

The FARMER'S ADVOCATE

AND HOME MAGAZINE.

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THE FARMER'S ADVOCATE

—AND—
Home Magazine.

WILLIAM WELD, Editor and Proprietor.

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Published in the Dominion.

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The Month.

January has been unusually mild and open; some farmers have had a few days' plowing. We do not consider much injury is done to the wheat, but we always consider it safest when kept well covered with snow during the winter. Wheat has been dull in the market, and then declined; this and bad roads prevented the usual amount of business being done in January.

Clover seed has also materially fallen in price, but timothy is scarce and high. Those who have any they can thresh should save the seed.

Not much ice has as yet been secured. If you intend to keep any get it this month; honey-combed ice is not the best to keep well.

The summer's wood must now be prepared, and manure may be hauled to distant fields and deposited in heaps ready for use. Perhaps you may amuse yourself in the orchard when the weather is not too cold. Some orchards we have seen have too much wood in them. If you intend grafting in the spring, cut the cions now.

Perhaps there are some tools or harness that want repairs. A little paint would be found a good investment.

Batten your shed well where the ewes are; a lamb lost now would be more expensive than a bit of lumber. Give the young animals something that will loosen their hides and keep them loose. Are there any lice on the hens or other stock, or ticks on the sheep? They should not be there. Have you got your seed grain home yet? Are your plans now made for the next crop, and the accounts all square? Do you know how your books balanced for 1879? If you ask yourselves these questions they will do no harm.

Sowing Wheat.

We have been asked which kind of seeders are best. We quote the following from J. P. Billington's catalogue. As he is one of our first manufacturers of drills in Canada, in fact, we believe the first, and as he has suffered greatly by loss from fire, we are pleased to see he is now to the front again, and deserves patronage and attention. His mode of disposing of drills, and taking part of the profit from surplus raised, is new to us, and no farm would feel the expense when paid in such a manner. He claims to make the best seed drill in the Dominion. Send to Dundas and procure his circular:—

"Many persons not having experience in sowing grain with machinery are very liable to be imposed on in their purchase of such machinery, and in none more so than in buying broadcast sowing machines. They are made to believe that the broadcast sowing machine has many advantages over hand sowing. Since the first introduction of these broadcasters I have taken a great deal of pains to learn if there is any advantage over hand sowing, and from what I have found out and from particular observation, I am led to the conclusion that there is no advantage over hand sowing, and afterwards using the cultivator; and particularly so if the land is lumpy or stony, as the jolting and oscillating motion of the machine throws the grain to one side, and I am quite satisfied that an ordinary hand-sower will distribute the seed more evenly than the broadcast sowing machine in use.

The most scientific and practical agriculturists theorize that the grain plant, in common with all vegetation, takes very largely for its sustenance and growth from the atmosphere, and under more favorable conditions a larger percentage is thus taken, and that that more favorable condition is in putting it in rows, as the Drill does, so that constant uninterrupted currents of air passing through the grain gives it this increased growth.

Therefore, the large increase over broadcast sowing of any kind, averaging from 3 to 5 bushels to the acre, by practical tests; and no one has proven this oftener than myself, by taking the increase of grain sown with the Drill over broadcasting for my pay for the drill, by which offer I never yet failed to get full price and sometimes double in one year. Now this may seem pretty strong, but I have the proof that can satisfy you. Anyone can find this out by broadcasting and drilling the same quantity of land side by side (not from appearance, for it is always against the drill); keep separate and thresh, and compare quantities. This will tell the story, and can be done with very little trouble. Try it, farmers, you are more interested in knowing than I am.

I may here say that it some thirty years since I commenced making farming implements and machinery, and some 25 years since I commenced manufacturing the grain drill, and in my time have manufactured all the different kinds now in use (except the broadcast seeder), and am thoroughly convinced that no machine that the farmer uses will pay in dollars and cents like the grain drill in proportion to its cost; and I think when I confine my principal efforts to the production and sale of grain drills I am pursuing an honest and legitimate business, for although I have a profit on these drills, the farmers by using them have a larger."

The Editor's Chair.

"There are truths which some men despise because they have not examined them; and which they will not examine because they despise them." The Editor's chair may be of the hardest oak or the softest velvet, yet a thorn will be found there. It is a matter of impossibility to conduct an independent journal and please all. We allowed a letter signed "A. P." to appear. The letter was from a pretty clear-headed old subscriber; it condemned Prickly Comfrey. It has brought such a sweeping confutation in the form of marked papers, extracts and letters, many from old reliable subscribers, that we insert some for your own perusal. We must say that they have very materially changed our opinion about this plant. These correspondents are all from Quebec and Maritime Provinces. We should like to hear from some of our Ontario subscribers who have tried it.

A communication in last issue signed "Brant" has brought some complaints. The numerous replies to correspondence that appear each month all require attention and time; sometimes we have difficult questions submitted. No one can satisfy all, and all our subscribers will bear in mind that we are not responsible for opinions expressed in the correspondence department.

But the chair is not always thorny. Pleasing, kind letters arrive, and lots of them. Every mail brings its quota of care and pleasure.

We must return our thanks to the many thousands that aid us, and for the prompt manner in which our friends have renewed their subscriptions this year. How pleasing it is to receive such a letter as appears in this issue from our English correspondent! Every one must be pleased with it. Then we have the astonishing letter by Prof. L. B. Arnold, the highest authority in dairy matters, who furnishes us with information about the new and wonderful manner of raising cream from milk. Almost every contributor furnishes some honey for others to sip. We leave the honey for you to extract, and still we labor and enjoy quite as many roses as other people.

Agricultural Societies.

No class of premiums would be productive of more good than one offered in each county for the best managed farm. Hedge cultivation, greater pride in the care of stock, better buildings and a more thrifty appearance about the farms would be the result if thus stimulated by competition. Again, the farms under the best management would be brought prominently before the eye of the public, and would guide those who are trying to improve their method. We hope this feature of the work of Agricultural Societies will receive attention.

During fifteen years, ending in 1877, the average yield of corn in the United States had fallen off 20 per cent., and of wheat, 16 7-10 per cent.

English Letter, No. 10.

[FROM OUR OWN CORRESPONDENT.]

Liverpool, Jan. 5.

The depression which has so long beset all the leading British industries has, of course, had its effect upon the Christmas festivities; still there has been a large demand for good cheer, and in the effort to meet that demand Canada has waged a good fight. We have had Canadian beef and mutton, Canadian fish and fowl, and Canadian fruit and potatoes; and with some few exceptions they are all well spoken of and appreciated.

Before, however, I proceed to refer to these matters more in detail, the matter of the tenant farmers' delegates calls for notice. Those who went forward "to spy out the land" in September last have now, with one or two exceptions, returned, and the majority of them have addressed their constituents, and their official reports are, I understand, now being compiled by Mr. John Lowe, the Secretary of the Dominion Department of Agriculture, who is in this country, and will shortly be issued in pamphlet form. These reports are all of a very satisfactory character, far exceeding the most sanguine expectations of those who organized and promoted the experiment; but that they are not mere "gas," and are really well-considered, able and unbiased reports, is sufficiently attested by the Field, the leading farmer's and country gentleman's paper here, which in introducing a summary of some of them says:—"Their reports will be read with interest and at least with profit, as it must be remembered that the delegates were not emigration agents. They are independent, intellectual, experienced men, who have no purpose to serve except to convey reliable information to their brother agriculturists at home." This is a graceful tribute, but it is every whit deserved.

At Stowe, Midlothian, on Friday last, three of the delegates, Messrs. Walter Elliott, of Hollybush; John Logan, of Legerwood, and John Snow, of Pirntaton (who were all sent out by Mr. Dyke, the agent at Liverpool), gave to a large meeting of farmers detailed accounts of their Canadian visit. They are all three farmers on an extensive scale in the southeast of Scotland. Mr. Elliott, who has paid more attention to the Province of Ontario than any of the other delegates, stated that fine crops of wheat and other grain were grown there without manure. He was astonished at the practice of burning stacks of straw. At one place he saw a newly-invented rotatory plough, which promised to come into extensive use, as a boy with a pair of light horses can plough with it five acres a day. The summers, he added, are hotter and the winters colder than in Britain, but the dry atmosphere prevents the extremes of temperature being so keenly felt as they otherwise would be. Mr. Elliott had not the slightest hesitation in advising his brother farmers to emigrate to Ontario or the Eastern Townships, for he was satisfied from what he saw that a man with moderate capital and energy can do better there than in this country. In Canada, he observes, a man may buy and stock a farm at little more cost than it takes to stock one alone here. Mr. Logan was strongly in favor of Manitoba; and Mr. Snow calculates that Manitoba has a great future before it in the breeding and rearing of good strains of young cattle, which can be fattened in Ontario and then shipped to Europe as beef. Mr. Cowan, of Wigtonshire, also related his experiences, and was much pleased with the style of farming in the district of Guelph. The buildings, he said, are good and tidy. Mr. Biggar, of Kirkcudbrightshire, advised men with considerable means and young

families to settle in Ontario. It may be remarked that this is, substantially, the opinion of all the delegates, so far as Ontario is concerned, though a majority of them also speak very glowingly of Manitoba.

I am glad to be able to report that the Durham heifer referred to in my last, which was bred and reared in the neighborhood of Guelph, took the first prize in her class at the Christmas fat stock show held at Edinburgh. This is very gratifying. If only a few years ago any one had hinted, especially in a company of English or Scotch farmers, that a Canadian beast could be found to take a prize in competition with English or Scotch bred cattle, he would have been voted a madman.

There is nothing very special to notice in the live stock trade from the Dominion. There is, however, one item worthy of note. On Monday last a lot of very fair though rather small sheep from Prince Edward Island were sold in the Liverpool market, and realized for their weight about the best price of the season for Canadian sheep. This is attributed mainly to the large proportion of wethers. Wether mutton is distinctly preferred here, and a flock of well-bred wethers will realize from 4 to 5 cents per pound more on this market than ewes and rams of a similar breed. Will your farmers, as Captain Cuttle advised, make a note of this?

There has been a good deal of fluctuation in the poultry trade from the Dominion this season. Some of the importers have got the idea that the trade has been overdone; but I strongly suspect that the real fact is that they had bought a lot of bad poultry, which, having to compete with superior article here, of course was nowhere, and severe loss was sustained. I cannot harp too much on the string that one quality and one quality only will do for this market, and that is the best. If your farmers cannot send the best of whatever they want to send, it is better not to send at all. Many a Canadian turkey offered for sale in Liverpool the past fortnight would have borne easily twice or thrice the weight of meat, and probably sold for half a crown, whereas if it had been in prime condition, at the cost of a few quarts more corn, it would have realized almost as many shillings as it did pence. The Christmas turkey is looked upon essentially as a luxury, and the in ordinary most careful housewife will have naught but the best when the article wanted is her Xmas turkey. The same remark holds good when the dish preferred is a goose. He must be a good one. Will your poultry breeder take a note of this? As a contrast to the disappointment of less experienced importers, I understand that Mr. Dawson, of Brampton, Ontario, who has now been shipping poultry for three or four years, and is well up in his business, has done a good speculation. There is a practically unlimited market for good stuff, and Canada can if she will, by judicious management, develop a very large and profitable trade.

On the whole the past year has, I should say, been a most important and encouraging one in the history of the Dominion, and the auguries for the future are now very bright. There is a tide in the affairs of nations and communities as well as in those of men, and Canada has now entered upon the full current of that tide. I firmly believe that no field for emigration is at the present moment so prominently or so favorably before the eyes of Englishmen as Canada. Much now depends on your Government; and if it maintains actively and unstintingly the policy which it has so intelligently initiated of late, the Dominion will attain ere long a grasp on fortune which none of her competitors will ever be able to loosen.

Prickly Comfrey.

BY H. B. S., ST. LAMBERT, Q.

This forage plant does not seem to have met with much favor in this country. Very few farmers however, have given it a trial. It is called in Italian *orechio d'asino*, or "the ear of an ass," its botanical name being *Symphytum asperinum*. I propose to give a few notes on its value for feeding purposes, and also on its mode of cultivation:

It is a native of the Caucasus and was introduced into England about the year 1810; it is hardy, a rapid grower and comes to a good size; it is a perennial, the flowers reddish blue. It may be cut three or four times in the season, thereby producing a large crop. The cultivation of it requires but little care; it is propagated from cuttings and is planted usually in drills two feet apart and fifteen inches apart in the drills. On account of the prickly leaves cattle do not like it at first, but for milking purposes are said to do about as well on it as on any other green food. It contains ninety per cent. of water, so that a larger quantity of milk may be obtained, though of a poorer quality. The same is true to a certain extent of all these excessive growers, such as lucerne, Italian rye grass, though as an aid to protect against drouth and poor pasturage these green crops are exceedingly valuable. In Ireland, about Dublin, it has been grown and is looked upon with favor. There is this to be said, that it is difficult to eradicate it after it has once well started. In my opinion, it is not to be compared with lucerne, with which every farmer who keeps any quantity of stock ought to have a portion of land planted in case of bad pasturage; lucerne can be cut and cured the same as clover-hay in case too large a piece of land is planted, but I will defer further remarks about lucerne, which may form the subject of another article.

To continue with the comfrey. It has been grown in the United States, and has not, from the accounts that I have seen, been a success. It should not be condemned or pre-judged by a few unfavorable reports. It has been successful in Ireland, and if grown under similar conditions here ought to be useful. The yield from it has been exceedingly great, as much as eighty tons having been taken off an Irish acre.

It would be a serviceable plan for any farmer to try a few square feet of the comfrey and send the result of his trial for publication, giving full particulars as to soil, dry or wet spring, and so on, not omitting the least item; such a report is worth something. But for a man to write and say that he has tried it and found it useless, without giving any information, is not of any value when we know that it has succeeded under certain conditions. Farmers, as a rule, are not particular enough in giving particulars, and are rather apt to attribute their own want of success to some short-coming or unsuitability of the plant.

Rapid Sawing.

Mr. Archibald Campbell, near Strathroy, recently purchased one of the Waterous Portable Sawing Machines. At a recent trial, at which many farmers were present, it cut nineteen boards 16 feet long, 22 inches wide and one inch thick, footing up to a total of over 550 feet, in seven minutes. In a run of one hour it turned out from small logs 1,950 feet of inch lumber, and to use Mr. Campbell's words, "all cut perfectly true and smooth, the machinery running like clock-work." This, we presume, is the fastest sawing on record. The whole machine complete cost only \$1,500.

From the United States.

[BY OUR OWN CORRESPONDENT.]

Washington, D.C., Dec. 27, 1879.

One of the most interesting objects to the agriculturist who visits Washington is the "Agricultural Department" of the United States, where samples of various products from every portion of the world, together with information relating to their culture in suitable soil and climate, are gathered and liberally distributed to practical and scientific farmers, planters and gardeners throughout the whole country. The great seed-room is a bee-hive and a curiosity-shop, where wheat from Egypt, oats from Norway, onions from Mexico, potatoes from Peru, and thousands of seeds and nuts not indigenous to this soil are packed and distributed for experimental planting and report of result. Not only are they packing and shipping grains and nuts, but flower seeds of such as bloom from the regions of snow to the flaming tropics, and plants and trees with wood and fruits of great value in commerce. Among the most recent acquisitions to the latter, and which is at present being experimented upon in different latitudes, are several varieties of Japanese bamboo. It is believed that the most hardy of the twelve varieties that grow in Japan will grow in the latitude of Pennsylvania, New York and Ohio, and from the results thus far attained in raising the young bamboo in those latitudes it is not improbable one or two of the varieties might be made to grow successfully in some portions of Canada. The rapidity of growth and the variety of uses to which the bamboo may be put makes it a very valuable acquisition. The first shoots that sprout up from the root in a few weeks are cut and eaten like asparagus. The next growth is allowed to attain a great height, which it does in two or three years. It is then cut down and the wood used for baskets, mats, tables, canes, and many fancy articles of value. In a short time another tree has shot up like magic from the old roots. The Japanese persimmon is another tree just being experimented with by the Department and the fruit-growers throughout the country, to whom the Commissioner has sent and is still sending small trees and roots of the more hardy varieties. The successful propagation of the Japanese persimmon in this country and Canada will bring to our markets a large luscious fruit, and secure to the farmer and orchardist a crop valuable not only for its abundant yield and delicious flavor, but for the many medicinal qualities ascribed to it by many eminent physicians of Japan and Europe.

In the laboratory of the Department may be witnessed some important achievements, which may result in great benefit to the practical farmer who may desire to utilize them. Among the very many which attract attention, none are so important to the latitude of Canada as the manufacture of sugar from common corn-stalks. The samples of sugar, molasses and whiskey manufactured from the green corn-stalks are equal to the finest samples in the various jars in the laboratory made from sorghum, beet or the regular sugar-cane. The report made by the Commissioner to Congress gives the details for the manufacture of sugar and molasses from the corn stalk and sorghum, and it is alleged that its simplicity and the valuable results will lead to its adoption by many farmers, not only for domestic uses, but for commercial purposes.

The museum of the Department is an attractive and instructive place, not only to the practical farmer, but to every man who is a lover of art or has a taste for the curious and the beautiful. In a glass case, extending the full length of the large

museum, are plaster of paris models, colored so nicely by art that it equals nature, of all the fruits and melons and nuts and vegetables from the temperate zone to the tropics. There are 1,000 varieties or models of apples, from the pink-cheeked diminutive crab to the ponderous golden-skinned "Gloria Mundi," weighing 29 ounces. There are quinces, plums, pears, peaches, &c., &c., from the temperate zone and from the tropics; pomegranite, alligator pears, Japan quince, shaddock, sapodilla, fruit of the palm, guara, mango, Japanese persimmon, fruit of passion-vine, and many others. There are models of pumpkins as big as a half-barrel, potatoes, onions and other vegetables of astonishing growth. In the high glass cases ranged on each side are the natural products of the soil. In one case, silk of Japan, China, France and America, showing the worm, the cocoon, the raw silk, the floss, and the silk worked into the most beautiful fabrics. In another, cotton, from the white ball on the stem to the white goods from the spindles of Fall River and Manchester. Then flax and hemp, as it grows in the fields, as beaten, and as manufactured, showing varieties from Portugal, Brazil, Argentine Republic, the United States, and several samples from Canada West. Near them are also samples from Ireland, France and Japan; but the most curious are the samples of Egyptian flax, bleached by a process found by Gastinel Bey, agricultural chemist of Egypt. In the cases for wool there are some beautiful samples of Merino, Cotswold, Southdown, and crosses of these breeds. There are also fine silky fleeces of the Angora goat, the Rocky Mountain goat and the Cashmere goat.

There are cases devoted to stuffed birds, animals and fishes; cases of medicinal herbs and barks from Iceland to Cape Horn; tobacco in the leaf from Cuba, China, United States, &c.; jars of flour from wheat, rye, rice, arrow-root, &c.; samples of curious "Indian foods," and huge cases of wheat, oats, rye, corn, barley, beans, peas, and many grass seeds, in jars and on the stalk. These samples of grains and seeds are from all portions of the globe where they will grow, and present to the intelligent farmer an instructive lesson in the results of climate, soil and cultivation upon the various grains and seeds before him. Side by side are the many varieties of wheat from France, Germany, England, Canada, Russia, Egypt and the United States. The largest oats, although not the best, are the big black oats from Norway and Poland. Of corn there is a splendid display, shelled, in the ear and on the stalk. The most curious is the Pueblo corn, raised by the Pueblo Indians of New Mexico, the kernels of which are round and black. There are jars of beans and peas of every conceivable form and color, coming from the most savage tribes and the most civilized society of man. The most beautiful collections are those from France, being their contribution to the Centennial Exposition, and the most curious those from Chili.

We will now leave the Agricultural Department, and in the interest of the agriculturist skip over to the State Department. We find a dispatch from Buenos Ayres, showing the agricultural condition of the Argentine Republic. The sheep business is an example. In 1852 there were five and a half millions of sheep in that country; in 1879 there are fifty-six millions. To improve the stock, breeding sheep are imported from foreign lands, at from \$90 to \$300 per head. The number of horned cattle is estimated at fourteen millions. Immigration has increased from 5,000 in 1860 to 36,000 in 1878. About 80 per cent. are farmers, who come with their families to settle on the public lands. They use the various labor-saving implements, including steam threshing machines made in the United States. Of American products wanted in Buenos Ayres, the Consul names cheese, hams and paper.

This communication from Washington came to hand too late for insertion in the January number.

On the Wing.

Having heard Whitby Township spoken of as being the "Garden of Canada," and that much fine stock was raised in that locality; also, as Mr. Wm. Hodgson, of Myrtle, Ont., had advertised a sale of Cotswolds, we deemed this a good time to visit that section. The principal stockmen in the neighborhood attended the sale; some were there from distant parts of Canada, and two or three from the States. Mr. Hodgson's stock has gained a very high reputation, he having carried off the highest honors at the Centennial Exhibition at Philadelphia, and at different State Shows; he has also been awarded high honors in Canada. The sheep sold averaged \$35 per head.

Mr. Hodgson kindly invited us to his residence the following day, and also an American gentleman named J. H. Swales, of Logan, Indiana. We were furnished with a horse and cutter to drive round and see the fine stock in the neighborhood. We first drove to Mr. H. H. Spencer's, near Brooklyn. Mr. Spencer's name is known to all breeders of pure Southdown sheep. It gave us great pleasure to see his flock of really prime animals, all so well attended and such fine specimens. Mr. S. is also raising a flock of Shropshire Downs. This class of sheep drew our particular attention when last in England, and we look on them as the coming sheep for America. Mr. Spencer coincides with our view. They are not yet sufficiently known on this continent. They are fine, hardy, black-faced sheep, having a larger carcass than the Southdown, and much finer quality of mutton than the Lincolns or Cotswolds; they carry a fine heavy, compact fleece of good wool. Mr. Spencer has some fine specimens of this class. He has tried the crossing of this breed with the Cotswold; as a result he has a lamb beautifully and clearly blotched and spotted with distinct marks of black and white on its face and legs. This lamb we think the prettiest (if we may use that term) we have ever seen. We hope Mr. S. will have it at the Exhibitions next year; if he does go and see it. We should like to have a flock of such sheep.

BEAUTIFY YOUR FARMS.

We then drove to the farm of J. Dryden, M.P.P. for S. Ontario. As we rode along Maple Street we observed the farms to be well tilled. Fine crops and stock are raised in this locality; this is the head-centre or hub from which is disseminated the largest number of farm animals to improve the stock of this continent. Many thousands of sheep, horses and cattle are taken from this and the surrounding country to the States annually to improve the stock of that country. Americans are continually coming and going.

We are not surprised that this should be called the "Garden of Canada." The immense quantities of turnips, mangolds and carrots raised—the fine stock and well cultivated fields contrast greatly with the farms in many sections. Our American companion frequently expressed his admiration of the country, and particularly of the continuous rows of maple trees that have been planted along the road-sides, now grown to be fine, handsome trees. He gave us one good hint that we hope our readers may profit by; while he admired the substantial barns and houses, he complained greatly about the dirty, careless, neglected appearance they presented in comparison to the farm buildings in Indiana. He informed us that the farmers in that State made a practice of going over their buildings at house-cleaning time; while the ladies would be arranging the inside the men would take their whitewash brushes and go over the outside of the houses, barns and outbuildings, and give them a coat. They would put a little coloring round the doors, windows and corners of

the buildings. He said the cost was very trifling. Stone lime should be slacked in an iron vessel, covered over at the top; this makes the wash much whiter than when air is allowed to have access to the lime. When slacking a piece of tallow is put into the lime, and salt is also added; he did not remember the exact quantities. He says the buildings will last longer if thus treated, and will look so much better that if the plan is once tried the farmers would not abandon it. It would give the country a different and more pleasing appearance. We agree with our American friend, and hope some of our readers will try the plan. The Americans do not neglect the inside of their stables, granaries and outbuildings. They get a thorough cleaning out and a good coat of white-wash; this destroys the vermin and purifies the buildings. Our companion expressed his surprise that stock could remain healthy confined in buildings so oppressively filled with ammonia as some that were entered. The day was a damp, murky one, and the ventilation had not been quite as well attended to as we thought it might have been. We spoke about this, but were informed that heat was requisite for cattle; they would not thrive without it, and it is seldom animals are found too warm in a shiftless farmer's buildings in winter.

At Mr. Dryden's farm we found a fine herd of Shorthorns, Cotswold sheep and Clyde horses. Mr. D. is one of our M. P. P.'s, and as he was attending to his duties in Toronto, we did not see him. He has a very fine farm and excellent buildings. A remarkable feature about this farm is the old herdsman; he has been in Mr. Dryden's employ for 20 years, being steady and most trustworthy. He fairly exists in seeing the stock thrive. He has made money; he was a poor man, but now has a good annual income from his savings and could buy a good farm at any time. A few years ago he took a trip to the States to see if he could suit himself by purchasing some land there, but after due consideration he concluded he would rather attend to Mr. Dryden's farm and stock on a salary and let his money alone. This man appeared ten times more happy and contented than the majority of farm owners. How much better off is he than hundreds we have seen who have left good situations.

We next visited Mr. W. Smith's residence, and here found two fine sets of farm buildings, one on each side of the road. These buildings are painted, contrasting greatly with all others, giving the place a very neat and attractive appearance. In the buildings and yards we find another very fine lot of Shorthorns, Cotswold sheep and Clyde horses; here are many of the animals that carried off the prizes—a Clydesdale for which \$450 was refused, a perfect beauty; a fine imported Clyde mare, with the rough hair on its buttocks touching the ground. "The more hair on the legs the better," is the cry among the farmers in this locality. They are the class that the Americans now want; they bring better prices than clean-legged horses at the present time. To show you how stock are kept by good herdsmen, we observed that the sheep allowed the sheep-dog to go in amongst them, and took no more notice of it than they would of a lamb; they had no fear, one of the rams coming up to play with us. The stockmen had been on the farm for 25 years, and were happy, contented and comfortable.

We next called at Mr. J. Howden's farm. He has erected a substantial stone house, the joints of the stones representing the letter H; it is neatly done. Mr. H. has Shorthorns, Cotswolds and Clydesdale horses. He fattens a good many cattle every year and has a fine lot now fattening for the English market. We must stop or we shall weary you on this subject.

January 21.—We inspected Mr. Hodgson's celebrated Cotswold sheep, which brought the highest honors to Canada from the great World's Exhibition as well as from many of the Western States. He considers that he has been unjustly treated by the Provincial Fair Association, and thinks he will never exhibit there again. The numerous complaints from such men are ominous—Deadman on fruit, Russell on stock, &c., &c.

We next called at Mr. Menderson's residence, in Reach Tp., who has long been noted for his care in wheat culture. He is a good, clean farmer, and tries all new varieties that he can hear of. His name stands higher in honors for prizes gained for really meritorious exhibits than any other person we know of. He showed us different varieties of grain, and says that he considers the Odessa is superior to any other spring wheat. It has far out-yielded the other varieties. He has a very fine sample of it, but has none to spare, all being promised except his own seed. A few miles from his farm there is a small lake, and about half an acre of the land on the brink of the lake took a slide into the lake. On this land-slide tall pine trees were growing, and now their tops are to be seen a few feet below the surface of the water, standing in an upright position. The water is clear as crystal to a great depth. We are informed that the depth of the water is unknown, and that thousands of visitors have gone to see this freak of nature; it is a favorite resort for summer pic-nics.

We drove next to Port Perry; then to Scugog Island. This island is connected with the main land by a floating bridge about a quarter of a mile long. It contains about 12,000 acres of land. Numerous muskrat houses are to be seen on the lake. Wild rice grows along the margin of the lake, and large numbers of ducks frequent it during the duck season. Mr. Graham is the most extensive farmer on the island. He has 800 acres here, having purchased it four years ago. The land has been covered with pine and hemlock, and is excellent wheat land. Mr. Graham has a large herd of Shorthorns. His large barnyard is enclosed by the most remarkable fence we have seen. It was erected many years ago, and consists of solid pine or hemlock logs, 36 feet long, from 20 inches to over two feet in diameter, and four logs high, built in this style:—

The water conveniences are remarkable. Continuously flowing water fills the tanks for cattle, and flows into the house in any desired quantity. This is supplied from one of the purest crystal-looking lakes imaginable. The lake is supplied by a spring, and the water conducted in pipes to where it is wanted.

(Continued on Page 32.)

Talks with Farmers.

Mr. W. Green, of Westminster, brought a load of barley to the market; the barley was good but was discolored, and he was only offered 50 cts. per bushel for it. He also brought 20 lbs. of butter, for which he received \$5. He took the barley home again, and says he will double the price of the barley by feeding it to his cows.

Mr. W. R. Pincombe, of Komoka, says he fattens 12 head of cattle each winter, his father 15, and his brother from 30 to 50. He says the family have fattened more animals than most farmers; they have followed it for many years, and never had a year of loss from following this plan: They feed straw first and a bushel of turnips daily, with a little meal; then hay and a pint of ground barley daily. They have succeeded in adding farm to farm, and consider it the safest and most profitable mode of farming.

The Farmer's Paper—Its Independent Course.

We are happy to say that our independence of party and party politics has been appreciated by the farmers of the Dominion. There are, however, a few exceptions—very few. There are a few narrow-minded individuals that would have every one see through their spectacles. We give extracts from two letters received from subscribers, both ceasing to be subscribers, and for reasons diametrically opposite to each other. A subscriber from Woodville says:—"Though pleased with the ADVOCATE as a farmer's paper, I cannot continue taking it. Though compelled by your convictions to criticize the N. P., the tax on corn, &c., yet you do it by gentle hints, as if afraid of giving offence." A subscriber from Kincardine says:—"You will oblige me by not sending the ADVOCATE this year. I think it was not to my interest that you applied to Sir L. Tilley to take the duty off corn." Let them go. Though unwilling to part with old subscribers, we are glad to say we have the confidence and hearty support of thousands of independent farmers throughout the Dominion; and we write not "by gentle hints, as if afraid to offend," but boldly and fearlessly we oppose what we know to be opposed to the interests of farmers, and advocate what is for their interest. And we are willing at any time to insert communications from subscribers, even though their opinions are opposed to ours. Even at the risk of offending a few narrow-minded partisans, our paper shall be an independent, outspoken journal.

We profess to endeavor to advocate the farmer's interest in the manner we deem best. Our pages have always been open for correction and furnishing the best information to farmers. Neither party or sect has been favored with our intent, but we have aimed to do the greatest good to the largest number. An angel could not satisfy all. There will always be some that cannot see matters in that light. We have only to regret that any feel aggrieved, and trust that it will be only a matter of time when they will acknowledge that these remarks are correct.

Advance in the Price of Wool.

The United States Economist gives fifteen reasons why wool should advance. Three of them are: "No wool in the West; stock of fleeces lighter in the market than usual; the demand for woollen goods exceeds the supply." The supply of wool has been for some years decreasing in the United States, notwithstanding the vast tracts of virgin soil every year enclosed and farmed. In New England especially the decrease in sheep husbandry is rapid and continuous. In a report quoted by the New England Farmer it is stated that in a single town in New Hampshire the number of sheep had decreased over 5,600 in a few years. In 1860 Massachusetts had 114,000 sheep; in 1878 the number was reduced to 55,000. The unremitting depletion of our flocks in Canada by shipments to England and the States must have a perceptible effect on the number of our sheep. Very little if any effort is made to add to our flocks. Too many of our very best lambs are sold off the farm. The great demand for wool and mutton proves that sheep husbandry, when carried on judiciously, is a very profitable branch of business. It is a sure means of enriching the farm and of keeping down weeds. And there is a fair prospect of the demand for Canadian Eutton increasing. There is an increasing demand for good mutton in the States—such as Canadian soil and climate can produce. The number of milk cows that a farm can feed profitably will not be lessened by adding to them a small flock of sheep. Of this there is ample proof from the experience of many stock-feeders.

Draining Land—No. 2.

(See Page 8, January Number.)

WHAT LANDS REQUIRE DRAINAGE?

That question is easily answered. "Wet lands, of course." And many would be satisfied with the answer. But let us consider for a moment, if the underdraining of some dry lands would not benefit them. "O! that's nonsense." Don't decide too quickly, my friend. Suppose you had a cornfield that was suffering from drouth, what would you do? "I would start the cultivator and keep working the land." Well, doesn't that course seem as absurd as my question? You would stir up the soil so that the air could penetrate and the sunlight fall on the freshly turned earth. Wouldn't you think that such a practice would make the soil still dryer? "I would; but it don't." So the underdraining of dry land may seem to you to make the soil still dryer, but it don't. On the contrary, for the same reasons that working your cultivator keeps the soil moist, so does an underdrain keep a soil moist. Just as the moisture in the air condenses on the cold surface of a pitcher, so the moisture in the air condenses in the cool soil when it can penetrate it. The surface of the soil becomes hard in a dry time, and you take your cultivator and break up the soil so that the air may penetrate. Now, if by a system of pipes under ground you admit the air beneath the surface its tendency will be to rise through the soil, parting with its moisture by condensation and keeping the whole soil mellow.

I do not suppose that its effect upon all soils would be alike in degree, because we know that the effect of air and moisture is much greater on some earths than others. A sand heap does not appear to suffer any change, but a hard compact clay exposed to air and moisture will slacken and become very mellow. Then, as the clay settles and the air passes from it, it will become compact again. The effect of admitting air through drain pipes to a clay soil is the same in kind as to throw the clay up to the air. It makes it mellow.

Now, from the above facts, known to every farmer, it appears that even a dry soil may be greatly benefited by underdraining, and that the amount of benefit bears some relation to the amount of clay in the soil. But underdraining not only renders a soil moist and mellow, but it is a means through which the soil is constantly becoming enriched. I turn to my chemistry and I find that clay is a decomposed silicate of ammonia. That the "value of alumina in the soil seems to be in retaining moisture, ammonia and carbonic acid." The presence of this valuable agent not only prevents the valuable parts of the manure from passing through the soil to taint subterranean springs, and holds them for plant food, but it draws from the atmosphere day and night the same elements that make the manure nourishing to the plant. *Moisture, mellowness and enrichment* are the effects of underdraining a dry soil. ALUMINA.

[Much profit should result from the careful perusal of these articles, as they are to be continued.]

Acquiring Improved Stock.

The Maritime Farmer, in a sketch of a New Brunswick breeding and stock farm, indicates how a farmer may become owner of well-bred stock without incurring heavy expense. In the new departure of feeding beef for the English market, our people will find it advantageous to secure thrifty growers, and those that come to maturity at an early age. Mr. Slipp, of Upper Hampstead, N. B., ten years ago commenced the breeding of Shorthorns, purchasing from the Queen's Central Society one heifer in calf and one bull calf, being part of an importation of stock made by the Society. The heifer has proved a fine breeder, and her descendants are numerous. The record now shows twenty-eight descendants from the heifer "Mary Bell," at the present date, with seven of the cows in calf. He has now 12 cows, 4 yearling heifers, 10 heifer calves, 1 bull, four years old, and 1 bull calf. On Mr. Slipp's farm, which is in splendid cultivation, is 60 head of cattle, 25 of this number being milch cows, 6 horses and 25 sheep. All the grain grown is fed upon the farm, and considerable quantities of beef and pork are fed.

American Horses in England.

The demand for good horses is as brisk as ever in England. Many of the horses imported from Canada have brought good prices and given great satisfaction to buyers. But on this point we need more steady aiming at improvement. English buyers are willing to pay good prices, but they must be for good articles. It will not pay to ship inferior animals or inferior produce of any kind. The English Live-Stock Journal, in the following brief item to horse-breeders of Canada and the United States, speaks to the point as follows:—

"Of late a considerable trade has been done in importing horses from the United States and Canada. The North Metropolitan tramways (this is the name given in England to all horse railroads) imported more than a thousand. They were full of quality, with fair and in some specimens fine action. There were pairs well worth \$750 to a dealer, but they have not weight enough for tram-work, and are being superseded by the French horse of the class so largely used for the last five years by the London Omnibus Company. Unless the recent fall in prices stops the trade, the United States will send us a great many high-class horses—of the sort Yorkshire used to breed. In the States they have plenty of mares of the right stamp for hunters, hacks and harness; they have thoroughbred sires to keep up quality; they have boundless pastures of good grass and maize at a very cheap rate. On the other hand, they have no idea of the proper make, shape and action of a riding horse, or of breaking for saddle. All their horse talent has been directed to producing fast trotting harness horses; these they understand perfectly. But they are the quickest people in the world to learn a new trade if it pays. They will learn to pick out mares and sires with riding shoulders and strong backs, thighs and necks. Their horses have size, quality, good temper and sound constitutions to start with. With these advantages the Americans will soon fill up the blank in horse stock created by the competition of beef and mutton in Yorkshire and in Ireland."

The prize essays on "Fattening Stock" and "Keeping Poultry" will appear in next issue.

The Board of Agriculture and Arts have appointed a committee to examine into the charges brought against them by the Chief of Police, and report that they are incorrect.

Land and Home writes:—The corn crop of 1878 for the United States removed in the grain alone 213,785 tons of phosphoric acid. Of this there was exported 13,527 tons of phosphoric acid and 8,116 tons of potash. We export about 6½ per cent. of our crop.

A contributor to the Prairie Farmer says:—"From years of experience, observation and enquiry I find that \$11 an acre is about the average cost of growing and marketing wheat under the present common system of farming, with only the fourteen bushels average of yield."

ORCHARDS.—Cultivate your orchards and do it well. You don't expect corn to grow without work, and you must not expect trees to bear fine fruit without thorough cultivation. Orchards will grow in grass, if manure is given in sufficient quantities each year; but we know of but few farmers who have the manure to spare, therefore give the trees what you can—a thoroughly mellowed soil.

"Ashes," said Marshall P. Wilder, a few years since, "are worth 50 cents per bushel to apply to orchards and are the cheapest manure for that purpose." That ashes have a very beneficial effect in this connection is shown by the fact that on all virgin soils recently burned over we get the fairest fruits and the best vegetables. The same authority cautions the use of salt as a manure for orchards, believing that it has no beneficial effect on land near the ocean, where the atmosphere is constantly saturated with salt.

A Maine farmer gives the following opinion as to the best position to plant an orchard; "Were I to plant an orchard and had two locations, one in a valley surrounded by hills except on the south side, and the other a high elevation exposed to high winds, I would choose the latter in preference to the former. The same holds good in regard to peach orchards. A great object is to keep back the blooming as long as possible, and this can best be done in northern exposures without shelter."

The Apiary.**Practical Hints.**

BY C. F. DODD, NILE, ONT.

During this month bees require comparatively little attention, particularly if they have had the requisite attention bestowed on them in the fall. If they are in a cellar, or other winter repository, and become very uneasy, making a loud noise, it would be well to set them out for a fly about noon on a warm, calm day, when the sun is shining. If it is windy, or the air is chilly, many bees will be lost before they can return to the hive. If there are hives that have not sufficient honey to last them till spring, exchange some empty combs for full ones from those hives that have to spare. Do not feed them liquid food, if it can be avoided, as it is liable to cause disease. After they have had a good fly, return them to their winter quarters. If they have sufficient stores, and remain quiet, do not disturb them.

VENTILATION.

Some beekeepers have advised giving bees upward ventilation, but, instead of being beneficial, it has often proved injurious, as it allows the animal heat from the bees to pass off too rapidly. To retain the animal heat in the hive and allow the moisture from the bees to pass off, and at the same time have sufficient ventilation afforded, is what they require; and this may be accomplished by placing a sheet of duck on the frames, then fill the cover of the hives with straw, and place it on the hive; or, what is still better, make a bag from good factory cotton, or some other strong material, fill it with chaff or dry sawdust, and place it on the frames, then put a sheet of duck under to prevent the bees from cutting the cushion, which should be large enough to cover the frames and about six inches thick, and should be packed down snugly. This may be made and put on now.

Management of Bees.

The great progress of bee management within the past year or two is encouraging to the general introduction of bees on the farm.

It is often more detrimental than one would suppose to allow more open space inside the hive than they can well fill; and it often happens that the honey season is in full blast before some colonies are strong enough to have much room given them.

It is desirable not to change the location of hives, unless it becomes absolutely necessary to do so. After the bees have become familiar with their location, should the hive be moved a few feet, they will not notice it when departing on their daily rounds, and if there are other hives near, they may perish in attempting to enter them or in wandering about seeking for their own home.

Prize Essay.

A \$5 prize is offered for the best essay—the subject to be "Instructions to New Settlers in Manitoba or our Northwest Territory," commencing on turning the first sod. The essay may be made continuous if desired, and must be in this office by the 15th March.

Sprinkle your plants every day, no matter what the weather may be. Water plentifully. Remember the fire-heat dries the soil more rapidly than sun-heat.

Carrots are used by farmers of South Jersey for cattle during the winter, and much of the print butter sold in the Philadelphia market is made there. The carrots give the golden color so much admired.

H. C. Burleigh, an extensive breeder of Herefords, says a pair of two-year-old steers he once owned gained 14½ inches in girth in six months by feeding them with good, early cut hay, and two quarts of corn, barley and bean meal, equal parts per day.

\$750,000 Wheat.

Last autumn we promised to give information about this wheat this spring. Last harvest we walked over the test plot of seeds at the Model Farm, accompanied by Mr. Brown, the farm manager, and one of the pupils. When examining the different varieties of spring wheat we came to a miserable-looking mixed lot of wheat that appeared to be worthless with rust, crumbling, mildew, etc. We asked Mr. Brown what that was. He said it was imported wheat, but was no good and was to be thrown away. We stood a little while to notice the different forms of the heads, and saw one head that appeared to have better straw and to look different from any of the others. We took the liberty of gathering it, and on rubbing it out, found it to contain a short, plump kernel of wheat of good quality. We showed it to Mr. Brown and the student, who were quite surprised. We then looked carefully and found a few more, procuring 12 heads; Mr. Brown said these comprised about half the wheat and that we were welcome to them, as the whole lot had been condemned to be destroyed.

Mr. Brown gave it the name of the "Advocate Wheat." We called it the "\$750,000 wheat," because there are about that number of grains to the bushel and we presume it has cost the farmers fully that sum.

It appeared to us that it may be of more value to the country than anything we had yet seen at the Farm. The wheat may be an old variety, but we do not know what kind it is. There was no other like it on the Farm that we could find, and the fact of this variety yielding well when the other kinds were useless is a matter of importance. Time alone can tell. The few grains we have will be carefully looked after; they will not be sold for cash, but if any one is anxious to secure a sample, we will send five grains (as long as they last) to any one that sends us the name of one new paid subscriber. We gave an ear of the wheat to one of our artists, from which the accompanying cut was taken as an exact representation of the wheat. A new spring wheat is much wanted at the present time.

Sowing Fertilizers.

We have had several enquiries from parties asking for a machine to sow fertilizers. We are pleased to answer in the advertising department that we now have such an implement manufactured in Ontario. From its construction and from reports we hear of it, it is our impression that this is a distributor that farmers who sow much artificial manure should have. The machine, by means of a revolving disk, takes up a certain quantity and deposits it into the tubes. We consider this the best implement of the kind within the reach of our farmers. The sowing of fertilizers properly is much more difficult and disagreeable than sowing grain. We saw one of these drills that had been used to sow salt, and our informant said it worked satisfactorily. When used for sowing salt the drills should not have any salt left in them, as the salt will dissolve in wet or damp weather, and will rust the iron. In the hands of good farmers this will be a valuable aid. You can send to the manufacturers for full particulars.

**Dairy.****Centrifugal Cream Separator.**

BY L. B. ARNOLD.

Written for the Farmer's Advocate.

Though the idea of an almost instantaneous separation of cream from new milk, fresh and warm from the cow, strikes a dairyman as simply ridiculous, a little careful investigation soon reduces the apparent absurdity to a plain matter of fact affair. Everybody knows that the difference in specific gravity between cream and skim-milk is the cause of the separation which brings the cream to the surface. If we could make that difference 100 times greater than it is when the milk is standing still, the cream would rise so much the sooner for it. If we could make the difference in gravity between equal bulks of milk and cream equal to the difference of gravity between equal bulks of cork and water, cream would separate from milk as quickly as cork does from water. The centrifugal machine does this and more too. It makes the difference more than 1,000 times greater, and consequently the cream is made to separate from the milk as fast as bits of cork would from quicksilver. A simple illustration will give the reader an idea how this is done. A vessel of which figure 1 may be considered a vertical section, is rotated, say 2,000 times a minute. We may suppose this to be filled by a stream of new milk falling from a reservoir above and dropping steadily into the vessel through its open neck. To keep the vessel as it rotates from running round the milk and leaving it comparatively still in the middle, strong partitions extend from the side of the vessel toward its centre to compel the milk to rotate with the vessel. By revolving the vessel 2,000 times a minute, the tendency of the heavier milk to gravitate toward the side of the vessel is so much greater than that of the lighter cream, that it pushes the cream back toward the centre to make room for itself. In a vessel two feet in diameter the skim-milk is estimated to push against the side of the vessel at the rate of 300 pounds to each square inch of surface, making it necessary to build the vessel with thick plates of rolled steel to enable it to stand the strain.

If there is anything heavier than the milk mixed with it, like specks of dirt or bits of curdled milk, as is often the case, these heavier things will be thrown to the very side of the vessel, and everything will be arranged *instantly* according to its gravity, the heaviest next to the wall, and the lightest in the centre.

The reader is probably by this time wondering how the milk and cream can be got out of the vessel separately. This is the easiest part of the operation. The stream of milk is kept running till the vessel becomes filled up to the flaring part above the neck. As soon as the liquid rises into the flaring part there is nothing to hold it, and it is whirled off in spreading circles up the inclined surface and against a disc placed above to arrest it. From the disc it drops into a vessel of which the disc covers a part, and is conducted away through a spout into a vessel set to hold it (see figure 2). The skim-milk is taken from near the side of the vessel and is run off into another dish, the apparatus for which is not illustrated.

The cream obtained by this machine is remarkable for its pure, full and delicious flavor. The thorough airing it gets in being vigorously whirled up and over the funnel-shaped top of the vessel, cleanses it of all foreign odors and gives it a better ripening in one or two seconds than it ever gets before it will sour when standing still for cream to rise. It churns to butter remarkably easy, and is

said to yield 5 or 6 per cent. more butter than can be got in setting by the most approved methods.

The skim-milk is as much improved as the cream, because every impurity it may chance to contain is thrown against the very side of the vessel, where it remains and accumulates, when the milk is kept very clean, at the rate of one quart in nine hundred.

A machine two feet in diameter—about as large as they can be run—will cream from 600 to 1,000 pounds of milk in an hour and require about a 3-horse power to run it, and would cost \$300 or more. When it becomes reduced to its very simplest form and is made in a larger way, its cost can be very much reduced.

From the working of a model at the late Convention of the American Dairymen's Association, and the fine results stated to the Convention by E. Burnett, of Southboro, Mass., who has been using one for several months for creaming 7,000 pounds of milk daily, this new machine bids fair to revolutionize our whole system of butter-making at no very distant day.

[The figures referred to in this article will appear in next issue.]

The Ameliasburgh Central Fair.

The subjoined report of the annual meeting of Ameliasburgh Agricultural Society, which we have received from the Secretary, we publish with pleasure. The good work of forming Agricultural Societies—Farmers' Clubs on a larger scale and bearing another name—is progressing steadily, and will no doubt supply the want of mutual aid and improvement long felt. The Ameliasburgh Society has made steady and unintermittent progress by efficient and careful management, and by the persistent application of its energies to the one object proposed, the improvement of agriculture and promoting the agricultural interests of the country. It now proposes to extend its field of operation, as will be seen from the report. It stands an example to others to act as they have done, assured by their experience of equally prosperous results. The farmers of Ontario need no fostering. Their own unaided enterprise will assure better and more lasting results than the fostering care of politicians. The officers have proved themselves to be the right men in the right places.

The annual meeting of the Ameliasburgh Agricultural Society was held on the 8th of January, 1880, at which the annual report was presented, showing receipts \$561.05, expenses \$597.06, leaving a balance due the Treasurer of \$36.01. On motion of Wm. Delong, seconded by N. A. Peterson, the report was received and adopted.

The officers were then elected for the ensuing year: John G. Peck, President; Elijah Sprague, Vice-do; Edward Roblin, Sec. and Treas., and a Board of Directors.

On motion it was declared that the Society do forward the FARMER'S ADVOCATE the ensuing year to all its members in the county. It was also decided to open the Society—in addition to its own county—to the counties of East and West Hastings and East Northumberland. On motion it was declared that in the future the Exhibition of the Society be known by the name of Ameliasburgh Central Fair, and that the Exhibition be held as usual on the second Saturday in October; also that the Directors do take in consideration the advisability of holding the Exhibition on two days. The Society has enlarged the Exhibition grounds, now having nearly seven acres enclosed with a good substantial board fence, seven feet high, with a large opening to Roblin's Lake, giving the exhibitors and visitors all the privileges of an abundance of water; and have at a large expense fitted a driving track of one-third mile, which will compare favorably with many of the driving parks in the country; also, cattle sheds have been erected and are in contemplation that will eclipse the accommodations at many of our county fairs. The officers are determined, if possible, to excel their last exhibition (which was a grand success for the old Ameliasburgh Cattle Show), having now come out in the new dress of the Ameliasburgh Central Fair. The officers are looking to a great future, and will be glad to furnish any information necessary.

Agriculture.

Seasonable Preparations for Root Crops.

The good farmer is always forehanded in preparing for his crops, and he is pretty sure to reap the benefit of it. From the Country Gentleman we take the following extract on the value of root crops, the timely preparation and the application of manure required. With the increased demand for well fed stock the root crop has become of primary importance:—

Farmers who intend to grow mangolds, &c., next year, should by all means mix up the horse and cow manure with some from the hogs also, and give it a turn over; shaking it all thoroughly together so that it will become a mellow mass of short stuff, which will be food for the young plants at once and force them from the start.

There is a great mistake in the management of manure in general, first of all a fear of the labor of turning and mixing; it is asserted it will last much longer. It is really applied for the purpose of acting immediately, and instead of lasting ought to be used up directly for the production of a heavy crop. In England, instead of scattering broadcast either farmyard manure or concentrated fertilizers, the first is put in ridges straight as a line, 27 inches apart, so that the young plants strike their rootlets into the friable dung which was evenly spread in the open ridges, and then the ridge turned back over it. Often with the same plan superphosphate is run from a separate hopper, and runs in the same channel with the seed, so that the plants are doubly stimulated. By this method of planting roots the crop obtains the full benefit of all the fertility in the applications, and upwards of 20 tons of succulent food are grown per acre, and are converted into manure. When the crops are eaten on the land by sheep the soil is sometimes too rich, and in many instances part of the crop is fed at the homestead to young cattle and fattening ones, and then the portion left gives all the droppings necessary for growing as much barley or oats as can stand on the ground.

In England the root crop is first in importance, every farmer putting all the manure he can make and collect together on the land coming in rotation for that crop, and when it does not hold out there is no hesitation in resorting to artificial manure. A heavy crop of mangels, swedes, and turnips insures good crops of barley, clover and wheat, and a failure gives an opposite result; consequently roots are the mainstay of success, and without them sheep-husbandry and stock-farming could not succeed. It is of no use to ignore roots, for good stock-farming could not be conducted without growing and feeding them. Sheep will not thrive and produce the best quality of wool and mutton without roots. In a few years it will be a matter of surprise that roots were no longer appreciated here. Any farmer's intelligence and capability can be estimated by seeing his root crop, and his standing and good sense may be known by the importance he attaches to growing the best of this nutritious and health-giving food.

Complaints of the existence of red rust in wheat reach us from South Australia—the premier wheat-growing colony which took the first prize for wheat against all comers at the Paris Exhibition—from Queensland, from Victoria, and more recently from New South Wales. The disease is due to the existence of a minute insect parasite, somewhat similar to the phylloxera, the appearance of which on the growing crops has given rise to the expressive name popularly applied to the pest. In one or two instances the red rust-like appearance is said to have been due to the growth of a parasitic fungus, similar to the coffee fungus which has caused the "leaf distress" among the coffee plants of Ceylon. The Queensland Government have offered a reward of £1000 for the discovery of a remedy.

CANADA THISTLES.—Glancing over the schedule of convictions for the county of Wentworth, published in the Dundas Banner, we notice that no less than 76 parties were brought up for allowing Canada thistles to go to seed on their land, and were fined two dollars each and costs. The prosecutor was the same in each case, and appears to be a public functionary.

The Monster Farms of the West.

The two great facts shown by observations of the monster farms of the West are, that those who have gone into wheat growing upon a large scale, making use of the most improved machinery and cheap labor, are making colossal fortunes at seventy cents per bushel for wheat, limited only by the number of acres cultivated and the skill with which the work is done, and that wheat may be grown at large profit for less than forty cents per bushel; but that, on the other hand, the small farmers, depending mainly on their own labor, with limited capital and less machinery, are not making a comfortable subsistence, but are running behindhand, and must go under, and that a further reduction in the market price for food products must hasten their end.

The development of the large farm interest has the direct and immediate effect of impoverishing the sections in which the farms exist, and skinning the lands without any compensating benefits. Not one dollar of the gross amount or net profit received from the products of the soil is returned and placed upon the land from which it is taken, except in the construction of the fewest buildings necessary to shelter and protect the laborers in the working season, and for the care of the work stock and the tools. On the whole 5300 cultivated acres of the Grandin farm there was not one family finding a permanent home by virtue of title in the soil, where there should have been at least one to every fifty acres of ploughed land, 106 families. This would give 106 houses in place of the five there at present, and 106 barns in place of three, with other buildings in like proportion; and a population of at least 500, where there is now one fixed inhabitant, with all the accessories of household comforts and home improvements that do not now exist in the smallest degree.

The large development of the tenant system of farming is an evil. The effects of the system have been too apparent in Europe to require any discussion in these pages. But with us it has features worse than ever known in Europe. The tenants in England hold leases and occupations that practically run for life, and often are kept in families for generations, which give encouragement for great improvements, and the farms are practically homesteads. But with us the leases are uniformly for short terms, with no encouragement for improvements, and the farms are never homes. In England the rent has rarely reached, and never exceeded, one quarter the gross product; but in the United States it is commonly one-half. Under the English tenant system the land is thoroughly cultivated and improved; with us it is impoverished. There is not one redeeming feature in the whole system in America, and it is in every way worse than in Europe.—[January Atlantic.

The English Journal of Forestry writes as follows as to how to make a worthless quagmire valuable: Upward of forty years ago Mr. Murray, at that time land agent to the Earl of Jersey, planted a bog near the Button Ferry Station, South Wales. This bog was quite useless and even dangerous, as people often lost their cattle in its wet quagmires. Mr. Murray planted it with poplar, and the trees made such extraordinary growth that at the end of 15 years, when they were cut down, the produce realized something like \$65 per annum per acre for the whole period of 15 years during which the crop had occupied the ground; it luckily happening that the poles were just wanted in the neighboring copper-works. However, this was not all the benefit or profit derived from planting the bog with these rapid-growing trees. Their strong roots ran through the underlying clay and thoroughly drained the bog, letting off the water in a way that no other process of draining could accomplish. Beneath all bogs—which are formed of decomposing vegetation—there lies a bed of clay, and below that comes a bed of gravel. The strong roots of the poplar will run down through the soft bog to a depth of many feet, and pierce through the bed of clay some feet thick into the gravel. In these days of great demand for packing cases, etc., the wood of this poplar is very valuable, and the tree has the additional property of arriving at a fit state to be cut down in a man's lifetime. When the timber was removed, a charge of gunpowder was inserted in each stool, which effectually burst them up and rendered their removal easy. After the ground was cleared, a beautiful rich, firm pasture remained.

Starving Out the Pea-Weevil.

At the annual meeting of the East Middlesex Agricultural Society, in the report submitted by the Secretary, Mr. H. Anderson, was the following suggestion:—

"With regard to peas, we know what is the matter, and we believe if proper means are taken it would not be difficult to provide a remedy. The bugs that have injured our peas for some years past have now become so numerous that they almost entirely destroyed the crop the last year; and we have learnt by experience that there is little hope of getting rid of them unless we cease sowing peas entirely for one season. This, we believe, would be a perfect remedy, as, according to the best authorities, the mature bug only lives one season, and it seems certain that they must be annihilated if there were no peas in which to propagate their young.

But we are aware that this object can never be attained by the voluntary action of the farmers, although the great majority have determined not to sow peas. Still there will always be a few in each township that will sow enough to preserve the breed and perpetuate the pest. We would, therefore, strongly recommend the Legislature of Ontario to pass an Act permitting County Councils to prohibit the sowing of peas in those counties that are infested by the bug. To show the importance of this matter we may mention that at a very low estimate the damage to the pea crop in the county of Middlesex alone the past season has amounted to at least \$100,000. We know that the Government has always shown a desire to do anything in their power to promote the prosperity of the farmers, and if their attention is called to this matter by a report emanating from a body as influential as the Agricultural Society of East Middlesex, we have no doubt they will institute enquiries on the subject that will, most likely, result in securing the object we have in view."

The report was approved of. The meeting was the largest annual meeting of the Society that we have seen.

MUCK.—At a meeting of the Western New York Horticultural Society, Prof. C. H. Dann read an essay on this material, recommending it very highly as a means of fertility. His treatment is as follows:—Draw and store near the stable. After cleaning the stables in the morning cover the floor with half an inch of muck and throw coarse litter above. When muck is to be applied directly to the land it needs to be "waked up" by the action of animal manure, lime and salt or ashes. Prof. Johnson says that muck may be thoroughly decomposed by mixing with it three bushels of a mixture of one bushel of salt to two of dry lime. Some draw muck directly to the land in winter and mix the other manures on the ground by harrowing in the spring.

PROTECTING PLANTS IN WINTER.—Pits dug in the ground and walled up, say to the depth of about four feet, are excellent as a means for preserving tea and Bengal roses, carnations, and other half-hardy things over winter. In the bottom, in a soil containing a good proportion of sand, the plants may be hilled in pretty thickly, or the pots plunged up to the rims. Here also plants such as cabbage, cauliflower, lettuce, etc., for early use, may be heeled. They must be kept from hard frost by a covering of glass, and hay or mats, and have ventilation in fine weather, or when it is not freezing. A little care will thus enable you to winter successfully many plants, both for the vegetable and flower garden.

If your cow's teats are sore from any cause, wash them clean with warm water, and then apply glycerine while they are moist. Two or three applications will cure the worst cases and render the teats soft and pliable. For caked bag, use fresh lard as hot as you can handle it. Apply with a rag or brush, and thoroughly rub it in with the hand. It never fails to effect a cure in a few days.

Among the influences that have largely contributed to unfold and expand the husbandry of this country, the steady, earnest and persistent work of our agricultural journals—even if not the most conspicuous—is probably the most valuable and important.

On the Wing.

(Continued from Page 28.)

STUMP MACHINE.

On Mr. Graham's farm the pine and hemlock stumps are so thick that the land can hardly be cultivated. Mr. Graham has set to work stumping the land in good earnest. He procured a stump extractor from the States, with which he can pull any stump easier and quicker than by any machine made in Canada. It is a lever power, worked by blocks and pulleys. It is drawn from stump to stump by the oxen. As soon as the stump is up, the men take all the earth off it with iron spids, the earth dropping into the hole from which the stump has been pulled, thus leaving the ground level and ready for the plough; the stump is then lowered and the machine moved to the next stump. One man then chops off the rough roots, so that oxen can draw the stump more easily and be better piled in the heap. Mr. Graham works with a gang of five hands and two yoke of oxen; he hires the men for the summer

Spring Rye.

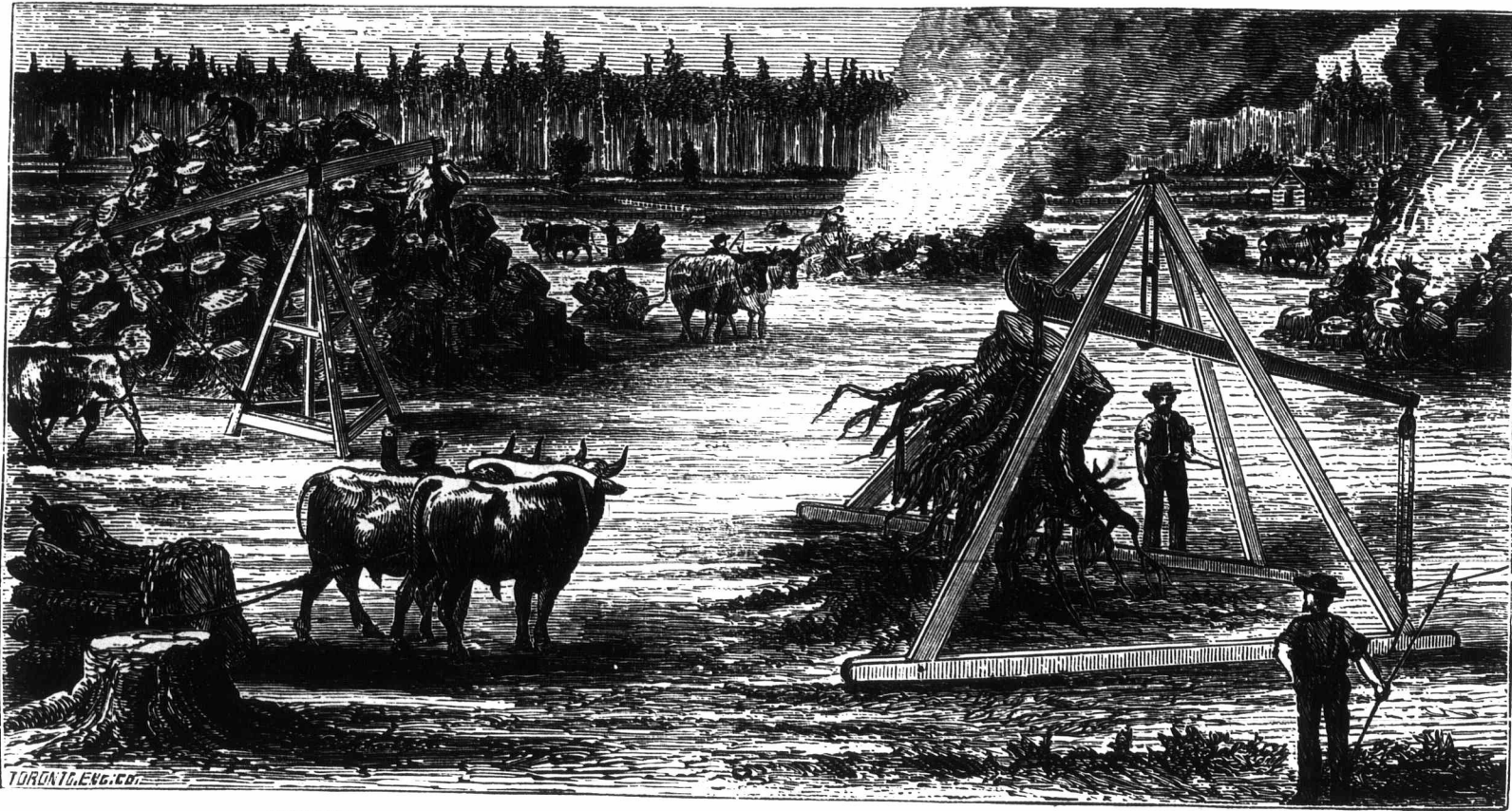
In reply to "Young Farmer," who asks for some information concerning spring rye, we give the following extract from the American Cultivator:—

"Spring rye can be sown as early in the spring as the frost will permit—the earlier the better, since it is a grain which matures rapidly. Spring rye will not yield so large a crop, neither for grain nor for soiling purposes, as may be secured from winter rye, though for soiling the former may be grown and cut before any other spring crop. We have known of farmers sowing winter rye in the spring, or so late in the fall as not to germinate until spring, but we recollect no instance where so good a crop was secured as when the grain made a good start in the fall. Spring rye cannot be obtained so early in the spring as winter rye, though the former will be ready to feed as soon as the latter is fed out or becomes too mature for profitable feeding. For plowing under, spring rye is as good as winter rye, though of course it can only be done later in the season than would be the case if the winter rye were used. Spring rye comes into bloom about the first of June. For early soiling winter rye comes first, next spring rye and then

Tarring Fence Posts.

A correspondent of the Country Gentleman writes as follows:—"I have tried tarring fence posts, and seen it tried by others a great many times, and my experience is that near the surface of the ground (the difficult place to keep sound) the preservative effects of the tar are completely neutralized in from one to two years by the action of the soil—wet and dry. I saw some oak posts treated with a covering of hot coal tar, set in July, 1869, which completely rotted off, and the fence had to be rebuilt in 1877. The location of this fence, however, was such that it was subject to frequent changes of wet and dry.

"It occurred to me, some years ago, that after applying coal tar it would be a good plan to burn it off, thus producing a charred surface, which will resist decay under all circumstances. I set some white cedar posts in this manner in 1875, and they are as sound to-day near the surface of the ground as when set, and since then I have followed the practice up quite generally. I cover the posts thoroughly with hot tar, being careful to cover to some inches above the surface of the ground, then pile up the tarred ends together, six or eight in a pile, and set fire to them, turning them over, if necessary, while burning, until the entire tarred



STUMPING LAND ON THE FARM OF JAMES GRAHAM, ESQ. S'UGOG ISLAND, NEAR PORT PERRY, ONT.

months, and has cleared fifty acres each year for the past four years. He says by this means he makes fifty acres of land a-year, as one acre stumped is worth two acres with the stumps on it, and will sell for double the money. Mr. G. has invented a stump-piler, which works like a charm. He took the plan from the old Dutch pump; in place of the crotch he put a solid iron band; on the lever he put a solid iron pivot, so that the stumps are raised up and then swung around on the pile. All the work is done by the oxen, except hitching and unhitching the chain. The accompanying illustration shows both the extractor and piler—of course, our artist had to put the men and oxen there, as it was only during the past month that we saw these implements. We never saw so much land stumped in so short a space of time. There is no patent on the piler, so that any person can make one who has much of this kind of work to do.

Good profits and sure sales are always to be had on good stock put in good condition. Inferior stock, if it finds buyers at all, finds them at low figures. Farmers should recollect this, and buy only the best

barley. Spring rye matures very fast, and very hot weather injures its value for soiling. Last spring, on account of the hot, dry weather in May, we almost lost our spring rye, as it became so hard before blossoming that the cows did not like it. The spring was late, and it was after the middle of April before we sowed it. We have now a piece of ground plowed and manured, ready for spring rye, intending to sow the latter as early next season as possible.

Farmers' Reading.

The Husbandman, Utica, N. Y., writes:—"I visited Orange County not long ago, with my son. We called upon an old acquaintance—a fore-handed farmer. There were seven sons in that family and no paper. The sons leave such a home when they are old enough to get away. There is nothing to interest them there—no instruction—so they go out into the world to seek the knowledge denied them at home. Yet even in Orange County a "fore-handed farmer" is found who has not ventured one dollar a year for the means of intelligent improvement for himself and his family. It is really surprising that any man with a soul above his barn-yard can deliberately deprive himself of the aid an agricultural journal would give in his business, leaving out of view the pleasures and profit it would afford his family.

surface is thoroughly charred. It is better to apply the tar hot, as it enters all the cracks and checks and also the pores of the wood, and some of it remains there under the charred surface.

"It will not do to treat green posts in this manner, as the confined moisture soon rots the posts from the inside, but I can see no reason why a dry post so treated will not last for a great many years."

In the experiments which have been made with coal tar applied to woodwork exposed to earth and moisture, it has been found important to heat both wood and tar to cause it to enter the pores, and this is doubtless effected very efficiently by the charring described in the preceding report of experiments. Simply applied to the surface of wood exposed above ground, coal tar has been found to do more harm than good. Where we have used it for wood at the surface of the ground, properly driven into the pores, it has made it last in some instances twenty years, when without this protection it would not survive five years.

It seems sometimes as if improved or high cultivation of plants produces, along with increased production, diseases from which that plant was never known to suffer during the old system of culture.—Farm Journal (Eng.)

Stacking Hay on the Prairie.

Winter is the time to prepare for summer, and as many of the most extensive hay makers like to know which are the best appliances for labor saving, we have procured the accompanying cut of the wire cable hay device from J. E. Porter, of Ottawa, Ill., U. S. The illustration conveys more than a page of descriptive matter.

If any of you contemplate using such a device, we would advise you to get your timber cut this winter, so as to be prepared by the time you want to use them. The timber required is four poles 20 feet long or 4 x 4; or good scantling of that length. For cost of wire and particulars write to the manufacturer.

Improved Farming Necessary.

The following we extract from the report of the West Middlesex Agricultural Society:

Your Directors feel that they would be remiss in the discharge of their duty did they allow this opportunity to pass without pointing out some of the things that in their judgment would better the condition of the farming community in particular and the whole country at large.

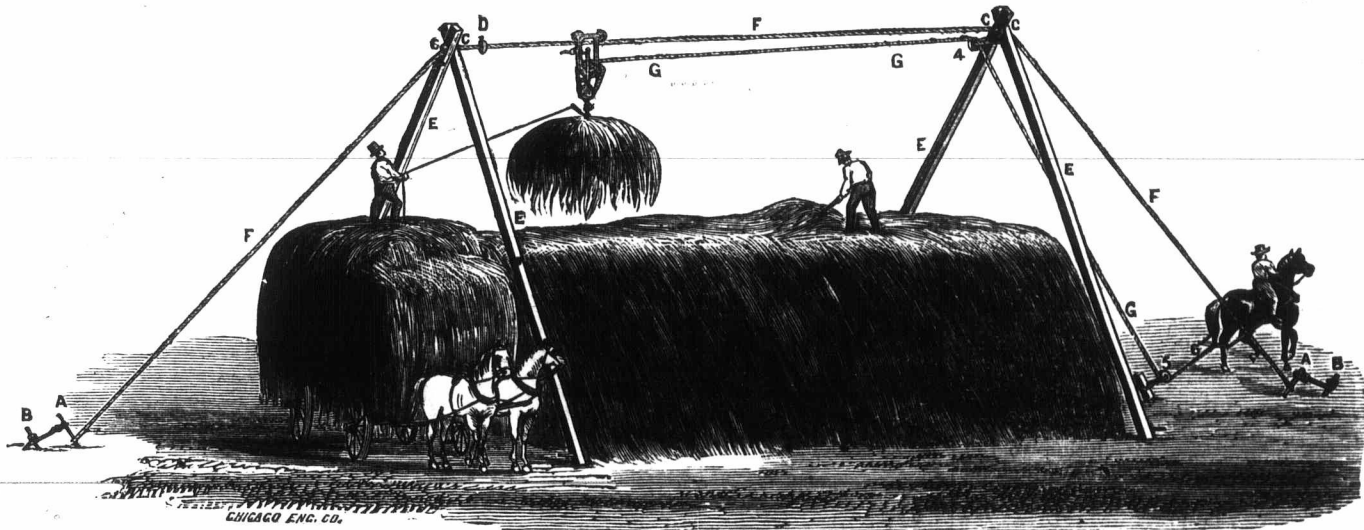
Garden and Orchard.**Strawberries.**

We extract the following remarks from an article by E. P. Roe, in Scribner's Magazine. Mr. Roe is a well known pomologist and a good authority on small fruits:

I am satisfied that the method best adapted to our eastern and western conditions is what is termed the "narrow row system." The plants are set one foot from each other in line, and not allowed to make a single runner. In good soil they will touch each other after one year's growth, and make a continuous bushy row. The spaces between the rows may be two and a half to three feet. Through these spaces the cultivator can be run as often as you please, and the ground can be thus kept clean, mellow and moist. The soil can be worked—not deeply of course—within an inch or two of the plants, and thus but little space is left for hand-weeding. I have found this latter task best accomplished by a simple tool made of a fork-tine. This can be thrust deeply between the plants without disturbing many roots, and the most stubborn weed can be pried out. Under this system the ground is occupied to the fullest extent that is profitable. The berries are exposed to light and air on either side and mulch can be

Pruning Orchards.

The New York Times says the present is a good time for pruning orchards. This work is often done, apparently, for no other purpose than to do some perfunctory work in hashing up the trees. Trees should be pruned and thinned out, and so, with axe in hand, the owner goes over them and butchers them miserably. The rough wounds inflicted do not heal, but rot begins, and in a short time the trees are useless, if not dead. How rare it is to come across a good-looking old orchard, venerable with age, but yet trim, neat, and sound in limb and trunk. Fruit-trees exist in Europe that are historical in their age, and in this country there are trees from which the old Indian tribes gathered fruit before they were crowded from the banks of the beautiful Delaware. But now, an orchard 30 years old is a ruin, and unless trees are planted every few years a farmer must buy his fruit. Much of this is due to the rough pruning the trees undergo, and more to the continual cropping of the orchards. Perhaps something of it is owing to the root grafting, which does not seem to produce long-lived trees, top-grafted trees seeming to be more vigorous than others. But bad pruning has much to answer for. One cannot prune by system. Every tree must be studied separately and in regard to some definite principles. For instance, pruning is intended to relieve the tree of useless or superabundant wood; to take away less important branches that crowd and press upon



STACKING HAY ON THE PRAIRIE.

1st. Better cultivation of the soil, plowing less and seeding down more to clover.

2nd. More thorough drainage.

3rd. Getting and keeping a better quality of stock, keeping fewer of them and keeping them better, so that more ready sales and better profits may be secured.

4th. Following a mixed husbandry instead of making a specialty of any one thing, so that we shall not be so dependent on the price of any one commodity.

5th. Taking some good agricultural paper, so that we may have the experience of others engaged in similar pursuits, and thereby be better prepared to go intelligently to work to secure the best possible results.

Little has been known of the history of the mite which causes the widespread disease called pear-leaf blister; but Prof. T. J. Burrill, who first discovered the mite in this country, believed it to be identical with that of Europe, and to have been imported. They have but four feet, but Prof. Burrill is convinced that they are matured and not larva, as other entomologists have held. They are peach-colored, slow-moving, and only 1-200 of an inch long, but dozens and sometimes scores are found in a single leaf-spot. They pass with difficulty in autumn from the leaves, and pass the winter in the leaf-scales of the buds. The remedy, he thinks, is to cut back and burn all the one-year-old wood of affected trees, and to destroy in spring every young shoot that seems to be attacked.

applied with the least degree of trouble. The feeding ground or the roots can be kept mellow by horse-power; if irrigation is adopted the spaces between the rows form the natural channels for the water. Chief of all, it is the most successful way of fighting the white grub. These enemies are not found scattered evenly through the soil, but abound in patches. Here they can be dug out if not too numerous, and the plants allowed to run and fill up the gaps. To all intents and purposes the narrow-row system is hill culture with the evils of the latter subtracted. Even where it is not carried out accurately, and many plants take root in the rows, most of them will become large, strong and productive under the hasty culture which destroys the greater number of the side-runners.

FRUIT GROWING IN ARGENTEUIL.—There is a wide extent of land in this county that is unfit for cultivation with the plough on account of its rockiness. A very great proportion of such land might be made productive by turning it into an orchard. To attain this desirable end a fruit-growers' association is necessary to inculcate correct ideas with regard to the best sorts of fruit to plant. Small fruit of all kinds succeed everywhere in the county. Currants, gooseberries, raspberries and strawberries in the gardens, as well as blackberries and cranberries in the swamps, and nothing is wanting but the attention of landowners and others to be turned to the subject to make the county one of the principal fruit centres of Canada.

In Goodneston Park, Kent, England, is a Cedar of Lebanon with a spread of branch 100 ft. in diameter, and maples and sycamores of 120 ft. each.

others; to reduce the quantity of bearing wood, and so preserve the vitality and balance of the tree; lastly, to remove disfigured, blighted and diseased wood. Now, with these rules in mind, let one examine carefully each tree before he cuts away a twig, and note where and what he should cut away, and then mind how he cuts.

Implements.—No axe should be used about a tree except to cut it down when it cumbers the ground. A sharp, fine-toothed, long, narrow-bladed saw is the proper pruning implement. A sharp knife with a curving blade that makes a draw cut, and a pot of shellac varnish, should go with the saw. Everything that is removed should be cut close to the main wood, trimmed smoothly with the knife, and the wound covered with the varnish. The varnish is shellac dissolved in alcohol. This leaves a water and air proof covering over the wound. The work may be begun now and continued as opportunity offers. There need be no hurry. Young trees should be put in training now for future pruning. Three or four main limbs only should be left, so as to balance the head. All in-growing shoots should be removed close to the main branch, so that no bud is left to sprout. Each main side-limb may fork into two or three sub-branches, spreading fan-like around the central limb, if there is one. The sub-branches should be encouraged to start low, so that a low, round, compact, spreading head may be produced; much may be done in forming the head by tying down or hanging weights upon limbs that are inclined to wander the way they should not go, so that when they are old they will not depart from it. "As the twig is bent the tree is inclined," and a piece of hemp twist will soon bring a crooked young tree into a regular and quite handsome form.

A Fruit that Never Fails.

Of all the small fruits the raspberry alone never fails. The strawberry scarcely excels it in flavor. During its season, amid the greasy and ponderous bill of fare of most American families, it is a genuine promoter of health. Not one of our small fruits is so easily propagated and cultivated. Every one who has a garden plot should be ashamed of himself unless he raises raspberries. The best kind to plant is what is called the Mammoth Cluster; some call it the Canada Black Cap. This variety makes new canes every year from the same root, does not sprout, and is easily controlled. Unless you are an amateur gardener it does not pay to cultivate the tender sorts with the ever-bearing varieties. The tender varieties—such as bear the red berries—sprout badly, and are frequently winterkilled. The ever-bearing are weakened by their extra summer's work, and in their season fall far behind in productiveness. The canes of Black Caps fall over in summer, and their ends take root and form new plants. These should be taken up in spring, when the ground is dry enough, and be planted in thoroughly prepared ground. The rows should be six feet apart, and the plants four feet apart in the row. The first season these should be cultivated the entire summer and allowed to grow as they will. Cultivate them in the same manner next season, but when the canes are 3½ or 4 feet high clip their ends. The canes will after a time throw out shoot, and these will need to be clipped two or three times during the growing season. The clipping can be done very rapidly with a sharp knife by striking the ends of the tender shoots. The canes will thus become stiff and stocky, and will need neither stakes nor wires, and the next season will be loaded with berries. Every spring remove the dead canes, and keep the ground between the rows clear of grass and weeds. In my garden I do this with a double-shovel plow, following with the hoe between the hills. I plow them right through the bearing season—keeping the ground fresh and mellow more than compensates for broken roots. Some gardeners say the plants should be renewed every three or four years, but I have taken seven crops from my present garden without any sign of failing. (T. W., in New York Tribune.)

Starving Wire-worms.

A Michigan farmer writes to the New York Tribune, desiring information in relation to the treatment of low river-bottom land, on which he has failed to get a catch of cultivated grass. He says the original sod of wild grass was turned over and a fair crop of buckwheat grown, but the seeding of a cultivated grass was a failure except in spots. That the next season the land was well prepared and planted to corn, which wire-worms destroyed. To this the agricultural editor of that journal replies: The corn crop being destroyed by wire-worms is evidence that the same insect destroyed the grass seeding. I have never known any crop to grow uninjured, except buckwheat, on land infested with wire-worms. Weeds and some wild grasses which have a hard and tough root, like buckwheat, will grow; but the more delicate grass and grain crops are destroyed. The best means of getting rid of the worms is to starve them, or they may be destroyed by the liberal use of salt, say at the rate of two barrels per acre. Sowing two crops of buckwheat in succession, and keeping the land well cultivated during the time the crops do not occupy it, so that the worms can find nothing to feed upon, will starve them, as they cannot feed on the buckwheat root, it being too hard. I have in two instances destroyed this insect by a thorough summer fallow. A field of some ten acres of flat and mucky land was so full of worms that no crop could be successfully grown. This I desired to cultivate. The land was plowed late in the fall, and the following season four or five times more at intervals, so that nothing was allowed to grow; since which time, some twenty years ago, no worms or their work have been seen. In another case, a field of about twenty acres had been damaged by them. It was summer fallowed and plowed but three times, with intermediate cultivation with harrow and cultivator, so that nothing grew, and no signs of the worm have appeared since, which was some six years ago, but a crop of grain or grass has been grown annually since. I would advise the inquirer to summer fallow his land one season in this thorough manner, allowing nothing to grow to feed the worms; then seed to grass, 1st October, of such variety as he desires to raise, without any grain crop with it.

Ashes for Apple Trees.

When apple or pear trees become diseased from being planted in unfavorable or ill-prepared soil, or from a lack of food, they are very certain to be attacked by insects, which if they were in a healthy condition would probably be unknown. Certain washes, such as lye (a solution of potash), have been applied with success in destroying these insects and restoring the tree to health. But for our own practice we have for the last two years applied a much simpler remedy with more success, as it causes the old dead bark, the chosen hiding-places of insects, to cleave off, leaving in its place smooth healthy surface. This is simply, after a rain and while the bark is yet wet, to throw on dry wood ashes until the capacity of retention is full. If rain soon follows the strength of the ashes is carried into every cranny of the bark, and the effect is working cleanliness on the tree. If there is no rain, the ashes will remain and be working their good effects, and be ready for action when the rain comes. The operation of sowing on the ashes is easily and quickly performed; so if the tree is in a bad condition it is easily repeated until the insects are all destroyed, and a new healthy bark covers the tree. To remedy existing evils sow on the ashes between now and leaving out, after the first rain if possible; for they can be scattered over the bark now with less waste than when intercepted by leaves, and placed more equally where they are needed. As the preventive of future depredations, sow them on in summer, when the insects deposit their eggs, which will never hatch under the influence of the ashes. Two objects are gained by this operation; the ashes or lye they produce furnishes food for the tree as well as destroying its enemies, and imparts cleanliness to the tree.

Iron Filings for Pear Trees.

Mr. G. A. Hubbard, New Haven, Conn., writes the Scientific American that it is conjectured that New Haven county has a larger supply of choice pear trees than any other county in the United States. Some fine varieties, notably the Flemish Beauty and White Doyene, are generally failures. They set well with blossoms, but the young fruit cracks, prematurely ripens, and drops off. Mr. Hubbard thinks the general success of the pear in that locality is due to the fact that the sandy soil contains a proportion of iron, which he has come to believe is a necessary element in pear culture. He thinks the quantity there, however, is insufficient for the needs of the two varieties named. He bases this conclusion mainly on the fact that a Flemish tree fertilized annually from the sweepings of a smith's shop, in which there is a large quantity of iron filing and bits of iron, gives a good yield of most excellent fruit. He suggests to pear growers everywhere the propriety of procuring iron filings, or drillings, and mixing with the soil about their trees. He would mix with wood ashes in moderate amount.

Transplanting in the Night.

A gentleman anxious to ascertain the effect of transplanting at night, instead of by day, made an experiment with the following results: He transplanted ten cherry-trees while in bloom, commencing at 4 o'clock in the afternoon. Those transplanted during daylight shed their blossoms, producing little or no fruit; while those transplanted in the dark maintained their condition fully. He did the same with ten dwarf trees after the fruit was one-third grown. Those transplanted during the day shed their fruit, those during the night perfected their crop and showed no injury from having been removed. With each of these trees he removed some earth with the roots. The incident is fully vouched for, and if a few similar experiments produce a like result, it will be a strong argument to horticulturists to do such work at night.

HOW NUTMEGS GROW.—Nutmegs grow on little trees which look like small pear trees, and are generally over 20 feet high. The flowers are pale and very fragrant. The nutmeg is the seed of the fruit, and mace is the thin covering over this seed. The fruit is about as large as a peach, and when ripe breaks open and shows the little nut inside. The trees grow on the islands of Asia and in tropical America. They bear fruit for 70 or 80 years, and have ripe fruit upon them at all seasons.

Poultry.**The Hen Fever.**

About twenty-five years ago this country was afflicted by a severe visitation of the 'hen mania,' in an epidemic form. It was the first introduction of Asiatic fowls under the form of the great, naked uncouth Shanghai. Exorbitant prices were paid for these, and many speculators suffered severely. Notwithstanding this, it left our poultry in an improved condition, and the late importations from India and the south of Europe, have given us several varieties of fowls that combine early maturity with excellent laying qualities. There is, however, a tendency to make poultry-raising a specialty, and to those who propose to pursue this course a word of caution may be timely.

The farmer who keeps 50 or 100 fowls and gives them the liberty of the farm, including the barn and stables, with the adjoining feeding lots—prohibiting them only the range of the garden, finds his hens the most profitable stock on the farm in proportion to their expense. Stimulated by this experience, he determines to go into the poultry business. He encloses two or three acres and builds a hennery of the latest and most improved pattern, and starts business with 500 thoroughbred fowls, intending to increase the number to 1,000. But, anon, disease creeps in among his flock—his chickens die with gapes, or in feathering, his brood hens mope about and are unhealthy, and, in short, he has had bad luck in general, and he ends the year with no increase of his flock and no income from them. Let us review the situation, and, if possible, see where the trouble lies. In what does the condition of the present flock differ from that of the fowls on the farm? On the farm they had the largest liberty, here they are imprisoned—there they had a great variety of food and pure water, here they are confined to at least a fixed routine of diet and stale water, or none—there the roosts were well ventilated, here they are shut up in overcrowded quarters and breathe a vitiated air—there the chickens followed the mother in her strolling and picked up a great variety of food. The feeble died young, the remainder became strong and able to resist disease, on the principle of the "survival of the fittest;" here there is no room for exercise, no fresh plowed ground to scratch for worms, and none of the brood prove fit to survive.

By this we do not mean to say that a man cannot raise 5,000 chickens as well as 50, but he must observe the conditions of health in the one case as well as in the other. Not more than 100 fowls should be kept in one lot, and it should not be less than three acres, so as to allow them plenty of green pasture.

Brood hens should be furnished fresh plowed earth to scratch in, and the diet of the whole flock should be varied frequently, and a full allowance of animal food should enter into the bill of fare. All the lots should have running water in them, even if it has to be produced by a well and a windmill. The house should be well ventilated, and only in the severest winter weather should it be closed. In fact a few chickens will profitably take care of themselves. A "poultry business," like every other business, requires constant care and attention. With this it may be made profitable—without it, failure is inevitable.—Indiana Farmer.

CUTTING THE TOPS OF TREES.—Excepting with the more experienced cultivators a practice on receiving trees from the nurseries is to reduce the tops considerably. This is a common practice with some growers, but a greater mistake could not possibly be perpetrated. The more branches and foliage a tree is allowed to carry the more roots it will make, and the less chance is there of its producing strong gross shoots; but on the other hand cut it back, and its growth and strength are concentrated in a few buds that start away most strongly in the Spring. Healthy trees, such as are generally supplied, if planted early will always afford plenty of shoots to choose from without having their tops reduced. We never shorten under any circumstances unless it be the extreme tips not quite ripe or any bruised through packing or carriage, but plant with the branches almost entire and properly laid in and trained. By this treatment they cover more than double the space the first year than they otherwise would and bear in less than half the time, and we are sure that those who may feel disposed to give this system a trial will never resort to the old practice again.—[Cottage Gardener.]



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 ½ ounce. We do not hold ourselves responsible for the views of correspondents.

How May We Know Good Land?

CLAY IN THE SOIL, AND CLAY WITH MANURES.

SIR,—I do not know that this question has ever been discussed by a farmer's club or an agricultural paper, but it certainly is important for every one who cultivates the soil to know how to select that which will best pay him for his labor. We know that there are lands that have borne good crops for 40 years or more without manuring, while there are other pieces that have been exhausted with a few crops; and though you may burden them with manure, you will be poorly paid for your labor. What makes the great difference? Surely it is not the amount of vegetable matter in the soil. There appears to be more vegetable matter in a few good cereal crops than the soil contains. A scientific experiment once determined the fact that while a willow-tree increased over 100 pounds in weight, the soil in which it grew only lost a few ounces, showing conclusively that it derived its growth from elements in air and water. The fact that one soil pays for cultivation better than another must be because it is better constituted to absorb nourishment from air and water, and give it to the plant. Soil is composed, apparently, of soil and clay. Sand is glass; it will absorb nothing. Land composed of sand alone will not improve in crop-bearing power by rest. The deserts are sandy deserts. Clay is a powerful absorbent. I have used different earths in an earth-closet, and found them effective in proportion to the clay they contained. A very light covering of clay dust would immediately stop all offensive exhalations. Clay soils do improve by rest, and very rapidly, when they are under-drained so as to be pervious to air and moisture. Can we escape from the conclusion that the clay absorbs from air and water plant food, and surrenders it to the power of life within the plant? I cannot say what proportion of clay to sand should exist in the soil. My present purpose is to speak of certain indications of the presence of clay found in very productive soils. A good soil should be mellow when plowed, but having sufficient clay to retain the form of the furrow, and to harden if worked in a wet state. When in the proper state of dryness for cultivation it should be sufficiently cohesive to hold its shape when pressed in the hand. A steel plow is required, as a cast one is liable to clog. A simple indication of the quality of the soil is the state of a natural carriage-road over it. If there are deep ruts and large lumps, there is likely too much clay; if the land rides the wheels of the carriage, there is not enough. If the soil packs smoothly it shows a desirable combination.

The timber is an indication, and one which governs people's judgment perhaps more than any other. Beech and maple are considered positive evidence of good soil, but much of the very best land does not grow such timber. These trees, especially the beech, do not grow thriftily on wet land, however good the soil may be. Timber and plants are better indications of the condition of the soil as regards moisture than of its crop-producing power. If the water in the land is near the surface, the trees are of soft wood generally, though some species of oak thrive in wet land.

Let me offer some suggestions in regard to the use of clay upon the farm: Its effect upon manures is different from that of lime. We know that in mortar it will neutralize the lime. I would not use it in compost heaps, but as a covering for compost heaps it will absorb the exhalations. As a covering for all manures it would certainly be very valuable, for it will absorb the ammonia released by fermentation. I would mingle clay or a clayey earth with the offal from the hog-pen, scatter it under the roosts of the poultry house

and spread it over the manure heaps. Clay alone applied to sandy soil would be valuable. Mingled with any manure, it renders it inoffensive and earthlike, so that it can be much more readily applied to crops "in the hill." When freely used, it will render the air pure about the stable, the poultry house, and even the pig-pen—an object which, though treated as unimportant, may be more deserving of our effort than we realize, on account of the effect of impure air on the health of animals. Certainly human beings could not live under the conditions to which many animals are subject.

I hope some of you readers will try the effect of clay or a clayey earth in some of the ways I have suggested, and report results. "The shoemaker says there is nothing like leather," but I am of the opinion that "there is nothing like clay."

ALUMINA.

SIR,—We felt the times during the past two or three years very hard, but I am glad the good old times are beginning to come again, and I think there ought to be some credit given to the N. P. for the return of business. I read your article on removing the duty from American corn. For my part I do not agree with the idea. Your reason that it would help dairymen and stockmen I admit to be plausible, but you must bear in mind that those classes do not represent the mass of agriculturists. I think that a large majority of farmers in Canada are benefited very much by the present duty on American corn. The price of butter is very fluctuating, and it may soon take a tumble down, therefore it would not do to touch the tariff on the butter question. As for Canadian beef, it will always command a high price in the English market. Then, I say let the herdsmen pay a little more for the feed and we will all benefit proportionately. I know a couple of gentlemen that shipped cattle to England the past summer, who made a nice fortune notwithstanding the duty on corn.

J. C., Claude.

SIR,—We have a disease called sturdy, or worm in the head, which depends on a parasite found in a small bladder containing fluid, in which the worm floats, in some part of the brain. The symptoms of the disease are governed by the place or division of the brain in which the parasite is found. It is a species of tape-worm, and is generally found in flocks attended by dogs. Cattle as well as sheep are attacked. Lambs are oftener affected than older sheep. Delicate animals are more subject to the disease, and more particularly in the autumn and winter months.

W. H., Chiselhurst P. O., Ont.

[There are a number of diseases affecting sheep in the head, causing giddiness or staggers. Where the blood has become congealed, then bleeding from the facial vein would be beneficial.]

Ventilation.

SIR,—In answer to "Pictou's" inquiry in the January number as to the best mode of ventilating a cellar I send you the following:—Build a bin of brick or stone from the bottom of the cellar up to the hearthstone, the size of the hearth; leave a hole at the bottom to admit a shovel for taking out ashes, and one near the top for ventilation; insert a grate of two iron bars half an inch apart between the hearthstone and fireplace, in length from corner to corner. I built the original one twelve years ago, and would not dispense with it on any consideration. It keeps the cellar pure, gives the chimney a draught, dispenses with the daily lifting of ashes, and prevents all risk of fire from hot ashes. If for ventilation alone the grate is sufficient.

R. G., Upper Stewarcke, N.S.

SIR,—I want to know the best way to give flax-seed to horses, and if it is really good for horses and cattle—that is, without grinding the seed.

N. McP., Vernon River, P. E. I.

[Flax-seed should be ground or boiled; boiling answers very well. It is an excellent food for calves, cattle and horses. About half a pint well boiled and mixed with grain or bran, and fed once a week, is about the proper allowance for a horse.]

TO QUERIST AT SAULT STE. MARIE.—You should have sent your name. We could have replied to you by mail. Correspondents and querists should always send their names and address in full. We do not pretend to reply to non-subscribers' queries.

Stock Raising.

SIR,—I see many good things in your paper, and for the information of others I will submit a little of my experience. I find tar and salt mixed and kept continually within reach of my cattle very beneficial to their health. I also find a little sulphur good. I use the above constantly, and never have any sick cattle. They are all in fine condition. My cows average 300 lbs. of butter per year, which I sell at 25c. and 26c. per lb. I would like to get some information concerning the Devon cattle. Would they be a good cross with Ayrshires? If so, what would a bull calf cost me? I would want an early one.

J. I. M., Morrisburgh.

[The Devons are considered a hardy, active cattle, and produce an excellent quality of beef. To cross them with the Ayrshires may do well in some sections where feed is spare or the country rugged, and the animals have to exert themselves considerably to obtain sufficient food; but in the level and more luxuriant pasture lands we would consider the Durham or Herefords a good cross, and would doubtless produce a heavier animal for feeding off and shipping, which has become an important interest in the Dominion. J. Pincombe, Lambeth; John Peters, London, and G. Rudd, Guelph, are breeders of Devon cattle, and can doubtless inform you concerning prices, &c.]

SIR,—I would like to know which is the nearest office to this place for the registration of pedigrees of thoroughbred stock. I also have a yearling colt, bred from a valuable Morrill mare and a Hambletonian stallion, and lately I have noticed a swelling on the inside of the right hough. The animal is not in the least lame or stiff, and at some times it appears to increase, and then shows slightly on the outside. Can you inform me what it is, and what treatment will effect a cure? I do not think it is a spavin, and am wholly at a loss what to call it or how to stop its growth. By answering the above at your earliest convenience you will greatly oblige.

P. Y., Gould P. O.

[Your colt has what is termed thoroughpin. You will apply a lotion made of hydrochlorate ammonia, saltpetre and common salt, equal parts, dissolved in cold water and applied twice a day. If this does not succeed in removing the swelling, you will then apply a strong astringent liniment.]

SIR,—I take the liberty of asking where I could get one hundred Spanish hens, as I am thinking of keeping a hennery, and think they might be the most suitable for that purpose. If they cannot be had, perhaps you could suggest some breed equally good.

T. D., Hanover, Ont.

[This is one of many enquiries we have for information where fowls of pure breeds can be procured. We had two Americans in this office the other day making similar enquiries. If poultry breeders having pure bred poultry to dispose of would make it known through the medium of advertising, they would find it to their advantage.]

SIR,—I have a colt 18 months old. About four months ago it became lame on its hind feet. I cannot ascertain the cause. Its fetlock bones are growing, and the joints are swollen both sides. Can you tell me what to do?

M. M., Gulf Shore, N. S.

[It would be well to pare the toes off short and apply a cantharidine blister to the affected part once every three weeks until a cure is effected. Blister to be composed of cantharidine 1 part and lard 10 parts. Apply by rubbing in well with the fingers, also rub in a little lard three days after blistering on each occasion.]

SIR,—What ails the ducks? They stretch themselves, fall over on their backs, lie kicking and not able to get up for a long time; one day well, next day sick again. They seem dizzy. What is the cause, and what will cure them?

M. B., Thornbury.

[From your description we cannot say positively what the disease is, but would be inclined to think it is from over-feeding with strong food, causing apoplexy. Perhaps some poultry-breeder can give us further information.]

SIR,—Can you inform me whether there is a breed of white Berkshire pigs.

R. H. B., Bomholm.

[We do not think any such breed of pigs exist.]

The Grange Defended.

SIR,—I write you as one of your oldest subscribers, having taken your paper some ten or twelve years, and am very well satisfied with it as a whole, but take exception to some letters and editorials which have appeared the last few months, which are written for the purpose of injuring the Order of the Patrons of Husbandry. In last month's issue is a letter from a person signing himself "Brant," in which he says that the Grange is a failure in all that it undertook to do. Now, sir, how any man with a particle of common sense about him can make such a statement is beyond my comprehension. He either knows nothing of what he writes, or else tries to injure the Order by using misstatements. The principal objects of the Grange, as you well know, sir, are to make the farmers more independent of other classes; to give them a more thorough knowledge of their occupation, by meeting together and discussing subjects pertaining to their calling; to teach them to take their part in public business, of whatever nature; to use their own judgment, and not be led away by oily-tongued lawyers and politicians to go against their own interests, and also to show them the benefits of dealing without the aid of middlemen and of paying cash for their purchases. Now, sir, I claim that in these particulars the Grange to a large extent has been and is a success, and if there was not one in existence to-morrow, has done more to benefit the farmers than anything that has taken place in our country for a number of years not even excepting your great National Policy, which so far as the farmers are concerned is the greatest national swindle I have yet seen in our fair Dominion.

In the first part of "Brant's" letter he says "it was to raise the farmer from his down-trodden condition and place him in the high station he should occupy in the country." So far as I know this was never promised, and the farmers in this country, at least, do not feel themselves so down-trodden that they are over-anxious to be raised to the exalted station "Brant" expected them to occupy. To a certain extent the Grange has elevated the farmer, by making them more independent and giving them confidence in themselves, so that they are now able to take part in the public affairs of the country. Has the Grange failed here?

"Brant" also says it promised higher prices for what we had to sell and lower prices for what we had to buy. I know of cases—and he might also, if he ever reads the public prints—of the Grangers getting more for their produce, by selling direct to large merchants in this country or sending direct to Europe, than the majority of farmers realized for their produce. I remember seeing in one of the Toronto papers, of the fall of 1878, that the Grangers near Belleville, or one of the towns in that part of the country, sold some 10,000 bushels of barley for \$1.12½ per bushel, several cents higher than the Toronto grain dealers were paying for the same grade at the time. Also another case, which I also saw in a public print, of a large quantity of wheat (I do not remember how much) being shipped direct from the county of Grey by the Grangers, and realizing 10 cents a bushel to the producers more than the grain buyers in that county were paying at the time of shipment. Has the Grange failed here?

Has the Grange failed in enabling the farmers to buy apple trees for from 10 to 12½ cents each that formerly were 20 to 25 cents; to buy reaping machines for \$88 that are retailing at \$110; to buy ploughs for \$12 that others paid \$20 for; to buy turnip drills for \$12 that are sold singly for \$18; to buy harrows for \$11 that I know were sold for \$22; to buy forks for 55c. that retail at 75c.; spades at \$1 that retail at \$1.25, and a great many other things in the same proportion? Let him answer, has the Grange failed here?

"Brant" goes on to say that the Grange is kept alive, and that for a few years only, by designing men, who are making money out of it. There are, I think, only two persons drawing any salary from the Grange—the Secretary and the Treasurer of the Dominion Grange. Both of these salaries combined will reach during the current year the prodigious sum of nearly five hundred dollars. Just think of it. Twenty-seven thousand members contributing to make up this immense sum. No wonder the farmers are poor, when this salary costs every member nearly two cents a year!

If the Grange depended on such men as "Brant" and others I know of, I would indeed tremble for it; but when I see such men at the

head of it as met at the annual session in Toronto last month, I have no fear of it failing in its undertakings, but believe it will grow and prosper in spite of its enemies. I know it will have its ups and downs, but will come out stronger after every trouble. Men who joined for the sole and only reason of making money are leaving, and using their puny influence to injure the Order that could not make them rich in a day. But let me tell "Brant" that there are Grangers in this county who are true to their pledge, and will work for the Order as long as they are able. I suppose "Brant" is one of those persons who, like the Editor of the FARMER'S ADVOCATE, was very favorable to the Grange on its introduction, but turned against it when he found he could not turn and twist it to suit himself.

Now, Mr. Editor, you must excuse the length of this letter; but when I find letter after letter running down the Grange, and such an editorial as yours in last month's number, entitled "Duty," on the first page of volume fifteen, I cannot refrain from writing the above in defence of the Order that has been of so much benefit to the farmers of this country. I do not write over an anonymous name, but my own, which I would like "Brant" and other enemies of the Grange to do also.

THOS. A. GOOD,
Master Brantford Division Grange, No. 8.

[Perhaps we should not have inserted the communication signed "Brant" in last issue. To act fairly we insert Mr. Good's reply.]

Shearing Sheep.

SIR,—As there is a diversity of opinion as to the propriety of agricultural societies fixing a specific time that sheep must be shorn on or after to be eligible to take a prize, and after watching the working of such rules for the last fifteen years in different societies, I have failed, with a good many others, to see any good result from such a rule. With a few exceptions, those who advocate for such a rule strongest are not generally directly interested in the exhibition of sheep, but being placed in office are anxious to show their authority as law-makers; or, perhaps, they have heard their friend or neighbor complain of getting beat at the fair because others had shorn earlier than they had and had the advantage in wool—a common excuse for a poor sheep. Such a rule might be all right if exhibitors would conform to it; but it is very evident a great many do not, and instead of being a protection to the honest exhibitor, it acts as a bonus to the dishonest one. Now, if there is any advantage to be gained from shearing before the 25th April, why should any man be deprived of it? and to shear much before that time I do not think would add to the appearance of a sheep at show time, unless it was a very poor woolled one. Get good, competent judges, men of experience, and they will not be deceived by a month's wool. The rule is no protection to the inexperienced man; for if the best or show sheep were all shorn according to such a rule, the poorer ones can be shorn as much earlier as the owner sees fit, and taken to the fair not for exhibition but for sale, and when the inexperienced purchaser comes along he gets beat, because he thinks he is getting a heavy fleece at a comparatively low figure. Then, again, the 24th April is a very unseasonable time to shear sheep; about the time they are let out to grass to be stripped of their winter clothing and exposed to the sudden changes of weather is very injurious; either earlier while they are still housed, or later when the weather has become more warm and settled, would be much better. But while everybody expects that everything on exhibition is shown to the best possible advantage, and exhibitors are allowed to stub and scrape the horns of their cattle and oil their pigs, and use every device that tends to beautify their exhibits, I see no tangible reason why the exhibitors of sheep should be made an object for special rules and regulations. But if necessary at all shows, great and small should have one uniform rule, and that of itself would aid materially in the practical working of it. Would be pleased to hear from others interested in the above subject.

J. J., Abingdon.

SIR,—I maintain that there is no such thing as worm in the head in sheep; it is simply a stoppage of the blood. A simple remedy is to cut the veins under both eyes and pare the toes of the front feet till the blood comes. I have had many cases in this neighborhood, and have been successful when the animals were given up to die.

A. C., Harloch, Ont.

The Agricultural College.

SIR,—I think you were hardly justified in your severe strictures on the fall sale of fat stock at the Ontario Agricultural College at Guelph. In a pecuniary point of view it was a failure, but that very failure will serve as a guide to farmers who may have stock to fatten. The principal fault appears to be in selecting cattle too young to have attained their full growth, so that part of the feed was required in building up bone and muscle instead of laying on flesh and fat. As for leasing the farm to a company of practical farmers, that would tend to defeat the very object for which the College was intended, viz., for the education, physical and mental, of our farmers' sons. Such a company, if formed, must be conducted on the commercial principles of profit and loss. They might take farmers' sons or others to teach them farming, but to be a source of profit thews and sinews would be of more consequence than mere brain power. I consider our Provincial Government deserve credit for their intention to introduce during the present session some measure calculated to place the College on a permanent foundation. I agree with your correspondent, J. P. P., of Hespeler, in thinking that it would be an improvement on the present system to elevate the standard of admission, so as to do no work there that could be attended to in our common schools. If that were done, an extension of the course for a third year would be less necessary, although still desirable. Besides, farmers' sons who wish to work at home during the summer can attend a winter course of lectures, whilst during the summer the students are paid 10 cents per hour for working on the farm, which, if they are steady and industrious, will go far towards defraying their expenses.

A. C., Guelph, Ont.

SIR,—I send you an extract from an English paper respecting Iowa. Can you give an opinion as to the comparative advantages of that country and our Northwestern Territories for an English emigrant worth (say) from \$15,000 to \$20,000 capital? What would you advise an Englishman with that amount of money and little or no experience in farming to do—a man having a number of sons growing up, and a wife and daughters accustomed to city life? The eldest available boy, being about 17 years old, is now at the Guelph Agricultural College.

C. H., London.

[The extract sent contains a very favorable account of one of the States, in which the profits are shown to be large and risks small. It admits they cannot raise wheat equal to our Northwest Territory, and also states that the writer purchased corn last year at 12½ cents per bushel. We would advise your English emigrant with that amount of capital to keep a fast hold of his money for one year after arriving in America; to take a small house near where his fancy leads him to live; part with his money only in America on undoubted security, if he is able to discern; put his boys to work for their living with a good farmer; live within his means, keeping his expenses so that he can spend about half of his income in examining different parts of America and observing the ways and habits of the country; learn to adopt them, abandoning English ideas and English plans as much as possible. This is very hard to do. Make no ostentatious display; be very cautious about letting people know what you are worth. The elder girl might go to the best farmer in the neighborhood, and become as one of the family, if she were willing to make herself useful and learn what is wanted of a farmer's wife. By adopting such a plan he might be worth twice as much in three years as he would be by investing with the first oily-tongued speculator or agent that he may meet. Travel, observe and wait is our advice.]

In reply to a correspondent who asks for information as to the utility of variety in feeding, we give the following from an exchange: "It is an established fact that a single kind of food is not enough for the best growth, health and comfort of animals. Like ourselves, the stock which we keep does relish a change of diet—thrives better with a change of pasture. Coarse fodder should be mixed with that which is of a finer nature, and the highly nitrogenous fed with substances weak in nitrogen. It is this love of change that makes the colt, cow and even the oldest horse feel glad when turned into a new field."

Black Currants.

SIR,—We have some black-currant bushes which have been planted for seven or eight years and have borne no fruit, though quite healthy and flower every year. Could you inform us what to do with them.

B. C., Meadow Farm.

[Dig them up and destroy them; they are of no value at all. There are many thousands of this worthless variety of black currant disseminated over Canada and the United States which have been sent out as true Black Naples. Its distinctiveness from the genuine is only known to a few. We have no doubt to-day there are acres of good land in the country planted with this variety, that for all the return they will give might as well have so many thistles. There is no explaining now how it came to be introduced, but we think it a chance seedling, which from its growing so vigorously and throwing up so much fine wood for propagating, that it has crept in, and increasing yearly has nearly displaced the genuine. The evil has been in existence for a great many years, and we doubt very much if there is a nurseryman in the United States whose stock does not consist principally of this variety. The reason it has not been detected sooner is, that there this fruit is not such a favorite one as it is with us, and consequently no great attention is paid to its cultivation; but we now know attention has been directed to it by the following incident which we give, and we trust soon the evil will be remedied:—A gentleman living near Toronto desiring to grow the fruit for profit, purchased several thousand plants from a well known firm of tree dealers and planted them on his place. After growing several years he noticed that the majority of the plants produced no fruit; he accordingly notified them that the plants were not as he ordered, and they would have to make them good. Being surprised at this state of affairs, as they had filled the bill in good faith, he brought over with them a gentleman well known for his reliability and experience in nursery business to examine the stock in the growing season. He examined them, but reasoned that the plants not now in bearing must have borne fruit the previous season. One of our staff, being an expert in this line, was sent for, and on examination of the plantation pronounced one-half of it as being entirely worthless, and convinced those present of the difference between the real and the spurious. The genuine Black Naples makes a short, thick growth, upright, and having plump white buds. The other is a very rapid grower; willowy; leaves narrower, more serrated and pointed than the true variety, and has reddish buds. In the spring it promises to be very fruitful, throwing out a long string of blossoms, but all the fruit that ever appears is a few small black berries about the size of gunshot.—HORTUS.]

Prickly Comfrey and Pearl Millet.

SIR,—Your issue of this month, page 12, contains remarks on prickly comfrey, which induce me to address you, giving my experience on its cultivation and use.

In 1878 I bought four pounds of the root, cut it in pieces the size of a white bean, making about 100 cuttings to each pound; planted in rows of twelve square rods, having the plants three feet each way apart, and giving each hill a little barnyard manure. This last year (1879) I set out an equal space, so doubling the lot. All the cows did not take to it at first, but as the fall came on they all eat it well. This last year (1879) a 3-year old Ayrshire bull was kept in the stable, having a bushel basket of the leaves three times a day, without other food, and did remarkably well, eating it greedily. The yield has been two cuttings the first year and four the following year. The result thus far is to me satisfactory.

The flaming accounts in the American agricultural papers of pearl millet, giving, as it was stated, five cuttings during the season, yielding 95 tons of green or 16½ tons dry per acre, induced me to try it on a small scale. I prepared a quarter of an acre, spreading seven loads of barnyard manure, and sowed in drills twenty inches apart; but instead of the above yield with five cuttings, I had only one, on the 29th September, of about 600 pounds dry, or 11-5 tons instead of 16½ tons per acre. This return will about pay for the seed, which cost 75 cents per quart, but not for labor or manure. I shall not try it again.

G. E. J., Dunham, Que.

Oshawa, Ont.

SIR,—Seeing your many useful communications from various sections, I thought one from South Ontario might be acceptable. The most of our land is a clay loam, of pretty even quality, though somewhat heavier toward the lake shore. We follow a mixed husbandry. For the past four years our crops have been very poor, which has caused the farmers much embarrassment, and was the true cause of starting a Farmer's Club in this town a year ago, which has continued ever since, with the exception of a few months at midsummer, and has been productive of the best results. The Club meets once every two weeks, the sole purpose being the discussion of farm topics and the farmer's interests generally, which have been hitherto ably and practically treated. Much benefit has been derived from a lecture delivered by W. F. Clarke last winter on clover, which was very practical, and we again wish to engage this gentleman to deliver lectures on agriculture. The most important facts brought forward by us are that clover must be grown more extensively, if we wish the productiveness of our farms to continue. Artificial fertilizers have been tried with varied results, but most of us agree they are too costly for general use. Salt is used considerably alone, and also mixed with plaster. The results are generally satisfactory, but barnyard manure is considered the great staple, and renewed care is taken of it. The approved plan with us for growing cereals is to top-dress and harrow the manure in. The majority of the meeting are decidedly against growing hay or oats for sale, but maintain they should be fed on the farm. Extensive root culture is considered very profitable by many, and should in all cases be fed on the farm. Two-rowed barley is attracting attention and growing in favor. Black-eyed peas are grown extensively, and are a very profitable crop, but do best on the heavier soil. The varieties of wheat most in favor are the Menonite, White, Russian, Baltic, California and Arnecta, which is almost midge-proof.

The Club has had the effect of making us more watchful in our farming operations. Much more attention has been paid to agricultural papers, and great benefit has been realized from hearing the views of the more experienced and successful farmers. The club is now on a firm basis and highly appreciated. Other clubs are being formed in adjoining vicinities as the result. There should be at least one well-attended club in each county.

T. W. H., Oshawa.

Kansas.

SIR,—We have heard much of the profits to be made in Kansas and other western States from farming and stock raising, and some farmers' sons having been induced to forsake Canada for that country. Would you be kind enough to insert in your paper the following extract from the New England Farmer, telling some truths about Kansas. What the writer says of New England is even more applicable to Canada.

A. C., Lindsay.

"Having lived four years in Kansas, the present Mecca of the stock grower and dealer, and having observed carefully the results of this branch of farming there, I feel prepared to form a fairly reliable opinion of the comparative merits of the two sections for stock farming. Knowing what I do of the West, I must say that it falls far short of the ordinary conception of that section of country, as a cattle raising section. One acre of well kept pasture among the well-watered hills of western Massachusetts and other New England States is worth four of Kansas grazing land and furnishes as much feed, of a much better quality, to say nothing of the other advantages in the way of superior water, shade, &c., presented by the former. The prairie grass presents a great want of continuity, so that scarcely more than half the soil or surface is covered, and the grass is coarse, hard, and far inferior to the fine, rich, velvety product of the pastures on our hills here in New England. Winter feeding in most parts of Kansas and other Western States north of Texas is equally necessary and for nearly as great portion of the season as here. The hay used, being made of the prairie grass, is of a coarse, inferior quality, and large amounts of grain are required to be fed in winter by the Kansas stock grower, to keep his animals growing and increasing in flesh. Shelter in winter is quite as necessary there, though cattle are much neglected in this respect, and on the plains in the western part of the State the large herders lose great numbers of animals every severe winter that occurs."

Pear Orchards.

SIR,—Which is the best kind of soil to plant out a pear orchard, sand or clay, or is the pear a profitable fruit to raise—i. e., in large quantities? If so, please name some of the best varieties—one or two early and one or two for the fall, the rest winter varieties. As I have so much faith in the ADVOCATE, I thought I must ask your opinion.

W. H. A., Weldon, Ont.

[The pear succeeds best in a clayey loam, well drained, or a sandy loam with clay bottom. We have seen so many fine pear orchards flourishing alike on sand and clay that we hesitate to lay down any rule as to soil, but confine ourselves to this fact—that it flourishes anywhere (no matter the soil), wherever good cultivation is given. By good cultivation we mean having the land in good tilth before planting. Apply plenty of manure (the pear is a good liver), and particularly plenty of bone fertilizers, ashes and lime. The pear is a profitable fruit to raise, but from its liability to blight is in some seasons a little uncertain. Taking it all round, however, it proves a good investment, and the varieties most profitable are, first, the Bartlett—and we feel inclined to say plant nothing else but the Bartlett, but this would be an injustice to such varieties as Sheldon, Flemish Beauty, Louise Bonne, Howell, Beurre d'Anjou, and Beurre Clairjeau. These can all be recommended, grown as standards, with Duchess d'Anjouleure as dwarf. We would not recommend planting early or summer kinds in Canada, as the early fruit from the States completely glut our market, and brings our prices down to nothing. If sufficient protection should be given and shut this fruit out, then it would be wise to grow such varieties as Manning's Elizabeths, Edmund's Early and Osband's Summer. Clapp's Favorite we recommend, anyway. The tree has the fault of coming into bearing slowly, but we think it makes up for this by bearing abundantly afterwards. Souvenir du Congrès also has its claims as an early, large fruit, but we fear the tree is entirely too delicate for our climate, unless in some very favored locality. To recapitulate, plant Clapp's Favorite and Edmund's Early for summer; Louise Bonne, Bartlett, Flemish Beauty and Sheldon for fall, with Beurre Clairjeau, Josephine de Malines, Winter Nelis and Beurre d'Anjou for winter.]

Spring Wheat.

SIR,—I enclose two heads of spring wheat. I have about a hundred bushels from five acres; I sowed it too thin or it would have done better. Most other kinds of wheat yielded but ten bushels per acre in this vicinity this season. I would like all the information you can give concerning it, the name, etc. Some call it "Imperial" and others different names.

W. M., Woodville, Ont.

[The wheat you have sent is now known in some sections as Arnecta. We believe it to be the same as was formerly known as Wild Goose; also, Rice and Chilian. It is of a hard, flinty nature, and the flour is generally considered inferior. Local millers, as a rule, will not buy it readily, though grain shippers buy it at from 3 to 8c. per bushel less than other spring wheat. Many practical farmers sow it extensively in various sections of Ontario, on account of its superior yield for several years over many other spring wheats; they claim that the superiority in yield exceeds their loss in the price per bushel.]

Nova Scotia.

SIR,—I have subscribed for the ADVOCATE for three years, and consider it an excellent agricultural journal. I think it would be well if more of our farmers would become subscribers, as many people appear to think that to go through a certain routine is all that is required to secure a good crop, and if they fail they exclaim that "farming is no business!" I suppose that here we have not such good soil as in Ontario, but the farmer who thoroughly understands his business generally receives fair remuneration for his toil. The raising of wheat has proven much more successful here of late than in former years; the midge in many places not injuring it to any serious extent. The largest yield in this township being twenty bushels to one sowing. If we could get the protective tariff repealed, or at least the duty taken off corn, I think it would be well. Long life to the ADVOCATE. I enclose my subscription, \$1.00.

R. D. F., Bass River, N. S.

Duty on Corn.

SIR,—I am sorry to notice that you are in favor of repealing the duty on Indian corn, because by lending your voice to such a change you are helping a few feeders at the expense of thousands of farmers, if you are successful—farmers whose cause you usually champion so stoutly. The reasons why I would oppose a repeal of the duty on Indian corn are these:—

1st. We can raise a sufficient amount of corn in that part of Ontario south of a line drawn from Hamilton to Sarnia and in the Niagara peninsula to supply the wants of the whole Dominion, if we have a market secured, as it is at present, by a sufficient duty. And we can make it pay better than any other spring grain. Forty bushels of shelled corn, worth, as it is at present, 60 cents per bushel (\$24), can be grown upon an acre of sod that will not raise 40 bushels of oats, worth say \$16, or 25 bushels of barley, worth at present prices \$15. And I consider the stalks, if well preserved, worth enough more than a crop of straw to pay for the extra work in cultivating and housing the corn. Now, if we can raise enough corn to supply the Dominion, and if the duty increases the price until we do raise that amount, why, in the name of justice, should the farmers—who will have to pay dearer for manufactured articles that are not manufactured in sufficient quantities to supply the wants of the country, until they are so manufactured, and which higher price we are perfectly willing to pay as the bonus for a home market—willingly throw away whatever increase in price the duty may be the cause of? And for whose benefit will we throw it away? First and chiefly, the whiskey distiller, who uses by far the greatest amount of Indian corn imported; second, the city man who keeps horses, and who is getting in many cases more for his manufactures for the very same reason that causes the farmer to get more for his corn; and, thirdly, the feeder, who may possibly be a farmer also, but of this class of farmers who buy feed there are very few. What, then, do we find? If the duty remains, an increased price per bushel is put into the farmer's pocket for every bushel of Canadian corn sold. If the duty is removed, who gets the benefit? Chiefly people who are not farmers, but to a great extent whiskey distillers. How, then, can you, the *farmer's advocate*, urge such a change?

2nd. The higher the price of corn the more oats will be consumed and the better the price; and as oats are a staple of the country at large, this should be a very serious objection. The repeal of the duty upon corn would in a great measure nullify the duty upon oats.

3rd. As it is generally considered that a reciprocal free trade in agricultural products with the United States would be advantageous, one very strong reason why the people of the United States would wish for such reciprocal trade with us would be removed were we to repeal the duty upon corn.

Now, as regards fattening cattle, it would not seem to be a very profitable business, if we were to take the experiments at the Model Farm as a guide, and such would be a fair guide, I presume, as regards cost of feeding, if the feeder bought all his feed, &c. And were we to allow that the 16 head there experimented with could have been sold for two cents per lb. above cost, instead of 9-35ths of a cent per lb. above cost, there would still be a deficit of \$56.25, which would be very little more than counterbalanced by the value of the manure. Now when we consider that with five months' feeding cattle can rarely be sold for two cents per lb. above cost, it must be apparent that it would be a very poor investment to buy both cattle and feed under these circumstances. But to the farmer who raises his own feed the case is different. The feed is not worth so much to him as it costs one who has to buy it by the cost of transporting it, which is a large part of the total cost of roots, hay, straw, stalks, &c. In fact, it is apparent that the farmer can feed cheaper than any one who buys the feed. And, moreover, it is absolutely necessary that the farmer should feed, in order to keep up the fertility of the soil, at no matter what cost. It must pay in the end by increased fertility.

Let it be granted, then, that the farmer alone can feed profitably. What difference can it make to him whether his corn or peas are worth 50c. or 60c. per bushel in the market if he has to buy none to feed? He can fatten just as many cattle upon a given quantity of land at the one price as the other; but the increase of price caused by the duty

will make a very material difference to the farmer who has a surplus to sell. You may say some farmers find it pays to sell barley and buy corn. The question then resolves itself into this shape: If there is no corn imported, then every bushel of corn sold is sold by a farmer, and said farmer gets the benefit of the increased price. But not nearly every bushel bought is bought by a farmer; so that at any rate more farmers would be benefited by the increase of price than would be by the decrease. Then let us have the advantage for the greatest number.

I would like to hear brother farmers express their views through your widely circulated and widely appreciated paper. I have heard many of your subscribers in this township express their dissent from your views regarding a repeal of the duty upon corn.
E. D. S., Saltfleet, Ont.

SIR,—We congratulate you on the course you have pursued. You are the true farmer's advocate, because you defend the farmer from injustice and plead his cause most nobly. Be fearless; be independent. Expose corruption whenever and wherever brought to light. Though a good Conservative, I go for a repeal of the corn duty. I go for retrenchment in every department affecting the farmer. I wish you every success, and hope your paper may be more prosperous than ever.
P. D. S., Milton West, Ont.

Poultry House.

SIR,—I have in contemplation building a poultry house. I will give you my plan in brief, which is to place a balloon frame on a stone wall, the foundation two feet below the surface. The part above ground to be laid in mortar. The frame to be lined on both sides with inch boards, leaving a space of about 10 inches to be filled in with grout 6 feet high. The rafters projecting over this wall 2 feet, to be lined on the under side to admit of white-washing, forming a vacancy between the roof and ceiling. The south side to be 10 feet high filled in with glass. How much of the front should be covered with glass to admit of sunlight, so arranged as to give free ventilation at the top? Would it be better to divide in three sections to separate the fowls? Would the vacancy filled in with sawdust or ground tan-bark be better than grout, or would a solid stone wall laid in mortar be preferable? If I should build of grout, would it be advisable to take off the inside lining so that I could white-wash the wall? How many fowls would such a building 60 feet long by 12 wide, keep in a healthy condition during winter? In summer they will have the run of my orchard of 7 acres of apples, pears, plums and cherries.

By answering the above questions, with any suggestions you may make to me by way of improvement on my plan, you will much oblige.

H. V. H., Cressy, Ont.

[In reply to our offer of a prize for the best essay on the farm management of poultry, the essays now being received will give all the information required by H. V. H.]

SIR,—The FARMER'S ADVOCATE AND HOME MAGAZINE is a useful, interesting companion for either sex. I have been to four farmers, thinking they would like to subscribe; waiting to hear from them has spoiled my good name for prompt payment in all my business. You may continue to send the ADVOCATE. I think by my taking it they may yet feel ashamed to borrow mine. You may insert my opinion of the farmers here. They are like drones in a hive of bees; some are thriving, industrious farmers, and others are perfect drones. Mr. H—t is an old friend of our family; I was pleased to meet him. I have built myself a fine cottage, and have a good garden and 190 hens to take up my time. No family; live alone—happy with my ADVOCATE and three newspapers. I like improvement.

Mrs. A. J. A., Westfield Station, N.B.

SUCCESSFUL TRAPPING OF THE CODLING MOTH.—Began June 23, 1879, and ended August 2, 1879. Smallest daily catch, 1; largest, 205; whole number caught, 2,831; daily average, about 69.

L. Crosby, Markham Nursery.

Fattening Steers.

SIR,—When reading the report (in your December number) of experiments on fattening steers at the Ontario Model Farm, some thoughts crossed my mind which it may not be amiss to present to your readers. The first thought was that the experiments on the Model Farm are not any safe guide for farmers generally to go by. To casual observers the natural conclusion of the report would be obvious, viz., that it does not pay to fatten cattle, because if you have the stock without buying they are or should be worth as much in the market to sell as they would be to buy, therefore it would pay better to sell your stock and your hay and grain and buy fertilizers. But in my short experience this rule would not hold good, for I have found stock-raising and feeding (on a small scale) to be very profitable, exclusive of the increased value of the manure. And if the same care and economy be exercised, why should not it pay as well when conducted on a larger scale. It should be remembered in writing all agricultural articles that no two farmers are situated just alike; thus the same rules will not apply to all. I am convinced that it is better that farmers should raise their own stock for feeding than to buy, as the little sour milk, hay, meal, &c., which it requires to bring up young cattle in good order, would not likely realize the same value in any other way. It appears to me that five months was a very long period for the fattening of steers already in good condition; also, though I am ignorant as to the relative qualities and value of different kinds of food, I think that oats might have been more profitable food. Then the time of feeding may have been winter, when, without artificial warmth, cattle will not take on flesh nearly so readily as in warmer weather. The cost of attendance and bedding would be to very many farmers a superfluous item, it being frequently the case that farmers do not know how to use up all their straw; and as to attendance, in all probability our time would not realize anything if not thus engaged. Of course all this refers to feeding on a small scale, and will not apply to stock-raising and feeding as a specialty. My remarks will, I think, apply to those farmers who feed off two or three or half-a-dozen head annually.

As an offset to the discouraging experiments referred to, I feel tempted to give a little of my own experience in feeding cattle this year. I had a two-and-a-half-year-old steer, which was doing well on good pasture. I fed him oats (whole) for six or seven weeks, about eight quarts per diem, and then butchered him. He dressed 740 lbs. beef, 100 lbs. hide, 36 lbs. tallow—total, 876 lbs., at 5¢c. per lb., realizing \$49.27½. The best offer for him in August by a butcher wanting beef was \$35. I then commenced feeding a heifer (farrow), also in good condition on good pasture, six quarts per diem; continued for six weeks, then butchered her. She dressed 458 lbs. beef, 53½ lbs. hide, 26 lbs. tallow, and realized \$29.62. She was two years old when killed. The common price for store cattle that age was \$14 to \$17.

I am so well encouraged by this as well as previous years, that I intend to feed off some every year, and though I may not always be quite so successful, I am confident that with careful and economical raising and feeding any farmer can realize a good profit, besides keeping up the fertility of his soil. I hope the next experiment on the Model Farm will be of a more encouraging nature to us as a class.
BEEF, Bertie, Ont.

SIR,—Could you inform me what is beneficial for swelled leg in horses? I have a mare 4 years old that has a bad leg of about a year's standing, though it is not as bad now as it was last winter. When she is at work it settles down almost as small as the other, but swells up when she stands in the stable. I lent her to a neighbor a year ago and he drove her through the river when she was warm, after which she took inflammation, then scratches and settled in the leg.

A SUBSCRIBER, Newbridge.

[Give her a mild purgative, composed as follows: Aloes 8 drams, carbonate of soda 1 dram, ginger 1 dram. Follow this up with equal parts of sulphur and nitrate of potash, giving two drams of the mixture each night in bran mash; also poultice the leg nightly with hot bran or boiled turnips—the turnips are preferable. Give exercise every day. When the swelling is gone down after work it would be well to bandage part of the leg, and if the cracks are deep in the heel apply some hot green salve after removing the poultice.]

Sugar-Beets for Feeding.

SIR,—Having taken a great interest in all that has been said or written about the cultivation and value of the sugar beet, and having seen quite a few inquiring about them, I thought I would tell what little I knew about them. I put in a small piece last spring, not quite an eighth of an acre. Although the season was a very bad one for roots in this part of Kent, it being so very dry, I had 100 bushels; but owing to the very early frosts which came on so severe before I got them pulled, I was afraid to pit them away for spring use, so I have been feeding them all along to my cows. I never saw anything to equal them in making cows give milk, except boiled beans. I would give the cows two or three feeds of carrots once in a while, and I could notice them fail in their milk, the feeds in both cases being equal in bulk. The difference in favor of the beet, in my estimation, must be over 100 per cent., as I had carrots growing alongside of the beets, and they did not turn out half the quantity as did the beet. Besides, they come up so much sooner after being planted that the weeds do not get a start of them, like they do the carrot. All kinds of stock, horses, pigs, sheep and even fowls, devour them greedily. There is no table beet that can beat them, or I can safely say equal them, for pickles. I write this, hoping it may be the means of inducing some more to try a patch of them. I think if they once try them they will not regret having done so. Plant them a little closer than you would mangels or turnips, as they do not grow quite so large. The tops are quite small. Ask for the white sugar-beet seed.

A. H., Weldon, Ont.

Canning Peaches.

SIR,—I am extensively growing and canning tomatoes and corn. I have been engaged in this business now for several years, and since the high protective tariff has been put upon American canned fruits coming into Canada, I have thought I could commence canning peaches, provided I could obtain a suitable variety of Canadian-grown peaches at prices that would make it an object for me to start. I have understood peaches can be successfully cultivated along the southern borders of Western Canada, but to what extent I have not as yet ascertained. Should you in your travels obtain any direct intelligence in relation to the fact, and give me the names of some of the growers, etc., I shall feel very grateful for the kindness.

J. F. O., St. Mary's, Ont.

[This query, while of interest to all, concerns more immediately those engaged in fruit-growing. We hope to have a reply from some of them in the ADVOCATE.]

SIR,—I take the liberty of sending you by post some circulars of the "Anglo-Canadian Farm Agency" which has lately been established for the purpose of giving facilities to farmers and others wishing to purchase suitable farms on their arrival here from the Old Country. Unfortunately, many Englishmen are prevailed upon by the representatives of railway agents and others from the States to settle in that country, in preference to Canada, where they would find equal advantages as regards farming, and superior in many other very important respects; and therefore it is to be hoped that all who take an interest in the future of Canada will, especially at the present time, do all in their power to induce a desirable class of settlers from the Old Country to make Canada their future home. Much may be done by those having friends and correspondents in England, and I hope to be able to accomplish a good deal in that way myself.

H. F. P., Oakville, Ont.

SIR,—How can I cleanse sugar-cane and make it up into sugar and syrup? I had a small piece planted last year, and if I can make this into good sugar I intend to plant more extensively.

C. S., Odessa, Ont.

[Some few months ago we gave an article on this subject. It is now late in the season to take up the question, nor have we the space at present. We would merely say the cane is pressed in the mill; the juice is then pumped into the desiccating vats, and from there into evaporators. The evaporators allow the juice to be concentrated without undue exposure to heat, the scum is readily removed and the juice made into a syrup. We intend taking up the subject fully at an early date.]

Fermenting Feed.

In reference to an article on Fermenting Feed for Stock, with an illustration, in the last number of the ADVOCATE, we have received from Mr. Stone the following reply to our questions, which was received too late for last issue:

I beg to say that the quantity differs according to different persons' ideas, as also the quantity of roots they may have to use. When a party has a large quantity he feeds more freely. I never kept a correct account of quantity, but had it mixed more or less as was required for the feeding of different animals—generally a quantity of hay, or hay and straw, cut, then spread it about 6 inches deep over feedhouse floor; then set the pulper to work, which took one man to throw the roots in, one to fill the pulp into boxes, and another to carry it away and throw it over the cut hay, etc. And if we wished more or less of the pulped roots, the man emptied the boxes of pulp thicker or thinner on some parts; so in like manner with bran or meal as required; then another layer of cut hay, and so on until four or five feet high. I found the cattle eat it best when it began to ferment. We generally cut enough for three or four days at a time. A fair quantity of roots pulped to mix with a ton of hay, 30 bushels. It is such an open question parties must determine the quantity they wish to feed. FRED'K W. STONE.

Guelph, 3rd January, 1880.

SIR,—Knowing the profit from reading your paper, I showed it to some brother farmers. Some have become subscribers. One said he was taking more papers than he could read. One man told me that he sent \$1 to the States last year, and got no account of money or paper. It was one of those light, trashy novels.

G. F., Aberarder.

Homes for Settlers.

SIR,—Seeing that you invite correspondence from your readers, I will take the liberty of sending you a few lines, as I wish to ask for some information concerning the new parts of our Dominion. I am twenty-three years of age and single, and wish to know where I can go (in the new parts of the country) to get the best land and best situation. I am hearing reports of the different sections of unsettled country nearly every day, but am unable to decide what part is the best for the young settler with a capital of two or three hundred dollars. My attention has lately been called to Muskoka, in an article in the Montreal Witness over the signature of Mr. Archibald Thompson. He invites all who want a home to go to Muskoka, and calls it the "Eldorado of Ontario." Now, would you or some of your many readers kindly give me a little information concerning that part of the country? By giving this your attention you will greatly oblige.

C. T., Cressy, Ont.

[If you are not experienced in Canadian farming, we would advise you to go for a year to a good farm, or until you become acquainted with it, and save your money till then. Try by your money for the future, and for the present learn how and where you may after a time use it to the best advantage. In Muskoka some farmers have acquired an independence, and others have entirely failed.]

SIR,—Will you kindly inform me what is the matter with my peach-trees. I am afraid of the yellows. I noticed this once before, but it went away, and now it has appeared again on almost all my trees. I think myself that they are chilled. Please send cure. Those that had it on last year have not got it this year. It is the first leaves that come out that are affected in the spring, and the after-growth does not show it at all. Enclosed find some leaves for examination. It does not come on the budded fruit, being only on the natural fruit.

G. B., South Zorra, Ont.

[The disease affecting your peach-trees is, as you surmise, the yellows, as far as we can judge from your letter. Cut off every twig affected as soon as the yellows appear, and burn. Strew the ground around the tree with salt as far as the roots extend. If this remedy fails, as it sometimes does, grub up the affected trees and burn them. The disease is contagious, and spreads from tree to tree.]

Prickly Comfrey.

SIR,—I wrote to the editor of the American Agriculturist about this plant, and he says he has no reason to change his opinion of it, and that he considers it a very valuable addition to the forage plants of the country. Comfrey is recommended by the U. S. Board of Agriculture. There is, however, a great difference of opinion as to the real value of comfrey. There is no doubt that it is easily propagated and grows luxuriantly, but while some say it is very valuable for feeding stock, others say stock will not eat it under any circumstances. Chicago Farmer's Review says of this plant: "The prickly comfrey of the Caucasus, as a forage plant, is attracting great attention in England, and is certainly worthy of experiment in this country, especially at the hands of small farmers and dairymen. It does not seem to be a food that animals at first have a great liking for, but they 'learn' to eat it, and it contains a large percentage of nitrogen, about double that of Indian corn. It may be cut from four to seven times in the course of the season. A writer in the Agricultural Gazette says of the comfrey: 'We have in this foreign plant one of the earliest, heaviest, and most useful spring fodders known to agriculturists, and we may add the cheapest to cultivate.' The sets are planted in England in November, some three feet apart, and about two inches below the surface. In May the first cutting can be made, if the winter has been open like the present one, the plants yielding five or six pounds each. Each succeeding cutting will be heavier."

A. B., Point de Bute, N. B.

[Our advice would be that farmers who may be inclined to plant prickly comfrey would try it on a small scale, a few rods at first, and by this means be enabled to judge for themselves. Experiments are necessary to determine whose opinion on the subject is correct.]

SIR,—Believing you to be an honorable and impartial man, I wish to give my experience, through the medium of your valuable paper, on "prickly comfrey," as opposed to the letter of "A. P." in your last issue. He has evidently written on a subject which he is altogether unacquainted with. I would answer to what he quotes from "Old Farmer," what farmer does not know that the greater number of domestic animals have to be learned to eat turnips and other kinds of roots?

Just imagine any farmer crying "swindle" because his cow, horse or sheep will not fill themselves full of turnips the first or second time they are offered to them. Here is a plant that is well known in England, France, the United States and parts of Canada as one of the best soiling plants. He truly has undertaken to carry a heavy burden indeed if he thinks he can write up against this matter. I have fed a large quantity of this plant in the past two seasons. Seven cows were fed 60 lbs. a day for about two months, while running on pasture in the day-time, and it increased the flow of milk just double and very much richer than formerly. I had no trouble whatever in learning them to eat it. Six of the cows broke into the plot of comfrey, and eat so much that I was very much afraid that they would be injured by it. On land that will bear good mangolds or turnips, with good cultivation it will grow from 80 to 100 tons per acre. And this would give eleven cows 100 pounds a day for 180 days; and one-twelfth part of an acre would give one cow about 80 pounds a day for the same time. Cuttings may be made any season by the 1st of June, and continued until hard frost and snow sets in. These facts speak for themselves. Trusting that you will publish this for the good of your readers.

SUBSCRIBER, Durham, N. S.

SIR,—Could you or any of the readers of the ADVOCATE give me a plan of an apple-house, as I intend building one this summer? I will give you a plan of one I intended putting up. The building to be 30 x 18 and 8 feet high, built of studding 2 x 5, and filled in with concrete the width of the studding, and boarded and plastered on the outside and inside—the apples to be put in boxes, to hold about three barrels each, along each side of the building, and a hall in the centre. If you or any of your readers can give me a better plan, I would be obliged.

A. R., Oakville, Ont.

[We would be thankful to any of our subscribers for the required information.]

SIR,—Will you please inform me what kind of grass seed is best to sow on creek flats to last for a time? I have tried timothy and clover, but they soon ran out. Clay soil. W. L., Hawksville.

[See reply to J. C., Darnley, P. E. I., in last issue.]

Our Prize Essays.

The first of the series of \$5 prizes was offered for the best reply to the following letter:—

"SIR,—It is with great pleasure I now write to you to ask through your paper for advice on a few things in farming. The first subject will be the use of lime, when and how to put it on. I will give my opinion of it, and should like to hear the opinions of others. I was thinking of putting it on the land just before I sowed my wheat, and cultivating all in together. In fixing the lime for sowing, as it will be unslaked, I suppose I shall have to slake it before sowing? How much lime should I put on my land per acre? Some parts of the farm are clay, but the most of it is clay loam. I think ten bushels per acre would be plenty. Will salt and ashes do to mix with the lime before sowing? Should it be sowed after the grain is up? Should salt be sowed on barley land when you sow the barley or when the barley is up? I have a field for barley next spring, but I intend to seed it down; will the salt hurt the young clover? I should like to know if it will pay to seed down every field each year? I intend to do so with all except the land plowed up from sod. I shall plow up in the fall the land I seed in the spring—will it pay to do so? You will find my questions somewhat mixed in my letter, but you must excuse it this time, as it is the first letter I have written on any subject like this.

"H. M., Newcastle, Ont."

We received such a large number of really valuable responses that we found it a difficult matter to decide to our own satisfaction which essay was most meritorious. We, therefore, concluded to publish six of the best, as they all contain so much valuable matter that every real farmer would be benefited by them. To endeavor to act fairly, we selected four in this office, then placed the remaining essays in the hands of one of the best and soundest men that we could think of, that was out of this office, and requested him to select the two that he thought the most deserving. These we now publish. Now we respectfully request the different competitors that have sent in essays to compete for these prizes, to refer to the December, January and February numbers, and send us a post card on or before the 20th of this month, and state which essay they deem deserving of the prize. Neither of the gentlemen whose letters have appeared are entitled to a vote, only the eleven whose contributions we return. They will kindly oblige by sending a post card saying which of the essays, No. 1, 2, 3, 4, 5 or 6, they think entitled to the prize.

No. 5—Reply to Newcastle Letter.

I will endeavor to answer the questions propounded by "H. M.," Newcastle, as far as my practical experience goes. The first subject is the use of lime as a fertilizer. Some 18 years ago, I thought I would give lime a good fair trial on my farm, there being an old quarry and disused lime kiln about two miles from my place. I asked the proprietor if I might have the use of it to burn a kiln flume; he granted my request, and I never regretted it, as the good effects are seen to this day, and, I might say, "bad effects as well," as having about 600 bushels at a cost of 7 cts. a bushel, I put it on pretty thick, and like every other stimulant, you can overdo it. I advise "H. M." not to use more than 40 bushels an acre, and to slake it and spread it at once, as there are spots in one of my fields where I laid it in heaps and left it for two months to air-slack before spreading, which to this day do not produce anything like the quantity of the surrounding soil, having had an overdose. The object of lime is to neutralize the acid in the soil, hence the greatest benefit is derived from mixing lime with peat or mucky soils, or on any soil that is deficient in lime. Lime, like all alkaline or caustic substances, hastens the decay of organic matter, which furnishes carbonic acid and other useful materials for the food of plants. Again, lime is very useful in killing all noxious insects. An application of lime and salt is certain death to the wire worm in wheat; harrow it in with the seed, 20 bushels of lime mixed with 200 lbs. of salt, or even 300 lbs. will be all the better. Lime will have more effect on clay than on sandy soil, as, like ashes, it will render

the land porous and easier worked. By all means mix salt and ashes with the lime before sowing, but do not let the lime come in contact with fresh manure, as it will liberate the ammonia and decrease instead of increasing its fertilizing qualities. I prefer sowing either lime or salt before the grain is up, harrowing it in with the seed. The salt will do the young clover good if sown and harrowed in well. With regard to seeding down every year each field, I may say that for several years back, until the last, we have been troubled so much with drouth that when we got a good catch of grass seed we were too glad to leave it and not plow it up; but if you could be sure of the grass seed taking, it would decidedly pay to seed down to clover every year, as the extra amount of pasture you would have all through the fall would well repay for the seed and labor, and by letting the clover grow up and plowing it under, you could not have a finer fertilizer for the soil in the shape of green plant food. Clover having a very long, deep tap-root, gets nourishment from the subsoil which is never brought to the surface, and contains in the root itself very valuable plant food; and as the large, broad clover leaf draws the greatest amount of its nourishment from the atmosphere, plowing under a good crop of clover recuperates a worn out soil better than any other green crop I know of. I have several times tried buckwheat, which is very good, but when it gets lodged is difficult to get covered, especially if twisted. Clover is in my opinion preferable.

If "H. M." thinks 40 bushels of lime to the acre too much, let him try part with 10, part with 20 and part with 40, and let us know the result. I have found great benefit from 40 bushels an acre, and have applied double that quantity mixed with muck and salt to my orchard, with the most beneficial results. I will be most happy to answer any question "H. M." may desire in regard to lime, as far as my experience leads me.

J. A., Guelph, Ont.

No. 6—Reply to Newcastle Letter.

By putting lime on your land just before sowing your wheat, and cultivating all in together, you will no doubt get all the benefit of your lime and labor. The best results that I have witnessed, however, from the use of lime were obtained by spreading the lime on the land early in the season and ploughing it under, subsequently applying barnyard manure and ploughing under before seeding. The time, however, of applying the lime is, in my opinion, of minor importance, provided it does not come in contact with the manure before being incorporated with the soil. In applying lime it will be well always to bear in mind that lime is in all probability present in all soils—in Southern Ontario at least—in sufficient quantity to supply all plants with their requisite proportion. Hence it is useless, or nearly so, to apply lime for its manurial qualities. And also that lime is one of the most active agents in setting free the ammonia contained in barnyard manure and other vegetable matter; hence the utility of applying lime for this latter purpose to the soil.—For if the ammonia be set free from barnyard manure while incorporated with the soil, it will still be retained by the soil; while if it be set free while in the compost heap, a great portion of it will escape. As regards slaking lime before applying it, much will depend on the amount to be applied. If you apply ten bushels per acre, you will of course have to slake it first; while if you apply two hundred and fifty bushels or more per acre, as some farmers do in this section, you may just drop it unslaked in small piles, as you would barnyard manure, immediately after working down your fallow for the first time. By the time you wish to work your field again it will have become thoroughly slaked even without the aid of a single shower of rain, when you may spread it with a shovel. I much prefer this latter mode of applying it, as it is very unpleasant work to sow slaked lime by hand, I can assure you.

"How much lime per acre?"—That depends partly on the condition of the land but more on your own condition. If you have a quantity of cheap wood on your premises, and limestone within easy access, lime in your case is very cheap, and you may apply say from two to five kilns of five hundred bushels each on a ten-acre fallow. While if lime costs you from fifteen to twenty-five cents per bushel, you will have to be content with less—say from twenty five to fifty bushels, and from such an amount you would probably obtain a greater proportionate return. I am aware that by some two hundred and fifty bushels of lime per

acre is considered an enormous amount, but living as I do in a well wooded section, with limestone cropping out on nearly every farm, I have become accustomed to see that amount, and even much more, applied with most gratifying results when accompanied with a liberal amount of barnyard manure. The majority of the farmers in this vicinity, who use lime, apply it to clay and clay loam, though the effect of a heavy application of lime is more noticeable in after years on clay than on loamy land. I prefer applying lime separately to mixing with any other ingredient, though I see no reason why salt might not be applied at the same time and thus save labor, if the lime is applied in quantity sufficiently small to require slaking first. Salt in this section is usually sown after the grain is up, though some harrow it in with the grain. For myself, I have ceased to use it. No amount of salt that can be sown broadcast by hand at one double cast will injure young clover.

You ask will it pay to seed in the spring the land you intend ploughing in the fall. This depends also on the nature and condition of the soil. If you have a moist sand or sandy loam to seed in the spring, you will in almost any season have a large growth of clover to plough under in the fall, compared with which the value of the seed sown is as a drop to a bucketful. Again, if you have a dry loam or clay in poor condition, unless you have a very moist season you may put the clover in your hat in the fall.

F. H., St. Catharines, Ont.

The Bovine Lung Plague.

We extract the following from the National Live-Stock Journal for January:—

The so-called hog cholera caused deaths of swine to the value of \$20,000,000 to \$40,000,000 per annum; the trichina having driven our hams and bacon out of the market in certain countries of Europe; the lung worms, intestinal worms, scab and foot-rot having depopulated the sheep-runs on large tracts which are admirably adapted to wool-growing; and the Texas fever having caused extensive yearly losses in the middle and northern States. But among all these and many more, one affection stands out as pre-eminently demanding suppressive measures—the lung plague, which has for many centuries desolated the herds of Europe, has invaded our territory, where it has not only maintained itself for thirty-seven years, but has spread three hundred miles from its original centre, in a direction opposed to the steady current of cattle traffic. If neglected, it must take but a short time longer to reach the open cattle ranges of the South and West, whence it will be impossible to expel it. One animal landed in Brooklyn has infected seven separate States. England, with her 40,000,000 of cattle, lost \$500,000,000 in the course of thirty-five years; we, with our 100,000,000, should lose over \$1,000,000,000 in deaths alone in the same length of time. Like all true plagues, this gains new force with every step made in its advance. As the malady is developed in this country by contagion only, it secures an additional advantage with every new animal infected. Every new case of sickness is but another manufactory of the virus, spreading this on the air in countless myriads with every breath expired.

Farmers, have we done our duty for years past in attempting to prevent the introduction of these diseases into Canada? Have our condemners been correct in their statements? Why, if truth shall prevail, have they not acknowledged their error ere this?

A NEW HORSE DISEASE.—A new horse disease, says the Turf, Field and Farm, has broken out in Kentucky. Cynthiana and its vicinity is just now much exercised over a disease which has broken out among the horses in that neighborhood. The early symptoms resemble distemper, and soon after being attacked the kidneys and bowels become involved, and the disease then assumes a fatal form. Many prominent farmers in Harrison county have lost valuable animals from the effects of this new malady, and the rapidity with which it is spreading is exciting considerable alarm. So far, the vets are at fault in arresting it before it assumes its variable phases. From a letter just received from Cynthiana we gather the fact that the disease is a similar type of influenza to that which was so fatal in 1873 throughout the country.



The Family Circle.

"Home, Sweet Home."

OLD ELSPA.

BY MRS. C. L. BANKS.

I was alone in the world—or I thought I was, which amounted to pretty much the same in its moral effects. My mother died when I was so young that I had only a shadowy remembrance of a pale face, and a long, last clasp to her loving heart. I had been my father's pet and darling, and now he was dead too and his will had designated me, just like a bale of goods, to the care and guardianship of his brother, a doctor, whose home lay amongst the picturesque mountains of Cumberland. I was "too impulsive," said the will, and would "throw myself and money away before I knew the value of either, if I had no one to take care of me;" and so when my poor father died in the south of France, where he had gone to winter, Uncle Ritson, who came barely in time to lay him in his foreign grave, carried me off at once to his house on the bleak hill-side, gave me a kiss, as he lifted me out of the stuffy vehicle which had conveyed us from the station, presented me to my aunt and cousins with a "Well, here's Adela!" and told me to consider myself "at home."

It was the beginning of January, intensely cold. The sudden change from a warmer climate had sensibly affected me; I was chilled under all my furs, and perhaps more chilled by the restraining influences of my father's will, having pondered the "too impulsive" all through the journey.

Certainly I was not "too impulsive" on my entrance to my new "home."

Aunt and cousins had met me on the threshold with warm welcomes, pressed to remove my wraps and to make me comfortable. There was a huge fire blazing on the hearth, a tea-table piled with moon-country luxuries, and all that should have made me feel at home; but something was wanting, and instead of responding to their greetings in my own natural fashion, I dropped into a seat, after the first glance around, and covering my face with my hands, burst into tears.

I have small, thin, quick ears. I overheard Aunt Ritson whisper to Bella and Winnie, as she drew them back—"Hush! It's but natural, poor bairn! Leave your cousin alone, lassies; she will come to herself all the sooner."

And I did come to myself; but whether my tears had fallen frostily on their hot hearth, or we travellers had brought a chill in with us, or my own manner did not invite effusion, a certain air of restraint seemed to grow upon us; and when I was shown to the room set apart for me, and left to myself, I flung myself upon my bed, and sobbed in passionate grief for my dead father, declaring that I was alone in the world, utterly alone.

And this feeling grew upon me. Looking back, I am conscious that it was much my own fault, that I had not responded with sufficient warmth and gratitude to the relatives who had made room in their household for one they had not seen since she was a baby, and had met with open arms and hearts.

They had heard that I was gushing and exuberant, a creature of impulse, and finding me reserved and languid, concluded that I, accustomed to elegance and luxury, could not brook the homeliness and retirement of my new life. I was rich, and they were not. They mistook my morbid melancholy for pride, and ceased to press their society or attentions on me, lest I should attribute to them mercenary motives.

I see it all now, but then I was blind. I had another grief at my heart besides sorrow for my dead parent, and I fear whenever my thoughts flew to that lonely grave among the Pyrenees, I questioned the policy which had isolated me from the world in which my hero lived and moved—and prisoned my free soul amongst those unresponsive walls of stone.

In this rhapsody I did not apostrophise alone the four walls of the solid-stone house that, set against the mountain-side, with a background of pine, larch, and mountain-ash, looked so cold and grey, staring with its many lidless eyes from its rocky perch above the straggling lake-village, on the steep, unguarded road-way in front, and the narrow strips of garden ground stretching like green arms on either side.

No, I held converse with the mountains. They were to me the barriers between love and life and happiness, but it was only on their solitary heights I felt free to give the feeling utterance. The thrifty household ways of my aunt and cousins, which kept them ever busy, were strange to me. My dainty fingers had no acquaintance with rolling-pin or paste-board. It was not I who kept so bright the mirror in which I saw my own beauty, eye, and my own unhappiness reflected. I was supposed to be mourning, and, with mistaken delicacy, was left to do—nothing.

Had Uncle Ritson known it, or how I spent my time, he would have shaken me up like a bottle of physic, and I should have been the better for it. But whether on foot, or horse-back, or in his ancient gig, he was off in a morning, and frequently was absent all the day. His patients were scattered, and his rounds extended.

I, having no occupation for hands or energies, feeling myself something apart from the rest, was off and away up the breezy hill-sides to the lonely margin of the lake, or into the most secluded glens, my only companion my faithful dog; and there, where there was only the wind to answer me, I poured forth all the pent-up feelings of my heart; and oft my gusts of passion found utterance in song. At times I took a pencil and sketch-book with me in these wanderings, but there was ever one figure in the foreground of the most picturesque scene, and often enough the figure was there alone, the adjuncts all forgotten.

At first Bella or Winnie had borne me company, but I think they saw my longing to be alone; and I had my way, not without many cautions from my aunt.

What were the perils to me, chafing against the restraint of my father's will, crying from the depths of my inmost heart for the banished love who would never find me in those solitudes, and longing for wings to traverse land and sea until I found my home on his faithful bosom?

Lost in abstractions, all danger was forgotten, and I had paid the penalty but for a guardian angel little dreamed of.

My first peril was from the mountain-mist, which came down and around me with bewildering suddenness, blotting out the landscape far and near.

Still, I thought I knew my way, and was stepping onwards, though with caution, when my dress was clutched from behind, as I fancied by some brush. Turning to disentangle it, I was confronted with what seemed an awful apparition looming through the misty veil, and, with a suppressed cry, I stood still in affright.

I saw a woman's form, bent with age, a face intersected with lines and wrinkles like a map, from which nose and chin stood out like mountain peaks, and the sunken eyes gleamed like the fiery depths of two volcanic craters.

"Stop, my leddy!" she cried, "the gates of death are open before ye! Tak' my hand and let me lead you; and thank God, my bairn, that Elspa was near you in your peril."

I had heard of Elspa as a woman who dealt in herbs and simples, but I had heard of her as one with an uncanny reputation. She was spoken of as "the wise woman," but the words were uttered as if they meant "witch."

I confess I was half afraid to accept her guidance, but she stamped her foot, and by gesture strong as words gave me to understand that I had been walking towards a precipice, and three steps further would have borne me to destruction.

What landmark she had I know not, but I think she seemed to feel her way with her feet. At all events, after about an hour's cautious stepping, we stood below the mist, the blue lake gleaming like a mirror still further down, and my uncle's house within sight. Conscious of the service she had rendered, I did not confine my thanks to words, but was liberal with my coin.

As she took "the siller," she scanned my face curiously, then seized my hand and peered into it closely, whilst a sort of creepy sensation (excusable in a girl of nineteen) stole over me.

"Once, twice, thrice! Three perils, my bonnie leddy. One is past. The others lie before. Perils of your ain seeking. The gates of death stand in the path of your true love. Open them not with rash or heedless hands before the year be out, or love may mourn for love that couldna bide. The air of mountain and of lake is na gude for ye, bairn. Keep mair at hame, and dinna be misdoobin'. There's a gude God above us! Remember! One danger is overpast. Tak' heed ye seek not the others; and dinna scoff at old Elspa's warning words."

The old woman trotted off with her basket on her arm, a rusty black bonnet on her head, garments poor but clean, and only a small check woollen handkerchief to protect her from the chilly mountain mists.

I had scarcely decided whether to laugh at her maunderings, or to yield to the superstitious feeling she had awakened, when I opened the house-door, to find all within in a state of excitement.

It was long past our dinner-hour, and my absence had alarmed them. Of course I explained the cause of my delay, and it was only by Aunt Ritson's agitation that I fully comprehended the danger I had escaped. I think her motherly concern made me more communicative than usual.

We were still speaking of Elspa when my uncle came in.

"Ah!" said he, as Winnie helped him off with his overcoat, "Ah! my dear, you might thank your stars Elspa was on the mountain-side. I dare say she had followed you. The old Scotchwoman is shrewd and far-seeing; she has turned her eighty years' experience to account, has a good practical knowledge of common ailments and curative simples. I should lose my own credit or I might do worse than take her for an assistant," and he laughed. "Then she can read character with any physiognomist in the world, and the silly folk think her prophetic, when she is only clear-eyed."

I think uncle was using an invisible probe. I know I colored and he laughed again, but said nothing more—nor did I.

The excitement had not all been on my account. Bella had received an invitation to spend some months with a newly-married friend in London, and good natured Winnie was in high glee. Even aunt acknowledged it was "a chance not to be missed, if possible," and I saw her glance furtively in Uncle Ritson's face, which I fancied was graver than usual. Still, possibilities were not discussed in my presence. It was not until I had retired to my own pretty room for the night, that I overheard the sisters discussing the problem, unmindful of the thin partition between the head of my bed and theirs.

I found that money—or its scarcity—stood in the way, and had the chances of the matrimonial market calculated with a balance greatly in favour of London.

Money! How I hated the word! I would have given every shilling I possessed to be assured that Edgar Neville was true to me, and would seek me out when the period of probation prescribed by my father was gone by. But where could he seek for me? Correspondence had been forbidden. He knew not my address, and my father withheld Edgar's from me. Ah, how he repented before he died! How glad he would have then been to leave me in those strong protective arms!

I soon bridged the monetary difficulty over in spite of uncle's opposition, and I think showed something of my old self in the spirit with which I entered into the needful preparations for Miss Ritson's launch on the sea of London society, little thinking what might be its import to myself.

It was May when she went. I had suggested that she should lighten her mourning, being about to visit a bride—a hint she seemed glad to take, for her pretty lavender bonnet set off her face much better than her heavy crape.

She kissed me very heartily before she got into the gig beside her father, to be driven to the station, to which her boxes had already been dispatched, and I felt more satisfied with myself than I had done since I had crossed the Cumberland border.

Letters filled with the wonders she had seen and the places she had visited broke up the monotony of our lives. Then came one from Hastings, in which she told of her introduction to a Mr. Neville.

I think my pulse stopped as Winnie read cut the name. I know aunt asked me if I was ill—the heat was too much for

me. But I drew myself together, said "nothing" was the matter, and tried to convince myself that the name was a common one.

At length a letter came, addressed in a manly hand to Uncle Ritson, with Edgar's well-known crest upon the seal. It was a proposal for my cousin's hand.

My head swam round, but I mustered courage to ask Mr. Neville's Christian name. He had merely sighed J. E. Neville.

Ah, that was it, sure enough—John Edgar!

I had my back towards my uncle, standing in the doorway, as I asked. No one noticed how I staggered into the hall, or how I snatched my hat from the stand and darted up the mountain-side to cool my fevered brow and still my throbbing pulses. How I went or where I went I could never remember; I have some recollection of falling as I bounded across a beck, of old Elspa's face bending over me, and then no more, until I found myself in my own snowy bed, with Winnie watching me, and an array of physic bottles on the window-seat.

Elspa had found me where I had fallen, half in, half out of the stream. Unable to drag me thence, she had summoned help with a peculiar whistle she kept suspended to her girdle, the shrill note of which no shepherd dared to disobey.

It brought a couple of shepherds to the spot. My limbs were lifted out of the stream—she had already bathed my brow and plastered up my temple—and then I was carried slowly down, to interrupt the answer Uncle Ritson was sending to Bella and Mr. Neville.

My fall and the immersion were accredited with the prolonged fever which almost baffled my good Uncle's skill. If any one suspected otherwise it was old Elspa, but she was too "wise" to revert to the subject when she came to see me ere my convalescence.

Very slow was my recovery, retarded no doubt by the scrap Winnie read to me as pleasant news from her sister's letters. It was now "Eddie" this or "Eddie" that; and as I shut my eyes and ground my teeth, the better to endure, I felt indignant that my noble-fronted Edgar should have a pet name like a baby. To me, he had the majesty of a monarch. How could she address him so?

I was down-stairs before the Christmas came, able and willing to assist my aunt in her multitudinous preparations, and tried to smile and look gratified during the Christmas merry-making.

I had heard, but hardly seemed to realise, that Bella was to be married early in the new year, and that she and her husband would come to spend the honeymoon with us, and I was doing my best to nerve myself for the meeting.

The old year was closing in. Elspa—who else?—came up to the house with a letter she had found lying in a by-road. It should have been delivered some days previously; and it was supposed that the postman had taken more drink than was good for him during the Christmas "cairdings," and dropped it by the way.

Goodness! how that letter stunned me! Bella was by that time married. She and her husband were to be with us on New Year's Day, and they should bring with them a New Year's gift for Cousin Adela, as a thank-offering for bringing them together. Their photographs were enclosed.

I saw only the one. Yes, it was Edgar's! There was no mistake.

The house was at once in a bustle of preparation. Again I slipped out, to hide my agony and prepare myself for the coming trial.

Dreamily I went along. I saw nothing before me but that meeting on the morrow and the revelation it was sure to bring. My mind seemed a chaos, in which though was lost.

All at once, I found myself on the reedy margin of the lake, as the silver circle of the moon was rising above the mountain-tops. And there I stood, looking on the dark waters, whilst something seemed to whisper me that there was peace; that I need not meet the proud bride and my inconstant love unless I chose; that I might hide my sorrows and my secret there, and none be the wiser.

My foot was on the brink. There was a step on the stones behind me. I turned; and I think my half-formed purpose was visible in my face, as I once more confronted old Elspa, weird and witch-like in the moonlight, a warning finger held up.

Sharp were her words, sharp as my need. She bade me go down on my knees, and thank God that He had sent her to save me from my third peril—the perils of body and soul. What was I pulling over? What right had I to fling away the life that was given for the service of others? How dared I tempt death, loving the creature more than the Creator? She had heard me raving to the winds when I thought myself alone, and had kept a watch upon me. And she bade me go back home, and pray to be forgiven, and to "trust the Lord to make His dark ways plain."

She took me by the hand, and led me back like a penitent child; said to my aunt that she thought I was not well, and, by her leave, would watch me through the night. Something she gave me too, and I slept.

When I awoke, a chaise was at the gate; and before I could fasten my dress with my trembling fingers Bella had burst in, radiant with happiness, and flung her arms around me.

"Come, Adela, make haste!" said she. "Edward is all impatience to see you, and show you our New Year's gift."

"Edward?" I gasped.

"Yes, my dear, Edward! Did you not know his name?"

It was all a tangle. I followed her to the living-room below, where the great holly-bush was hanging, and there stood a stranger, who was introduced to me as James Edward Neville, my new cousin—and surely, too, Edgar, my own Edgar; for he held out his arms, and caught me as I was falling.

He had been best man at his cousin's wedding, and Bella had only seen him a few days previously. The postman must have lost another letter, one Edgar had sent to me. The photograph had been enclosed by mistake. The other would be in the lost letter.

Old Elspa kept my secret well. But I never forgot the lesson she had taught me; and though Edgar carried me away from Cumberland as proud a wife as Bella, we took good care of old Elspa for the rest of her days.

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES,—How often we hear boys and girls express a wish to have nothing to do! "Humanity is said to be constitutionally lazy," but the experience of some cannot but contradict the assertion. Nevertheless the youthful mind often acquires that disrelish for actual labor, which grows with its growth, unless some vigorous motive is brought to bear upon such. They become useless members of society, and miserable creatures when associated to put forth their dormant energies. Many young people who have wealthy parents have no ambition for themselves beyond a butterfly existence, and affect ignorance or contempt of the blessings of labor. To be idle is to be miserable. No one has a right to be idle though he be heir to millions of wealth. Man is born to work. The best safeguard against the many temptations which assail our youth of both sexes is a well-defined, systematic habit of industry according to circumstances, tastes and duty. Life is full of temptations to the indolent that the industrious know nothing about. Industrious habits bring many casual payments, among which are health, self-respect and the regard of those whose esteem we value. Dear nephews and nieces, have you some fair goal to which you aspire of wealth, culture, education? Improve, then, the moments, and fritter not away in idleness; dissipation or fruitless repining the valuable time. Set your heart and will on that to which you aspire, and make circumstances bend to your will, instead of being controlled by circumstances, and you will achieve a victory all the more complete and brilliant for conquering difficulties.

UNCLE TOM.

PUZZLES.

11—CHARADE.

1. My first is liked by most folks very hot; My next, though personal, be not offended! My last is harmless if you touch it not. My whole is off for cleanliness intended.

2. Enveloped in a solemn gleam my first is often seen, And sometimes dressed in bright array reflects upon the green; My second forms a sweet retreat where you and I might stray, And while we walk with converse sweet enjoy the lovely day.

My whole is a vegetable fair With flower of purple dye; And fruits that hang in clusters thick, Delightful to the eye.

FRED. WILSON.

12—PUZZLE.

If to a vehicle you will but add The period of time which each one lives; You'll something see oft on the table laid— To many an epicure it pleasure gives.

J. N. T.

13—CHARADE.

To the animal kingdom my first doth belong, My second belongs to the fruit; My whole you will probably have to obey If it is proper and happens to suit.

EMILY.

14—TRANSPOSITIONS.

Transpose a rent into a thicket; transpose part of a book into an insect; transpose an animal into a plant; transpose a river into a sting; transpose a fruit into a fish; transpose a mineral into valley.

15—RIDDLE.

One day my master shut me up And stamped me on the back; Then sent me from before his face On a venturesome track.

I might have thought him cruel, But he was, in fact, a friend; And his own right hand safe guarded me Unto my journey's end.

16—LOGOGRAPH.

I am a word of ten letters: My 4, 5, 6, 7, 8 is part of one's body. My 4, 2, 8 is an animal. My 8, 9, 2, 10 is a drop of salt water. My 10, 2, 1 is an animal with horns. My 5, 6, 2, 10, 8 is what I live by. My 5, 6, 3 is a fowl. The whole is the name of a large town in England.

17—DOUBLE ACROSTIC.

My first is a bird with a very long bill, If my second could catch him he'd eat him at will; My third is a part of the human frame, My fourth is a Jewish Christian name; My fifth is brought from climes far away, In my sixth some children are oft sent to play. Initials read downwards a battle will name, And final a Prince who fought at the same.

NESSY HARRY.

18—PICTORIAL REBUS.



19—DIVISIONS.

1. Divide a piece of furniture and leave a district and garment. 2. Divide a weapon, and leave a boy's nickname and a bird. 3. Divide something discordant, and leave an ornament. 4. Divide a man of rank and leave a river.

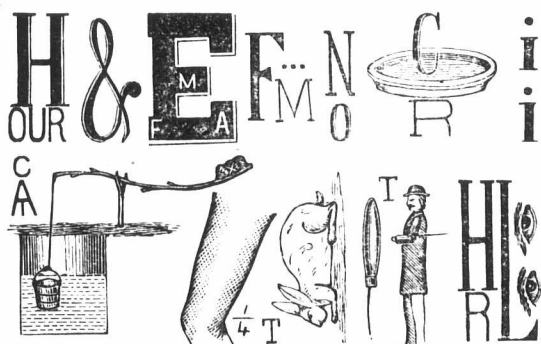
T. W. M.

20—SINGLE ACROSTIC.

The initials will form a proverb: 1—A boy's name; 2—a fruit tree; 3—a quadruped; 4—a verb; 5—a fluid often used; 6—a part of speech; 7—a measure; 8—a vowel; 9—a short sleep; 10—a little flower; 11—what soldiers do; 12—a public conveyance; 13—a dried fruit; 14—a color; 15—a bird; 16—a well-known fish.

21—NUMERICAL ENIGMA.

I am composed of 22 letters: My 4, 14, 6 is what many long to hear when 10, 19, 3, 14, makes them ask a question. My 22, 7, 5, 8, 18, 2, 6, is something nice to eat either raw or cooked. My 11, 1, 20 is a marsh. My 9, 13, 21, 15, 16, 17, 12 is to finish; and my whole is an adage.



Answer to Illustrated Rebus.

"Honor and fame from no condition rise; Act well thy part—there all the honor lies."

Thus: H on our (honor) & fame f row m no c on dition (condition) R I's (rise); act well thigh (th) 4 (part)—T hare (there) awl (all) T he (the) H on l: (honor) L eyes (lies).

An M. P. I. sends the following as the answer, which is not quite according to the illustration. Others have also failed in answering rebuses on very small points. An answer must be right or wrong:

"Honor and fame from no condition rise; Act well your part, for there all the honor lies." We re-insert this rebus, as some of our readers do not fully understand how to make them out.

We insert some for amusement, and some we hope may bear good fruit. There are some people now so firmly fixed in their ideas that nothing can change them. Habits grow like grain or weeds; some tend to honor, some to dishonor. The mothers of the rising generation would like good morals implanted in their children. Is there any easier and more pleasing manner than to have a little girl or boy pore over such a rebus as this for a few minutes to find out a little, then throw it aside and take it up again; then say—"Oh! mamma, I have found it out." That's a good girl; now remember it all your life, and act on it. Little boys, ask papa if this is true; show it to your school master—yes, your Sunday-school teacher, too, if you choose. It is a good and lasting principle; if you always follow it you will live and die happy, and you will make others happy.

Temporary advantages may be apparently obtained by deviation from the above maxim, but wealth and power fluctuate. When wrongfully obtained they do not bring happiness. There may be a great display; the ball and the dance may proceed; the wine may be consumed; fine mansions may be erected, and all the luxuries that wealth can purchase may be procured. Yet the possessor may be and often is a more miserable being than the hungry beggar who asks a piece of bread at his door.

Pictorial Rebus.

Any subscriber sending us the correct answer to the pictorial rebus in this issue, accompanied by the name of new paid subscriber, will receive fifty cents.

Answers to January Puzzles.

- 1—Stockholm, Colorado, Ohio, Timer, Terieriff.
- 2—Veni, vidi, vici.
- 3—1, CaP, Anno, EIM, SaP, AnniE, Rugby; 2, BelloW, LeaH, Alkali, CrypT, KalE; 3, SuN, Ohio, Under, TomiT, Hannah.
- 4—Longfellow, Evangeline—Lillie, OlaV, NinA, GoslieN, FiG, ElaineE, LaureL, Levi, OberoN, WinE.
- 5—

C	THE	ICE
S	PA	COG
P	SM	ARC
C	HARLES	SOLEMNIZE
S	ILLY	CORMORANT
T	EA	INSURGENT
S		VAN
		ANT
		ATE
- 6—
- 7—Honor and fame from no condition rise; Act well thy part—there all the honor lies!
- 8—Tablecloth—Sandringham—Table, able, bale, ale, la; 2, Capitulate.
- 9—Ashton, Swansea, Carlisle, Maidstone, Liverpool, Scarborough, Westmorland, Buckingham, Castleton, Dartmouth, Harrogate, Ramsgate.
- 10—K-ircher, N-elson, O-thman, W-ellington, L-eonidas, E-dward, D-arius, G-regory, E-manuel, I-rene, S-solomon, P-ope, O-ates, W-ickliffe, E-ugenie, R-omulus—Knowledge is power.

Names of Those Who Sent Correct Answers to January Puzzles.

H Westlake, R D Watson, George Hoover, Hon N B Troop, M P P, Hattie Haviland, John Spencer, Mrs T A Rothwell, Thomas Phillips, Moses Pierce, Rebecca H German, Royal Grafton, Wm Van Blaricorn, Wilhelmina Mercer, W Wallace, Fred Ray, Jane Lutz, L A Clinton, C N Dury, James Carr, Jos Plummer, C L Clayton, Mary McKnight, H T Harris, Annie Cole, Lillie Morgan, Harry Anderson, T W Craig, M Summers, George White, Leonard Phillips, Felson Adams, Wallace Cruickshanks, Emily Wise, J W Brown Edmund Willis, Samuel Scott, John Adams, Eva Parnell, Josephine Auld, Clara Baldwin, Mary Bridge, Jonathan Frank, E Turner.

Credit is due Wilhelmina Mercer for having answered the greatest number of puzzles correctly.

An Apology.—"But, Freddy, how could you ever think of calling aunty stupid? Immediately go to her and tell her that you are sorry." Freddy goes to aunty and says: "Aunty, I am sorry that you are stupid."

"The only jokes women like to read are those which reflect ridicule upon men." "Yes," says a contemporary, "on taking up a paper a women invariably turns to the marriage column."

In the Barn.

O Jack, are you up in the hay-loft?
 I'm coming up there, too.
 I'm tired of being a lady,
 I'd rather have fun with you.
 There's company in the parlor,
 And mamma whispered to me,
 "Now do be a lady, Pussie,
 And see how good you can be."
 But, Jack, it was really dreadful!
 I couldn't sit still, you know,
 And most likely the company wondered
 To see me fidgeting so.
 But I heard you laughing and shouting,
 And I knew you were having fun,
 And I looked at the clock and wondered
 How soon her call would be done.
 But when they were busy talking,
 And didn't remember me,
 I just slipped out as softly!
 And here I am, you see.
 O Jack! it is awfully jolly
 Not to be grown-up folks;
 They never have fun in the hay-loft,
 Laughing and telling jokes.
 They can't go hunting for hen's eggs,
 Or swing on the old barn-door,
 Or climb this steep old ladder,
 And jump, like us, to the floor.
 To sit in a chair is horrid.
 To sit on a beam is fun,
 And we don't care if we're sunburned,
 We aren't afraid of the sun.
 Just fancy mamma or sister
 Rolling about in the hay!
 It makes me laugh—because surely
 Their "trains" would be in the way.
 I heard papa call me a "Tom-boy;"
 I'd rather be that, I declare,
 Than to sit for another hour
 So still in a parlor chair.
 Just think of the time I wasted,
 When I might have been here with you!
 And it may have been another half hour
 Before her visit is through.
 I'm sorry for mamma and sister,
 Long dresses, long manners and all!
 And Jack, I'll be sorrier still, dear
 When you and "Pussie" grow tall.

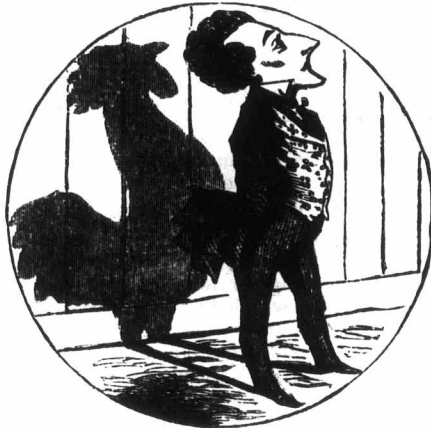
Carrier Pigeons at Great Altitudes.

Experiments were recently made in Switzerland to ascertain whether carrier pigeons would start at great altitudes, and would find their way from summits covered with snow as well as from less heights. Two pigeons were set at liberty on the Bergli, at a height of 8,600 feet. After perching for a few minutes on a neighbouring rock, they took flight in the direction of the Eiger; but soon returned to the hut whence they had been liberated. They did not start again for some time, when they took the route for their cot, although, surrounded by mountains, they had not seen the country. Of these two, one did not reach its destination till seven days after; the other failed to appear. Neither (it should be said) had been accustomed to be set at liberty at a great distance from its cot. Another experiment consisted in letting off two pigeons (one of which had not been trained for such great distances) about 9:30 a. m., at a point 50 feet under the highest point of the Jungfrau, or 13,750 feet above the sea level. They immediately rose, described several large circles, and took their flight down the valley of Lauterbrunnen, in the direction of Schilthorn and Schwalveren. One of these pigeons reached its cot at Thun at three o'clock next day (eight hours after starting). The other did not turn up. The result of these observations is the more interesting, because in several instances pigeons let off from balloons high in the air have seemed incapable of sustaining themselves, and have fallen to earth like an inert mass.

Mrs. Peter Piper's baby was making a tremendous noise, and a friend asked Peter why it was so cross. "Is has a stormy mother," said Peter, with a sigh; "You needn't wonder if it's a little squally."
 "If you marry Grace," exclaimed an irate father to his son, "I will cut you off without a cent, and you won't have so much as a piece of pork to boil in the pot." "Well," replied the young man, "Grace before meat," and he immediately went in search of a minister.

Here is Sermon Enough for Sunday.

A little shoeblick called at the residence of a clergyman of this city and solicited a piece of bread and some water. The servant was directed to give the child bread from the crumb-basket, and as the little fellow was walking slowly away and shifting the gift between his fingers for a piece large enough to chew, the minister called him back and asked him if he ever learned to pray. On receiving a negative answer he directed him to say, "Our Father," but he could not understand the familiarity.
 "Is it our father—your father—my father?"
 "Why, certainly."
 The boy looked at him a while and commenced crying, at the same time holding up his crust of bread, and exclaiming between his sobs:
 "You say that your father is my father; aren't you ashamed to give your little brother such stuff to eat when you have got so many good things for yourself?"



SHADOW ON THE WALL.

MUTUAL SURPRISE.—Many romantic stories are related of marriages resulting from correspondence between strangers. Here is a story of a pair who, after exchanging letters, met by appointment: "The surprise with which she discovered that he, instead of being 27, tall, dark, and aristocratic, was 46, stumpy, red-headed, fat, and bow-legged, was only equaled by the rapturous amazement with which he discovered that she, instead of being willowy of figure, just 18, with warm, golden hair, an opalescent complexion, and blue eyes like limpid lakes, was 6 feet 1, if she was an inch, 52, if she was a day, weighing 330 pounds, if she did an ounce, and with no warm, yellow, or any other hair of own."



DARWINIAN THEORY.

EDISON'S INDUSTRY.—Edison has finally produced a lamp for use by electricity simpler than any lamp in common use. It can light a house at night, or run a sewing machine or rock a cradle all day. The entire cost of constructing the new lamp is not more than twenty-five cents.

WILD BEASTS.—There were as many as 19,695 persons killed by wild beasts and snakes in British India in the calendar year 1877. Tigers head the list. There were 819 persons killed by tigers, 564 by wolves, 200 by leopards, 85 by bears, 46 by elephants, 24 by hyenas, 1,180 by other wild beasts.

Bashful lover to his sweetheart: "Ahem, Miss, I want to see your father. I've an important matter to propose to him." Young lady (considerately)—"I'm sorry papa is not at home, but couldn't you propose the matter to me just as well?" He did, and with perfect success.

Minnie May's Department.

MY DEAR NIECES,—How many housekeepers there are with only small families to do for who adopt such hard ways to do their housework that it is impossible for them to enjoy any leisure. They insist that they cannot visit their friends, not having the time; nor can they read periodicals or books for the same cause. Yet should company be expected to tea, these same housewives, who have no time for anything else besides hard work, will overrun the house from garret to cellar, although the same process may have been gone through with only a week or so before. Cakes and pastry must be manufactured, of which there are almost enough to supply a regiment, and at last, when the guests arrive, the housewife is too weary and tired to enjoy her friends' company. Now this class of housekeepers are very exasperating to the members of their own family. If anything happens to be out of place, if the least dirt is unavoidably brought into the house, scolding and fretting ensue, making everyone present feel very uncomfortable. Happily there is a way of doing housework not half as laborious as many make it. In the first place, all things pertaining to domestic work should be arranged as conveniently as possible; then use the brain as well as the hands and feet, and in going to or coming from the storeroom or cellar carry as many things as you can conveniently which should be brought or taken there, thus saving many extra trips. This saving of steps applies to all housework, therefore we must have our wits about us and not work like a machine. Let us work for the sake of living, and not live for the sake of working. Do work well which requires it. Provide a plain, substantial, yet not extravagant fare at all times, and let visitors feel as if they were members of the family and not company. Let us take proper rest, for rest and recreation incite a faster and better discharge of duties. Just dragging around when one is weary and worn, mechanically going through the day's duties, is a painful contrast to the vigorous step and cheerful movements of one who thoroughly enjoys her work.
 MINNIE MAY.

Answers to Inquirers.

G. C.—Certainly, it is the duty of a person to recognise a gentleman with whom he is acquainted, but etiquette enjoins that a gentleman should wait for the lady's recognition before addressing her; that is to say, unless great intimacy exists.

JANET G.—If your objection to the gentleman who asked you to dance with him was so very strong that you refused his invitation, you should not have, on any account, accepted that of another gentleman for the same dance. You ought to have declined dancing with anyone at all for that particular set, and sat it out, so by doing what you did you either betrayed a preference that no lady ought to exhibit so openly, or else you wantonly wounded the feelings of the first gentleman.

BLAENGWAUR.—There is no such custom. The bridegroom gives the left arm to the bride when leading her from the altar.

MAGGIE.—If you are of a good constitution, the daily use of dumb-bells could not possibly injure you.

M. L.—When the hands turn dead white, and afterwards blue, on issuing from the water, it is a proof that the bather remains in too long or that bathing altogether disagrees with him.

MINERVA.—It is a foolish place of business for a young lady who has become engaged to a man, to seek to pry into his love affairs. In such an undertaking, you can not of course find out anything which will give you any pleasure, but will evidently come upon much that will annoy and pain you. Besides, it is a low, vulgar, and mean piece of business, or in which no decent women should ever be caught.

TO PREPARE CANVAS FOR OIL-PAINTINGS.—It is first strained tightly upon frames; then washed with a thin white glue. When dry, it is painted with a coat of oil color made of white lead, red lead, linseed oil, and turpentine; and afterwards with a second coat, in which the red lead is omitted, and sugar of lead, with a little coloring matter, substituted.

J. C. J.—The Russian bath consists of perspiration, friction, and successive ablutions in hot and cold water. The poorest of all, however, adopt a similar method. They remain in the bathing-room only till they are in profuse perspiration, when they run and throw themselves—perhaps through a crust of ice—into the nearest stream or pond, thus exposing themselves to the extremes of temperature. Among the Russians in Siberia the bath is especially in use as a means of driving of the effects of a violent cold, and preventing fever. In Lapland vapour-heats are very much used. The bather is on an elevated platform, and vapour produced by throwing water on heated stones beneath, after which the bather is well whipped with twigs by female attendants. Modern nations have not generally adopted the use of the bath: yet it is less neglected now than formerly, and public baths are formed in most European cities and towns.

JESSEY.—A lady should not exchange photographs with a gentleman unless they be engaged to be married, or unless he himself is a very old friend of the family.

M. R. V. In selecting silk choose that which possesses three particular qualities, viz., softness, smoothness and lustre. The better the silk the softer it will be, provided that it is closely woven and not of flimsy texture. To test this quality gather the material sharply into folds across the width. If the silk be of good quality the folds will be full in outline, but if they break into sharp, projecting points the silk should be rejected. For if angles are found in the sample, they will occur also in the dress made of similar material, and when this takes place the delicate fibres of silk will be broken and holes will be made. Perfect smoothness as well as softness should be required. The material ought to be equal in thickness and present no irregularities of the surface. This is best tested by passing the fabric between the thumb and forefinger, when any imperfection in this particular will be manifest. One of the chief characteristics of silk is its gloss, and the lack of this feature usually is a sign of inferior quality. A fictitious gloss sometimes imparted to inferior silk is generally distinguishable from a brilliant natural lustre.

RECIPES.

BOILED HAM.

Put a ham in a boiler while the water is cold; be careful that it boils slowly, or rather simmers. A ham of twenty pounds takes four hours and a half, larger and smaller in proportion; keep the water well skimmed. A green ham wants no soaking, but an old one must be soaked sixteen hours in a large tub of water.

DEVONSHIRE JUNKET.

Put warm milk into a bowl; turn it with a little rennet; then add some scalded cream, sugar and cinnamon on the top, without breaking the curd.

STRENGTHENING BLANC-MANGE.

Dissolve in a pint of new milk half an ounce of isinglass, strain it through a muslin sieve, put it again on the fire, with a rind of half a small lemon pared very thin, and two ounces of sugar, broken small; let it simmer gently until well flavored, then take out the lemon peel, and stir the milk to the beaten yolks of three fresh eggs; pour the mixture back into the sauce-pan, and hold it over the fire, keeping it stirred until it begins to thicken; put it into a deep basin, and keep it moved with a spoon until it is nearly cold, then pour it into moulds which have been laid in water and set in a cold place till firm. This we can recommend for invalids as well as for the table generally.

TO GIVE A FINE GLOSS TO OAK WAINSCOT.

Boil two quarts of strong beer, a bit of beeswax as large as a walnut, and a large spoonful of sugar. Wet the wainscot all over with this mixture by means of a large brush, and when dry rub it till bright. If greasy, the wainscot should be previously washed with warm beer.

PEA SOUP.

After well washing one quart of split peas, soak them for the night, and boil them with a little car-

bonate of soda in just sufficient water to allow them to break to a mash. Then put them to three or four quarts of beef broth, and stew for one hour; then pass the whole through a sieve, and heat again. Season with salt and pepper. One or two small heads of celery, sliced and stewed in it, will be found a great improvement.

WAFFLES.

One egg, one cup of milk, one and a-half cups of flour, one tablespoonful of melted butter, one tablespoonful of sea-foam and a pinch of salt. Sift the sea-foam and salt through the flour. Beat the egg very light, add the milk and stir in the flour. If you measure both flour and milk with the same cup, this batter will be just right. Have the waffle-iron very hot on both sides and very well greased. Almost everything depends upon the baking. They must be eaten as soon as baked.

TO CLEAN GOLD OR SILVER LACE.

Take a three-penny stale loaf, rub the crumbs fine between the hands, then mix a quarter of a pound of powder blue well with it; lay it plentifully on the lace, and rub gently with the hand, and it will soon become bright. When this is done, take a piece of clean flannel and dust the crumbs well off; then take a piece of crimson velvet, rub gently over the lace, and it will then look as well as new.

POTTED OX-TONGUE.

Boil tender an unsmoked tongue of good flavor, and the following day cut from it the quantity desired for potting, or take for this purpose the remains of one which has been served at table. Trim off the skin and rind, weigh the meat, mince it very small, then pound it as fine as possible with four ounces of butter to each pound of tongue, a small teaspoonful of mace, half as much of nutmeg and cloves, and a tolerable high seasoning of cayenne. After the spices are well beaten with the meat, taste, and add more if required. A few ounces of any well-roasted meat mixed with the tongue will give it firmness. The breast of turkeys, fowls, partridges, or pheasants may be used for the purpose with good effect.

Coffee vs. Rum.

The idea of reforming the intemperate by opening up cheap coffee-houses in the neighborhood of the rum-shops has been tried with much success in England; so great in fact that they have compelled the rum-sellers near by to close their shops for want of custom, which the coffee resorts had drawn away from them. In Bristol, the rum-sellers, hearing of the proposed trial of he plan there, hired every available location in their quarter; and at first it seemed that the reformers were thwarted because of their inability to secure available rooms, it being considered necessary to have the coffee houses in the vicinity of the places where the laboring people were wont to resort for their evening drinks. The coffee men, however, out-generated the rummies by sending out a wagon every morning and evening, and peddling the hot coffee and tea for a penny a mug. The success was so great that a number of individuals have started coffee wagons, and have all they can do to supply the thirsty throngs which morning and evening besiege the wagons.

THE SECRET OF BEAUTY.—The secret of beauty is health. Those who desire to be beautiful should do all they can to restore their health, if they have lost it, or to keep it if they have it yet. No one can lay down specific rules for other people in these matters. The work which one may do, the rest he must take, his baths, his diet, his exercise, are matters of individual consideration, but they must be carefully thought of and never neglected. As a rule, when a person feels well he looks well, and when he looks bad he feels bad.—There are times when one could guess, without looking in the glass, that his eyes were dull and his skin was mottled. This is not a case for something in a pretty bottle from the perfumers, or for the lotion that the circulars praise so highly. To have a fresh complexion and bright eyes, even to have white hands and a graceful figure, you must be well. Health and the happiness that usually comes with it are the true secrets of beauty.

A teaspoonful of ground bone or bone-flour every two or three days mixed in their food is good for laying hens.

Gone, but Not Forgotten.

ON THE DEATH OF MY FRIEND, MISS HANNAH E. HART, AGED 23 YEARS.

Dead! 'tis but one more in heaven,
One loved one that we miss on earth;
But higher, holier aims are given,
And purer, sweeter thoughts have birth.

The friend we loved is gone—
Not lost, but gone before—
Life's toils are o'er, life's battles won,
She waits for us at heaven's door.

She sleeps—our darling sleeps—
Within the dark and silent tomb;
But Jesus her pure spirit keeps,
Beyond this vale of death and gloom.

We'll dry our falling tears,
And calm our throbbing breast;
Our feeblest cry our Father hears,
And to earth's weary ones gives rest.

Our hearts are bound by earthly ties,
Our Father gently breaks the chain,
And bids us high and higher rise—
For earthly loss is heavenly gain.

But O, at times 'tis hard to bear;
Our fainting hearts will sigh and moan
Under the load of grief and care
That's in that plaintive word—*alone*.

And shall we then forget our friend
Because our darling does not come?
Never, till life's great work shall end,
And we shall meet in our palace home.

Sacred to us are the songs she sung,
Her parting words memorial sweet;
But never again till death's knell has rung
Will our hearts, in love, responsive beat.

And yet we won't despair;
We'll strive to meet the friend we love,
Where all is glorious, bright and fair,
In realms of light above.

Covey Hill, Jan., 1880.

H. E. C.

Contagion.

Contagion consists physically of minute solid particles. The process of contagion consists in the passage of these from the bodies of the sick into the surrounding atmosphere, and in the inhalation of one or more of them by those in the immediate neighborhood. If contagion were a gaseous or vapory emanation, it would be equally diffused through the sick room, and all who entered it would, if susceptible, suffer alike and inevitably. But such is not the case; for many people are exposed for weeks and months without suffering. Of two persons situated in exactly the same circumstances, and exposed in exactly the same degree to a given contagion, one may suffer and the other escape. The explanation of this is that the little particles of contagion are irregularly scattered about in the atmosphere, so that the inhalation of one or more of them is purely a matter of chance, such chance bearing a direct relation to the number of particles which exist in a given cubic space. Suppose that a hundred germs are floating about in a room containing two thousand cubic feet of air. There is one germ for every twenty cubic feet. Naturally the germs will be most numerous in the immediate neighborhood of their source, the person of the sufferer; but, excepting this one place, they may be pretty equally distributed through the room; or they may be equally distributed. A draught across the bed may carry them now to one side, now to the other. The mass of them may be near the ceiling, or near the floor. In a given twenty cubic feet there may be a dozen germs, or there may be none at all. One who enters the room may inhale a germ before he has been in it ten minutes, or he may remain there for an hour without doing so. Double the number of germs and you double the danger. Diminish the size of the room by one half, and you do the same. Keep the windows shut, and keep the germs in; open them, a they pass out with the changing air. Hence the importance of free ventilation; and hence one reason why fever should be treated, if possible, in large airy rooms. Not only is free ventilation good for the sufferer, but it diminishes the risk to the attendants.—[Nineteenth Century.

Commercial.

LONDON, Jan. 28, 1880.

Trade of every description has been unusually quiet the past three weeks. The roads have been in a very unsettled state, and this, together with the very mild weather, has no doubt had a somewhat depressing effect upon the trade of the country. Farm produce has also suffered a sharp decline.

WHEAT.

The British trade and navigation returns to hand by late English mails show that during the month of December last the imports of wheat into the United Kingdom amounted to 5,395,000 cwt., valued at £3,363,889, against 3,501,359 cwt., valued at £1,737,614, for December, 1878, showing an increase of 54 per cent. in quantity and 99 per cent. in value. The stocks of wheat in eleven of the principal ports of Great Britain on January 1st were 12,093,096 bushels, as compared with 7,500,240 bushels on the same date last year. This, taken in conjunction with the 17,500,000 bushels on passage and 30,000,000 bushels now in sight in the States and Canada, will foot up the nice little total of 59,593,000 bushels. To this may be added 584,441 sacks and barrels of flour, 38,227 loads of oatmeal, 47,146 quarters beans and 75,655 quarters peas in stock in the United Kingdom. These figures we think will satisfy any one that England need not feel very anxious about her food supply for the next few months at least. We think that Mr. Keene and his friends have a pretty big job on their hands in trying to rule the English markets with all this stock on hand and in sight.

Stocks in this country are not very heavy, which is a good thing for holders, for with the sharp decline which has taken place they will be in some instances pretty heavy losers, for much of the wheat now in the warehouses along the lines of railways has cost from \$1.25 to \$1.30, and to-day it is not worth more than \$1.15, and it is doubtful whether it may not go still lower.

PEAS.

The price of peas has sympathized with wheat, but not to the same extent. The pea bug is getting to be a serious drawback to the raising of peas in many sections of the country, so much so that shippers are obliged to avoid certain districts and not buy in these at any price. The English grain dealer has a perfect horror of buggy peas, and will not touch them knowing them to be such. The pea crop is a very important one to Ontario farmers, and one which plays a very important part in the rotation of crops in many sections of the country. Cannot something be done to check its spreading, or if possible to exterminate it, for a time at least? Will the readers of the FARMER'S ADVOCATE give their views on the subject through its columns.

CLOVER SEED.

This article is going down every day, and no one seems to have any idea where it is going to stop. Almost everybody had a high opinion of this seed in November, and thought we might see the price go to seven or eight dollars. Since then these views have been very much modified, and some of the same parties venture the opinion that it may come down to \$3. It certainly looks very much as though these later opinions might be verified. This we know, that the English seedmen won't touch it just now at any price.

OATS.

are steady and in good demand for milling into oatmeal. The trade in this article is steady and in good demand. The mills are all running, or nearly so, on Canadian oats, they being much better than Western or States oats.

BARLEY.

This article is quiet, and prices have not fluctuated very much this season.

London Markets.

London, Jan. 30, 1880.

GRAIN.			
Per 100 lbs		Per 100 lbs	
Deihl Wheat.....	\$2 00 to 2 10	Barley.....	80 to 1 02
Treadwell.....	2 00 to 2 10	Peas.....	80 to 1 00
Clawson.....	2 00 to 2 10	Oats.....	90 to 1 06
Red.....	2 00 to 2 08	Rye.....	75 to 80
Spring.....	1 80 to 2 05	Corn.....	1 00 to 1 10

FLOUR.			
Flour, fall wht.	3 50 to	Oatmeal, coarse...	3 00 to
" mixed.	3 25 to	Oatmeal, fine.....	2 75 to
" spring.	3 25 to	Cornmeal.....	1 75 to
Bran, per ton.....	10 00 to 12 00		

HAY AND STRAW.			
Hay, per ton...	8 00 to 9 00	Straw, per load...	3 60 to 3 00

PRODUCE.			
Butter, crock....	18 to 22	Cheese, lb.....	11 to 12½
do roll.....	18 to 24	Potatoes, bag....	55 to 60
do keg.....	15 to 18	Turnips, per bu.	25 to 25
do inferior.	8 to 12	Mutton, lb.....	7 to 8
Carrots, per bu.	30 to 30	Lamb.....	7 to 8
Onions, bush....	75 to 1 00	Wool.....	20 to 20
Beef, per qr....	3 00 to 5 00	Dressed hogs...	5 60 to 6 00
Cordwood.....	3 25 to 3 50		

Liverpool Market.

Liverpool, Jan. 28.

Flour, p. c., 9s 6d to 12s.	Wheat—Spring, 10s to 10s 8d;
red winter, 10s 3d to 11s;	white, 10s to 11s; club, 10s 10d to 11s 3d.
Corn, ctl, 5s 5d to 5s 5½d.	Oats, ctl, 6s.
Barley, ctl, 5s 3d.	Peas, ctl, 6s 9d
Pork, 60s.	Lard, 40s.
Bacon, 35s to 47s.	Beef, 32s.
Tallow, 36s.	Cheese, 72s.

Montreal Market.

Montreal, Jan. 29.

Flour, \$5 20 to \$6 20.	Wheat, \$1 21 to \$1 33.	Corn, 65c to 76c.
Oats, 33c.	Barley, 45c to 60c.	Rye, 32c.
Butter—western, 15c to 20c;	Brockville, 17c to 20c;	Eastern Townships, 20c to 21c;
creameries, 21c to 25c.	Cheese, 13c to 14c.	Dressed hogs, 85 93.

Toronto Market.

Toronto, Jan. 29.

Wheat—Fall, \$1 22 to \$1 27;	spring, \$1 20 to \$1 24.	Barley—No. 1, 75c to 76c;
No. 2, 65c;	No. 3, 48c to 49c.	Oats, 35c to 36c.
Peas, 65c to 66c.	Corn, 57c to 68c.	Flour, \$4 55 to \$5 65.
Clover seed, \$3 75 to \$4.	Timothy seed, \$2 75 to \$3.	Hogs, \$5 70 to \$5 80.
Butter, 12c to 18c.	Rye, 78c to 80c.	

New York Markets.

New York, Jan. 29.—Wheat, No. 1 white, \$1 41½, February.		
Rye, 92c.	Corn, 58c to 61c.	Barley, two-rowed State, 70c to 74c.
Oats, 47½c to 50c.	Pork dull, \$12 50.	Butter, 15c to 35c.
Canadian barley, No. 1, 91c.	Barley malt, \$1 15 to \$1 30	

Chicago Markets.

Chicago, Jan. 29.—Wheat opens at \$1 22½, March.	Corn, 42½c.
May. Hogs—light, \$4 30 to \$4 50;	heavy, \$4 65 to \$4 80.

It is useless for the FARMER'S ADVOCATE to touch on the proposed obstruction of laws governing the the Model Farm and Agricultural College, or about the proposed Agricultural Commission. But we hope yet to see the day when farmers WILL SEE the chains that bind them.

Dairymen's Association of Western Ontario.

The Annual Convention of this Association will be held at London on the 18th, 19th and 20th of February, 1880, and the committee hope to make it both beneficial and interesting. In changing the place of meeting this year the committee have been actuated by a desire to hold their convention in the most central place, so as to make it accessible to dairymen throughout Ontario, inasmuch as it is their desire that all should have the benefit of the celebrated lectures and useful discussions that will form the attractive feature of this year's convention. As usual, eminent gentlemen from the United States and Canada have been employed at a large expense to be present, and there is no doubt but that in point of members and importance this will exceed any former convention. Any parties wishing to attend and become members may obtain certificates by applying at once to the Secretary, Mr. J. C. Hegler, Ingersoll, which will entitle them, owing to special arrangements made with the leading railway companies, to tickets at one fare and a third the double journey. It is desirable that parties wishing to attend should apply to the Secretary at once for certificates, so as to avoid confusion and delay, and it is earnestly hoped all dairymen will endeavor to attend.

The Guelph Poultry Show will be held early this month.

Young Storthorn Bulls, also few females for sale. Apply to A. B. SNIDER, German Mills P. O., Ont.

Stock Notes.

Mr. Heacock, of Kettleby has a sale of Short-horns on 18th inst. See advertisement.

As we go to press we hear that at the sale of the Canadian Live Stock Association, which has just taken place at Brantford, the prices of Short-horns showed a decided improvement. We have not received full reports as yet.

The Cincinnati Bulletin says: "Two Barnes County, Ky., hogs, slaughtered and dressed, weighed respectively 516 and 532 pounds." One hog fed in London Township, and dressed for last Christmas market, weighed 1,080 pounds.

An English Cart-horse Society has been formed in England, with the Earl of Eilsmere as President. Their motive seems to be the establishment of a stud book, the first volume of which they intend to issue before March 1st, 1880.

SHORT HORN PURCHASE.—Mr. D. Mackenzie of Hyde Park, purchased at the recent sale of the Bow Park herd, a yearling bull by the name of "Byron Fawsley 4th," for \$150. This animal has a first-class pedigree, and Mr. Mackenzie is to be commended for his enterprise in introducing such stock to the farmers of Middlesex.

Mr. A. A. McArthur, of Lobo, Ont., has been very successful with his fine Berkshires. He reports having attended many of the leading shows of Canada and the United States, where he won all the highest honors and has made a large number of successful sales. His breeding stock was judiciously selected from the leading English herds, and great care has been taken in the breeding of their offspring since imported.

Hon. H. M. Cochrane, Hillhurst, Compton, has sold thirteen yearling Shetland ponies, to go to Iowa; also a four-year old Clydesdale mare, to go to Illinois. Mr. C. states that his Shetland mares have bred more regularly since the stallion has been allowed to run with them during the summer months. They are now more easily taken care of than sheep, being content with the roughest pasture till snow comes, and in winter they run in a yard, with an open shed for shelter, and receiving but little food beside refuse hay and straw.

Dry Earth as a Deodorizer.

A correspondent of the Cincinnati Commercial gives a suggestive account of his use of this, nature's best deodorizer, and we gladly make room for the principal points of his statement:—

"If one will observe when the cows choose to lie down in the yard or pasture, it will be seen that they choose the bare ground, rather than the sod or bedding of straw. The same is true of sheep. We have taken this hint, and furnished the cow stables with dry earth dedding. Leaves and straw are poor absorbents in comparison. In the pig-pens dry earth has no equal. In very cold weather we add straw or leaves, but until the weather is very cold the animals will be more comfortable with a bed of fresh soil, or of soil changed once a fortnight or week. In the chicken-house we have learned its great value as a deodorizer. Our roosts are over a sloping floor, on which we occasionally dry earth. The dropping roll down into a pile of dry earth. This is turned over with a shovel each week or oftener, and we can say the chicken-house is free from any offensive odor, and the bright combs and glossy feathers tell of the health of the fowls. Dry earth is a good preventive, too, of vermin on cattle, pigs and poultry. It must be procured at a dry time, and stored under shed or in the stables. It not only promotes neatness and health but saves the very element of the manures which make them most valuable, and most of which would evaporate if not absorbed by the dry earth. We do not like it as a bedding in the horse stables, but it should be found in every stable, to sprinkle the floors with as soon as the bedding is removed in the morning. When removed from the stables, sties and coops, it should be kept under cover for spring use, or for drilling with the wheat in the fall."

The Royal Path of Life, advertised in another column, is a work many of our readers would like, is well got up and ably edited. Its aim is the elevation of man.

L. J. F. Essex, enquires of us the names of reliable firms, in London, England, to whom he can ship butter and eggs, in the spring. Perhaps some of our English correspondence could inform us.

PRIZE - MEDAL SEEDS.

McBroom & Woodward,

PRIZE - MEDAL SEEDSMEN.

Their splendidly ILLUSTRATED CATALOGUE will be ready for gratuitous distribution in a few days. It will contain 68 pages, on fine toned paper, and will be handsomely illustrated with numerous cuts of Flowers, Vegetables, and Field Roots.

Send your address on a postal-card for copy. Seeds by the ounce or packet sent to all parts of the Dominion POSTAGE PREPAID.

All leading Seeds tested by our Steam Testing Apparatus.

At the leading exhibitions and county fairs **OUR CUSTOMERS** carry off the MAJORITY OF THE PRIZES.

McBROOM AND WOODWARD,
London, Ontario, Canada.

ESTABLISHED 1845.

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B. K. BLISS & SONS'
Hand-Book for the Farm and Garden.
186 pages, Beautifully Illustrated. Indispensable to all interested in Gardening.
Mailed to all applicants enclosing 10 cents.

GARDEN, FIELD & FLOWER SEEDS!

SMALL FRUITS, GARDEN REQUISITES.
B. K. BLISS & SONS,
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P. O. Box 4129.

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
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JOHN CAMPBELL,
LONDON, ONT.
King Street, Manufacturer of CARRIAGES, BUGGIES, CUTTERS, SLEIGHS, &c., modelled from the Newest Designs; which, for Elegance, Durability and Workmanship, cannot be surpassed in the Dominion. de-12

Marlborough House,
Union Depot, Cor. Front and Simcoe Sts., TORONTO, ONT.
Modern Steam Heated.
Rates—\$1.50 per day.
de-12 M. A. TROTTER, Prop.

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-L

TREES ROSES SHRUBS

The largest and most Complete Stock of Fruit and Ornamental Trees in the U. S. Prices 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.

170c **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,
Seedsman, Toronto, Canada.



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

IT REGULATES THE STOMACH,
Giving it a healthy action.

IT REMOVES ALL IMPURITIES FROM THE BLOOD,

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

It Restores the Appetite

Strengthens and invigorates the whole system, and

Makes the Coarsest Proven-der Palatable.

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

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

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

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

POUND PACKAGES for sale by all dealers, or will be sent by express on receipt of price, by

T. MILBURN, & Co.,
170-L Toronto, Ont.



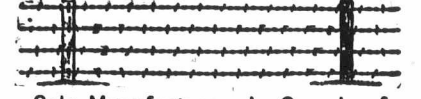
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170-b

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55 College St., Montreal, P. Q.



Sole Manufacturers in Canada of

PATENT STEEL BARB FENCING

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

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

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

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

CAUTION!

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

You are hereby notified that, in putting barbs upon wire, making a barbed wire fence, or in using or dealing in barbs for wire or barbed fence wire, not made under license from us, you are infringing upon our patents, and we shall hold you strictly accountable for damages for all infringements of Canadian Letters Patent Nos. 4,916 and 7,580.

Washburn & Moen Mfg. Co.

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WOOD & LEGGAT,
AGENTS,
Hamilton, Ont.

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

PLANTS CROWN

for transplanting, and Fruit for the market. 100 Acres planted with Berries 100 Varieties of Selected Fruits 100 See New Catalogue for what sorts to plant. Sent free. JOHN S. COLLINS, Moorestown, N. Jersey. dj-8

1880. The Canadian 1880. **AGRICULTURAL EMPORIUM**

Seed Catalogue

NOW READY, and mailed free to all applicants. Persons desiring fresh

Field, Garden, and Flower Seeds

will please reserve their orders for us. We import our seeds direct from ENGLAND, FRANCE, GERMANY, and the UNITED STATES.

Persons having any choice samples of NEW Spring Wheat, Barley, Oats, Peas, Clover, Timothy, Flax, Millet, Hungarian Grass, &c., for sale, will please forward samples and prices to

Canadian Agricultural Emporium,
360 Richmond Street, LONDON, ONT.



Will be mailed FREE to all applicants, and to customers without ordering it. It contains four colored plates, 600 engravings, about 200 pages, and full descriptions, prices and directions for planting 1500 varieties of Vegetable and Flower Seeds, Plants, Roses, etc. Invaluable to all. Send for it. Address, **D. M. FERRY & CO.,** Detroit, Mich. 169-D

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(Farmers' sons preferred) in every county, to sell "VETERINARY ADVISER," by Prof. Law. Dr. A. Smith says:—"This book will prove of immense benefit to the farmers of Canada." Agents now taking 50 to 60 orders per week.
Address—A. H. HOVEY & Co., Publishers, TORONTO. 170-1f

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The subscriber will offer for sale on **Wednesday, Febr'y 18th, 1880**

AT OAKLAND FARM, near Kettleby P.O., 25 head of Shorthorns, 15 young cows, and Herefords, 10 young bulls and bull calves, and a number of Berkshire pigs, from 3 to 5 months old, bred from imported stock.

TERMS.—7 months' credit on all sums over \$25, on furnishing approved joint notes, or a discount of eight per cent. for cash.

The farm is 4 miles from Aurora Station, N. R. C., 33 miles north of Toronto. Stage passes farm twice each day.

For catalogue and further particulars address

SETH HEACOCK, Kettleby, P.O., Ont.

170-A

THORLEY'S



HORSE & CATTLE FOOD

urifies the blood of horses, removes worms, hives, and 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 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.

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[Late "Agricultural Mutual."]

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Over two-thirds of a million of dollars have been expended in the payment of losses in the Province of Ontario.

FARMERS! Patronize your own good, long-established Insurance Company, and be not led away by the empty promises of the promoters of new-fangled ventures, amateurs in the business. For insurance apply to any of the agents, or address—**D. C. MACDONALD, Manager** London, 23rd Sept., 1878.



GURNEY AND WARE'S Standard Scales

HAVE TAKEN PRIZES OVER ALL COMPETITORS.

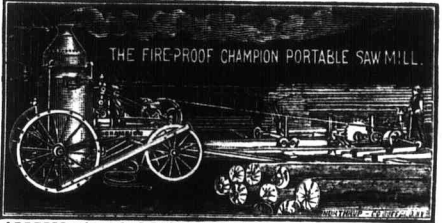
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1st Prizes taken also at former Provincial Exhibitions in Ontario, in Province of Quebec, and in London, England. Every scale warranted to stand inspection. All makes of Scales promptly repaired.

Send for Illustrated Catalogue and Price List to Hamilton, Ont.

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 saved a log with it. Not quite two days. In one week we moved and set it up as mentioned, and saved twenty thousand feet. I will write full particulars soon. We saved six hundred feet in twenty-nine minutes—3 sizes built—12 H. P. using 44 in. saw. Capacity 3 to 4,000 per day. 16 H. P. using 48 in. saw. Capacity, 4 to 5000 per day. Most simple, efficient and portable mill of its size in the world."

CHAMPION PORTABLE SAW MILL



W. A. VERNON GARRETT writes from Ilfracombe, Muskoka, Dec. 15th, 1879:—"The 16-H.-P. runs well. The other day we cut 1,039 feet in 45 minutes. The mill gives me entire satisfaction."

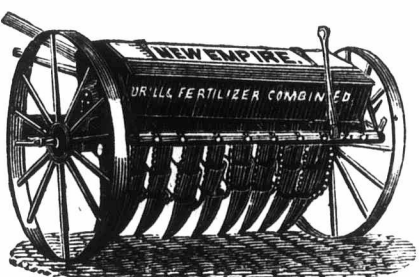
ARHHD. CAMPBELL writes, January 13th, from Strathroy:—"Mr. Bassett has started my mill, and it runs satisfactory. We cut 19 boards, 16 feet long, 22 inches wide, in seven minutes, making 551 feet of inch lumber. Will be glad to have intending purchasers inspect the mill."

Address for further particulars and references, **Waterous Engine Works Co., BRANTFORD, CANADA.**

170-L

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Something New, Accurate, Reliable and Durable.



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

NO MORE GUESS WORK—BUT THE CLIMAX OF ACCURACY.

A practical tool in the hands of any farmer.

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

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

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170-B

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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170-1f **ASK FOR MITCHELL'S HYPOPHOSPHITE.**

FRUIT AND TREES ORNAMENTAL TREES LARGE STOCK. LOW RATES.

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

L. D. SAWYER & CO.

Hamilton, Ont. Original and Only Genuine "Grain-Saver" THRESHING 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 littering or scatterings.

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Give your Sons a Chance. Young Men get a Business Education.

The British-American Business College is the leading commercial school in the Dominion. Its location is in the business and educational centre of this Province. Its staff of teachers and lecturers are thoroughly capable business men. The course of studies has been specially arranged to give a sound commercial training. Every subject in the course is taught by men who make these subjects specialties. Arithmetic, Book-keeping, Penmanship, Correspondence and Commercial Law are each thoroughly taught. In addition every student, after getting a thorough course of training in Arithmetic and Theoretical Book-keeping, is required to pass a rigid examination, and, if found competent, is put into actual business, where he engages in actual transactions independently, buying, selling, sending away and receiving goods on commission and joint account, taking and giving notes, banking, &c. In fact he enters a miniature business world; and under the direction of a competent tutor he must transact almost every kind of business, keeping his books for the same in the most modern style. Each in turn has to become a bank manager, doing with his fellow students all kinds of business, just in the same way as in the real bands of the country. Many of the best accountants and book-keepers in the Province have been trained in this institution. The President, who is the publisher of the *Monetary Times*, is thoroughly acquainted with the commerce of this country, and can do as much to aid worthy students as any man in Canada. We most cordially invite any who wish to get a business education, to come and see this school.

SEND AND GET OUR LAST ANNUAL CIRCULAR. 170-1

Lands for Sale!

\$20,000 Cash, or \$5,000 Down

Will buy the best 100 acre Fruit Farm in Canada, situate in the west end of the beautiful Village of Grimsby; extends from the mountain to Lake Ontario. About 55 acres are in Orchards—Apples, Peaches, Cherries, Grapes and Berries. One year's Fruit recently sold in the Orchard for \$5,000. There were over 2,000 barrels of Apples in 1878, and seven-eighths of the trees are young and only just beginning to bear. Good water; beautiful healthy location; excellent buildings worth \$4,000, on Main St.; only 5 minutes walk to 5 Churches, High School, good stores, and Great Western R.R. Depot; good sidewalk; good carriage roads, and only 50c by rail to City of Hamilton or St. Catharines. Title perfect; no encumbrance; immediate possession; personal inspection invited.

W. W. KITCHEN,

169-tf Grimsby, Ont.

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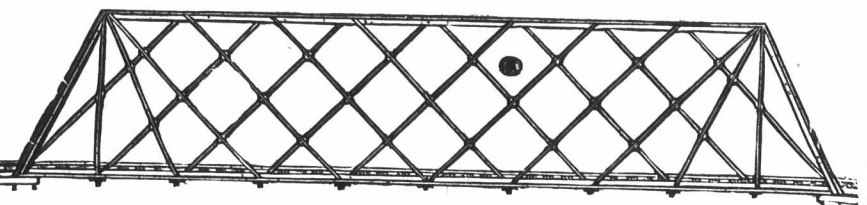
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