for the whole Dominion. Also manufacturers of
The Patterson Improved Reaper, Combination Mower, Ithaca and Ont Horse Rakes,
And the best line of **WROUGHT BEAM PLOWS** in Canada.

172-tf Send for Circulars and flattering testimonials.

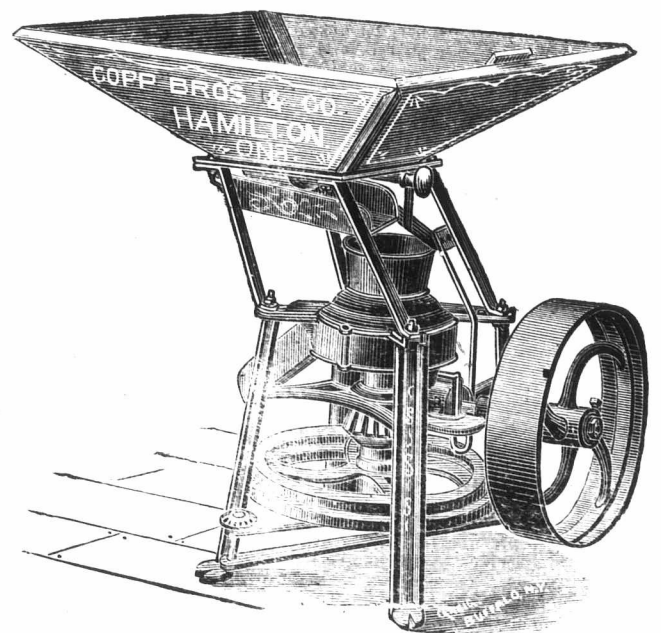
FARMS FOR SALE—A FULL DESCRIPTION of over 200 improved farms, also of wild lands, throughout the whole of Western Ontario, sent to any address upon application to **GEO. B. HARRIS & CO.,** Real Estate Agents, London, Ont., or to our Branch Office, Temp Chambers, Toronto street, Toronto. da-tf

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

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This is one of the most durable, perfect and simple **FEED MILLS** ever constructed. It can be used by one or four horse power, and if properly set will grind from 15 to 20 bushels of feed per hour.



Manufactured by **Copp Bros. & Co.,** Hamilton, Ont.

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Corn a paying crop

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Same style as made Moline, Illinois, who actual use, sold with have been tested three seasons in Canada invaluable to corn.

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entirely does a and a boy can thore ten across a day. B Corn is brought to p by thorough cultivat It has no equal adapted to every attaching an extra splendid Follow C Price, rigged fo do. with extr These cultivator class men on the al they fail to fill it th of the season.

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THRESHI

THE Matchless G Money-saving T all rivalry for Rapid for Saving Grain fro



STEAM-POWER T
D sizes of Separator power.

THE Entire Thre (much more) can SAVED by these Ma GRAIN-RAISERS Mous wastage of done by other mach difference.

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IN thorough worki fection of parts, etc., our "Grain-Sa

MARVELOUS for s than one-half Makes clean work, ings.

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Portable Engines a for farmers' use, from Hot-houses, and for specialty. Turning ang Machines, and ot sale.

Brantford Plow Works.

Corn a paying crop at 25 cents a bushel.

THE WESTERN

CORN CULTIVATOR

Same style as made by the MOLINE PLOW CO., Moline, Illinois, who have more than 145,000 in actual use, sold within the last few years. They have been tested practically for the last two or three seasons in Canada, and have proved themselves invaluable for the successful raising of corn.

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It entirely does away with the use of the hoe, and a boy can thoroughly cultivate from eight to ten acres a day. By its use the Western Dent Corn is brought to perfect maturity, being forced by thorough cultivation.

It has no equal as Root Cultivator, and is adapted to every kind of hoed crop, and by attaching an extra beam in the centre it makes a splendid Fallow Cultivator and never chokes up.

Price, rigged for Corn is.....\$30 do. with extra Beam for Field.... 25

These cultivators will be let on trial to first-class men on the above recommendation, and if they fail to fill it they may be returned at the end of the season.

JAMES G. COCKSHUTT,

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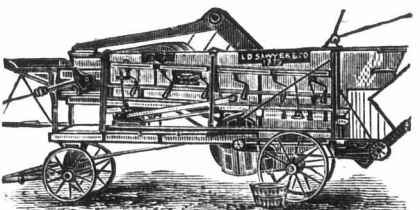
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Original and Only Genuine

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THRASHING MACHINERY.

THE Matchless Grain-saving, Time-saving and Money-saving Threshers of the day. Beyond all rivalry for Rapid Work, Perfect Cleaning, and for Saving Grain from Wastage.



STEAM-POWER Threshers a specialty. Special sizes of Separators made expressly for steam power.

THE Entire Threshing Expenses (and often much more) can be made by the extra Grain SAVED by these Machines.

GRAIN-RAISERS will not submit to the enormous wastage of GRAIN and the inferior work done by other machines, when once posted on the difference.

NOT only vastly superior for Wheat, Oats, Barley, Rye, and like grains, but the ONLY successful Thresher in Flax, Timothy, Millet, Clover, and like seeds. Requires no "attachments" or "re-building" to change from grain to seeds.

IN thorough workmanship, elegant finish, perfection of parts, completeness of equipment, etc., our "Grain-Saver" outfits are incomparable.

MARVELOUS for simplicity of parts, using less than one-half the usual belts and gears. Makes clean work, with no litterings or scatterings.

FOR PARTICULARS write to us for Illustrated Circular of our Mowers, Reapers and Threshing Machines, which we mail free. 175-L

FIRST PRIZE BRICK MACHINE

TORONTO AND LONDON, 1879.

FIRST PRIZE TILE MACHINE

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

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CURRIE BOILER WORKS

Established 1853.

New and Second-Hand

BOILERS AND ENGINES

Portable Engines and Boilers, complete, suitable for farmers' use, from \$100 upwards. Boilers for Hot-houses, and for Steaming Cattle Feed, a specialty. Turning Lathes, Boring Mills, Drilling Machines, and other Machinery on hand for sale.

NEIL CURRIE

Esplanade St., Toronto, Ont.

TORONTO NURSERIES

1879

1879

43 Prizes at the Industrial Exhibition, Toronto, and 1 Silver and 3 Bronze Medals and 31 Prizes at Ottawa. First Prize, Diploma and Gold Medal for Exhibit of Nursery Productions, for variety, thriftiness and general superiority of Stock.

Shelter and Ornamental Trees

For Profit, for Embellishment, for Shade to Man and Beast, for Building Timber and for Firewood.

Every farmer and estated gentleman can grow their own timber for every use; losing but little ground, if any at all, by planting waste places, hill sides, along fences, &c. Our Mr. Leslie, sr., says:—"Forty years' experience in Canadian tree growing has convinced me that farmers can profitably grow trees for all purposes on a farm."

Parties Visiting the Toronto Nurseries can see trees of various kinds, both deciduous and Evergreens, planted twenty-five years ago, some of which are sixty and seventy feet high, and from twelve to eighteen inches through. It will pay any person to visit our grounds and see our immense stock of small and large trees, and shrubs of every kind.

Fruit Trees

OF EVERY VARIETY,

Suitable for the Canadian climate, can be seen on our grounds in full bearing, so that intending purchasers can, if they desire, select trees by actual sample. Our entire stock is grown without employing unnatural means to force the trees.

We will sell Trees of every kind at about one-half the price charged by Yankee Peddlars and Canadian Tree Brokers.

Railway Companies Supplied with Larch Trees

for planting along their lines, at special rates on large contracts. Every railway company can thus grow their own timber for ties, and for storm-breaks to prevent snow blockades on their tracks in winter.

We are always pleased to have visitors inspect our grounds.

GEORGE LESLIE & SON,

TORONTO NURSERIES.

LESLIE P. O., ONT.

170-tf

HONEY'S IMPROVED FANNING MILL

MANUFACTURED SOLELY BY

W. T. Dingle, Oshawa, Ont.,

For the Dominion of Canada.

This Celebrated Mill has taken

FORTY-SIX FIRST PRIZES

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

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

The Mill has no Equal.

For circulars and further information apply to

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HURRAH FOR MANITOBA

Excursion Trains for Manitoba

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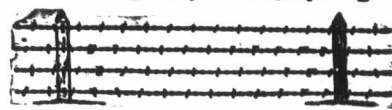
14th & 28th April, 1880.

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

171-f.

WASHBURN & MOEN MFG. CO.

55 College St., Montreal, P. Q.



Sole Manufacturers in Canada of

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STEEL BARB FENCING

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

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

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

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

CAUTION!

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

You are hereby notified that, in putting barbs upon wire, making a barbed wire fence, or in using or dealing in barbs for wire or barbed fence wire, not made under license from us, you are infringing upon our patents, and we shall hold you strictly accountable for damages for all infringements of Canadian Letters Patent Nos. 4,916 and 7,880.

Washburn & Moen Mfg. Co.

MONTREAL, P. Q.

WOOD & LEGGAT,

AGENTS,

Hamilton, Ont.

169-tf

SEEDS

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

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

WILLIAM RENNIE,

Seedman, Toronto, Canada.

THORLEY'S



HORSE & CATTLE FOOD

Purifies the blood of horses, removes worms, hids bound, obstruction in water. Relieves coughs, influenza and heaves. It improves the tone, spirit and general appearance of the horse; he keeps in better condition and does his work on 1/2 less grain. For fattening cattle it stands unrivalled. It increases the flow of milk from cows 20 per cent. Calves and colts thrive especially well. Sheep have more and better wool; are less liable to ticks, and increase rapidly in flesh. Pigs lay on fat with amazing rapidity. Hens lay more eggs. Fowls thrive better and have less tendency to disease.

NOTICE—This is not a spice or condition powder, but a Food, having been fed in Great Britain over 50 years.

For sale in all principal places. Manufactory, 48 John St., Hamilton. Circulars sent free. 170-L

The Dominion Prize Card Cutter

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

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

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

PATENTED IN CANADA, JULY 21st, 1879.
J. B. HARRIS,
Patentee and Assignee, Stratford, Ont. 171-c

BEE KEEPERS.

My circular and price-list of pure Italian Queens, Bees, Apian Supplies, with much valuable information, will be sent free to all. Samples of Bee Journals free. Address
CHAS. F. DODD,
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Will be mailed free to all applicants, and to customers without ordering it. It contains four colored plates, 500 engravings, about 200 pages, and full descriptions, prices and directions for planting 1500 varieties of Vegetable and Flower Seeds, Plants, Roses, etc. Invaluable to all. Send for it. Address,
D. M. FERRY & CO., Detroit, Mich.
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During months of March and April we will sell our

Tracts, Small Books & Bibles

Great Reductions

Circulars giving particulars sent free on application.

S. R. BRIGGS,
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ONTARIO LADIES' COLLEGE,
WHITBY, ONT.

Next Term begins April 18th, 1880.

Parents thinking of sending their daughters from home to be educated will do well to consider the following

SPECIAL ADVANTAGES

which have combined to place the Ontario Ladies' College in the front rank of the best Canadian Institutions:—High Literary and Social Culture; a well-sustained Fine Art Department; a finished education on Piano and Pipe-Organ, by Mr. Torrington and his able staff of assistants; an elegant and comfortable home; well-kept and extensive grounds; exhilarating open-air Exercises; Lessons on Walking, Calisthenics, Archery and Riding, by Major Dearnally—and all at MODERATE EXPENSE.

The Spring Term is one of the most pleasant terms of the year. A little effort and sacrifice on the part of parents, in sending their daughters to College, will be amply rewarded in subsequent years of enjoyment. We request the earliest possible notice of pupils intending to come.

For Calendars, with full particulars, apply to

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HEALTH, STRENGTH & ENERGY!

Mitchell's Compound Syrup of the Hypophosphites.

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

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

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

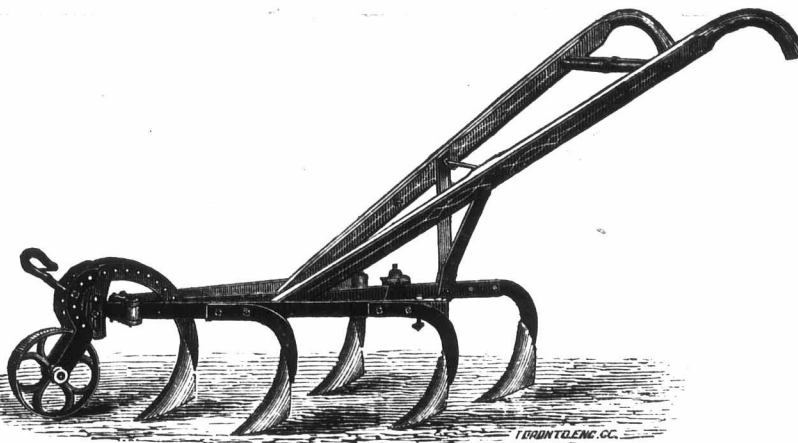
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Plows! Plows! Plows!

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

TWO-HORSE CULTIVATORS.

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



Champion Horse Hoe and Cultivator Combined.

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

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

CANADIAN NEW MODEL MOWER.

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

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Send \$1 and Receive

Post-paid 18 choice new plants of Roses, Geraniums, Fuschias, Double Petunias, Calceolarias, and magnificent new Pelargonium Victoria, originated by me. For description address,
S. H. MITCHELL, Florist,
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Strawberry Culture

In all its details, with history and description of 49 leading varieties. The result of 24 years' experience and observation. A 20-page pamphlet, price 10 cents, which will count on first order received for plants. Price list free.
171-b **M. CRAWFORD, CUYAHOGA FALLS, OHIO.**



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

IT REGULATES THE STOMACH,
Giving it a healthy action.

IT REMOVES ALL IMPURITIES FROM THE BLOOD,

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

It Restores the Appetite

Strengthens and invigorates the whole system, and

Makes the Coarsest Proven-der Palatable.

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

IT IMPROVES THE BLOOD,
REMOVING SCURVY,
ROUGHNESS OF THE HAIR,
HIDE-BOUND.

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

PRICE 25c., OR 5 FOR \$1.

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GREAT WESTERN RAILWAY!
MANITOBA!
SEASON 1880.

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

TUESDAY, April, 6th, 1880

and will be accompanied by Mr. Robert Patterson, Town Agent, Paris, who so successfully conducted through trains from the line of this road during the past year. Passengers from Main Line and Branches east of Paris must arrange to reach Paris before 5 p. m. Those from Loop Line and London, Huron and Bruce and Sarnia Branches should be at London at 6:30 p. m. on that day.

A Special Freight train, with settlers' effects, will leave Paris on 5th April, and one day previous to each of dates given below.

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

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

F. BROUGHTON,
171-B General Manager

ESTABLISHED 1840.

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Toronto, - Ont.
Manufacturers of

Superphosphate of Lime, - - -	\$30 per Ton
Fine Bone-Dust, - - -	30 "
1-2 inch " - - -	25 "
3-4 inch " - - -	20 "

Diploma was awarded to us at the Provincial Exhibition, Sept. 23, 1852, for the first Bone Mill established in Upper Canada.

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