

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.

The winter wheat west of Toronto has a very promising appearance; the plant is in a fine, healthy condition, and should no misfortune in the way of insects, frosts or rust overtake it, we shall have one of the largest crops ever harvested in Western Ontario. The reports east of Toronto are not quite as favorable. From the Western States the accounts are most encouraging from present appearances, although there are reports from some of the States that insects are already committing depredations. Insects will most probably be unusually destructive this year, as the winter has been so mild. Late spring frosts may check their operations to some extent.

The spring seeding has been progressing finely, and the ground has been in good tilth. The clover has been very badly injured, which will necessitate the sowing of more than the usual quantity of corn and millet, and should cause a more extensive growth of root crops. A liberal use of salt, plaster and other artificial manures might prove profitable this year.

The fruit trees show a good set of buds, and many are increasing their plantations, small fruits especially having been very remunerative the past season; and the price that apples have sold at in England has given a stimulus to their cultivation. Drying establishments are to be erected in Canada this season. The great North-West must be supplied from the east, as the winds and frosts of that section are such that they will never be able to raise fine fruit. They may supply us with wheat, but we in Ontario will be able to pay for what we want of it in fruit, manufactured goods, etc.

The fearful tornadoes and fires that sweep over the western prairies should tend to make those who have comfortable homes consider well before leaving a certainty for an uncertainty.

There is an old adage which we think should be more fully considered by our farmers, councilmen, aldermen and Parliamentary officials, namely, "Out of debt out of danger." Our Ontario Legislature increased the number of paid officials and increased some salaries, adding materially to our unnecessarily large expenditure.

We hope some of our subscribers have profited by the hints previously given, namely, to take extra care of their sheep, and to purchase more if proper care can be taken of them. The enormous price which wool will now command—50 to 60c. for unwashed and \$1 to \$1.20 per pound for fine quality—has never before been heard of. The sheep rot in England has swept away so many thousands that our mutton must command a higher price. Perhaps some of you may find it profitable to purchase a few sheep from those who do not take the *ADVOCATE*. Keep all you can. Do not hoard your sheep or wool. Sell your wool when the market is fairly established, and your sheep that are too old, when you have them well fattened. Read the article on raising lambs in this issue, and try to make yours gain one pound per day. Get some tick destroyer, and do not allow the ticks to worry the profit out of your pockets. Give the lambs a dip about two weeks after the sheep are shorn. We hear that Briggs & Son, of Hamilton, Ont., make a good tick destroyer; we have also heard of bad results from using some kinds.

If your debts are paid and you have not sold your clover, and if you can keep it properly, we would not advise you to sell now. If you have money to spare, it might not be amiss to secure your seed for next season. At the present time we do not think it will be lower, and there are no bounds to what it may command, although there are large stocks being held.

This journal has for years past called the attention of the public to the dangers of allowing the possibility of our farm stock becoming infected with the diseases prevalent in other countries. A dispatch from Washington, April 17, announces that the Spanish Government has prohibited the importation of American pork into that country. Our Government should not neglect our interests. American hogs still come into Canada. We should not for present gain risk the injury of our reputation.

Perhaps some of our Ontario nurserymen may be able to give us some information about Moore's Arctic Plum, so highly spoken of by one of our subscribers, a leading farmer in New Brunswick (see correspondence).

Some of our Manitoba subscribers might find it profitable to try a few seeds of the sorghum plant.

If the season is hot enough and long enough to grow the cane successfully, they might make money, as the freight is so high on everything they import. It has succeeded well north of Clinton, and its cultivation now commenced in Ontario will soon be increased.

CANADA THISTLES.

We cannot too highly commend every proper attempt to check or exterminate any pest, but the amended Act that makes it imperative on pathmasters to carry out the law respecting Canada thistles, will, we fear, in some sections where thistles are bad, be a very severe task on pathmasters, and will drive some farmers off the land, as there are sections where the cost of keeping the thistles down for one year would be more than the whole farm is worth. We have seen such farms, and hardships must result in enforcing this Act in poor, stony, hilly sections.

Currant Culture.

"A Young Farmer and Subscriber" requests some advice on currant culture. This fruit has not of late years occupied the attention even of fruit gardeners as much as previously. Currants are as much in demand as ever, and bring even higher prices, but the great difficulty of protecting the fruit and the bushes from the currant worm and currant fly has discouraged their culture by many who had raised currants before the fly ravages became so destructive. Despite all these difficulties this fruit is too useful and profitable to be disused.

The currant bush will thrive in any fairly good soil. The more fertile the soil, however, and the more mellow, the greater the yield of fruit and the better the quality. Having procured your first supply of young bushes from a reliable nurseryman, you can propagate all you may require afterwards by cuttings. The cuttings, about 18 inches long, from wood of the previous year's growth, are planted in nursery beds about nine inches in depth. We have planted cuttings both in fall and spring, and both seasons have done well. In the second year after planting we have them bearing fruit. Some persons, instead of cuttings, divide currant bushes, using the slips as young bushes, but they never bear so well. The currant fly can be easily got rid of by the use of hellebore, either mixed with water or sprinkled from a dredging box. The borer is a more troublesome enemy, eating the pith out of stems and branches. The only remedy is to cut away and burn all the branches injured. There are several varieties of currants. Of black currants we prefer the Naples; of red currants the Cherry and Victoria, and of white the Grape. There are, however, other good varieties. In order to have abundance of fruit the ground must be kept in good condition—mellow and rich, cultivated and manured every fall.

English Letter, No. 13.

[FROM OUR OWN CORRESPONDENT.]

Liverpool, April 6.

Since my last letter was written, one subject, and one only, has engrossed the public attention here; and that is the general election. If my present letter, therefore, is somewhat meagre, you must blame politics. I could write enough to fill three or four of your pages on election topics, but I know that neither you nor your readers would thank me for them. Suffice it to say, then, that the result of the dissolution of Parliament has astonished everybody.

Amongst the individual elections it may interest your readers to know that Mr. Thomas Duckham, the distinguished agriculturist and breeder of Herefords, who contested Herefordshire as a Tenant Farmers' Candidate, has been successful. Herefordshire has three members, and Mr. Duckham was third on the poll. Mr. D. is a warm friend of Canada.

In several of my previous letters I have referred to the horse trade, and have pointed out the splendid market there is here for well-bred heavy cart horses, suitable for the special traffic of Liverpool, Manchester and other large towns. I have therefore especial pleasure in stating that Mr. C. J. Douglas has just purchased for Messrs. A. & R. Wells, of Aurora, Ont., from Mr. Thomas Statter, jun., proprietor of the world-famous Stand stud, Manchester, the splendid Clydesdale stallion "Sir William Wallace." This grand horse was bred by Mr. Pitcairn, of Blacklands, North Britain. His sire was the noted "Scotsman," dam "Jean" by "Ivanhoe." He was purchased by Mr. Statter at the Glasgow Spring Show, in 1879, when five years old, for £350. He has since won the £150 prize of the Turrill Agricultural Society, and was first in the very large Clydesdale class at the great Birmingham Show, amongst his competitors being the well-known "Topsman." With the competition that exists for really first-rate stock, Canadians must be bold, and be prepared to pay "stiff" prices for first-class sires, if they would hold their own in the English market; and I trust that Messrs. Wells will reap an adequate reward for the enterprise they have shown. I observe that eleven other stallions selected from some of the best studs in Scotland have been sent out per the S. S. Ontario for employment in Canada and the States.

Messrs. Hendrie & Douglas have made some valuable importations of carriage horses from Ontario to Liverpool, and are now occupying stables which were recently vacated by Mr. Cremer, the agent of Messrs. Dalman & Co., of New York. I understand that, as they select only animals of really good quality, they have met with fair success, and have ordered further consignments.

Several shipments of cattle have recently been made from the Maritime Provinces, and the salesman to whom they were consigned informs me that some of the beasts realized as much as £45 per head in the London market yesterday. This is a remarkable price, and must indicate both good breeding and excellent feeding; and it behooves your western breeders to take note of it, for, as I have said before, only one article is suitable for the British market, and that is simply the best that can be produced.

The revised and completed edition of the reports of the Farmers' Delegates who visited you in the fall, has now been issued, and I understand that something like 100,000 copies have been circulated, or are in course of distribution. It is in my humble opinion the very finest specimen of "Emigration" literature ever produced.

I observed the other day some curious statistics about the French poultry trade. It is calculated

that there are in France forty millions of hens, which produce annually four milliards of eggs and one hundred millions of chickens; and the annual value of the products of the French poultry yards is put down at the enormous figure of 550 millions of francs, or say 110 millions of dollars. Veritably great effects spring from little causes. The above figures, be it remembered, do not include ducks, geese and turkeys, in which also a vast trade is done.

I observe that there is still a large import of Canadian potatoes, a large proportion being for seed.

Intelligent Farming.

When first commencing business a dairyman should be willing to sell his produce for what it will bring; but in all cases he should use his utmost endeavors to produce the best article. This he can do to some extent by carefully experimenting, but to attain the highest state of perfection a man must be a constant and careful reader, thus adding to his own experience the experience of others, and also receiving much benefit from the investigations of scientific men. But we often hear from the farmers the declaration, "We have not any time to read." Why? "Because we have too much manual labor to do ourselves, and if we should spend any time in reading, investigating or experimenting, we should have to hire more men and pay out more cash for the additional labor thereby incurred—an immediate financial loss." Quite true; we agree such appears to be the case, but we also know this idea is "penny wise and pound foolish," for by adhering to it we keep in the same old ruts as our forefathers. But this we can do no longer, as the soil has lost much of its virgin fertility and calls loudly for more enlightened husbandry. We have repeatedly noticed studious young farmers who had no better school advantages, and not as good financial starts in life as many others, who have in a few years taken honorable situations in our country, and have been the means of elevating the agricultural standard of Canada. These men have been ridiculed as "scientific farmers," "gentlemen farmers," etc., but the hard times of the last few years have shown that these men have shielded themselves from much of the evil that has fallen upon the other class.

Another noticeable and praiseworthy feature in favor of the reading farmers is that their homes and farms are more beautiful and more comfortable in all ways, and if this were the only argument it should be sufficient to convince any sane man; but beside this, their families are more refined and intelligent, and better fitted for higher and more useful spheres in life. The reading farmer also becomes fully conversant with each department of his business, and does nothing in the dark—a striking contrast to the non-reader, who does very much at hap-hazard, hoping for the best results, but not knowing whether they will be obtained or not.

The wisest, most useful and most successful men the world has ever known have been to a great or less extent studious readers; and there is no calling in life which demands more careful study and investigation than that of the farmer. Reading will elevate the farmer from a tired drudge to an intelligent and respected citizen. Then, and not until then, will his calling receive that respect to which it is entitled, for knowledge means power.

M. W. E. writes from Iowa to the April number of the Prairie Farmer: "Hog Cholera is raging fearfully in some portions of the country, many farmers losing all they had, from 50 to 100, and even 150 in some instances. All hogs fit to market have been turned off at about 3c. per pound."

Young Farmers.

The young farmer who starts for himself at the age of twenty-one has to make up his mind chiefly and principally to a course of honest, steady work; it is absolutely necessary that his mind should be indelibly impressed with this fact; nothing succeeds like work. Thomas Carlyle, the Chelsea sage, has said that the only pleasure in life is in hearty work, and that those who do not work are lichens, mere drones and parasites upon the industrious. Now, there are two sorts of work—one which is mere drudgery, and continually, on this account, unsatisfactory and making the worker discontented; the other a joy and a pleasure, because the heart is in it and there is a pride in doing it well. Therefore, young farmers, be proud of your work and your calling; condemn any misapprehensions in your mind as to thinking that a politician, a merchant or a lawyer has a more noble career; leave such thoughts behind, and remember that the nobleness of any career does not and can not consist in the calling itself, but in the manner in which you carry it on. No profession or calling is of itself ennobling; the man always ennoble the calling by succeeding in it. Let these two motives, then, actuate your hearts and hands from the start—the determination to work well and honestly, and to stick to your calling. Do not be ambitious to become rich; be ambitious to improve yourself and to make others happy, and to leave the world better—no matter how little—than you found it.

It is said that it is easy to advise, as if this were any objection to it; if it is so easy, be yours the task to accept it—do not be unwilling to learn from older heads than yours—do not think that you know everything and that the "old man" is behind the times. He can always see things more surely than you can; listen to him and get his reasons from him (he will be pleased to tell you). Above all, be kind to him, though you may think he is wrong. It may sound common-place to talk like this, but if it should induce but one young man to think over his moral duties, too often left out of sight in farming affairs, this will not have been written in vain. If you are married, relieve your good wife of the laborious duties; do not think her work is less arduous than yours, because in a great many cases it is more vexatious and annoying. To put all that I have written into a maxim—Be true to yourself and to others.

In your farm work be not anxious to keep as large a herd or as many acres of land as your neighbor; be not anxious to try every new-fangled experiment; begin in a moderate way, and increase as you see your way clear; adapt your system of farming to the district or township in which you may happen to be situated, and once you have chosen your mode of agriculture, do not be turned from it by low prices or temporary losses; of course, if you have made a mistaken choice, you will have to suffer, but with common sense and ordinary caution, one can always choose correctly. Avoid debt as much as you can; it has done so much harm in the past that the safest rule is not to get into debt. There are cases where money can be borrowed to advantage, such as for purposes of drainage, but be economical and cautious, and strain every effort to pay for it yourself. Subscribe to all the agricultural papers within your means, and subscribe to the one in your own township, state or county; there is no excuse for failing to take one farming paper. Communicate your experiences to it freely; if successful in any way, tell how you succeeded; if unfortunate, relate the particulars, and perhaps some one else will tell you where the mistake was, or you will prevent others from committing the mistakes that you have done. In all your operations be careful to note down or

remember *all* particulars, as sometimes the slightest inaccuracy will cause loss. Never delay in your work, as one wet day in early spring will cost you a week's work afterwards—that is to say, to give an example, supposing you have some weeding to do on a fine day, and that you should put it off for a more agreeable task; a wet day comes, and you can not weed for a couple of days more; your labor is increased four-fold and your crop suffers also. Therefore use your judgment as to the most necessary work to be done, and do it.

The day for sneering at "book-farming" is gone by, therefore study the principles upon which you are working; do not endeavor to store your mind with scientific formulas, but learn the *effects* of certain manures, certain foods, and the cost of these things. Also know the cost of your crops, of each one in particular, and I know of no simpler method than that of having a plan of your farm drawn by yourself on a sheet of foolscap, the portion of land which each crop occupies being lined off. Mark down in lead-pencil on each portion, as the week passes, the amount of days plowing, harrowing and sowing, the amount of seed, the amount of manure spread, and so on; then at the end of the season sum it all up as concisely as possible, erase the pencil memoranda, and re-mark it in ink, putting down the yield resulting from it, and you see at once the cost of your crop. These plans dated and put away, are valuable for future reference, and if a small diary is kept at the same time for noting down the character of the season, date of sowing and such particulars, these two will form a very useful work.

I append a few general rules, not that they are new, but that they are concise and have been proved trustworthy under nearly all circumstances:

1. Plowing should be as deep as possible, and the earth be subsoiled also; when the subsoil is clayey, lime it well and bring it up to the surface; if the land is inclined to hold water, plow into narrow ridges and tile-drain as soon as possible. Plow in the fall for all spring crops, as the winter frosts mellow the soil, and repeat, of course, in the spring.

2. Harrowing is done to pulverize what the plow is unable to do, or has left undone. There are several kinds of harrows, each good for a special purpose; the ordinary tooth harrow is, if the teeth are made slanting, as good as any for newly plowed land; a chain harrow is very beneficial for other purposes, such as breaking lumps of manure in pastures, meadows, etc.

3. Sowing is usually done altogether too thickly, but it must not be done as lightly as they do in the British Isles, where they have a very moist climate. If a wet spring is occurring, sow a little less; if a dry spring, not so light; the moisture causes more seeds to germinate. If the seed is drilled, drill closer in a dry spring and farther apart in a wet one. The depth proper for each kind of seed must also be borne in mind, as this will affect the crop very materially; on this account drilling seed is perhaps the most satisfactory. For meadows, sow three or four sorts of seed—even six or eight sorts will do no harm; this is when cattle are bred. If near cities, and the hay is wanted for horses, a large proportion of timothy is necessary.

4. Cutting Hay.—All authorities are pretty much agreed that the proper time for cutting is during the bloom, and the curing is most perfectly done when we manage to preserve it with all the color and sap and the least proportion of woody fibre. After the bloom has come the fibre commences to form, and this is to be avoided; in a great many cases it will be necessary to begin cutting early in order to get the greater portion of the hay cut in the bloom, for if we waited for the

bloom to form before cutting any, more than half the hay would be too woody, thereby causing loss.

5. Animals must be kept clean and comfortable, and must be fed plentifully. There must be no waste, and especially with cows, no chance to trample their food allowed. They must have their food regularly and have plenty of water; the water ought not to be cold, as they lose very much in this way, the coldness of the water chilling their stomachs and systems, and making them eat more food. There is one point about horses that a great many neglect, namely, the washing of the hocks; the neglect of this inevitably brings scratches. Speak to your animals kindly and rarely strike any animal; if you find that you can not do otherwise than strike one or two of them, and it should happen to be a cow, fatten and sell it; if a horse, sell it at once, and perhaps the buyer will be able to manage it; do not, however, sell it under false pretences. It is generally the case that a kind master has a kind animal.

These few notes may perhaps be of some use to beginners; they are not intended for others. They are offered modestly in the hope that some may be stirred up to better deeds and longings. I had more to write, but think that I have occupied enough of the space of the FARMER'S ADVOCATE for this month. Let each one who may read this article determine to "make two blades grow where only one grew before, and thus be a public benefactor." In adding to your own wealth you add to the wealth of the country, though the doctrine of Free Traders is somewhat opposed to this.

HIRAM B. STEPHENS, St. Lambert.

Healthy Pigs.

The prevalence of disease among pigs in the neighboring States warns us to be more careful than ever to prevent disease among our own herds, not only by guarding against infection from that country, but also by strict attention to the food and care of our own pigs. No food but such as is clean and sound should be given them, and their pens and bedding should be such as to ensure health and cleanliness. Mr. Mechi's plan for keeping his pigs clean in their sties is deserving of consideration. Although he keeps so many pigs (200 at a time) and so closely packed, he has no apprehension of disease among them. They are always on sparrowed wooden floors in their sties, the spars being three inches wide, with intervals between them, and a pit under them, so that the change of temperature caused by the heat of their bodies and their breathing, is continually circulating under and above them. There should be, of course, a way of escape for the heated air in the upper part of the sty. There can thus be no stagnation of air, so fatal to animal life.

The urine falls between the spars, and the pigs generally deposit their solid excretions in a corner, so the animals are kept clean and consequently healthy. There is little danger of their getting heated and then catching cold, bringing on lung disease and hog cholera. In like manner he has fattened hundreds of cattle on sparrowed floors without a particle of straw or any sweeping of floors, the excretions all passing between the spars to the pit under them. At one time he had twelve cattle on these spars from the time they were six months old until they were sold fat at two years old, and they were always clean and healthy. From calves until full grown for the butcher, his cattle were constantly on sparrowed floors. They always fattened as quickly and grew as well as those on straw in covered yards, and were especially healthy.

We would especially direct the attention of our readers to the advantage of keeping pigs clean in sty and food as a prime item in securing their healthiness. Cleanliness and good health in such instances are almost inseparable.

Profitable Potato Culture.

Never before has the potato as a farm crop been so highly estimated. Its almost entire failure by the disease is an incalculable loss to the farmers of Great Britain and Ireland, while the potato crop in America has been unusually productive, and quite free from any disease. The crop is estimated at 181,400,000 bushels. These figures will enable our readers to form some idea of the importance of the potato crop. Throughout North America it has doubtless paid the producers well for all their expenses, but how much greater would have been the profit had all the area planted been properly cultivated? The average yield of potatoes in the United States in 1879 was only 69 bushels, an average less at least by half than what would be expected. We have reports of 400 and even more bushels to the acre, but by planting good seed in suitable and well-prepared ground, with fertilizers drawn from the subsoil, we then have a soil rich, deep, mellow and porous, such as in a favorable season must reward the farmer with an abundant crop.

The next point to be considered is the seed, its preservation and preparation. Seed potatoes should be kept, as nearly as possible, as fresh as when dug in the fall, without heating or growing. The smooth potatoes of medium size are the best for seed. It is well that they be cut a few days before being planted, and the cuts healed by mixing them with land plaster or wood ashes. It is well, also, that they be cut to one or two eyes. The distance between the drills and between the sets varies. For late varieties from 30 inches to 3 feet between the drills, as the vines are the more luxuriant. For earlier varieties six inches less space, and in garden culture not more than two feet apart.

The potato beetle has caused a great diminution of potato growing. They put in an early appearance in the season, but these early beetles that emerge from their winter quarters, being perfect insects, are not gross feeders. Their mission is not to consume but to produce. May and June are the mating months for the beetles, and it is not till the larvæ appear that the great damage is done. Some take advantage of this circumstance, and by planting early varieties and planting them early, they mature so early that these suffer less from the beetle. Paris green is the great means of combating the potato beetle, as well as many other devastating insects. Other insecticides have been recommended. London purple is much lower priced, but it is doubtful if it is so effectual for the purpose. So far we prefer the Paris green to anything else. We use it mixed in water as the easiest mode of application.

The necessity of more skilful cultivation is shown by the official report of the U. S. Agricultural Department, which states the fact not very creditable to American agriculture, that the average yield in the States in 1879 was only 69 bushels, an average not half what it should be with fair cultivation.

SUCCESSFUL VETERINARY STUDENT. — C. P. Smith, who has been studying in the office of Messrs. Rudd & Tennent, veterinary surgeons, of this city, at the recent examination of the Ontario Veterinary College, Toronto, succeeded in carrying off the following prizes: First in Chemistry, first in Materia Medica, first in Physiology, with honors in other branches; also the gold medal for the best general examination. He had carried off the highest medal in the junior class last spring, being the only student that carried off the medal in both the primary and final examination. He was also awarded his diploma. The firm of Rudd & Tennent is one of our veterinary advisers.

Spring Care of Lambs.

As soon as a lamb is dropped, the shepherd should see that the mother gives it the proper attention, and in the course of half an hour he should see that the little one draws its mother's milk freely. Very often they will need assistance perhaps for a day or so, and often the shepherd will find a core in the ewe's teats, which will prevent the milk from being drawn; whether this be the case or not, the shepherd should ascertain by stripping a little milk from each teat; this will remove the core, which in some cases is harder to remove than in others. If the sheep are still in the pen, a small place should be partitioned off for each ewe as she lams, and kept there until the lamb is strong, say from five to eight days, according to the strength of the lamb; then all the ewes which have lambs should be put in one pen by themselves; if you have not two pens divide the house in two rooms, those ewes which have lambed should be in one pen and those yet to lamb should be in the other. The young lambs should be taught to eat as soon as possible; this they will do when very young. A low rack should be provided for them on one side, and a temporary partition put around this, leaving an entrance at some particular place large enough for the lambs to go through, but too small to admit of the sheep; in this rack the best clover hay should be placed, a very little at a time, and as soon as the lambs begin to eat, that which has been picked over should be removed morning and night and fresh put in, and that which is in the rack at noon should be shook out and turned over. They will also learn to eat turnips early if they are properly prepared; this may be done by cutting very thin shavings of a turnip, place them in a trough near their hay rack and sprinkle a little cracked oats and peas in the trough; a little oil cake meal will also do good service, the meal should consist of one-third oats and two-thirds peas, all of which should be cracked very coarse, and as soon as they learn to eat well they should be fed whole grain, consisting of same proportions, which may now be sometimes boiled. If you wish to force your lambs along as fast as possible give them as much turnips and grain as they will eat up clean, feeding three times each day; it would be better to feed boiled grain morning and night, mixed with bran enough to absorb all the juice of the grain; at noon give them raw grain, in which mix oil-cake meal, in the proportion of one-half pint to a quart of grain; after they have done eating clean their troughs out, and do not allow them to become crusted with filth, and on no account allow any grain to remain in them. You may have some trouble to get the lambs to eat the boiled feed at first, but this you can do with patience, by mixing it at first with raw grain after they have learned to eat well, but it is much safer to learn them to eat boiled grain at first, as it is not so heating or so apt to cause apoplexy by overfeeding; in fact lambs rarely eat enough to hurt themselves when the feed is properly boiled and a sufficient amount of bran mixed into it. If your sheep are in the pasture and it is convenient to the sheep house, put the lambs' feed in their troughs, and if the grass is not abundant you should have some soiling food at hand with which to fill their rack; when all is prepared drive them and their dams in and let all remain until the lambs have done eating, when they should be returned to the field. Morning and night is often enough to feed when they are on grass. When it is not convenient to drive them to the house, a small pen should be provided in some sheltered and convenient place, when you can feed the lambs as above described. Lambs will not grow as well as they should if their dams are not looked well after; they should

be in good condition when they lamb and should be kept so all the time while suckling. We have found oats and bran, half of each, an excellent food; a few peas may be mixed in to advantage; a pint twice a day of this mixture will give good results at all times, but should be especially fed if the grass is poor; soiling crops should be grown and fed liberally in racks when the grass is short, and salt ought to be kept within the reach of all.

FOSTER LAMBS.

Sometimes a ewe loses a lamb and another may have two; in such a case, select a young lamb, one which does not appear to get enough milk, the ewe should then be shut up in a pen by herself, the skin taken off the dead lamb and sewed on the live one, the liver of the dead lamb should be taken out and well smeared over the head, legs and all uncovered parts of the live one; if then given to the ewe she will generally take it without much ado, but she should be kept in the enclosure for a week or so; the surplus skin should not be left on the lamb more than 12 hours.

TWINS.

Twins generally need more care than single lambs, and sometimes may need to be fed with cows' milk from a suck-bottle, and should always receive that of a new calved cow (shepherds consider farrow cows' milk dangerous to feed); neither should a lamb a few weeks old suck the thick milk which first is found in a ewe's bag after lambing, but lambs just dropped should get this thick milk. The shepherd should see that every ewe which gives birth to a lamb raises one. The great secret of success in feeding is to be regular, both in time and quantity, and scrupulously clean with the racks and troughs.

DOCKING, &c.

We have found docking and other operations which are required to be performed on lambs best done at an early age, at three to eight days, according to the strength of the lamb, but in most cases about the fourth or fifth day is the proper time. The tail should be cut off at the second joint from the body; care should be taken to cut at the joint, or the healing will take much longer; a little ashes or flour may be put on the wound to obstruct the bleeding, which will soon stop, but should it not and the lamb seem to be getting weak, a piece of twine tied tight above the dock will stop the blood; the twine must be removed in twelve hours time or it will have an ill effect. At this season of the year the ticks leave the old sheep and attack the lambs; they should therefore be protected by some tick destroyer. With the above management our lambs have gained one pound per day for several months after they commenced eating well.

Over-Production.

If anyone will take the trouble to look into the facts about the comparative price of the different kinds of fruit grown in this country, he will see how foolish is the idea that the country is in danger of being overstocked. Take the price of apples, peaches, pears, strawberries, grapes, etc., and for forty years, dividing that time into four periods of ten years each, and statistics show that on an average the price of fruit has constantly increased. In strawberries and other small fruits this has been very marked. Production has grown rapidly in that time, but prices have constantly advanced. Occasionally we have a year of great abundance of apples and the prices are low. But farmers do not seem to have realized yet that the surplus apples may be very profitably utilized in fattening both hogs and cattle. The best of meat may be made with a little corn and plenty of apple food. In older countries it is well known that this kind of feed, cooked and mixed with ground grain, is very healthful for all kinds of stock, and it is doubted that hogs would have the disease known as cholera if fed this kind of ration frequently. So we see that in years of abundance the surplus fruit, when the price is low, may be profitably fed to stock, and thus we may realize a good price for it. There is no danger of planting too many orchards, or of getting too much fruit.

On the Wing.

On the opening of spring the animal and vegetable kingdoms awaken to new life and energy. Our migratory birds call to mind the advantages of a change, and having been pretty closely caged up all winter, we take a short flight to the County of Huron. We stopped at Londesborough, a small village on the L. H. & B. R., a few miles from Goderich and Clinton. A Union Spring Show was being held there. We were much pleased with the exhibit of heavy draught stallions and Durham bulls; these fine animals must rapidly improve the stock in this locality. There are not many sections in Canada that could make such a fine local show, as many of the Provincial prize animals are now owned here. The land is excellent in this section, and the farmers are thriving. There was a large attendance of farmers from the surrounding country. The implement manufacturers made a large display, although the exhibition only lasted a few hours. These exhibitions do good in other ways, besides stimulating to improve the stock; many meet and exchange opinions, and often go home improved. There is always something for the brain to work on after attending an exhibition, and most all the boys for miles around run in on the afternoon to these exhibitions, unless when held at long distances from home; many cannot spare the time or money to attend them; this is the great advantage of having the exhibitions perambulating, although there is often a lack of accommodation for man and beast at small villages.

We next went to Clinton, and seen that old enterprising gentleman, Mr. Andrews, of whom we gave an account in vol. 12, page 74. He has now introduced the manufacture of sorghum into that locality. He went to the States to ascertain about it and secure a mill for preparing it. He is highly delighted with the experiment. We partook of some of the sorghum, which is very nice. It can be raised profitably here, and no doubt will be soon found in many parts of Canada. This will be a great saving to us, if we raise our own syrups and sugars.

SALT.

We wished to know a little more about our Canadian salt works. We heard that the Goderich Salt Works were doing but little business at Clinton. The manager informed us that there is no profit in making salt now; that they only keep their works in operation to prevent them from falling into decay. So we proceeded to Seaforth. Here we found activity in the salt business; new evaporating vats are being erected, and the best process of purifying and preparing the salt for dairy purposes is in use here. The salt after being taken from the evaporating vats is put into a large revolving boiler, open at both ends and set in an inclined position; the boiler is heated from the bottom, and discharges the salt in a dry state at the lower end; from this it is elevated to a mill that crushes it to powder; before passing into the mill it is all sifted, and all hard lumps or foreign ingredients are taken from it.

One of the buildings of one of the salt works had been burned down. Men were digging out the old foundation, which had been made of logs of soft elm and other perishable wood. The logs were quite sound and showed no symptoms of decay. We were astonished at this, as the soil was just suitable to rot them where they had been set in the ground. We enquired how it was that they were so sound. The workmen informed us that the timber never rots where it comes in contact with the salt. If this is a fact, and this ocular demonstration pretty well convinced us, is this not an important fact to know? Perhaps some of our readers may be aware of it, but we are quite sure

that thousands of them do not know it. If there is any one who will give us full particulars about its use in preserving timber, the quantity to be used, and best means of applying it, we shall be pleased to hear from them, as it may be of great value in saving our fencing posts and building material.

When at Seaforth we noticed one of our subscribers, who owns a farm on the shore of Lake Huron, was loading salt on his wagon to apply on his farm. We thought this strange, as Seaforth is twenty-five miles from the lake, while the Goderich salt works are quite close to the lake, and the Clinton works are only ten miles away.

It is difficult for us to say where the purest salt is obtainable, as Goderich, Clinton and Seaforth all have their advocates. Mr. C. J. Kingstone, of the Ellerton Salt Works, carried off the prize for the best salt, and this without any extra cleansing. The Ellerton Works are south of the before mentioned works. This last month Messrs. J. L. Englehart & Co. have struck a bed of salt 90 feet in thickness; this is at Petrolia, further south than any. What the quality of this salt may be is not yet known to us, as they have no salt works at Petrolia yet.

Salt is very rapidly coming into use by farmers, results having proved it to be a profitable investment; and the immense supply that must underlie this section of country is such that no one need hear of it ever being exhausted. We hope to furnish more information about salt in future numbers.

We returned via Stratford. The fall wheat along the railway promises a most luxuriant harvest.

Ontario Agricultural Commission.

At the last session of the Ontario Parliament a measure was introduced empowering the Government to appoint an Agricultural Commission. The members of this body have been selected by the Government. The following is the list of members at the first meeting: Hon. S. C. Wood, Messrs. A. H. Dymond, Richard Gibson, Edward Stock, William Saunders, William Whitelaw, J. P. Wiser, M. P., John Dryden M. P. P., John McMillan, Eli H. Hilborn, John Watson, Francis Malcolm, J. B. Andrew Wilson, Wm. Brown.

The full powers and objects to be accomplished by this body are as yet to us only partially developed. One meeting has been held, and the following are the subjects put before the members for their attention:—

Resolved—That the topics for consideration be classified as follows: No. 1—The soil, climate, topographical features, cultivatable area and products of the several sections of the Province, and the progress and condition of husbandry in Ontario. No. 2—Grain-growing in its several agricultural and commercial aspects, drainage and manures, and recuperation of worn-out lands. No. 3—Stock raising, dairying, stock laws and fencing. No. 4—Fruit-growing, forestry, insects, and insectivorous birds, and bee-keeping. No. 5—Cultivation of special crops, such as flax, &c. No. 6—Labor and labor saving appliances, ownership of lands as compared with renting, agricultural book-keeping, and agricultural education. No. 7—Agricultural Associations, grants and shows, and functions of the Bureau of Agriculture.

For each class a sub-Committee of the members was appointed. The Chairmen of these sub-Committees were as follows: No. 1—Soil and its tillage, Mr. E. H. Hilborn. No. 2—Grain-growing, &c., Mr. F. Malcolm. No. 3—Stock-raising, Mr. J. Dryden. No. 4—Fruit-growing, Mr. W. Saunders. No. 5—Special crops, Mr. J. McMillan.

No. 6—Labor, agricultural education, &c., Mr. John Watson. No. 7—Agricultural associations, Bureau of Agriculture, &c., Mr. J. B. Aylesworthy.

There are among the members appointed many really good practical farmers, who have a stake in the general prosperity of agriculture; men who have labored and made and improved their farms, and gained their sustenance from them, and really understand the requirements of the leading farmers of Ontario; they also know the struggles and difficulties of the farmers of small farms and limited means. As the majority of the farmers in Ontario are of the last mentioned class, the objects of their deliberations, we trust, will be for the greatest good to the greatest number. The unanimous voice of this body should have great weight. As there are so many really sound and intelligent farmers, we anticipate that much good will be the result of this appointment. The members are not to receive pay for their services; they are, however, allowed travelling expenses. This, of course, cannot be expected to continue long. Every man's time is worth money; and if a man works for the public in a faithful manner he should not be called upon to be an actual loser. Every laborer is worthy of his hire. It is generally better to pay direct than indirect.

The present Board of Agriculture and Arts is composed of about 40 members; they receive \$4 per day and 8 cents per mile, one way, for the full distance travelled. This amounts to a very large sum. Surely these Commissioners will have more power, and it is to be hoped will do more good than the Board of Agriculture and Arts have done during the past ten years; they certainly are entitled to at least as much as the members of this Board are. The present Board of Agriculture and Arts cost so much that they are virtually a bankrupt body, and must either have an additional grant from the Government, or must fall from bad management or its own massive expensive encumbrance. The \$11,000 paid by the late Col. L. Denison has now vanished. It is our opinion that this Board has out-lived its utility, and that something must be done to make it more beneficial and less expensive. The principal work it has done is to manage the Provincial Exhibition. The private exhibitions that cost the Government nothing appear to be doing more good and giving more satisfaction to exhibitors than the Provincial Exhibition has for some years past.

THE CANKER-WORM.—On mild days the canker-worms may make their appearance, and the females, which are wingless and always crawl, must be prevented from ascending the tree and depositing their eggs. The devices for effecting this are numerous; they generally consist in placing some barrier around the trunk which the insects can not pass. Some have gutters of oil, others smooth surfaces which they can not travel. The simplest, and as effective as any, is stout paper smeared with tar or printer's ink. Blowing dust and dead insects will bridge them over in time, and to be effective, they must be looked to every few days, and renewed as needed. The tent caterpillar's eggs are deposited in rings on the small twigs of apple and other trees, near their ends, and can be readily seen on dull days; they should be cut off, taking the end of the twig, and burned, thus saving a much larger amount of work later in the season.—[Cincinnati Bulletin.]

BLACK PEPPER FOR THE CABBAGE WORM.—A correspondent writing in the Farmer, says: "Last year was a very bad one to get cabbage to head, the cabbage worm was so bad. Below I give a remedy that is sure death to them: For every hundred heads of cabbage take a quarter of a pound of black pepper and put it in a box large enough to sift out well. Go into the patch before the dew is off and pepper them well. Two or three times will be sufficient. The worms go through the leaves and die."

Report of the Committee of the Fruit Growers' Association of Ontario.

At a recent meeting of the Fruit Growers' Association of Ontario, there was much discussion in regard to the system of fencing practiced in Canada, and a committee was selected to investigate the matter and report. Below we give their report, which may have some effect on the Government, especially as this Society is an important one; those adverse to their views should let themselves be heard. Our columns are open to free discussion.

REPORT.

Your committee on fences, having examined into the subject, have the honor to report: 1st. That the existing laws regarding fences are unjust to the land owner and occupier, because if he has no need for a fence around his farm, society should not compel him to build one. 2nd. That if a farmer chooses to "soil" his cattle he should not be compelled to expend on fences a tax estimated at \$2 per acre per annum to keep his neighbors or highway cattle off his property. 3rd. That no law should compel a land occupier to make a road or division fence to protect himself from the public at large; that the public are just as much interested in the welfare of the State as are the individuals of the public; these last therefore should be protected by a public law compelling individuals to enclose their own stock. 4th. That although the public have a right to travel on the roads, they have no right to use said roads for a cattle run or pasture ground. 5th. That every farmer or property owner, either by paying taxes for road construction or repairs, or by the performance of statute labor, has a certain right in the roads surrounding his lands, and this vested right should enable a majority of owners to say whether the public roads should be used for any other purpose than the legitimate travel or driving of stock, when required, along them. 6th. That during winter these roads are fenced in such a way that they harbor snowdrifts, thus blocking to a considerable extent the travel along them. 7th. That the maintenance of fences is an excessive burden on the farmer now that timber is becoming scarce and dear, and it behooves the Legislature to make such provisions by law as will assist in doing away with such an oppressive expense. 8th. That in the early settlement of this country when cultivated lands were scarce, and there were no pasture lands for cattle, it was in the interest of individuals to fence in their crops and allow the cattle to run at large. Now the case is different; the principal part of the country is cultivated, and the pasture and waste places are in the minority; these, therefore, should be fenced and not the larger tract of farm lands. 9th. Therefore your committee, taking into consideration the above facts, respectfully suggest that in counties where a majority of the acreage of the soil is used as arable land, all horned cattle, horses, pigs, sheep, and geese, be prevented by legislative enactment from running at large; that owners of all kinds of stock should be compelled to keep them enclosed or pay all damages that may accrue from their depredations; that it may be the duty of any one finding cattle, etc., straying along the roads, streets, or any unfenced lot, when not accompanied by a suitable attendant, in such county, to drive the same to pound; that for every head of cattle so pounded the individual who owns such stock shall pay to the pound keeper, over and above all other fees or charges, the sum of 50c. per head, to be paid to the individual who put them in pound; that all damage to trees by animals be assessed at the full damage done, having in consideration the age of the said tree and the number of years planted; that such damage be paid by the owner of said stock to the owner of said trees; that suitable attendants be employed when cattle are being driven to market, or from one part of the country to another, so as to keep them from straying off the road; that any one turning off the road into a neighboring field, either on foot, in a vehicle, or on horseback, shall be liable to be apprehended as a common trespasser, and as such be amenable to the law in such cases made and provided.

There is no better way to destroy sorrel than to plow the land in early summer, and in July sow it to buckwheat. If this crop is not sown, then use the two-horse cultivator and harrow so as to throw the sorrel roots upon the surface, and the hot, dry weather of mid-summer will kill them.

Dairy.

Churning.

All other circumstances being the same, cream from the milk of the Jersey and other Channel Island cows, in all of whose milk the globules are large, will churn as well at 58° as that from the average native at 60° or from the Holstein at 62°. But the size of the globules varies not only with the breed, but with the individuals of each breed, and with the food used by the cows, and also with the length of time they have been in milk. Then, again, the temperature needs to vary with the relative proportion of liquid to butter in the cream. If we churn the whole milk a certain temperature will be required; if the cream is mingled with half the milk, then we need another and a lower temperature; if only pure cream is churned, then a still lower degree will be better. It will, therefore, in each particular case, be to some extent a matter of judgment and experience as to the temperature to begin with.

The churn itself is an item which enters into successful churning. It should be adapted to the work. The poorest churns—those which operate by friction or merely stirring—will churn cream made up of large globules, especially if from well-fed cows not long in milk, because such cream churns very easily. But when the globules are small, and from cows long in milk, and particularly if the cows are poorly fed, so that the globules are not well filled, the friction churn or stirring machine fails. The butter comes with difficulty and imperfectly or not at all. What is wanted for such cream is successive shocks of strong pressure or percussion, which will operate on the entire contents of the churn at once and alike, such as can be obtained in the old dash churn with a larger dasher, or by lifting the cream and letting it fall with a thud, as when dropping from side to side in a rectangular rotating churn with deep sides, in the direction it revolves, or by the blow given by the cream against the end of an oscillating churn as it suddenly reverses its motion. The large and small globules are all affected alike and come at the same time, which they would not do in a simple stirrer. Owing to the fact that cream is generally made up of large and small globules mixed, stirring machines are commonly inefficient and unprofitable. They churn the larger sooner than the smaller globules, and either leave the latter unchanged in the buttermilk, or if churned till all come, the butter which comes first is worn out, and becomes greasy before the last is churned.

A very common error arises from allowing the cream to become too sour. The excess of acid decomposes the butter fats into fatty acids and glycerine, inclining it to become rosy and stale in flavor, and the stale taste to be transferred to the butter. The churning too is more difficult as the souring increases. Early churning will avoid such faults. It should not be delayed beyond the first appearance of acidity, and it is better, if the cream or milk has been well aired, to churn just before acidity begins. This will secure higher flavor and better keeping quality to the butter, and the churning will be quite as easy. Though it is notorious that in common practice sour cream churns easier than sweet and makes a more desirable butter, yet it is by no means certain that souring the cream adds anything to ease in churning or is any benefit to the butter. Recent observations seem to point to the corrosion of the delicate membranous envelope of the butter globule by the free oxygen in the air as the cause of making the envelope so tender as to be easily ruptured. Cream churns easily, not according to age or sourness, but according to the atmospheric exposure it has received. Facts are also tending to the inference that the fine aroma and flavor acquired by giving the cream some age are due to a similar oxydation of the light oils in the milk, and that the effect upon flavor is finest when the oxydation is pretty rapid, as it is when the exposure is somewhat elevated or not below 60°.

Well-aired, sweet cream, twelve hours old, taken from milk heated from 80° to 120° or 130° and then cooled down to 60° within the twelve hours, churns as readily and makes as fine and better keeping butter than cream lightly soured at forty-eight hours old and taken from milk of the same quality and kept all the time at 60°. Such facts, which have often been noted, and many others of a similar character, go to corroborate the inference that the free oxygen in the air has been doing the work we have all along been ascribing to acidity.

The common observation that sour cream churns easier than sweet does not militate against such a conclusion, because the sweet cream, in the common practice, is taken too soon—before the envelopes of the globules and the flavoring of the milk have been sufficiently affected by atmospheric action. It may well be supposed that the results would be better, both upon the churning and the flavor, when the cream was allowed to stand a little too long, than when taken much too soon. There is a point somewhere between the extremes at which the best results are secured, and facts seem to be fixing it a little in advance of the appearance of acidity. The presence in milk or cream of acid as the product of fermentation is indicative of incipient decay, a condition of things not very likely to contribute to the welfare of such a sensitive product as butter.

One of the largest errors in churning is in doing too much. Not one in a hundred stops when he has done enough. To get the best butter and bring it into the best style for cleansing it of buttermilk the churning should be steady rather than violent, and stop when it has come enough to rise and separate distinctly from the buttermilk, and appear in fine particles or granules, which, though soft, will be nothing but pure butter. Then the whole contents of the churn should be reduced with cold water, or what is better, cold brine, to about 55°, and churned very moderately till the granules become so distinct and hard that they can be handled without sticking together; all the churning needed will be done. After this, it may be washed either in the churn or out, with cold water brine till the liquid runs off clear, when it will be ready for stirring in salt without any working at all. If the churning continues, as is usual, till the butter is all gathered into one or a few lumps, it will inclose so much buttermilk as to require an amount of working, even if done in the most skilful manner, that will materially injure the grain of the butter and make it appear greasy, and lessen its fine flavor and hurry on a stale and strong flavor. All this labor and injury can be avoided by stopping in time, while the butter is in granules, and cooling and washing as described.—[New York Tribune.

Whey—Its Nutritive Value and its Use as Food for Domestic Animals.

There are various opinions among dairymen respecting the value of whey as a food for domestic animals; some holding it in high estimation, while others consider it of little account. Whey is not always uniform in composition, sometimes differing widely in quality at different factories, since if the curds are carelessly or improperly worked, what belonged of right to the cheese goes to enrich the whey; and hence such whey when fed to animals is found to give better results than where more care has been taken in the process of cheese-making. Whey was at one time used quite extensively as a feed for cows in New York dairies, but of late years the practice has been generally abandoned on account of the bad influence which such food has on the milk, rendering it liable to early acidity, to take on objectionable taints, and otherwise causing the cheese-maker trouble in handling the milk, and in injuring the flavor and texture of the cheese. These troubles from "whey-fed cows" are more marked in hot weather and when the whey is fed sour and without being mingled with meal or bran. At many of the factories stringent rules are made prohibiting the use of whey for all cows from which milk is received, and no intelligent and progressive cheese-maker will now recommend it for this purpose.

The chief constituent of value in whey, when it results from cheese properly made, is the milk sugar, which varies from four to five per cent. The fatty and nitrogenous matter together ranges from one to two per cent, according to the care in which the curds are manipulated during the process of cheese-making.

Mr. X. A. Willard, in his large work on "Practical Dairy Husbandry," gives, on page 319, the analysis of fifteen samples of whey, and from which we select two analyses, viz.: No. 1 and No. 15, as showing a considerable variation in the fatty and nitrogenous elements. They are as follows:

	Whey	
	No. 1.	No. 15
Water.....	92.95	93.10
Butter (pure) fatty matter.....	.65	.14
Nitrogenous substances (caseine) and albumen.....	1.20	.76
Milk sugar and lactic acid.....	4.55	5.31
Mineral matter (ash).....	.65	.69
	100.00	100.00

It will be seen from the above that No. 1 contains a little less than two per cent. (1.85) of fatty and nitrogenous matter, while No. 15 contains less than one per cent. (.90). The difference in milk sugar is also three-quarters of one per cent.

It will be seen from an examination of the tables that water comprises the great bulk of whey, and that the amount of solid matter, and especially its nitrogenous or flesh-forming elements, are so small that the animal, depending upon it as a sole food, would be obliged to consume a very large bulk of the fluid to support life. Its constituents are not in the right proportion to maintain health. This is found to be so in its practical operation; for young pigs do not thrive upon it when it is used as a sole food, and soon die for lack of proper nutriment. And although full grown hogs may live upon it for a time, their flesh becomes watery and it does not make a healthful article of food. Whey is largely fed to swine in many sections of the dairy districts of New York and other States, but it should be used mingled with bran, ship-stuffs or with barley-meal and pea-meal, and then it can be utilized with advantage. It is often fed sweet to calves, mingled with oil meal, buckwheat, flour, or something of the kind, to supply the flesh-forming elements.

We have seen hogs nicely fattened upon whey mingled with bran, or ship-stuffs, the animals appearing to be in high health, and their meat made excellent pork. Barley meal with whey makes solid and nicely flavored pork, and we should prefer these ground feeds as mixtures to that of corn meal.

Whey is often injured for feeding purposes by allowing it to stand too long, or until it becomes too acid, or until it passes on to alcoholic fermentation. Sweet whey, when fed in large quantities, has sometimes caused the death of swine, and especially when fed without being mingled with meal or bran. Caution should be taken in not overfeeding at first.

The albuminous matter contained in whey is in a state of perfect solution, and differs from caseine or curd in not being coagulated by rennet. This is shown by heating the whey to nearly the boiling point, when the albuminous matter rises or separates in flakes. Assuming that the albuminous matter or caseine in whey amounts to nearly one per cent, and the sugar of milk to five per cent., it would be evident that whey has a certain value as food for swine, and is not utterly worthless, as many have supposed. The mistake in its use has been in not combining it with more concentrated food, and especially with meals or ground grains that have a good percentage of albuminoids in their composition rather than of sugar or oil. And this is coming to be understood by our more intelligent dairymen who employ whey as a feed for swine.—[American Dairyman.

BITTER BUTTER.—At the late convention of the Northwestern Dairymen's Association, held at Harvard, Ill., Col. R. M. Littler, of Iowa, in speaking of what he saw of dairymen in England during his visit there last summer, made some very pertinent remarks on this subject, in which he stated the opinion of the English dairymen was that the bitter taste in butter was caused by the serum of the cream. To avoid this they construct their cream jars with a faucet at the bottom, and allow the cream to stand several hours after being skimmed. The serum or bitter water settles at the bottom of the jar by natural gravity, and is then drawn off before the cream is disturbed by being poured into the churn. In this way they are enabled to make butter without any bitter taste. Would it not be well for our butter-makers to try the plan? It will cost but little, and if it can be made a success in England we can do the same in this country. Give it a trial.—[American Dairyman.

We have tried all sorts of mixtures to kill lice on animals and at last have hit on what we think is best; Melt hog's lard or any hot grease, and in it dissolve salt one-third of the bulk of the grease; take as much grease as will be required to smear the animal all over and into the mixture pour kerosene oil and stir it up. Two gills of kerosene would be sufficient for a cow of ordinary size. One application completely cured the most stubborn case of lice on an old hog. It leaves the skin smooth and clean, removing the scurf and healing the irritation caused by the parasites. It is also excellent for galls and sores.

Garden and Orchard.

The Clematis.

The coldness and bleakness of farm-houses and out-buildings is one of the greatest blots on our rural landscapes. Looking at the farmer's house and surroundings, it often seems as if he were so intent on cropping his fields as to have no time left to clothe his house with beauty and plenty. Where any attempt is made it seldom gets beyond a Grape Vine or Virginia Creeper, with occasionally a climbing Rose or Honey-suckle thrown in for variety. Now, there is no manner of necessity for this tiresome monotony of clothing, for in the genus Clematis we have now almost an infinity of variety in size, form and color of leaf and flower. The Clematis is also perfectly hardy, and easily grown in almost any soil, subject to the roughest treatment, and thrives and flowers freely under any system of management and training, or with neither, for some of the most perfect specimens ever seen by the writer had no training whatever. Properly treated, the Clematis may be had in flower freely from May to November. The flowers are almost infinitely varied in colors and in size, being mere white specks and stars, as it were, expanding into wide spreads of beautifully colored flowers from four to eight inches in diameter; these are sweet as the Hawthorn or May at its best; others, some equally or more beautiful, have little or no perfume. The colors have a wide range and infinite variety from crimson to pure white, through pure maroon, purple, violet, mauve, lavender, sky blue, French white. The diversity of form and size of the flowers is even more marked than their variety of color. Some of them are very small, others extremely large. There are likewise double Clematis as well as single, wide spreading and narrow flowers, furnished with ground petals and without. The leaflets and sepals of the flowers are also characterized by the widest differences of color, form and size, disposition and arrangements.

The Clematis is also adapted to all purposes or places for which any climbers can be used. For covering the walls of houses, encircling the roofs of out-buildings, clothing the bare stumps of trees or walls of any and every aspect, character, or height, verandahs, summer-houses, arbours, seats, running over rocks or mounds, dropping down the sides of rough banks or dells, &c., the Clematis has no rival or equal. It is also well adapted for forming edgings for flower beds, or picturesque masses in herbaceous beds or borders, or in front of shrubberies and plantations. Few plants are better adapted for forming unique and picturesque specimen plants on lawns, or intermixing with masses of roses and other flowering shrubs.

As a pot plant, too, the Clematis is strikingly effective grown over a few stakes or trained over trellises. Trained thus and treated liberally, the Clematis speedily reaches a large size, and few plants are more striking than masses of these in full bloom, averaging from six to ten feet in height, and four or five through, smothered with bloom.

They are by no means particular about soil, yet few pay better for liberal treatment. Some grow them almost wholly in peat, others prefer loam with a little leaf mould or rotten dung. Perhaps on the whole a mixture of equal parts loam and leaf mould, with rotten manure or mortar rubbish, is best, for the plants seem to delight in this mixture of vegetable substances, associated with a full complement of calcareous matter.

The Clematis may have its leading shoots trained over a trellis, houses, or walls in any direction desired, horizontally, vertically, diagonally, or spirally, for it is far more flexible than a grape vine or a rose. From these leading shoots the lateral branches may be allowed to ramble at their own will. Many of the late-flowering varieties may be cut down after flowering, and allowed to spring up afresh from the ground every year. The early spring flowering varieties that bloom on the old wood may be cut back very much as a rose, and spurred in pretty closely as a grape vine; but, as already remarked, the Clematis in its best form should be pruned but little and trained perhaps less. Few plants can be better adapted for farm gardens or those of amateurs and cottagers, as it would be impossible to find any class of plants within the entire range of horticulture that would yield such a full harvest of beauty with so little skill and care as the Clematis.

Manures for the Garden.

The effect of all new and fresh manures—the excrement of animals—is to engender heat in the process of fermentation. The manure from cattle—and of all animals that chew the cud—is adapted to light soils, that of horses, hogs and birds is heating in its effects and adapted to heavy soils. Of all manures of this class that of birds is the richest, a fact which those who keep much poultry and also cultivate a kitchen garden will do well to remember; but it should be thoroughly mixed with the soil, for in the fresh state, seeds in contact with it will not germinate, and the roots of plants are destroyed by its caustic action. But when it is thoroughly incorporated with the soil its effects are great in stimulating plant growth. Its superior value is on account of the urine it contains. Its immediate effects depend upon the quantity of soluble matter present, and this varies with its age. Fermentation robs it of a portion of ammonia, and hence it is advisable to collect it as often as once a week, and mix with it earth, plaster and a little salt. Treated in this way it does not differ much from Peruvian guano, which is considered the best of concentrated manures for general purposes.

Manure from sheep yards and pig styes is rich in nitrogen, and ferments or engenders heat rapidly. A liberal application of these and other similar manures from the sheds and stables turned under in the spring will render the garden soil warm, rich and friable, and stimulate the early growth of vegetables.—[Prairie Farmer.]

How to Manage Cuttings.

In reply to a correspondent, the Floral Cabinet gives the following directions in regard to the making and managing of plant cuttings:

In selecting a cutting, a great deal depends upon the judicious choice; if the slip is too young and full of fresh sap, it will fade away from too much evaporation; if it is too old—hard and woody—it will take a great while to strike root.

You must take a cutting that is perfectly ripened and is from a vigorous shoot, yet a little hardened at the base. It is also essential to have a bud or joint at or near the end of a cutting, as all roots strike from it; and the nearer it is to the base, the greater your chance of success.

Plant your cuttings in common red pots filled half full of rich loam and two inches of sand on top (scouring sand will do, but not sea sand); wet this thoroughly, and put the cuttings close around the edge of the pot, for if the bud or joint comes in contact with the surface of the pot, it seems to strike root more quickly. Pull off the lower leaves before you plant the cutting. Press the wet sand tightly about the tiny stem, for a great deal of your success in raising the cutting depends upon the close contact of the sand with the stem. When the cuttings are firmly planted, cover them with a glass shade if possible, as it will greatly promote the growth of the plant.

Moisture, light and heat are the three essentials to plant life—without them no cutting will start.

Shade for two or three days from the sunlight, but don't let the sand become dry; then give all the sun you can obtain, keep up a good supply of moisture, and you can hardly fail to root most of your cuttings.

Woodpecker vs. Apple Worm.

If woodpeckers are plenty in the orchard, they will take care of the apple worm, even when cuddled up under the paper bands, dreaming of wings, and do away with the necessity of examining the bands every week or two. At first I thought the codling moth had hatched in advance of our bi-weekly visit, and escaped the rub of the smothering-iron by boring through bands instead of escaping from under them, but the rattling stroke of the red-headed woodpecker a few trees off, and the similar peck of his industrious little white and black-backed downy cousin (*Picus pubescens*) told the story of the holes, and promised that just in proportion as the little crops were filled the apple crop would prosper. From some bands every larva and pupa had been dislodged by our thorny-tongued benefactor; indeed if any were present where he had been, they had evidently come since his departure and before his return. A barrel of apples for every one is a small valuation. If swine and sheep can be kept in the orchard, so much the better, but in any event I mean to try to keep in the woodpeckers and keep out the gunners, and ask and expect that every tree will cease to be a wormy nuisance, and "comfort me with apples" fit for other uses than vinegar and the still.—[Ex.]

Attention to Grape Vines.

Before the buds begin to swell grape vines should be securely fastened to the frame or trellis, lest the young and tender shoots be broken by the first storm and the prospective crop be materially lessened. The arms may be tied with coarse tarred twine, and for the new growth any cheap material, like bass matting, will answer, for in case it gives way it can readily be replaced on the occasion of one of the frequent visits to the vineyard. We say frequent visits, for it is part of the duty of the vine-dresser to go over his grounds every few days, and, among other things, make sure that all loose shoots are securely supported. He will also rub off all superfluous buds. Each well-developed eye will throw out two shoots. One of these from the start takes the lead, so that at the first glance it can be seen which is the best to leave for fruiting. The sooner the superfluous buds are removed the better for those remaining. On thrifty, bearing vines it frequently happens that quantities of these sap shoots are pushed out on the lower part of the arms of the old wood. These should all be rubbed off at the same time, for if allowed to grow they will only weaken the fruit bearing canes. When it is desirable to renew an arm, a single shoot may be selected and trained for that purpose.—[New York Tribune.]

Cabbage Pests.

Farmers in this country have experienced relief from grubs at the roots of cabbage by loosening the earth close to the roots with a hoe, and pouring about the plant one-fourth of a pint of soft soap and water two or three times during the season. The solution consists of one part soft soap to twelve parts water. Weaker suds poured on top, it is claimed by some gardeners, will destroy the green worm.

A method of preventing the inroads of the cabbage grub is to make each plant unpalatable to the grub. This may be done in the following manner: In the spring procure some fresh burned lime, let it become air slacked, and mix it with an equal quantity of soot. In planting, the holes are made with a trowel in the usual way; each plant is dropped into its place and an inch of soil put over the roots, a good watering given first, then a moderate handful of soot and lime mixture thrown into each hole, and the remaining soil filled in. Equal parts of soot and fine garden soil mixed with water to the consistency of thin mortar, with the plants dipped into the mixture up to the base of the leaves previous to planting, is also advised as a preventive to clubbing. Wood ashes, mixed with water poured into the holes, has been tried with success.

For cabbage worms, Professor Riley recommends hot water judiciously applied from a watering pot. This must be done with caution, and, therefore, is liable in careless hands to do more harm than good. Professor Riley also advises, for the same purpose, applying repeatedly a solution of whale-oil soap and water, in proportion of one pound of soap to six gallons of water. Pieces of board, raised an inch above the surface of the ground, afford an opportunity of examining and destroying once or twice each week the transforming larvae under them.

THE SQUASH-VINE BORER.—Another pest, very troublesome to those who grow squash for market, is the squash-vine borer. This moth is orange-colored, spotted with black, and is named *Melittia cucurbita*. The female is said to lay eggs on the vine, close to the roots, from the middle of July to the middle of August, and the larva eats out the heart of the vine and kills it. I have seen the moths laying eggs in different parts of the vine and the young worms eating into the vine far from the roots, so that to cover the lower part of the vine with soil is unavailing. But as the squash roots at every joint, if these joints are covered with soil to encourage the growth of roots, the vine may die below, but will still grow above the rooted joints. When the worms are in the vines, the latter may be slit with a knife and the worms killed. A liberal application of Peruvian guano, by producing a vigorous growth, will enable the vines to resist the injury of the borers, and by its strong scent will drive off the moths.

From small beginnings came our plump cereal grains, our rich, juicy and delicious fruits, our nutritious esculents, and savory garden vegetables.

Stock.**Washing Sheep.**

Our cut of sheep washing this month represents the mode generally practiced by farmers. A running stream or pond of clear water, with a gravel bottom, should be obtained if possible, but where this is not obtainable, the floor of the washing place should be paved with stones; also the path leading into the water and the one leading out. Special care should be taken not to let the water become muddy, and for this reason a running stream is preferable. Where a small running stream is of easy access, farmers will find it profitable to construct a place especially for sheep-washing. This may be done in a variety of ways, varying with the size of the stream; but where the stream is not more than 12 or 15 ft. in width, a good plan is to sink a large cedar post a few feet below the bed of the stream, on each side of it, and exactly opposite to each other. They should be let into the banks of the stream so that their outside may be just even with the sides of the bank, which should be cut down square. And it will be found necessary to drive down pieces of board or sink plank or stones a few feet in the bank from each post, to hinder the water from washing around the posts. When this is done a ditch about a foot wide should be cut in the bed of the creek between the posts, and extending from one to the other, and should be sunk into the hard bottom of the creek to prevent the water washing beneath it. In this a two-inch plank, long enough to extend from post to post, must be inserted; it is the best plan to have a groove 3 inches wide, and about 4 inches deep, cut in each post, and into these grooves slip the ends of the plank, pounding it down firmly to the bottom of the ditch. Its upper side should be about 12 or 18 inches above the level of the bed of the creek, and if not wide enough itself, another plank should be added. The ditch should then be firmly filled with gravel, clay, etc., to prevent any possibility of the water washing under the lower plank. Other planks should then be cut the proper length to reach from post to post, and made to slip into the grooves of same, as the lower boards did, and should fit evenly on the top of same boards, so as to be water tight. A sufficient number of these boards should be cut so as to raise the water somewhat, making it deeper than the sheep is high. The highest plank of the lot should have a piece sawed out of the centre about four inches deep and four feet wide; into this place a piece of board two feet wide and four feet long, nailing the same horizontally and projecting down stream, thus making a shoot over which all the water will flow. It will be found necessary to place braces on the under side of this shoot, or the weight of the water may break it down or cause it to be unlevel, and thus not carry the water in an equal volume. Pieces of board may be nailed on the ends of this shoot to prevent the water from running over the ends. When the stream is thus dammed and the

water flowing evenly over the shoot, which should be about eight inches to one foot higher than the backs of the sheep to be washed, the animals may be led under this flow of water, and by conveniently laying boards on posts or logs prepared for the purpose, the washers need not even get their feet wet, and the sheep can be thoroughly washed, being well rubbed while the water is flowing on them, which has the advantage of always being clear. Care must be taken not to let the water fall on them from too great a height, or it will damage the appearance of the fleece. It is best also to turn the sheep up when first putting it under the water; this will thoroughly wash the belly without wetting the washers. A clean and easy path should be provided for the sheep both to and from the water.

When the washing is completed all the boards may be removed but the bottom ones, which have been sunk in the trench between the posts; these must remain permanent. The other boards, after being removed, should be put away for future use.



SHEEP-WASHING.

Such a dam will last for years if properly constructed, which it may be at a trifling expense.

Clean quarters must be given the sheep after washing until shearing is done, some time being allowed after washing for the yolk to raise, which adds to the weight and quality of the wool. The time allowed between washing and shearing varies in different localities. Where the sheep are in high condition, and continuously grain fed, a large amount of yolk will be up in a week. But if we had a clean run for our sheep, such as an old sod field or some place where they could not get into the dust, we would prefer to let them go two or three weeks, and we believe farmers would find it profitable to feed grain to their sheep for a month before shearing, as the yolk would be in much greater quantities, thus making an advance both in weight and quality.

After shearing, the atmosphere affects wool considerably; when it is raining or the atmosphere is moist, it will weigh sometimes as much as 10 per cent. more than it does when the air is dry and has been so for some time. This change will take place to a greater or less extent, no matter how well the wool is protected. Again, if wool is kept in an underground apartment, or piled against a

stone wall, it will weigh more than it would if kept in an enclosure above ground.

There is a variety of opinions concerning the gain or loss by washing sheep, but different conditions produce different results. If your sheep have been very highly fed for a long time, and are in high condition, such as show animals, etc., and the buyers will not deduct any more than one-third of the gross weight, then it is better, all things considered, not to wash them, especially in the combing wool varieties. But otherwise we consider it preferable to wash, allowing ample time and advantage for the yolk to rise.

Canadian wool, like Canadian butter, suffers from a want of system in buying good and bad qualities, being indiscriminately bought at about one price; the only distinction being made is between the washed and unwashed. This is clearly unfair, taking the just due from the careful farmer who produces a good article, and the shiftless ones reaping a partial benefit from his labors. It has also an injurious tendency on the quality of the wool production of our country; for if the wool were bought according to quality, farmers would then be emulated to produce the required article, thus improving the general quality of our wools, to which insufficient attention is now paid.

Green Peas and Oats for Cows.

The following article from the National Live Stock Journal assumes greater importance from the partial injury done to our clover crop by the very unusual winter through which we have passed. A mixed crop of oats and peas, as stated below, will aid in supplying the deficiency:

Fodder-corn is raised to feed cows while on short pasture in the fall, and is so valuable an addition to their food that every dairyman should raise about one-eighth of an acre of it for each cow kept; but it should also be remembered that cows require a variety of food. It is not good economy to depend upon one kind of green food, and especially one containing so little albuminoid matter as fodder-corn. Clover and a mixture of meadow grasses may be relied upon alone, but corn should always be fed with some more nitrogenous food. It does very well with half pasture, for the grasses will supply the albuminoid matter.

There are other green crops that should be raised to be fed with corn; and we know of none better than peas and oats, sown together—one-third oats and two-thirds peas—three bushels of the mixed seed per acre, with a drill. On land in good condition a large crop may be raised, having a value second to no other. Peas and oats are equal to clover, and may be raised on a great variety of soils—a most important consideration. We have raised twelve tons of this green food to the acre, and this would feed twenty-four cows ten days, without any other food. The pea is rich in caseine—just what is required to make milk—and the oat is also rich in the elements of milk. These two crops grow well together, for the oats hold the peas up and prevent them from lying too flat on the ground. They mature so near together that they are both ready to cut at the same time. But the crop should always be cut when the pea pod is full and the grain in the milk. It is then very succulent and palatable, and will produce as much milk as any food we know of, aside from a large variety of pasture grasses in their most succulent state.

Jersey Cattle.

In answer to enquiries, we give the present cut of Jersey cattle, which we consider a good one, and for which we are indebted to Mr. J. F. Miller, of Richmond, Ind., who is an extensive breeder of Jerseys. There are now about 30,000 pure Jerseys, besides a vast number of high grades, in America. A few years ago Jersey breeders, with few exceptions, enthusiastically joined in a color mania, clamoring for solid colors, black points, etc. (by which they meant an animal of uniform color throughout, without any white, having dark colored or black points, viz., legs, tip of tail, nose and tips of horns.) Dark brown animals were also preferred to the lighter colors. English breeders have called so loudly for such animals that breeders on the Jersey Islands would not raise for their own use a bull which had any material amount of white in his color. On the other hand, bulls only fit for

From the above, as well as from other testimony of good authority, we believe the same may be said of the Jersey cow as of the horse—a good animal is never a bad color. In fact a little common sense will teach us that if we make the breeding for color paramount, the butter-producing qualities will suffer and continue to decrease, but the color will undoubtedly become more uniform. Yet there certainly can be no profit in color apart from the butter-producing qualities. As in these last named qualities, and in them alone, the value of the Jersey rests, we would advise our Jersey breeders to exert themselves in bringing these qualities to as great a state of perfection as possible, always bearing in mind that the cow is but a living machine for turning her food into butter, cheese, etc., and the one which will do this most profitably is certainly the best animal. And as like begets like to a greater or less extent, we

Cotted Wool and Its Causes.

If sheep are poorly fed, too much exposed, allowed to lie on damp beds, or otherwise maltreated, so that the general health suffers, the skin participates in the imperfect nourishment of the bodily organs, and the wool being less abundantly supplied with the liquids produced by the cutaneous papillæ from which it grows, and receiving less of the oily secretion (yolk) from the sebaceous glands, withers, hardens, loses its normal elasticity, and is liable to become matted into dense and inextricable masses while still on the back of the sheep. If there is scab or any skin eruption which impairs the natural nourishment of the wool, the condition is likely to be aggravated, and the matting even more dense and solid, because the wool is imprisoned by the hardening of the diseased exudations around the filaments. By care to keep the health good, and to keep the sheep thriving, the wool will retain such an unctuous covering and such life and elasticity that coting will be virtually impossible.



JERSEYS—IMPORTED BUTTERCUP 3RD AND HOOVER 2782, PROPERTY OF J. F. MILLER, RICHMOND, IND.

the shambles were kept at the head of some of the best herds solely on account of their tendency to produce calves of solid colors, and cows were used in a similar way. This has had such an effect in Jersey that really profitable dairy animals are on the decrease and poor ones increasing. Several English and Jersey writers make strong statements to this effect.

There have been many good cows of solid colors, such as Alpha 171 H. R., with a record of 23 lbs. per week, which stands ahead of all butter makers so far. There have been also some fine cows of mixed colors, that is, light or dark fawn mixed with white, or having white points. The herd which took the prize at the American Centennial were not all solid colors, but were as near solid as light fawn; many of them were dark brown with not much white. The mixed colors have their advocates also, who assert the best cows ever owned by them were of that color.

would advise breeding from such animals irrespective of fashion. In early life the Jersey should not be forced by strong feed, as in the case of Short-horns, as this has a tendency to increase their beef qualities at an expense of their dairy yield. Breeders also advocate breeding the heifers early, so that they may drop their first calf when about eighteen or twenty months old.

REMEDY FOR SWINE AFFLICTED WITH WORMS.—The Stock Journal gives this remedy from a correspondent, who has used it for the past three years:—Take one peck of ashes, one pound of black antimony, seven pounds of copperas, one pound of sulphur, a quart (one-eighth of a pound) of saltpetre; pound the ingredients fine and mix them well; keep it constantly in a trough by itself; each hog will eat what he needs of the medicine from day to day. See that it is kept in a place dry from the rain and storms. This remedy is claimed to be very efficacious.

An American stock-feeder is said to have freed calves from lice by feeding oil-meal.

The avoidance of coting, therefore, implies the avoidance of all causes of ill-health, or poverty, whether found in poor shelter, confinement, bad air, pure and innutritious food, lack of water, worms in lungs, bowels or elsewhere, scrofula and other constitutional ailments, or scab or any other disease of the skin. When the wool is already cotted it will usually be found impossible to restore it; and the object should be so to improve the condition of the system and skin as to insure that the future growth of this and succeeding seasons shall be natural and strong. This course has the double advantage that it not only secures better wool but a heavier clip, and gives at the same time stamina and vigor to the flock.—[N. Y. Tribune.

Sunflower seeds are said to fatten readily sheep, pigs and cattle. Four or five pounds of seed are required to the acre. They are drilled in rows about eighteen inches apart, the plants to be thinned out to twenty-five or thirty inches from plant to plant. The plants require a sufficient space between them for exposure to the sun. They should be kept free from weeds.

State of the Wool Interests.

The advance in the price of wool fully proves the correctness of the advice we gave to our readers some months ago. The present prospect is very favourable to sheep feeders, and there is no doubt of the continuance of high prices for wool for some time. The N. Y. Economist writes as follows:

"Our market is excited and higher for all kinds. It is feared that we are approaching a wool famine. Clothing wools are in demand and firmer. Combing wools are in request, and prices are still going up with some demand for America. Carpet wools are in active request, chiefly for home use."

The Economist, in explanation of the situation in England, further says:

"Hundreds of thousands of sheep have died of plague in England, and the Russia-Turkish and English-Affghanistan wars, in Turkey, in Syria, in Persia, and the Indian country, has caused tens of millions of sheep to be killed. In fact wool growing in Turkey, in Russia, in Persia, and all India has been almost given up on account of the war, and the low prices current for the past five years. At no period in the history of the wool trade have we witnessed so excited a market as there lies in one panorama before us to-day, no matter where we turn our gaze. All along this whole line no fine clothing wools can be bought ready for manufacturers' use below \$1 for the scoured pound, and a great deal will cost from \$1.10 to \$1.25 and even \$1.30. Combing and delaines and carpet wools are equally high, and from the present outlook no one can tell where the prices will stop. New York and Boston dealers are buying southern California, heavy, burry, greasy wools in San Francisco, and paying \$1.17½ for the scoured pound.

In Texas nothing can be reached below \$1 to \$1.10 scoured. Nearly all the Kentucky clip has passed out of the farmers' hands. In Indiana, Wisconsin and Illinois one quarter of the new clip has been bought on the sheep's back on Eastern account, at 40 to 50 cents for unwashed delivered on board the cars when ready."

The Test of Pedigree.

It is one of the most encouraging signs of the times in the world of stock-breeding that in every direction and in almost all kinds of stock the blind devotion to pedigree that prevailed so extensively a few years ago, to the neglect of every other essential, in selecting breeding animals, has passed away, and in its stead we find a disposition to closely scan the merits of each individual and its immediate ancestry. Not that intelligent breeders have less regard for pedigree than formerly, but they have come to understand that pedigree, to be of any particular value, must be something more than a mere string of names.

Breeders are now getting down to the very marrow of pedigree by enquiring what were the qualities of the ancestry all along the line. If selecting stock from which to breed trotting horses, they look at the records of the winners on the trotting turf, and judge of the merits of the ancestry accordingly. If for the dairy, they search for the butter or milk records of the ancestry; all of which shows that the people have at last been educated up to know just what pedigree means, and have learned how to tell a good pedigree from a bad one. What was once a mystery, full of technicalities that could be understood only by an expert, has now become so plain and simple that any man can understand it. A good pedigree is one which commences with a good animal standing before you, and runs back through an ancestry consisting of good animals only.—[National Live-Stock Journal.

In the Burrawara District, New South Wales, the Messrs. Edols lately got 466 tons of wool from one clip of their 200,000 sheep. The fleeces of the rams averaged 8½ lbs., those of the wethers 6½, and those of the breeding ewes and lambs 4 lbs., making a general average of 5 lbs.

Sheep husbandry in France is declining. At one time the number of sheep in that nation was 40,000,000. It had declined to 30,000,000 in 1870, and still later there was a decline of over 5,500,000 in six years.

Training Heifers.

It is an easy matter to train a heifer to stand quietly to be milked, but it is easier to train them to jump, kick and run. The way to teach them to stand still is to require them always to do so. If there is naught to hinder a wild heifer from running, and if her fears prompt her to run, she can and will run. If she cannot run, in a short time she loses her fear and stands from habit; and habit is one of the most powerful influences in this world for either brute or man. If you want to transform a wild heifer into a well-behaved, well-trained cow, you must be patient and exhibit no temper. Never strike her. She must first of all get acquainted with you and learn that you will not hurt her. She must learn not to fear you. If in winter it is best to milk in the stable; make as little fuss and as few alarming motions as possible; handle her very gently. Be careful not to pinch the teats. This is the great source of trouble. A cow naturally wishes to be rid of her milk. She stands quietly until some careless milker has given a squeeze that hurts, when she kicks and runs. By allowing such a course a few times, the habit will be confirmed. The best way to manage, if you have no stable, is to have a well fenced yard, and teach your heifers to stand for milking in that; or, next best, to tie them, using them very quietly. No man or boy is fit to handle animals unless he can control them, and control himself. Neither is it right to chastise the ignorant.—[Ex.

What we Expect from a Mild Open Winter.

If we are to form our judgments from the experience of the past, farmers need to prepare in time for a more than ordinary contest with hosts of insects during the coming spring and summer months. A correspondent of the Rural World speaks of a mild winter as a misfortune to the farmer:

"The very mild winter we have had, while it has been a blessing in some respects, is unfortunate in other particulars. Very cold winters are generally better for farmers in this latitude, than unusually warm ones. We have noticed that when we have had open, warm winters, all kinds of noxious insects are much more destructive the following summer to fruits and farm crops. A year ago we had a very severe winter, and it was destructive to a vast throng of injurious insects, and the result was we had the largest crop throughout the west ever raised. There were but few insect depredaters to fruits and farm crops the past season, but if the warm weather now continues, the number infesting crops the coming summer we fear will be legion. Already the wheat crop is being seriously injured south of us by a worm similar to the army worm. The chintz bug is much more destructive after warm winters than after severe ones, and so are the curculio and other fruit depredaters. The farmer must therefore prepare for efficient, active operations with the expectation that he will have enemies to meet the coming season.

Home-Made Guano.

Spread a layer of dried muck or road dirt, finely pulverized, on a corner of your barn floor. Over this spread your fowl manure, beat into a fine powder with a spade or any other suitable instrument, and then sprinkle with plaster, in the proportion of one quart of plaster to two bushels of the mixture. Pour over this all the strong soap-suds, urine and other waste water you have, but not in such quantity as to soak through the heap. The soap-suds, by a combination of the fat acids contained, along with the vegetable acids in the muck, prevents the escape of ammonia, as well as assisting in the decomposition of the heap. The dampness also is an absorbent of ammonia, and it should never be allowed to get dry nor too wet. You will find the manure, when you begin to use it, well rotted, and as black as tar. Applied to beans, corn or potatoes, at the rate of a handful to the hill, well mixed with the soil before dropping the seed, it will be found to be the best substitute for guano known.

Statistics of pork packing in Cincinnati for the season beginning Nov. 1 and ending March 1, show that there was a decrease of 89,025 head as compared with the previous year.

GLEANINGS.

Twelve hundred analyses of fertilizers, feeding stuffs, etc., were made during the past year in the laboratory of the Royal Agricultural Society of England.

Potash is absolutely necessary to successful potato growing. The easiest and best mode of supplying it is in the form of wood ashes. It is furnished also in soft coal ashes and well rotted yard or stable manure.

Continuously, though slowly, are the natural resources of the Dominion being developed. In 1879 the value of Canadian coal sold in Ottawa was \$33,000. In the previous year Canadian coal was unknown in that market.

In some places rats have become a great pest in farm houses and barns. Copperas is the dread of rats. In every crevice on every hole where a rat treads, scatter the grains of copperas and the result is a stampede of rats and mice. But look out for poison.

How just and generous treatment civilizes the Indians! The warlike Sioux of the Little Saskatchewan section are rapidly becoming civilized, bands of whom may be seen coming out of their reserve with ponies and sleighs loaded with wheat to be gristed at Balkwill's mill.

The ox-eyed daisy has become a great pest in some sections of the country. Those who are troubled with this weed should bear in mind that it is propagated by seed, and not by the root, and to rid themselves of it they have only to mow before the seed is ripe. It may require two seasons to rid a field entirely of the innocent looking flower.

The lily of the valley is one of the most fragrant of flowers, and yet we seldom see it in its perfection. Every one knows that it grows and blooms year after year, although overgrown with weeds, and shaded close by trees; yet those who have never seen it as it can be grown will be surprised at the results that can be produced by a little care and culture, from a good bed rightly prepared.

American Beet Sugar Crop for 1879.

Mr. C. K. W., of New Haven, writes as follows: "We are now feeding a carload of pulp every ten days to cows and steers. The milk is showing a larger percentage of cream than from any other feed we have ever used, and the steers, of which we put in twenty-four for the purpose of giving the pulp a fair trial, are doing finely, gaining at the rate of over a hundred pounds per pair a month, on pulp and corn-stalks and straw, without a particle of hay or any other feed. Seven calves also in one pen, from three to six months old, we feed entirely on pulp and rowen. We have never had a lot do any better; their hair is glossy, they are fat, bright and all right. You know that the raising of stock is one of our specialties, and that we feed high always, believing that the only way to get a good cow is to feed for this from a calf up; and when I see stock growing and looking as well as these all do on beet pulp, it is conclusive evidence to my mind that it is going to be the feed for farmers to use, that are situated so they can procure it."

A farmer of Vermont writes to the American Cultivator as follows:—I ploughed an acre in the fall of 1878, covered with a heavy coat of manure, re-ploughed in spring, harrowed, ridged, planted with a machine, hoed, chopped out the surplus to "a stand," and gathered a crop of 1,200 bushels.

The New York Tribune says:—The summary from Portland, Maine, shows that during the 70 working days of the season 9,000 tons of beets were used, yielding 8 per cent., or 1,440,000 pounds of crude sugar, which sold for 8½ cents per pound, or \$122,000, and was refined in Boston at a cost of 1 cent per pound. It will be easy to average an equivalent of two hogsheds, per acre instead of one and a half.

At Oswego, N. Y., it was stated that Mr. Kingsford had grown 22.2 tons per acre on common soil, and that he thought he could raise 30 on land in high tilth. Mr. Strever reported a yield of 18 tons from three-fourths of an acre in good condition, planted with a machine in rows three feet apart and worked freely though with less labor than is required for a crop of corn. Among results of experience related in the use of sugar beets for stock-feeding, Mr. Buckhout remarked that he had fattened pork on them, and it was sweeter than corn-fed.

Agriculture.

The Uses of Manure in the Spring.

Many persons hesitate to draw out their manure and spread it until they are ready to turn it under, supposing some waste to occur by exposure to the weather. It is very doubtful if this suspected waste really takes place. It is true that manure freshly turned or spread smells strongly, but in most cases there is no value or virtue in this scent. Decomposing mixed vegetable and animal matter, such as is found in the contents of a barn-yard, gives off much carburetted and sulphuretted hydrogen, and these gases are those which escape most freely from manure heaps. The scent of ammonia is not nearly so disagreeable as that of these gases, and is pungent to the nostrils and to the eyes. It is easily tested. By dipping a piece of red litmus paper in pure water, and exposing it to the vapors which escape from a heap of manure, the red color will be changed to purple if ammonia be present; or, if the ammonia is abundant, the color will become blue. It is very rarely that this effect can be noticed in the strongest flavored manure heap, for the reason that as water absorbs 700 times its volume of ammonia, and as fresh manure contains 75 per cent. of water, so long as there is any water not yet saturated with ammonia, none of this can escape into the air and be lost.

The method of throwing the manure, as it is hauled out, into small heaps, is sometimes objectionable and sometimes to be preferred. It is objectionable and injurious when it remains in that state for a lengthened period. It contains, when in the ordinary condition in which it is found at this season, about seven per cent. of soluble matter. One heavy shower falling upon a small heap of three or four bushels will wash out of it a large portion of this soluble matter, enriching excessively the small portion of the ground upon which it rests, and depriving the larger part over which it will finally be spread of its due share. The crop will show the result by an excessive growth in those spots where the heaps were placed. This excessive growth is an injury, and doubly so; a waste occurs in two ways; grain will lodge or be affected by rust or smut from rank growth in some places, and it will be robbed elsewhere; in the same way corn will run to stalk from over-fertility in these places, and make a weak growth in others. This is so obvious, and has been so often observed, that it is surprising that many farmers will persist in the practice.

Smut in Wheat.

Mr. Cyrus, a Tennessee farmer, claims he has found the cause of smut in wheat, and has proved by experiments that the popular remedies long used are effectual. He asserts that the smut is caused by hollow grains. The remedy which he claims to have discovered deserves careful consideration from the great importance of the subject and the results of his experiments. His wheat was badly damaged by smut five years ago. Testing the grains by putting them in water, he found that the medium-sized grains sank immediately; the large ones sank after floating a few minutes, and the small ones remained floating. Upon cutting the floaters open he found that in every instance they were hollow. By way of experiment he sowed a portion of this hollow wheat and raised a large crop of smut and chaff. Further experiments were made. Selecting four lots of seed, he soaked one of them twelve hours in salt water, another lot twenty-four hours in bluestone water, and another thirty-six hours in clear water, and sowed separately. He says the next harvest he had no smut in his wheat; he found no difference in the crop, except that the lot soaked in lime water seemed to be more thrifty. This may lead our readers to institute experiments to test this matter.

One of the best ways to keep a farm fertile and productive is to raise and feed stock upon it, and carefully save and apply all the manure. Sow considerable clover seed every year for pastures and meadows, and keep briars and weeds down, and the farm will improve in fertility and value, which will be a source of profit to the farmer. In raising stock choose the choicest breeds, for they are more profitable, and you will take more pleasure in them and better care of them.

Sowing Grass Seeds.

The importance of sowing grass seeds evenly and sufficiently thick to occupy every part of the ground to the exclusion of weeds, cannot be pressed on the minds of farmers too forcibly. In many cases there are not half the plants of the artificial grasses that could profitably stand on the allotted space of ground. The spaces unoccupied by good grasses are wasted, and it would be equally reasonable for a farmer to let his cows remain with half the milk in their udders, as to permit his fields, that have been duly and properly prepared for the reception of grass seed, to remain half covered with plants, and yet this is a spectacle which we see annually in the fields of many who are styled good farmers. Nature never works this way; give her time, and do not counteract her efforts, and she fills every space with some valuable production. A farmer who is fully alive to the importance of having his fields evenly set with grass roots, first passes over the ground, strewing about half the quantity proper to be put on, and then he crosses the other way and scatters the seed. In this way he is less likely to leave vacant spaces for the growth of weeds. This plan of sowing takes double the time for doing the work, but it is done better, and amply compensates for the time bestowed.—[Farmers' Magazine.

Crows and Corn.

Mr. James Howard, of the Agricultural Implement Works, Bedford, England, has, after many experiments, succeeded in discovering a "steep," which protects seed of all sorts from the attacks of birds. The recipe for its manufacture is as follows:

"For 8 bushels of grain, taken half a pint (Imperial measure) of coal-tar, 2 pounds of blue vitriol, and 2 gallons of boiling water. The quantities must be carefully measured, and not gussed at. The coal-tar should be as thick as good molasses (treacle). Put the tar into a pail, pour on it half the water, and mix well. Skim off the greasy matter which rises to the top, and, in the mean time, let the remaining water be stirred up with the vitriol, and, when the two lots are thoroughly amalgamated, mix them together in another vessel, and pour them over the grain. The thick matter which will be found at the bottom of the pail should not be disturbed, as it will render the grain difficult of distribution. The heap of wheat, &c., should be turned over several times, and well worked up from the bottom to assure a perfect mixture."—[Journal of Agriculture.

Why should not this answer as well in Canada?

Thorough Draining.

Mr. Thos. Davidson, St. John, N. B., had 30 acres under drainage, and his hay crop was now 80 tons a year off ground that, at first, would produce nothing. The cost of inch and a half tiles is \$8.50 a thousand, which he found cheaper than stone. If they were on the ground, the proper depth is about 3½ feet and the distance apart depended upon the land and the fall. It is the sour water lying under the soil that makes our best land appear the poorest. It costs about \$40 an acre to drain swamp or bog land properly. This makes the very best land in the country. The subject is an important one to nearly all farmers, as there are small areas absolutely requiring drainage. A spring on a side hill may destroy an acre or two of the very best land, and at the foot of our hills the very best soil is to be found. It must be drained to bring out its great producing qualities. It is not generally realized how deep the little rootlets of the growing crop descend. Crops on a well drained area will stand a drought because of their being deeper rooted and hence able to absorb the needed moisture from below.—[Weekly Telegraph.

AGRICULTURE IN THE MARITIME PROVINCES.—The N. S. Board of Agriculture proposes to make an importation of stock this season. This Board has made arrangements for importing a quantity of sugar-beet seed for the use of members of the Society who may wish to give the beet a trial. Thirty pounds of beet root raised on Bellfield Farm, Windsor, on being worked up in the laboratory of Dalhousie College, yielded 3 lbs. 2½ oz. of the most concentrated syrup, not counting waste. This is equal to a yield of ten per cent. of sugar on the gross weight of roots. The Journal of Agriculture says: "The poorest acre of land in Nova Scotia may readily be made to yield two tons of sugar.

Free Grant Lands in New Brunswick.

From the report of the annual meeting of the Provincial Farmer's Association, N. B., we take the following:

The Province offers 145,357 acres of land free of any charge whatever in farms of 100 acres. The only conditions to be complied with are simply that the applicant shall chop down, cultivate and clear not less than ten acres in three years, build a small house and continue to reside on and cultivate the land. In other words the Province offers to 1,453 men of the age of eighteen years and upwards, 100 acres of land each free of any charge.

With reference to the capabilities of the soil we have abundant proof from year to year as reports reach us from the large yield per acre of lands under good cultivation, and also by corroborative statements of gentlemen who have had opportunities of comparing our soil with that of other countries. There appears to be no question as to its productiveness, while the proper system and method of cultivation is an open question and well worthy the careful study and consideration of our best agriculturists. Situated as we are on the seaboard, in possession of the finest winter ports of North America, in easy access to Halifax, the present winter port of the Dominion for the shipment of cattle by the Allen line of steamers, we certainly possess advantages over the western Provinces in marketing such of our products as meet with ready sale in the English market.

BEEF CATTLE FOR THE ENGLISH MARKET.

It is also a fact, that may not be generally known, that several farmers from Ontario have visited this Province with a view to locating themselves, in order that they may more successfully prosecute this branch of agriculture. Considering the very extensive trade in beef cattle which is going on between this continent and England, and in view of the fact that it is likely to be a permanent business, the question is one of much interest to farmers of New Brunswick to what extent they can participate in this trade.

Large numbers of sheep are sent to the English market from this Dominion, and although our Province has not participated in this trade to any great extent, there would be no reason why we should not take greater advantage of it. The breeding of sheep and fattening them does not require so much capital as the cattle trade requires, and is therefore suited to the circumstances of farmers of moderate means. There can be no question as to the results, as we have good reasons for believing that sheep farming will pay as good, if not better, than cattle raising. Our Province is well suited to the raising of sheep, and our woolen factories are steadily increasing the volume of their productions to enable them to meet with a steady sale of their wool, and should, as far as possible, supply the new material required. The past season has proved very favorable for the growth of various kinds of crops cultivated. The early frost, however, did considerable damage in some localities to buckwheat, which proved the most serious drawback of the season. Wheat, as was predicted in our last report, was much more extensively sown than during the year previous and the yield per acre was greater. The total yield for the Province last year is, by a careful estimate, stated at 700,000 bushels. Our farmers are satisfied with the results and express a determination to sow a greater breadth the coming season. Other grains have given an average yield and been cultivated to about the same extent.

LIME AS AN INSECTICIDE.—The value of lime in its many varieties, as an exterminator of the insects that harbor in the ground, and cause so much injury to the husbandman, is not generally sufficiently appreciated by the cultivators of the soil. The lime of sea-shells is very beneficial in this respect. Quite a heavy business is done in California in shipping to China the shells of the shrimp, which are caught in such numbers on the coast, and there is almost as much profit from the sale of the shells as from the shrimps themselves. The use they are put to in China is as a manure and as a poison to the worm which works such destruction to the tea plant. The Chinamen state this is the only remedy at present known for the tea pest. The warmth of the soil produced by lime, whether phosphate, superphosphate or other lime, causing early germination, growth and maturity, is no small benefit to farmers and gardeners, and to this is added the mitigating of the evils wrought by insects and fungus.

Danger Ahead.

We have heard several complaints of serious injury done to our clover in several parts of Canada. We abridge from the N. Y. Tribune the following article from the pen of Prof. Riley, the well-known Entomologist, and high authority on such subjects. It should be read with interest by every farmer. This new enemy to the very important forage plant which is the mainstay of our agriculture, will, we hope, receive due attention from the Commissioner of Agriculture and Canadian Entomologists. We will anxiously await their report on these insects.

There are a number of insects that affect clover more or less injuriously by feeding on the leaves; while one species, the clover hay-worm, attacks it when cured in mow or stack. There are two species in this country that have for the first time during the past year been observed to affect the plant, in New York more particularly. Both of these work in such a manner as to prove far more destructive than any of the clover insects heretofore known. These are what I have called the clover-root borer and the clover-seed midge. In September, 1878, I received roots of clover that had been ruined by a small beetle not before reported in this country as having this habit. The insect was found in all stages of growth, though the principal injury had evidently been done by the larvæ, which worked more particularly in the larger roots. These, in many cases, were entirely severed at the surface of the ground. The flower-stalks were also, in many cases, eaten into.

While the facts which I have been able to learn in relation to the insect's work in this country show that it attacks healthy plants, yet it is undoubtedly true that this beetle flourishes most in the roots of plants that have been injured and that have already begun to decay; bearing out in this respect, the well-known habits of other species of its family, which are known to prefer the bark of trees and the woody stems of plants that are sickly from one cause or another.

I have found the insect in all three stages, of larva, pupa and adult, up to the time of frost, though the perfect beetles at this season very greatly predominate. The insect hibernates in any of these three stages, and continues propagating as soon as the spring opens, the beetles issuing from the ground and pairing during the early spring months. The female then instinctively bores into the crown of the root, eating a pretty large cavity, wherein she deposits from four to six pale whitish elliptical eggs. These hatch in about a week, and the young larvæ at first feed in the cavity made by the parent. After a few days, however, they begin to burrow downward, extending to the different branches of the root. The galleries made in burrowing run pretty regularly along the axis of the roots, and are filled with brown excrement. The pupa is formed in a smooth cavity, generally at the end of one of these burrows, and may be found in small numbers as early as September. It is the custom in Western New York to sow the clover in spring on ground already sown to fall wheat. This is generally done while the snow is yet on the ground or while the frost is disappearing, one peck of seed being used to the acre. The clover is allowed to go to seed in the fall, and usually produces but little. During the second year one crop of hay and a crop of seed are obtained. It is during this second year that the injury of the *Hylesinus* is most observed. No experiments have yet been made with a view of preventing these injuries of this clover pest, and no other mode of prevention suggests itself to my mind than the plowing under of the clover in the spring of the second year, if the presence of the beetle is observed.

While the *Hylesinus* treated of above was proving so destructive to the roots of clover in Western New York, the seed itself, where the beetle was not working badly, was very seriously affected by the bright-orange larvæ of a minute two-winged fly, having both the size and general appearance of the common wheat-midge. Clover infested with these larvæ was first sent to me the latter part of last August by Mr. Snow, and, upon my subsequent visit, I had opportunity of studying the species in the field. It seems to have attracted attention more particularly during the last two years, and bids fair to become as serious a drawback to the raising of clover seed as the wheat-midge has, in past years, been to the raising of wheat.

The larvæ affect the heads of clover in the same well-known manner that the wheat-midge affects wheat, and in all essential life habits agree, so far as I have been able to learn, with that species. When full-grown these orange larvæ quit the clover heads, drop to the ground, and either work a short distance beneath the surface or hide under the dead leaves and other shelter that may be thereon. Here each one forms an oval, compressed, rather tough cocoon of fine silk, with particles of the surrounding earth or other objects adhering to the outside, thus rendering its detection extremely difficult. The pupa state is assumed within the cocoon, and when about to give forth the fly the pupa works itself out of its silken covering and to the surface of the ground. The flies begin to issue in September, and continue issuing all through the mild autumn weather and during the ensuing spring.

If the injuries of this insect should become serious, the clover-seed raiser will be obliged to abandon for a series of years the growth of this crop, as in no other way are we likely to be able to affect the multiplication of the enemy. The more thoroughly farmers combine in this course in any given district, the more effectual will be the eradication of the evil.

Buckwheat.

When sown on soil destitute of alkali, is poisonous, and has been the means of causing death, both in the human family and among domestic animals. It is generally sown on the poorest old worn-out land on the farm, and is thus sometimes rendered destitute of the very element that renders it fit for human food.

Have the observing agriculturists who read these columns discovered any evidence suggesting that buckwheat kills insects? According to The Farmer, of England, "many years practical experience has convinced M. Legarde" that this plant thus ploughed down when in blossom, not only serves the useful purpose of green manuring, but has the additional important effect of "killing white worms, grubs, ants, etc.," with which the soil may be infested, the destruction being due, as he supposes, to some poisonous principle in the plant itself or to the asphyxiating quality of the gas freely disengaged during the rapid decomposition of the succulent growth. He suggests that sowing rows of the buckwheat among grapes and digging in the green crop as near the vines as possible, might likely enough serve as a help against phylloxera. It would seem to be worth while for persons favorably circumstanced to make some experiments to test the possible value of buckwheat as an insecticide. If its haulm proves as efficient for this purpose as its grain is believed to be as a promoter of winter rash among those who breakfast regularly and heartily on the beguiling hot cakes of which it forms the basis, the fact should be widely known.—[New York Tribune.]

BURNING RUBBISH.—If all the dead weeds, leaves, brush, and rubbish of the gardens, and the fields as well, be gathered and burned now, a large number of insects will be destroyed, most of which are troublesome. In examining a heap of rakings of the garden one may find eggs and larvæ or pupæ and mature insects of many kinds. Every tree, bush, and plant seems to have its peculiar pest, and the prunings of apple and pear trees, ornamental trees—for even the horse-chestnut harbors the oyster-shell bark louse—flowering shrubs, every curled and withered leaf, dead raspberry and blackberry vines, and all other refuse matter, shelter myriads of noxious creatures which live only to torment mankind. The usual Spring clearing and burning is, therefore, a commendable work, so long as it is kept within bounds. But the reckless firing of swamps and woods that is done every Spring is far from this; on the contrary, it is reprehensible in the highest degree, a crime that should be severely punished by law, for the most serious damage is done by the escape of the fire from its intended bounds into places where valuable property is endangered or destroyed.

Our mealy potato belongs to the same family with the deadly nightshade, and in its wild state was an insignificant plant, with little tubers not worth digging from the earth, or of eating when they were dug.

The Apiary.

Buying a Swarm.

BY CHAS. F. DODD, NILE, ONT.

Many who have written on this subject advised buying from a regular dealer in bees, in a movable hive, and it is perhaps the safest and best way. I find many, however, who wish to engage in bee-keeping who do not wish to buy off regular bee raisers who may be far distant, but prefer to buy a swarm from their neighbor, in the old bee-hive, and from that beginning grow moderately. And if I can in any way help those who are so disposed my efforts will not be in vain. If possible, buy them in the spring, about May 10th; there is then little or no danger of "spring dwindling," and the hives will contain less honey than earlier, and consequently more safely moved. Before starting for your swarm get a bellows smoker—that is half the battle gained at the outset, and many stings will be avoided—blow a little smoke in the entrance of the hive you wish to examine, turn the hive bottom side up, blow a little more smoke in, and begin your examination. See that the combs are built moderately straight, and that they are mostly worker combs; you will notice two sizes of cells, one considerably smaller than the other—the small ones are the worker, the large ones are the drone cells. See also that the hive is full of comb and nearly so of bees; blow smoke in whenever the bees seem disposed to rise; drive them down as much as possible, spread the combs apart and see that they are breeding, which you can tell by seeing cells capped over near the centre of the combs; they are rounded out, each one separately, and they have a brownish color. Do not make it a point to select the heaviest hive, as too much honey is sometimes detrimental to brood rearing. Now replace the hive on its stand, and any bees that are out will gather in; then invert the hive and tack a sheet of wire cloth on the bottom to give them ventilation, and carry them in a spring wagon, bottom up; you can drive at a good pace where the roads are smooth, and they will stand a journey of two or three days if they are shaded from the sun. On arriving home, put them where they are to remain, and give them a chance to fly immediately. If you wish to become successful and obtain the best results from them, you must transfer them into a good movable frame hive, and if you wish to secure a large crop of honey and increase your stocks rapidly, we would advise you to Italianize them, which you can do by removing their queen and replacing her with an Italian queen, and you will have a strong stock of Italians at work in six weeks.

HOP RAISING.—Here is a method recommended by a prominent New York hop-grower: Make a cavity in mellow and rich soil; place the cuttings on end, one at a place, with the eye upward and top of the cutting level with the top of the ground; cover about two inches with mellow earth, leaving a small mound; protect with brush. Stick a pole ten or twelve feet long near the hill and start the vine around it with the sun. Protect the hill in winter with a forkful of manure or straw. Cut the old vines off near or below the ground. About the middle of March cover again with mellow earth. The sound, and every season after, side shoots under ground must be cut off, leaving only the crown plant. The first vines after the first season are sometimes too rank and mellow; do not allow them to climb, but choose slender and green-looking vines, which are more fruitful.

Mr. Joseph Barnard, N. H., tells *The People* that the "English White potato has been raised on his place from fifty to seventy-five years, and upwards of a hundred years on the farm above, and is the only variety that has not gradually run out."



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.

Reducing Bones.

SIR,—I have a large quantity of bone; how can I reduce it so as to be able to apply to the land to the best advantage? H. W. F., Columbus.

[One of the simplest and cheapest ways is to treat the bones with caustic potash—unleached ashes answer the purpose well. Place a tight barrel on a stand, bore a hole in the bottom, laying a little straw over the hole, then a layer of bones covered with fresh ashes, and alternate layers of bones and ashes until nearly full. Four water on them until it runs out below. Place a tub to receive the lye, which is to be returned daily with additional water equal to the evaporation. If a sufficient amount of ashes be used in the packing the gelatin will be entirely dissolved in a month or two in the warm weather, and the bones can be crushed by a blow of a spade. In this way nothing is lost, whereas by burning all the nitrogenous matter is destroyed. The addition of a little of the caustic potash of commerce would hasten the operation and would give more acid value to the manure.]

Another mode as, given by Ph. Pusey, M.P., who was a distinguished English agriculturist: He had previously decomposed crushed bone by mixing with peat ashes, and it had been suggested to him that the heating was caused by moisture, and that any moisture would do as well. He says: "I therefore procured three cart-loads of crushed bones, and having wetted them, mixed one cart-load with two cart-loads of peat ashes, another with two loads of coal ashes, and the third load of bones with two loads of sterile white sand, dug up from some depth, and quite unfit of itself to support vegetation. The three heaps were made up as compactly as possible side by side. In a few days they all heated equally, becoming too hot in the middle to be borne by the naked hand; in a few more the bones had disappeared in each heap, equally, being reduced in general to a blue-mouldy substance. Some corroded fragments, indeed, which remained in the centres and outsides to the depth of five or six inches, were unchanged, because there the heat was insufficient."

Having succeeded in decomposing the crushed bone with either peat ashes, coal ashes or sand, equally well, he next proceeded to try their effects on half-acre lots of early turnips, and found that equal quantities of bones produced equally good crops. Having the impression that the members of the Royal Society would not be convinced of the utility of his new mode of preparing bones by one year of experiment, he the next year proceeded to experiment on a larger scale on a seventy-acre lot of turnips and swedes, and to compare the effects on the one hand with unprepared or raw crushed bone, and on the other hand with bone decomposed with sulphuric acid, called at that time "dissolved bone" or "superphosphate." He gives the result as follows: 17 bushels of raw bone costing \$11.68, produced 13½ tons of turnips; 4½ bushels of dissolved bone, costing \$5.68, produced 14½ tons; 8½ bushels of heated bone and sand, costing \$5.18, produced 13½ tons.

By Mr. Pusey's experiment it is seen that crushed bone, decomposed by moisture and sand, produced as large crops of turnips as superphosphate of lime, or "dissolved bone," as it was called at that time.

A farmer also writing to the Country Gentleman, says he has used crushed bone rotted in a similar way, only that he used loam instead of sand, which is undoubtedly better. His results were as follows:

Corn did very well with it, but the crop was injured if the seed came in contact with the manure when sprouting. I thought it did not have so good

an effect upon the potatoes, though other causes may have prevented a full crop. Its effect upon tomatoes was surprising. They literally covered the ground with fruit. I have also used it many years upon grapevines, peach trees and pear trees, with decided advantage. But I have used more of it as a top-dressing to meadows and when seeding down to grass than in all other ways. In the latter operation I always apply 500 to 600 pounds of the bone, rotted, and 200 to 250 pounds of guano to the acre, and always with success and satisfactory results; and that treatment generally insures a fair crop for 15 to 20 years.

All organic substances must be decomposed by natural processes before their elements can enter into new combinations. Flesh, grain, vegetables or bone cannot nourish a plant until it rots; nor can either act as a manure for any plant until its elements are set free by decomposition. Bone, if mixed with moist soil, is decomposed, while the soil retains all the gases or manurial qualities which are disengaged and set free by the fermentation. All the elements of vegetable nutrition which bone contains are then in a condition to be taken up by the roots of any plant; but of course those elements are better adapted to some plants than to others. I have never seen much advantage from unrotted bone, even when finely ground. The amount applied is so small in proportion to the soil of the field that it will not ferment. And even if well harrowed in, it will remain unchanged, inactive, and nearly useless for a long time. And it is even more inefficient when applied as a top-dressing, as I have found, when thus applied at the rate of a ton to the acre.]

SIR,—Seeing from your correspondence from the Maritime Provinces that you are willing to publish notes of improvement from all parts of the Dominion, I write a line to you from this eastern part of Ontario. This section of the country does not fall short of any other part in agriculture and general progress. You know the Bay of Quinte district produces the best barley on the continent. Our country is also rich in minerals, and our Live Stock interest is well cared for. Our prospects for this season are very good so far. From the following extract from the Intelligencer, your numerous readers can form some idea of our progress:

EXPORTS TO THE UNITED STATES.

Col. Prince, United States Consul for the Belleville District, furnishes the following returns of exports to the United States from this district during the past quarter:

Value of declared Exports from Belleville Consular District to the United States for the 3 months ending 31st March, 1880.....\$63,075.46
Do. same period 1878.....42,279.27

Increase.....\$20,796.19

Principal items:

Barley.....\$28,212 70
Iron Ore.....15,049 00
Live Stock.....4,035 00
Hides and Skins.....2,200 00
Pease.....1,000 00
Rye.....2,500 00

FARMER, Belleville, Ont.

SIR,—Can you tell me how I can most effectually prevent the continued washing away of the side of a gully? The winter's frost and the following spring rain wash the earth into the gully, and no grass will bind it. X.X., Shakespeare, Ont.

[A bank such as you describe is in our immediate vicinity. It is a steep declivity over the river. Eight or ten feet wide of surface were washed away in a few years. The owner then planted it with strong willow cuttings, 5 to 6 inches in diameter, to a depth sufficient to hold their position. These cuttings grew freely. Their roots have formed a strong net-work in the bank, and the consequence is there is now no washing away of the earth. They are growing rapidly, and will be a perfect protection of the bank, and now there is a sward of grass on it, as the soil is not hoven by the frost and washed away by the torrents. The golden willow is the variety used. It is the simplest and the most effectual remedy for such land slides that we have seen. The roots extend so far into the bank and gain such a hold in a short time that the object aimed at is attained at a trifling cost.]

Corn and Rye.

SIR,—Please tell Mr. Tilley to raise the duty on corn a little higher, as we find that our coarse grain is selling much higher than it did under the late Government. Rye is in good demand by distillers, if they are allowed to make and sell whisky. I say let the Canadian farmers have the profit of raising the grain, and not the American farmers. Protection is working splendid, and old honest Reformers are beginning to see and acknowledge the improvement to be just what the country wants. My rye which is now growing was spoken for twelve months ago by the distillers, at the highest price in the market. We will have no trouble to get 75 cents per bushel, which will pay far better than wheat. On our light sandy soil, where wheat will not grow, heavy crops of rye can be grown; it makes fine feed for stock of all kinds and produces a large quantity of straw for making manure. It is a paying crop at the above figures, and will be raised by many farmers both for feeding and marketing. There is no crop grown that will make more manure than rye, and by feeding stock and having abundance of straw you enrich the poorest land. The ADVOCATE is just what every farmer in Canada should have and read. I wish it every success. Keep corn out—we can grow all we want for "mush" and Johnny-oake. E. E., Hespeler.

SIR,—I wish to pasture my sheep in the orchard, but find they gnaw the bark of the young trees. What can I do to hinder them?

[Where it is desirable to pasture sheep or hogs in orchards, or where rabbits make depredations, the bark of young trees may be successfully protected by washing the trees in spring, and again in mid-summer, for sheep, and in late autumn for rabbits, with soap suds and carbolic acid, or a solution of coal tar and whitewash. Both are sure in accomplishing the end in view, and are valuable in keeping off the borer and in giving a healthy surface activity to the sap, which will make the bark look fresh and healthy. An ounce of carbolic acid to a pail of soap suds is sufficient.]

SIR,—Can I grow pumpkins among corn to advantage? Will they make the yield of corn less per acre than it otherwise would be? G. R., Orillia, Ont.

[In our experience we have found it profitable to grow pumpkins among corn. The vines will not seriously incommode cultivation, as they do not begin to run much before the corn is too large to work a horse among; but in case they do, the extra time it may take to move the vines out of the way will be well repaid in the yield of pumpkins. It has been proved by experiment that the yield of corn will be in no way decreased.]

SIR,—Send me a remedy to prevent smut in corn. I had a good field last year which was very badly affected. J. S., St. Thomas, Ont.

[We believe smut in corn to be produced by a luxuriant growth which is caused by a rich soil, or damp year. Steeping seed wheat in strong brine has been found a preventative against smut, but we do not know how it would answer with corn. You might try it as an experiment.]

SIR,—Give me, through the ADVOCATE, the address of the National Live Stock Journal. SUBSCRIBER, Ingram.

[S. G. Brabrook, Secretary National Live Stock Journal, corner Adams and Clark Streets, Chicago, Illinois.]

SIR,—I have been a constant reader of the ADVOCATE for a long time, and receive much benefit from it. Some years ago I saw the Scott wheat recommended in it; I bought some, and it has given me good satisfaction. Last year I had 1,200 bushels, an average of 40 bushels per acre. J. S., Biddulph, Ont.

H. W. W., of Orwell, Ont., enquires of us the proper way to save bees without letting them swarm. Perhaps an apiarian will reply.

A. C. Grimsby.—The onion was once a nauseous shore plant, growing in the sand.

Mangel Wurzel.

SIR,—Will you inform me concerning the culture of mangel wurzels, the amount of seed to sow per acre, and time to sow; also, their nutritive and keeping qualities. H. C., Arthur, Ont.

[From 4 to 6 lbs. of seed is sufficient to sow per acre, and may be sown any time between April 20th and May 20th, according to locality and warmth of the soil. The seed should be sown about one inch deep, in drills similar to the turnip. A machine is used for sowing by some, while others plant by hand after first running a light roller over the drilled ground. An advantageous plan when sowing by hand is to take a piece of 2 inch plank 6 inches wide and 40 inches long; bore an inch hole 2 inches from each end and one midway between; then in each of the end holes drive in pieces of wood of a suitable size to fit tightly, and let the ends protrude from 1 to 1½ inch below the lower side, and in the centre hole insert a handle from 4 to 5 feet long, letting it pass as far through the lower side as the end plugs do. You press this on the top of the drills, and thus make 3 holes at a time at the proper distance and depth to plant the seed. Another person can follow and drop 3 or 4 seeds in each hole, covering as he drops and firmly pressing the ground over each hole after covering the seed, which should be damped from 3 to 4 days before planting; it will come up the quicker. The seed may be rubbed dry just before planting with land plaster. Mangels are said to do best on clay land, which must be well manured and worked deep. It is the best plan to prepare the land in the fall as far as possible. The manure to be used should be well rotted, and 10, 15 or even 20 tons applied per acre, according to the present fertility of the soil. Salt produces good results, generally making the yield much greater, as is the case with asparagus. Both mangels and asparagus are supposed to be natives of the sea coast. The salt should be sown in the spring just before harrowing the ground previous to drilling up; 300 to 400 lbs. per acre will be sufficient. After sowing mangels require about the same culture as turnips. "Beck's Champion," "Yellow Globe" and "Mammoth Long Red" are among the best varieties, each having its advocates. As a cattle food, they are relished by most stock even more than the turnip, and are generally considered more nutritive. They are preferable to the turnip for the food of dairy cows, as they do not give any offensive taste or smell to either milk or butter. As a keeper they are excellent, and will be found sound and good, if properly stored, the June, July and August of the year after growing. Care must be taken not to let them get at all frosted either before harvesting or after.]

The Tree Louse.

SIR,—I have enclosed a twig of an apple tree. Will you let me know what it is affected with, and give a remedy? Which variety of wheat do you think the best, Lost Nation or Defiance? P. P. F., Shefford Co., P. Q.

[Your trees are affected with the common tree louse, and arise from poverty of soil, which is probably cold and undrained. To cure your trees you must manure the land well, and drain if necessary. Scrape all the old rough bark off them, and wash the trunks and limbs with lye or strong soft soap suds; or after a rain, before they are dry, rub the trunks and larger limbs over with unleached ashes. We cannot advise you concerning the wheat; in some sections one variety does best, and in another section the other.]

SIR,—You generally give very good advice on most subjects, but when you undertake to give legal advice, you are evidently not posted. Your answer regarding statute labor on snow drifts I think wrong. Township Pathmasters are not required to open roads blocked with snow, unless the County Council pass a by-law requiring them to do so. And further, if a person is traveling on a highway so blocked up that he cannot get along, he can let down fences and go through fields, and the owner cannot prevent him, a snow drift being a legal excuse. Can you refer me to the statute from which you derive your information? SUBSCRIBER, Ont.

[Read chap. 185 of revised statutes. When this Act is taken advantage of by the Council, our answer in last No. is right; but if it is not taken advantage of, you have a right to throw down fences.]

Flax Seed for Horses.

SIR,—Will you inform me if flax seed is good for horses. If so, how must it be fed, and how much at a feed? Also, what is your opinion of feeding horses condition powders, and what quantity to feed? S. S. W., Ont.

[Flax seed is good for horses if properly fed. Put a cup full of seed in a pot of water over a slow fire until cooked; let it cool and mix with cut feed. This will be enough for a team. A similar quantity may be fed two or three times a week in the spring of the year. Though condition powders and such food are good for cattle, especially when a speedy fattening is required, the veterinary faculty does not consider them good for horses, but say the less a horse gets the better. About a dram of saltpetre once or twice a week, with plenty of good hay and oats, is the best condition powder, though it is necessary to give soft food, such as bran mash or boiled grain, occasionally.]

Plaster—Seeding Down with Grass.

SIR,—You recommend the sowing of plaster as soon as vegetation starts. That has been my opinion for a long time, and is still. I always look on sowing plaster after seeding is done, or about the first of June, as many farmers do, like trying to make a prize animal out of a calf that has been starved till half grown.

Perhaps my experience in seeding down with grass seeds would be beneficial to some of your numerous readers. Last spring we seeded down 36 acres; one-half of the field was sown by hand, the other half was sown by the broadcast seeder at the same time as the grain was sown. Both halves of the field were sown on the same day. That sown by hand was as fine a catch as I ever saw; on the part sown by the machine the seeds were a long time in coming up. I thought for a long time they were not going to sprout at all. When they did come up the plants were "few and far between," and very weak. I think the machine buries the seed too deep. C. H.

[We would like to hear from other farmers on this subject.]

SIR,—I am about laying down in grass a piece of ground in front of my house, and would thank you to let me have, through the ADVOCATE, some directions. I have been advised to sod it, but I cannot spare the time. How shall I secure a good permanent even grass, and how soon after its growth does it require to be cut? A. B., Simcoe, Ont.

[The soil, in order to make a good rich sole of grass, must be thoroughly cultivated—plowed and re-plowed—and enriched with some good fertilizer—nothing better than well decomposed farm-yard manure. The richness of the soil will aid the germination and rapid growth of the young grass, and will also add to its appearance by giving it a dark green hue. Do not sow the grass seeds for some time after cultivating the soil. By this means the seeds of weeds near the surface will have grown, and a thorough cultivation will exterminate them. Sow about three bushels of mixed grass seeds to the acre in the following proportion: one and one-half bushels of blue grass, half a bushel red-top, and half a bushel white clover, with a few pounds of sweet-scented vernal grass and two pounds trefoil. The object being to have a close sward as soon as possible, this seeding will not be found too much. The subsequent treatment is the cutting in proper time. The young grass should be allowed to attain some growth and strength before mowing but not more than six or eight inches in height. After the grass has become established it should not be allowed to grow three or four inches high. The oftener it is cut the more dense it becomes. The cut grass should not be raked off, it soon withers and disappears, and it serves to shade the roots of the grass from the excessive heat. It is well that the lawn have an application of some fertilizer each spring. An objection to barnyard manure for the purpose is the appearance of the manure in front of the house and the disagreeable flavor. A mixture of bone dust and wood ashes makes a good fertilizer for grass. In making a lawn excavate the walks the desired width a foot in depth. Fill them up nine inches with small stones, finishing off the walk with fine gravel rolled smooth and firm. When the walks are laid at the same time with the seeding of the lawn; place a green turf a foot or more on either side of the paths, so placed that the newly seeded lawn, when it settles down along the border, will be of the same height, and a due uniformity be maintained.]

Covering for Hot-Beds.

SIR,—Will you tell me the German process of preparing cotton for covering hot-beds, instead of glass? J. B., Flesherton, Ont.

[We do not know the German process, but can tell you the English, which is to take the cheapest factory cotton, oiling it thoroughly with raw linseed oil, and stretching it tightly over your frame, which should have bars running crossways at intervals of 18 to 20 inches, to which the cotton should be tacked. Thus prepared it will shed water, admit light, and will keep the ground cool and moist, but is not as good a preventive against frost as glass.]

SIR,—Will you or any of your readers inform me through the ADVOCATE which is the best time to cut tamarack for fence posts? Some say they will last but a short time, and others speak more favorably of them. A friend of mine told me he knew of a tamarack fence that stood for twenty years, and that the posts were cut in the summer, but he could not tell me the exact time. The same party put up a similar fence, with the exception that the posts were cut in the winter, and this time the fence only lasted four or five years. W. R., Strathroy, Ont.

[Will some of our readers answer?]

SIR,—What is best to do for a cow whose calf b d protrudes when she lies down? She will calve in about six weeks; is in fair condition. W. J., Colborne.

[Bathe the protruding part with an astringent wash, such as oak-bark tea or some alum dissolved in soft water, 1 oz. of alum to 1 pt. of water. All applications must be cold when used. After bathing, press the part carefully back to its place. She must be kept in a stall, with the hind end elevated about six inches, where she must remain for some time after calving.]

A Welland stock-feeder enquires how he can feed the most stock on a farm of 200 acres of land that produces good crops of clover and roots, and is also a good grazing farm. Would a good pasture feed more stock than the farm would, if tilled?

[There is no other way by which so great a quantity of cattle food can be grown than by mixed farming. A grazing farm of the very best quality cannot produce as much beef as a mixed farm. Ten acres of grass cannot possibly produce the same weight of cattle food as an equal area of roots, nor can ten acres of pasture feed as much stock as they would of any forage crops when cut for soiling. This demonstrates that mixed farming feeds more stock. The expenses of mixed farming are, however, greater than those of pasture. For this account, and from the opinion generally held that grazing at large is conducive to greater healthiness than confinement in the shed or cow house, even though abundantly fed with good succulent food, is urged by many as an insuperable objection to house feeding. Our reply to "Stock-feeder" may be summed up in a few words: The greater the proportion of the farm that is in tillage the greater the amount of stock that can be fed, if the crops grown be fed on the farm. Such farming is safest, and tends to the improvement of the land.]

SIR,—We are well pleased with the ADVOCATE, and find it both interesting and profitable. We hope it may obtain a large circulation in this Province, where, as a rule, the farmers need waking up. The greatest difficulty in this (Carlton) county is the want of a market where farmers can obtain a better price for their produce. We are situated not more than one hundred and thirty miles from St. John, but freights from here to St. John are higher than from Montreal to the same point. I might say that our only market for hay and grain, sheep and horses, potatoes, etc., is Boston, and the duties cut the prices down so that the farmer does not realize what he should from his products. Tee ruling price for hay is from \$5.50 to \$6; potatoes, 45c per barrel, and other things in proportion.

We have a new kind of a plum down here that is a wonder in itself. It is called the Moore's Arctic; in size as large around as a Canadian cent, with a pit no larger than the damson; in color it is a deep blue, and a heavy bearer. Its flavor is delicious. This county can boast of some fine orchards, and would be one of the best places in the world to live in if we had better markets.

C. L. S., Woodstock, N. B.

The Sugar Beet.

SIR,—Noticing an article in your last issue about the manufacture of sugar from beets, I take the liberty of writing to you for some information through the columns of your paper. In this neighborhood some enterprising men are going to start a sugar manufactory, if they can get a sufficient quantity of beets subscribed. What they contemplate paying per ton I have not yet learned, but being anxious that the enterprise should prove a success, I write to you, being ignorant of the culture of the sugar beet. Could you inform me where it thrives best and gives largest yields, and what is the most successful manner of cultivating it? What quantity of seed is required per acre, and where can pure seed be procured, and at what price? Please answer in your next issue, and oblige a subscriber. H. F. K., Canifon, Ont.

[We have several enquiries, besides this one from H. F. K., on the subject of sugar beet growing. In reply we give an abridgment of a letter on the sugar beet from Gen. LeDuc, U. S. Commissioner, a good authority, he having devoted much time and availed himself of his peculiar opportunities to know everything relative to the subject. Commissioner LeDuc says:

"Any good soil free from stones and suitable for Indian corn or wheat, is well adapted to beet root culture. Deep surface soils are to be preferred. It is better to make the beet crop follow a plowed one, such as corn or potatoes. In such case fall plowing will not be absolutely necessary. It is, however, always of advantage to plow deeply in the fall with a heavy plow, leaving the ground rough to be cross-plowed in the spring. Subsoil plowing is always of advantage, especially where the surface soil is shallow. If stable manure be applied it should be well rotted and plowed in in the fall. It is even better and more profitable to make heavy applications to a corn crop to precede beets, for enough of nutritive elements will remain in the soil to satisfy the demands of the latter, and a valuable advantage is thus secured to both. Artificial manures, phosphates, etc., may be applied at planting preferably in the row, at the rate of 200 pounds of the former and 100 pounds of the latter per acre. The soil being well prepared and mellow, the seed should be sown in rows 15 to 17 inches apart, and when the seed is well up, and the roots $\frac{1}{4}$ to $\frac{1}{2}$ inch in diameter the plants should be thinned to a separation of 7 to 10 inches. This will secure a yield of 20 to 25 tons per acre, and if a good variety of seed have been sown, the roots will contain 9 to 13 per cent. of sugar. This is the percentage found in the crop of the past year grown in Maine. To attain this result, however, the meteorological conditions of the season must be favorable. Deficiency of rainfall during the summer months has a ruinous effect upon the crop, especially if it be attended with too high a temperature. The conditions prevailing as to temperature and rainfall in the beet growing districts of France and Germany are comparatively regular from year to year. Concerning the cost of machinery for a factory for extracting sugar from the beet and putting it in a marketable condition, the following are the estimates for delivering on dock in New York:

For daily capacity of 50 to 75 tons.....	\$45,000
" " " " 100 to 120 "	75,000
" " " " 180 to 200 "	85,000

"The cost will be somewhat above or below these estimates, according to the process for extraction of juice chosen. The cost of working is generally estimated at about \$3.00 to \$3.50 per ton above the cost of the roots. The average yield of sugar from roots such as have been grown in Maine may be estimated at 7 to 8 per cent., worth in open market from $6\frac{1}{2}$ to $7\frac{1}{4}$ cents per pound. This is generally sufficient to insure a handsome profit on investments. Beets are sold to sugar factories in this country at from \$4.50 to \$5.50 per ton of 2240 lbs. The cost of culture may be estimated at from \$40 to \$50 per acre, exclusive of manures. The pulp from the factory remaining after the extraction of sugar is of value for cattle food, and its composition as compared with that of various kinds of hay, distillery and brewery refuse, will enable you to form your own conclusion concerning the comparative value of the refuse pulps from the beet sugar factory."

The beet root cultivation has become a very important interest in some of the United States, especially in Maine. The price paid to farmers for the roots by manufacturers is about \$5 per ton, and remunerates them fairly for their labor. A good crop averages not less than 20 tons per acre.

The pulp from the factory remaining after the extraction of sugar is valuable for cattle food. It is good food for swine and is spoken highly of for feeding milch cows producing an increase in milk and imparting no disagreeable flavour.

The cultivation of the sugar beet is extending through Canada. In the Province of Quebec the Government encourages those engaging in it by paying them a liberal bounty. In New Brunswick and Nova Scotia they are commencing the culture with high hopes and good prospects of succeeding. In Ontario the farmers and capitalists are preparing also to build factories and raise beets. Welland and Oxford counties especially are active in preparation.

PLEASED WITH BEET-PULP.

President W. A. Kilburn, of the Lancaster, Mass., Farmers' Club, states that the thirty or forty stock-keepers in his section who fed during the past season 500 tons of the pulp from the beet-sugar factory at Portland, are, without a single exception, so well satisfied with the experiment that they want at least twice the quantity next Fall and Winter, and so long as they can buy it at say \$3 per ton at their respective railway stations. They consider it worth as much as beets, pound for pound. One man who was incredulous at first ended by taking several car-loads which he gave to cows at the rate of a bushel each per day for three months, stopping all grain, and they increased not only in milk but in flesh, and by the time the supply was exhausted some were really fit for beef. Another who fed the pulp to hogs, with meat-scrap and a little meal, ran short toward the last, and tried in vain to buy a few more tons from his neighbors; they preferred to feed what they had left rather than sell it even for \$5 the ton, the price he offered. Mr. Kilburn's personal experience we give in his own words, from the Maine Farmer:

"In feeding twenty cows the first morning, but one or two would eat it without meal; but by sprinkling a quart of meal over it, all but three or four cows had licked it up clean before night; and after three or four days all ate greedily without meal except two,—one of these wanted a little meal with her pulp for several weeks, but now eats it greedily like the rest. It seems to have a good effect both on the flow of milk and on the condition of the animals. I have also fed six calves and about sixty pigs and hogs with good results. Breeding sows—about twenty—are now bringing strong hardy pigs, and I have every reason to be satisfied with the affects of the feed. I learn with much surprise that about five thousand tons of this feed found no takers at Portland, and have been wasted or dumped into the sea."

Destroying the Curculio.

Inquirers in regard to the destruction of this pest will find the following, from the Country Gentleman, of interest:

"Padded mallets," so commonly employed, are very inefficient, and lead to frequent failure. The pads defeat the very object we wish to obtain; they soften the jar, which should be sharp and severe, to bring down the insects. It often happens that one-half remain on the tree after such an imperfect attack—enough to spoil the crop. The mode which we have employed for many years, and which has already been described, is first to cut a three-eighths iron rod into pieces about three inches long, then bore a hole with a bit an inch or more deep into the trunk of each small tree, or into the principal branches of a large one, and insert one of the iron plugs. The stroke of an axe or large hammer on the end of such a plug gives the tree a very sharp and effectual jar, and no curculio can retain his hold. All are at once brought down and destroyed, and none are left behind to do the work of mischief. The blow cannot injure the bark of the tree, and it will be many years before the plug is grown over.

By the adoption of this mode, we have found no difficulty in saving a good crop, even when these insects have been most abundant, and the work is done in about half the time required for the repeated pounding with padded mallets.

At first we employed railroad spikes instead of the iron plugs, but their sharp points caused them to be driven up to the head by repeated pounding. The inserted end should therefore be blunt.

"E. W."—Parsnips, turnips and carrots, in their wild state, were strong, unpalatable roots, unfit for food.

Whitewash for Out-Buildings.

SIR,—In your article "On the Wing," published in the Feb. No., you mentioned a cheap and durable whitewash for outbuildings—will you state how it is made? J. B., Oshawa.

[Take $\frac{1}{2}$ bushel of lime, put it in an iron vessel, add $\frac{1}{2}$ of a pound of tallow and 1 pound of salt; now pour over this sufficient boiling water to thoroughly slacken the lime; cover the vessel over to retain the heat while the lime is slacking; after it is thoroughly slacked, dip out the quantity you want for immediate use into a convenient vessel, to this add sufficient warm water to make it the proper thickness to use; stir well while applying and apply warm. This wash is highly recommended for both the inside and outside of buildings, and is found to destroy insects in granaries and render them more wholesome. If you wish to color the doors or windows differently, take 3 lbs. of yellow or red umber and add $\frac{1}{2}$ lb. of tallow and a few ozs. of salt; put boiling water on the mixture to make it the proper thickness for use; stir it well while applying, and apply warm.]

Capped Knee.

SIR,—I have a cow which is in good condition, but her knees are badly swelled and running pus; they have been so for some time. She has been tied up in the stable nearly all winter. G. M., Oakwood.

[In reply to the above we give an extract from the National Live Stock Journal:—"Enlargements of the above described kind are the result of a bruise, or a repetition of bruising, such as are apt to occur when cattle are kept in stanchions which allow them very limited choice of position. When, besides, the floor is uneven and hard, or sufficient bedding is wanting, these tumors are almost certain to occur. In the beginning the enlargement is more or less inflamed and painful, with or without exudation or serum and blood. Frequent cooling applications, or poultices, together with liberal bedding and liberty in a box-stall, will then be of service; and if the enlargement persists, recourse may be had to strong stimulating applications, or to blisters. If no reduction is accomplished, or when treatment and preventive measures have been neglected, plastic exudation takes place, abscesses may form, or one or more cavities, with thick, smooth walls, the contents of miscellaneous consistency, may result. In cases of long standing, the whole substance gradually becomes solid and even cartilaginous and partially bony. In such cases the removal of the tumor can be accomplished only by dissection, the advisability of which is questionable, because of the great difficulty of healing an extensive wound in that location."]

Farmers' Clubs.

SIR,—Many of us are very desirous of starting a Farmers' Club at Woodham, but we do not know how to organize. We would like you to give us advice how to start, and how to conduct our meetings afterwards. A. D., Woodham, Ont.

[Farmers wishing to start a club must meet at some convenient point, and issue letters to the farmers of the vicinity, or such of them as would be of service in a club, asking them to unite in your efforts. If you do not wish to write you can go and see them personally, and urge that they will meet you at some certain time and place. When you have thus got a few together, your first business will be to elect a President, a Secretary, and a Treasurer, also to draft out a Constitution, which will consist of a few simple rules, which are to guide your meetings. The expenses will be very small, and may be payable by voluntary contributions, or by each member paying a small initiation fee, also a quarterly or yearly fee. One of your first requirements will be a blank book for the Secretary to keep the minutes of meetings in. There will also be a small expense in connection with the hall in which you meet. After you have the above business accomplished, select some subject on which to debate at the next meeting. The subject for debate should always be selected at a meeting previous to the one in which it is to be discussed, and should be such subjects as the farmers are most interested in, and ought to be as seasonable as possible. It might be somewhat hard to form a club in a section where the farmers are inactive: but by the patient perseverance of one or two good men it can be accomplished, and will prove a great benefit, as they always have in every vicinity in which they have been formed. Read the FARMER'S ADVOCATE closely, and note the doings of other clubs.]

Sorghum.

SIR.—The object of this communication is to tell you a little of my experience about sorghum, embracing three varieties of cane, viz.: Minnesota Early Amber, Comseana, Tiberian. Obtaining seed of the varieties named, about the 1st of May, 1879, we planted two of the varieties, Minnesota Early Amber and Tiberian. Soaking the seed about thirty-six hours, we raised our land in ridges about three feet apart, and planted in rows across the drills also three feet apart. When it was about three inches high it did not appear to grow in the least for about two or three weeks. But then is the time to make the cane rich in saccharine juice, for then it is making root, and if it makes a good root by a little help the result will be, first, a large cane; second, a rich cane, and third, a cane more free from foreign matter, than if left to take care of itself. About the middle of July it commenced to grow, and one Monday we raised the highest leaf we could find and cut a notch in a stick we had driven down beside the hill. A week from that we again raised the leaf, and we found it had grown some seventeen or eighteen inches. Another week and it had grown some twenty-five or twenty-six inches.

When the cane was cut it averaged nine feet high; the yield was about 160 gallons to the acre. The Tiberian, planted beside the other cane, received the same care but did not mature, so we made no use of it. The Comseana was planted in the same manner, though in a different field, and about two weeks earlier. Cane averaged about eleven feet high, and yielded about 275 or 280 gallons per acre. The land best adapted for raising cane is gravelly or sandy loam. We commenced to cut the cane the first week in October, and we would advise all farmers, that is, in a locality where they can get it manufactured into syrup and sugar, to grow their own sweetstuffs, as it can be done at trifling expense.

S. ANDREWS, Clinton.

[The above useful information is forwarded to us by the venerable old gentleman of whom we gave a description some time ago. Mr. Andrews is the oldest settler we have ever seen in Ontario. He lived some weeks on browse when no other sustenance could be procured. Now he is more vigorous and more enterprising than half the boasted leaders in agriculture. He here has taught you how to make your farms more profitable. He took a trip to the States to ascertain about the sorghum and to procure the most suitable kind of a press. His information differs with that of Mr. LeDuc, the Minister of Agriculture of the United States, who says the Early Amber is the most suitable variety for the Northern States.]

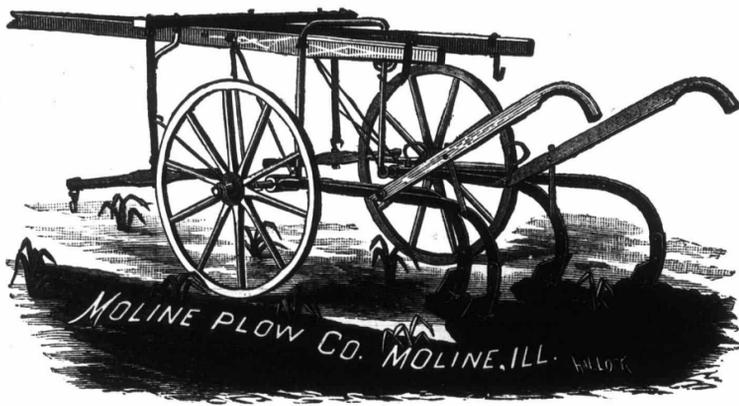
SIR.—I have taken the ADVOCATE for some time and like it very much; even for those who are not farmers it is interesting and instructive. I was brought up a farmer, and until about 9 years ago meant to follow that business. On the completion of my service as a soldier I mean to try my fortune in Canada. If you can find time to, will you kindly answer these questions through the F. A.: Do you think that 21 years as a soldier would prevent a man who had been brought up as an English farmer succeeding as a Canadian one, with about \$1,100, and a pension of 2s. 6d per diem? Which would be the best method of obtaining a farm on the most advantageous terms under the named circumstances and with the above capital and pension? P. R., Color Sergeant, 3rd Batt. Gren. Gds., Victoria Barracks, Windsor, England.

[Many in similar circumstances to yourself have by economy, industry, and precautions, succeeded in becoming owners of good farms, and have made themselves very comfortable and independent. You should not invest your money in land until you have some experience in Canada. A good, frugal, industrious wife is almost indispensable to successful farming in America. Occasionally a bachelor may succeed, but the chances are against him by long odds.]

Miscellaneous.**The Western Corn Cultivator.**

HOW TO RAISE CORN PROFITABLY.

It is now with pleasure that we introduce to your attention another very valuable American invention, the Western Corn Cultivator. The great advantages that this implement possesses over all others made in Canada, are, that corn can be cultivated and kept entirely free from weeds without the use of a hoe. The saving on labor is immense, as a man can go over so many acres in a day, and the land is so much better cultivated that the increase in crop in a large field, with the saving of labor, will pay for the implement in one year. The land can be cultivated to the depth of six inches with this cultivator. The handles to which the cultivator teeth are attached are easily moved to or from the corn by the operator. There are light iron flanges to prevent the earth from covering the corn. Mr. Thomas Palmer, of Norwich, informs us that he has used one of these cultivators for the past four years. He sent to the States for the cultivator, as there were none then made in Canada. He never uses a hoe, and says that as soon as our farmers know the use of these cultivators they will raise double the quantity of corn



THE WESTERN CORN CULTIVATOR.

they have been doing, because it can be raised so cheaply. These cultivators are also used in cultivating different kinds of root crops. James G. Cockshutt, of Brantford, Ont., is the enterprising gentleman who has first commenced the manufacture of them in Canada. We would advise any of our readers that intend planting a good field of corn this year to send to them for their circular. They will find this American corn cultivator just what they want to make a crop of corn cheaply. We do not grow half as much corn as we should. When we pass along any road in the western part of Ontario we do not require a much better guide to inform us if a man is in prosperous circumstances, or if his place be owned by another, than to see the extent and state of his corn crop. When we earned our living by farming we used to take pride and delight in having our corn-field in order. Good full bins of corn delighted us and kept our stock thriving in winter. Plant corn, more corn, and that will carry you through. Thus we speak of Western Ontario.

The editor of the London Horticulturist asserts that among all the fertilizers proposed for the grape none embody more of the necessary ingredients than bone meal. It should be applied as early in the season as possible. About a ton to the acre makes a dressing that will prove valuable in two or three years.

Prize Essay—Five Dollars

is offered for the best essay on "The use of salt for preventing the decay of timber." The article must be written by one of our subscribers, who must have had actual experience in its use, or observed the results. The article that gives the most valuable information to farmers regarding its practical utility, will be awarded the prize, irrespective of length. The length must not exceed 2 columns, it may be less. The copy, to be entitled to the prize, must be in the office not later than the 15th June.

FOR THE WEST.—Of the thousands who are rushing to Colorado this spring, a large proportion of those who remain till November will wish for the means to get home with.—[Boston Paper.]

MANUFACTURE OF SUGAR FROM POTATOES.—Sugar is manufactured extensively in Germany from potatoes as well as from beets. At the establishment of Herr Hydeman, in Hydeman, an American traveller saw the process of the manufacture. At that factory 12,000 bushels are used annually in the manufacture.

The Massey Manufacturing Co., of Toronto, Ont., who recently removed their entire business from Newcastle to that city, are now turning out fifteen reapers and mowers and 40 horse-rakes daily. Their entire production of this year, if arranged in one continuous straight line, would reach over thirteen miles. They employ nearly 200 men, whose average wages monthly amount to about \$6,000. The company employ a capital in their business of a quarter of a million dollars. The success they have met with during the past few years with their machines and horse-rakes is astonishing. In passing through their factory on a recent occasion, we noticed that great care was exercised in doing the work on the various parts of the machines, every machine being fully tested by running it at a high rate of speed. We also observed several thousand dollars worth of new and valuable tools with which the parts of a reaper, mower or rake should not fail to be perfectly finished. They have three powerful steam elevators in constant operation. We would advise any of our readers who may chance to visit Toronto, to call and visit their factory, feeling assured that a few hours spent there would be full of interest.

Notice.

Advertisers should send in any notice of change or other alterations of advertisements on receipt of their paper, if change or alteration is required in the following issue.

If any subscriber should at any time miss his copy of F. A., he should give us notice at least within one month. We do not pretend to keep back numbers for sale. Even the bound volumes are only limited in number, and some years cannot now be supplied.

We must inform you again that we will not delay the publication of this paper on your account. Advertisements and correspondence, to insure insertion, must be in this office by the 25th of each month. Several communications have arrived too late for insertion this month.

The Queenslander says that last season's wool clip in New South Wales is one of the best, both as to quantity and quality, which has ever been known.

The wheat grown in western New York has deteriorated so that the millers in their own region will not use it for fine flour; they send a thousand miles or more for western wheat, and the New York farmer charges the decline in his prices to the discrimination of the railways.

Mr. Henry Hart, Conn., The Farmer says, has a veteran peach tree with stems four feet in circumference and four branches [proportionally large, which has been a constant and abundant bearer for a generation and is not through yet.



The Family Circle.
"Home, Sweet Home."

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

BY FRANCES FREELING BRODERIP.

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

CHAPTER IV.

Old Poppleson, in spite of the contempt in which he was held by the better-halves of Chatterbury, was a very sensible and far-seeing old fellow, and under his apparent simplicity and real shrewdness he hid a very tender, good heart, which always seemed to be in the right place when it was wanted. And so he made the most skilful go-between and general pacificator in this lovers' quarrel. He had two very truthful and candid people to deal with, it is true; but then, as they were both gifted with a good share of pride, he had no small amount of trouble in bringing these high-minded, high-spirited folks together. In fact, as old Poppleson afterwards declared, it gave him the best idea he had ever had of driving two fiery thorough-bred horses; and, moreover, his good offices did not actually succeed till within three days of the important bazaar.

This great event has been too long neglected, and we must, therefore devote a few words to it, in stating that, by the incessant perseverance of the lady committee, the whole affair was assuming quite a successful aspect: that is to say, in less grandiloquent language, that the promoters had teased, worried, coaxed, bullied, badgered, tormented, harassed, led, driven, inveigled, betrayed, and beset everybody into giving or doing something for it; and that by these various means, such a multifarious accumulation of property had been collected together, that it would have heaped the treasury of Otaheite to overbrimming, and rendered its Sovereign rich for ever! The contention for the best stalls had raged high, and entailed more than one perpetual feud on the town in consequence. The Mayor had been judiciously coerced into lending the Town Hall for the occasion, and the various stalls were arranged with more or less success and infinite labor. The articles were of fairly average value, and everybody of any note, as aforesaid, had been well taxed. Even "poor old Poppleson" had contributed some choice bouquets of flowers, for the flower stall was to be presided over by Mrs. Sparks and her large tribe of girls. The only anxiety remaining was to weather; but even in that the fates were propitious, and the day dawned beautifully. The fare saleswomen were early at their posts, to give the last finishing touches to their stalls, and to have a final gossip before the hall was opened to the public.

"It was lucky that stuck-up Alice Earle did not take you at your word about finding a place for her in the stalls," remarked Mrs. Bond to Mrs. Boyce: "they are all filled up as it is; and, indeed, people were glad enough to pay a few attentions to ensure their daughters a place. I've the Ellisons' girls with me; they're rather ordinary-looking, but then they're so well off. They were so kind, and brought me such a great hamper of fruit and vegetables."

"Do you know that Lord Erlsmere is coming," replied Mrs. Boyce; "or rather, Lady Erlsmere and party?"

"No really? Well, that is fortunate; it will sound so well in the paper to have them here! But come along; there goes the door open!" And away they all hastened to their places, before the outer world should be let in.

The bazaar soon filled, but sales appeared to be very languid; so that the gay young shopwomen did not get into the spirit of their work. But time wore on and by-and-by, at the more fashionable time, there was a little rush and crush near the door, and the stall-keepers telegraphed to each other. "The Erlsmere party!" Everybody stretched, struggled, and strained to get a glimpse of the "aristocrats," but no one could be much wiser while the dense crowd passed on. But, presently, when the attention of the visitors was concentrated around a raffle for a pretty French clock, chiming the hours, Mrs. Boyce beheld a lady and gentleman approach her stall, and recognized her old friend.

"Ah, Mr. Poppleson, so you are tempted out into the world at last! May I, in the commemoration of the happy event, induce you to purchase a souvenir?"

"I shall be very happy to do so," replied Mr. Poppleson, with unusual alacrity. "There is a pretty water-colour sketch I should wish to be the owner of."

Mrs. Boyce packed up the purchase, and then asked if there was nothing she could supply the lady with?

"Indeed, Harry, I think I must have that pretty inkstand for Alice," replied the very quiet, but elegantly-dressed lady. "May I ask you to keep it for me till my footman comes? For Lady Erlsmere, please?" And then she passed on, to the amazement and slight horror of Mrs. Boyce. What did it mean? Why she was with old Poppleson, and calling him Harry in that familiar way? And, oh! there was Alice on Lord Erlsmere's arm, talking and laughing quite gaily. What could the mystery be? But, thank goodness, there was John Carttar just by Mrs. Bond's stall; and so, leaving her own stall to the care of her nieces, she hurried off to that of Mrs. Bond, and called so energetically to John that he was obliged, though much against his inclination, to come to her.

"Why, Mr. Carttar, how is it that the Poppleson set have become so hand-and-glove with Lord and Lady Erlsmere's? I can quite understand old Poppleson's fortune being a sufficient guarantee; but then—Miss Earle!"

"Well," replied John, smiling in a positively malicious way, "it would be strange if they should not know each other. Lady Erlsmere is Mr. Poppleson's own first cousin; and only their long absence on the Continent has prevented their meeting so long; they have always corresponded with each other."

"I am sure it is very kind of them, then, to extend their friendship to all their poor relations," said Mrs. Bond, spiteful as ever.

"Poor relations, madam!—who do you mean?" asked John Carttar, looking at Mrs. Bond with an intent but seemingly ignorant face, though a close observer would have noticed a furtive smile on his open, honest countenance.

"Well, Mr. Carttar, I don't want to hurt your feelings again," replied Mrs. Bond; but we all know that Miss Earle has, to put it in the plainest way, no money except what Mr. Poppleson gives her."

"My good Mrs. Bond, allow me to undeceive you. Mrs. Earle is Lady Erlsmere's own daughter, by a first marriage, and entitled in her own right to a very large fortune. Mr. Poppleson is her distant connection, and by her father's will was her guardian until she was of age last week."

"Good heavens!" cried Mrs. Boyce—"and to think how little we knew it! We should not have said what we did, had we even dreamed of such a thing!"

"Take my word for it," said John Carttar, turning to go away, "the old proverb is right, 'The least said, the soonest mended.' I have been so annoyed by the malicious gossip and scandal of Chatterbury, that I have every right to leave them, as a parting blessing, the hope that all you ladies will talk less and think more."

"Parting! But you are not leaving us, Mr. Carttar, surely?" said Mrs. Boyce, pathetically.

"Not just yet; but next month my successor arrives, and I leave for London. Miss Earle will, I hope, become my wife in August, and we shall settle in town. And I must still more harrow up your feelings, I am afraid; for my good old friend is coming to us. So you will have lost your new doctor, and Mr. Poppleson and his Ward!"

THE END.

Gathering Figs in Italy.

A correspondent of the Chicago Times, writing from Florence, describes the method of gathering figs practiced in Italy, and the singular way in which the fruit is forced. He writes as follows: The season, just at its height, joins hands in October with the vendemmia, or vintage; but it begins in August, owing to a curious system of culture. Early in that month, as you sit gasping under the noon-day sun, you hear a wild, eerie strain in minor-key, which goes echoing up and down the slopes with intense mournfulness. It is the song of the fig-gatherers, tossed back and forth from hillside to hillside, and from tree-top to tree-top, as they squirm through the twisted branches, and "oil the fruit." The tribe is nomadic, and appears and disappears like the wandering harvesters of France, no one knowing whence they come or whither they go. Late in July the masserie are rented to them, they paying a given sum to the proprietor, and taking possession of all the fruit, beginning with the figs, and ending with the last waxen cluster of grapes.

Rude huts thatched with straw are built by the proprietor in all his orchards, and there these two gypsy-like creatures live with their families—sturdy, fierce-looking men, swarthy, dark-eyed women, and active, lithe young rascals of children. Sometimes they supplement their narrow quarters with a ragged tent; three sticks crosswise and a kettle in the crotch constitute the kitchen. Beds are an unknown luxury; indeed, they seem never to lay aside their clothing, and day and night they patrol the orchards with long guns and a fierce dog, the very sight of which is enough to destroy one's appetite for those particular figs. The process of forcing the fruit is at once begun, and for many days that wild, sweet song, into whose weird melody the spirit of their homeless life seems to have entered, is heard from tree to tree, in call and response as far as the faintest adumbration of sound can reach. The methods of forcing the ripening are curious. In one a wad of cotton is dipped in olive oil and gently rubbed on the flower end of the fig. Fig by fig is thus treated, and eight days thereafter the fruit is ready for market, where it commands a high price as a *primeur*.

Another method consists in gathering in the spring the half-formed fruit, which is strung on ropes as we string dried fruit. These ropes or garlands are thrown over the branches of the tree and allowed to decay under the burning sun. Life out of death. An insect is born from this decay which pierces the growing fig, and induces rapid maturity—or, shall we call it early decay?—maturity being only that precious zenith of existence which must inevitably be followed by decline. Leaving such premature sweetness to the epicure, one may well be content to wait the result of nature's unhurried process. The fig, when perfectly ripe, exudes a slow drop of honey-sweet juice at the nether end, which never falls, but hangs there, a standing temptation to bees and men. When fresh picked, at this stage, the fig is indescribably luscious, with a rich flavor entirely lost in the dried fruit.

The Stairs of Life,

SEEN FROM A JUVENILE POINT OF VIEW.

[Written for the Home Magazine by R. W., Kings Co., N. B.]

'Mid bustle and mysterious haste,
To Grandma's joy, and driving fast,
The doctor comes with babe at last—
The tiny little thing!
She laughs and plays as babies do,
Then cries a little wee "boo hoo"—
As many a time did all of you;
And then she'd coo and sing.

One step of time, and baby's grown;
Now as a romping girl she's known,
Brim full of mischief, glee and fun—
A precious puss, and sly;
With dishes, dolls, mud pies and cakes,
Droll mimic parties oft she makes;
Or make-b-lieve ma her baby takes
To hush a noiseless cry.

A step again, and other scenes
Are brought about by old Time's means;
A blooming maiden in her teens
Our romp does now appear.
To parties, balls and routs she goes,
Attended by a flock of beaux;
How she endures gracious knows
All calling her "my dear."

Another step—a blushing bride,
A manly form close by her side;
With friends all wishing joy betide,
She bids mamma adieu.
To keeping house in earnest now
She goes, with light and happy brow;
"Make-b-lieve" of childhood long ago
Is real at last, and true.

Again a step—a matron fair
Now greets us, with a face where care
Has made some furrows here and there,
As care will always do.
Her children now attention claim,
While oft in frolic do they aim
At mischief, glee and fun—the same
As she did years ago.

A greater step than those before—
Her head is silvered—frosted o'er;
Her trembling frame bends more and more
As years fast slip away.
Her children's children round her crowd,
And childish voices shout aloud
At Grandma's funny stories, proud
Of which to tell are they.

But one step more—she's up the stairs;
The scene is ended—from the cares
Of life she's called, and shares
True joy with saints above.
Dear children all, our story heed:
The stairs of life you'll tread indeed,
And may each step on which you tread
Be marked with joy and love.

A Pretty Romance About a Hair.

The romance of a hair comes from Vienna. A poor girl with beautiful hair went to a barber to sell it. He tried to make a close bargain, saying hair was plentiful this year, and declared he could only give her eight florins. The little maiden's eyes filled with tears, and she hesitated a moment while threading her fingers through her chestnut locks. Finally she threw herself into a chair and said, "Take it quickly." The barber was about to cut off the tresses when a gentleman sitting in one of the chairs interrupted him and spoke to the girl. "My child," said he "why do you sell your beautiful hair?" "My mother has been nearly five months ill. I can not work enough to support us. Everything has been sold or pawned, and there is not a penny in the house." "No, no, my child if that is the case I will buy your hair and give you a hundred florins for it." He gave the poor girl the note, the sight of which dried her tears, and he took up the barber's shears. Taking the locks in his hand he selected the longest hair, cut it off and put it carefully in his pocket-book thus paying 100 florins for a single hair. He then took the poor girl's address, in case he should want to buy another at the same rate. This charitable gentleman is mentioned as the head of a large industrial establishment in Vienna.

It is well to practice entertaining to the best of your ability your intimate associates, the members of your family. In this way you become better qualified to interest others in conversation.

Minnie May's Department.

MY DEAR NIECES,—It is surprising on how small a thing persons will sometimes pride themselves! I have known some girls set themselves up as something superior to their neighbors' daughters because of the curiously-wrought needle-work on their garments. They quite despised their acquaintances who wore plain hems, whereas a person of fine taste would see at a glance that the neat hem was far more tasteful and elegant than their coarse embroidery or irregular braiding. Great skill is needed to make fancy work pay in beauty for the time and labor it costs. A dress over-loaded with trimming is always a mark of uncultivated taste. Very few young ladies can become proficient in fancy-work without woefully neglecting their minds, not to speak of every-day duties. You will usually find these skillful needle-women are narrow in their views and exceedingly ignorant of the leading events of the day. Aim rather to cultivate your minds and hearts, dear nieces, by careful study and reading, and by self-sacrificing efforts for the good of others, and you will be far more attractive in the eyes of all whose good opinion is worth having than if you were adorned in the gayest robes of fashion.

MINNIE MAY.

OFFICE RECEIPTS.—"Andrews' Bazar" for May will be welcomed by all ladies interested in the toilette. The styles published in it are new and popular.

Answers to Inquirers.

NELLY N.—The best way to prevent your bird from eating its eggs is to put its food in the cage over night, so that when the breakfast hour arrives there will be something to detract its attention. If it still persists in this troublesome habit, we fear there is no remedy for it.

J. D. S.—"When should verbenas plants be set in the open ground? What kind of soil do they require?" Verbenas are not very particular about soil, provided it is not water-soaked. Too much moisture tends to produce mildew and rot the roots. Set out the plants in May as soon as the ground is warm and all danger from frosts is past. Verbenas set in May will have spread two and three feet by August, and the plants will be profusely covered with flowers and seed pods.

"Farmer's Wife," who asks about keeping the skin smooth, will find if she dissolves 5 cents worth of borax in a quart bottle of soft water and rinses her hands and face in a little of it whenever she washes them, that it will keep them smooth. I keep a bottle of borax water sitting on a washstand where I can use it often, and my hands are neither rough nor red, though I do my share of scrubbing, &c., with soft soap, which is liable to make the skin crack if some precaution is not used.

SUSIE.—When showing a gentleman into the parlor of your own house you may allow him to pass in first, but if he is very punctilious, he will wait and allow you to precede him. But should he not do so, you must not consider him rude.

LIZZIE.—Asks can a young lady of twenty-three, after having placed all the affections of her youth on a young man—yet through unavoidable circumstances that friendship was severed—love another? Now, if Lizzie had really placed all the affections of her youth on number one, she would be utterly inconsolable, and would not dream of the possibility of change. Therefore, the very fact of her asking this question is a good sign, and when we proceed to her next question, we feel still more hopeful. She asks—"Can a lady teach herself to love a gentleman (one worthy to be loved) whom she does not hate, but simply regards with indifference? Yes, Lizzie, we think she can. Life is still young at three and twenty, and if number one is out of the question there is no reason that you should wear the willow for him through all your remaining years. But don't be in a hurry; be sure you are "off with the old love before you are on with the new."

How shall I treat my Calla Lilly through the summer in order to have it bloom next winter? Mrs. L.—Plant it in the garden and leave it there

until September; then it should be potted for winter.

J. A. D.—Do not sow your flower seeds before the soil becomes warm and dry; a guide will be found in the forest trees; when they put forth their young leaves, all nature is ready for active work. Seeds planted then germinate at once and grow vigorously.

RECIPES.

CHOCOLATE JELLY CAKE.—One quarter pound butter, two cupfuls sugar, three eggs, three cupfuls flour, one cupful milk, one level teaspoonful soda, two teaspoonfuls cream tartar, one teaspoonful extract of lemon. Cream for between cakes: One cupful chocolate, one cupful sweet milk, yolks of two eggs, or, instead of eggs, substitute one-half tablespoonful corn-starch, one and a half cupfuls sugar; boil as stiff as jelly, stir all the time; this requires boiling over half an hour to be stiff enough; when cool add one teaspoonful extract of vanilla.—Mrs. J. B.

CREAM PIE.—To one pint of milk put two even tablespoonfuls of corn starch, two of sugar, one egg, a small pinch of salt, and flour to taste, with extract of lemon and orange mixed. Bake in a rich paste.—Aunt Addie.

Miss Corson, Superintendent of the New York Cooking School, furnishes the following directions for making the cake termed "Angels' Food." Beat the whites of eleven eggs to a stiff froth. Sift into them, a little at a time, ten ounces or one and a half tumblerful of powdered sugar, mixing carefully and lightly; then sift five ounces, or one tumblerful of flour four times; add a level teaspoonful of cream of tartar to the flour; sift it again, and then sift it into the eggs and sugar a little at a time, mixing carefully and lightly; when all the flour is used, add a teaspoonful of vanilla essence to the cake, and put it into a new cake pan or mould not buttered or lined. Bake in a moderate oven about three-quarters of an hour, testing it with a broom straw. Let the cake cool gradually in the mouth of the oven with the door open. When quite cold loosen around the edges and turn out. The success of this delicious cake depends upon preserving its lightness. If the eggs are beaten quite stiff and the flour and sugar very carefully and gently stirred in, it will be light. Do not open the oven for fifteen minutes after putting in the cake.

What Every House Needs.

No house is properly constructed that has not in it a room or rooms expressly designed for the accommodation of the sick and the infirm. This room should have a warm, sunny exposure. The window light should be ample, and command the widest possible view. The next essential is a good, liberal fireplace. By the warmth which it generates, and facilities for ventilation, the whole room is kept wholesome and pure. Not only so, but a slowly burning fire with its lights and shades, its rising sparks and glowing brands, its curling and many-colored smoke, and its changeable embers, furnish careless diversion to the sick one who lies watching it. Nothing is more soothing and quieting than the influence which subtly steals over the senses of one who gazes dreamily into the general flame. It is companionship itself. The walls, too, should have their proper adornments. Pictures that suggest quiet and peace, and the free, fresh life of nature outside, should be on them. A bracket with its vases of flowers, a green clambering vine, clinging ambitiously to the ceiling; a library case filled with familiar books; curtains that soften the light while admitting it—all these are helpful to one that lies in weakness, and can take no more of life than the little room reveals. Better still, if just outside of the window stands a tree with the branches so placed that the leaves of some almost sweep the pane. How much the sight of twigs, buds, and leaves stirred by the wind and flecked by bright gleams of the sun, can cheer the mind of one who lies upon the pillow idly looking at them. The central thought expressed in a well-constructed sick room is—diversion. The object of its construction and location should be to give accommodation and protection to the invalid, while at the same time it suggests the beauty and the freedom of being unconfined—the life and animation of the great out-door world beyond.

Attractive Luncheons.

A writer in Scribner's Magazine utters a protest against making the school luncheon so unattractive as to destroy the child's appetite. She says:—"There is something very dampening to the appetite in the aspect of thick bread and butter rolled in a piece of coarse brown paper with a cookie or two sticking to the parcel, and an apple covered with crumbs at bottom of pail. Such a luncheon will often prevent a delicate child from eating at all. A little care spent in preparation—in cutting the bread trimly and neatly, packing the cake in white paper, and the whole in a fresh napkin, in choosing a pretty basket to take the place of the tin pail—is not pains thrown away. Some children are born fastidious and with a distaste for food. They require to be tempted to eat at all—tempted, not by unwholesome goodies, but by making simple things dainty and attractive to them. We have heard a grown woman, whose fastidiousness had survived her childhood, describe with a shudder the effect which her dinner basket at school had upon her. The very sight of it took away all appetite, and she went through the afternoon faint and fasting rather than meddle with its contents. By all means bake the custard in a pretty 'cup,' and do what is possible to give the luncheon an appetizing appearance to the little people who depend upon it for the working force of their long school day."

Coffee in Typhoid Fever.

Dr. Guillaume, of the French navy, in a recent paper on typhoid fever, says: "Coffee has given us unlooked-for satisfaction; after having dispensed it, we find, to our great surprise, that its action is prompt as it is decisive. No sooner have our patients taken a few tablespoonfuls of it than their features became relaxed and they came to their senses. The next day the improvement is such that we are tempted to look upon coffee as a specific against typhoid fever. Under its influence the stupor is dispelled, and the patient rouses from the state of somnolency in which he has been since the invasion of the disease. Soon all the functions take their natural course, and he enters upon convalescence." Dr. Guillaume gives to an adult two or three tablespoonfuls of strong black coffee every two hours, alternated with one or two teaspoonfuls of claret or Burgundy wine. A little lemonade or citrate of Magnesia should be taken daily, and after awhile quinine. From the fact that malaise cerebral symptoms appear first, the doctor regards typhoid fever as a nervous disease, and the coffee acting on the nerves is peculiarly indicated in the early stages before local complications arise.

TO PRESERVE BOUQUETS.—To preserve a bouquet, a correspondent of the Western Rural says: "Sprinkle it lightly with fresh water, and put it in a vase containing soap-suds. Each morning take the bouquet out of the suds, and lay it sideways in clean water; keep it there a minute or two, then take it out, and sprinkle the flowers lightly by the hand with water. Replace it in the suds, and it will bloom as freshly as when first gathered. Change the suds every three or four days. This method will keep a bouquet bright and beautiful for at least a month."

A tongue should be cut across, nearly through the middle, and thin slices be taken from each side; the fat is situated at the root of the tongue, and a portion of it should be helped with each slice.

Practice in the art is essential to dexterity, and when once the lady of the house is mistress of the carving knife and fork, she will value the accomplishment quite as highly as others that may be considered more brilliant and ornamental.

It is not desirable to be a chatter-box. An excessive and stupid talker may be even more tiresome than the most reticent person. But the habit of talking fluently with cheerfulness, humor, wit, is one of the pleasantest and most enviable of accomplishments.

It is not what we earn but what we save that makes us rich. It is not what we eat but what we digest that makes us strong. It is not what we read but what we remember that makes us wise. It is not what we intend but what we do that makes us useful. It is not a few faint wishes but a life-long struggle that makes us valiant.

Stock Notes.

As we go to press we learn from the "Canada Gazette" (official) that the Government has issued very stringent orders prohibiting the importation of neat cattle or swine from the U. S. into the provinces of Ontario, Quebec, New Brunswick, Nova Scotia and Prince Edward Island. They still will be allowed to pass over Canadian railroads in bond, under very strict regulations, and under no circumstances are they to be allowed to remain in above-named provinces except in the case of their death, when they must be burned; and will be at all times, while on said railroads, under the supervision of a Canadian official appointed by the Minister of Agriculture. And the importation of animals from Europe is prohibited except at the ports of Halifax, St. John and Quebec, and are subject to the following regulations: All neat cattle to a probationary quarantine of 90 days before being allowed to come in contact with Canadian cattle, or before being exported to any other country, and shall not leave such quarantine ground until officially discharged. And all sheep and swine arriving in Canada through said ports may, at the discretion of the officials, be allowed to enter or be detained in quarantine until discharged.

Bow Park Farm held its eleventh annual sale of Shorthorns at Dexter Park, Chicago, on April 23rd. Forty-five animals were sold, realizing \$13,270, making an average of \$295 per head. We are glad to learn that Shorthorns are again becoming paying property.

We recently received a call from Mr. A. A. McArthur, of Lobo, who reports his Berkshires to be doing well. He has 57 fine young pigs, and 8 sows yet to litter. He says the demand for pure bred Berkshires for breeding purposes is again becoming quite active.

The sale of Mr. J. F. Miller's, Jerseys, took place at the Union stock yards, Indianapolis, Ind., April 14th. A large attendance was present from all quarters, and very satisfactory prices were realized. \$5,755 was obtained for 36 cows, an average of nearly \$160, and nine calves brought \$322, being an average of nearly \$36 per head. This sale is reported to be one of the best ever held in the State.

F. W. Stone, of Guelph, has sold 14 bulls to go to Texas. Stock business is so much improving that importation from England this year will be much larger than for several years past. Mr. R. Gibson, is on the way to England, to make purchases. Mr. S. Beatie has already sent one shipment of horses to Toronto, they realized a good paying price. We hear he intends bringing many hundred sheep out with him shortly.

EDITORS TABLE.—We have received "Farming for profit," by John E. Read, published by Brady Garresen & Co., of Brantford. We are pleased to state that this work is well got up, the binding, paper and printing are much superior to most of the trash circulated. The book contains 360 pages, and has 140 engravings. It treats on the various departments of the farm, garden and household, it contains much useful information. The circulation of this publication will do good to the farmers and the country. Most probably we may make some extracts from it. We wish success to this and all other similar publications.

The lower house of U. S. Congress has passed a bill providing that two artesian wells shall be sunk east of the Rocky Mountains, as an experiment for a system of wells designed to reclaim in some measure the arid desert east and west of the mountains. And some are induced to emigrate to that arid desert.

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

NEW ADVERTISEMENTS.



THE LEADING AND MOST SUCCESSFUL MACHINES OF THE DAY.

THE NEW END-SHAKE "CLIMAX" AND "MINNESOTA CHIEF" THRESHERS

—ARE THE—

Fastest Threshers, Most Thorough Separators, Best Cleaners built.

Unequaled for Finish and Completeness of Outfit.

SPECIAL SIZES built for Steam Power.

We are preparing for an extensive demand this season, but would urge intending purchasers to order early, as sales are now being rapidly made.

We also manufacture "VIBRATOR" THRESHERS, to which we have added our patented improvements, making them superior to any of their class.

Send for Illustrated Catalogue and Price List.

Address—GLASGOW, MACPHERSON & CO., CLINTON, ONT.
Or, MACPHERSON, GLASGOW & CO., FINGAL, ONT.
173-1f

MOLSONS BANK

THOS WORKMAN, President,
F W THOMAS, Gen'l Manager.
Paid-up Capital, \$2,000,000
Rest, 540,000
Contingent Fund, 10,169

The London Branch of Molsons Bank, Dundas Street, one door west of the New Arcade,

ISSUES DRAFTS ON LONDON, ENG.
NEW YORK, U S
ST JOHN, N B.

and all the principal Cities and Towns in Ontario and Quebec.

Offers unusual facilities to those engaged in the produce business.

Deals liberally with merchants and manufacturers.

Discounts for the Farming community.

Buy and sells Sterling Exchange, New York Exchange, Greenbacks, etc. at very close rates.

Makes advances on United States Currency and Securities on reasonable terms.

SAVINGS BANK DEPARTMENT affords opportunity for safe and remunerative investments or accumulative savings.

JOSEPH JEFFERY,
Manager.

London, January, 1880. 169-12

Rubber Paint

ALWAYS USE THE BEST!

The Rubber Paint is Durable, Elastic, Economical, and will resist water better than any other paint manufactured.

Good for either inside or outside painting.

Send for circulars to

The CANADIAN AGRICULTURAL EMPORIUM,
360 Richmond-St., LONDON, ONT.

L. D. SAWYER & CO.

Hamilton, Ont.

Original and Only Genuine

"Grain-Saver"

THRESHING MACHINERY.



THE STANDARD of excellence throughout the GRAIN-RAISING WORLD.

MATCHLESS for Grain Saving, Time Saving, Perfect Cleaning, RAPID AND THOROUGH WORK.

INCOMPARABLE in Quality of Material, Perfection of Parts, ELEGANT Finish, and BEAUTY of Model.

MARVELOUS for VASTLY SUPERIOR work in all kinds of Grain, and UNIVERSALLY known as the only successful Thresher in Flax, Timothy, Clover and all other Seeds.

ASTONISHINGLY DURABLE and wonderfully simple, using less than one-half the usual gears and belts.

LARGEST Capacity of any Separator made in Canada.

STEAMPOWER THRESHERS A SPECIALTY

36-inch Cylinder. 48-inch Separator.

For full particulars write for Illustrated Circulars of Threshers, Engines, Mowers and Reapers, which we mail free.

173-1

NOTICE TO THRESHERS

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

These engines are licensed by all the leading insurance Companies.

THE SORGO HANDBOOK

A Treatise on Sorgo and Imphee Cane, and the Minnesota Early Amber Sugar Cane. The EDITION FOR 1880 is now ready, and will be sent free on application. We can furnish PURE CANE SEED of the best variety.

BLYMNER MANUFACTURING CO.,
Cincinnati, O.

Manufacturers of COOK SUGAR EVAPORATOR,
VICTOR CANE MILL, Steam Engines, &c.

172 b



Leicestershire Tick and Vermin Destroyer,

FOR SHEEP, CATTLE AND HORSES.

ENQUIRE FOR IT, USE IT, AND MAKE MONEY.

For many years this preparation has been used with unparalleled success in different parts of Europe. The proprietors have purchased the formula at great expense, and are now prepared to supply the trade with the genuine article at greatly reduced prices.

IT EFFECTUALLY DESTROYS TICKS, Lice, Worms or Grubs, to which sheep, horses and cattle are subject, and enables the animals to thrive.

IT WILL BE FOUND FAR SUPERIOR to other preparations used for a similar purpose. The Proprietors will guarantee perfect success when used according to directions, as will be found on each box.

IT PREVENTS SCURF AND SCAB, and renders the wool bright and clear. It is put up in tin boxes, price 30 and 60 cents each. One small box is sufficient for twenty ordinary sized sheep. It only requires to be tried to prove itself all that is claimed for it.

MANUFACTURED BY

C. M. BRIGGS & BRO., 181 Main Street, Buffalo, N. Y., for the United States.

G. C. BRIGGS & SONS, 8 McNab Street, Hamilton, Ont., for the Dominion of Canada.

It can be had at The Canadian Agricultural Emporium, London, Ont., and other places.

1880.

Garden Seeds for May!

Field Seeds for May!

Flower Seeds for May!

THE CANADIAN AGRICULTURAL EMPORIUM,

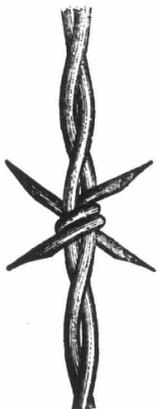
360 Richmond Street, LONDON, ONT.,

Will mail, post-paid, to any address, on receipt of price, any one variety of the following Seeds:

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|--|--|----------|
| 1 lb Minnesota Early Amber Sugar Corn, for 50c | " Potatoes—Bliss' Triumph..... | The four |
| 1 qt Compton's Early Field Corn, for 25c; 5 lbs for \$2. | " " Beauty of Hebron..... | kinds |
| 1 qt Stowell's Evergreen Sweet Corn, for 30c | " " Burbank's Seedling..... | for |
| " Crosby's Early Sweet or Sugar Corn..... 3c | " " Early Ohio..... | \$1.00 |
| " Dwarf Wax or Butter Beans..... 50c | " " St. Patrick..... | 50c |
| " Peas, McLean's Advance..... 4c | " Webb's Improved Hardy Swede..... | 50c |
| " Carter's First Crop..... 25c | " Vilmorin's Improved Sugar Beet..... | 75c |
| " Veitch's Perfection..... 50c | " Prickly Comfrey (Caucasian)..... | 75c |
| " Champion of England..... 50c | " Silver Hull Buckwheat..... | 20c |
| " Webb's Kniver Yellow Globe Mangle..... 75c | 25 papers selected annual Flower Seeds, for..... | \$1.00 |
| " Beck's Champion Prize..... 50c | 25 papers selected Vegetable Seeds for..... | 1.00 |
| " Norbiton Grant Long Red Mangle..... 50c | 3 roots Tuberoses, White Pearl..... | 30 |
| " White Green Top or other Carrot..... 60c | 3 " Caladiums Esculatum..... | 20 |
| | 12 " Gladiolus, choice mixed..... | 1.50 |

1 root, each Peony, white, rose and red, \$1.00.

Agents for the celebrated CHAMPION HORSE HOES. Price, \$12.00. The best implement in the market.



THE LYMAN 4-Pointed Barb STEEL-WIRE FENCING.

The best and cheapest fence made.

Four strands make a good farm fence. Cost, about 65 cents per rod, erected.

The leading Hardware Merchant in each town our agent.

DOMINION BARB-WIRE FENCE CO. MONTREAL

HILLS ARCHIMEDEAN Lawn Mower Co., Of Hartford, Conn., MANUFACTURERS OF THE NEW ARCHIMEDEAN & CHAPTER OAK LAWN MOWERS.

These Mowers have become celebrated throughout the World, where lawns are cultivated, as being the most perfect and desirable Lawn Mowers ever made. They stand at the head of the list of Lawn Mowers in the U. S. and Europe. They contain all the improvements that experience in their manufacture can suggest; are beautifully finished, thoroughly made, and do splendid work on every variety of lawn. Hand Mower Sizes, from 8 to 18 inches. Pony and Horse Sizes, 24, 28 and 32 inches. Send for Circulars. Sold by our agents every where. 173-d

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

GRAIN CRUSHER.



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

ATTENTION.

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

CRAWFORD & CO.,
Of the Globe Works, London,
CAN SUPPLY YOU.

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

The Dominion Prize Card Cutter

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

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

Cheese Buyers and Factorymen.

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

PATENTED IN CANADA, JULY 21st, 1879.

J. B. HARRIS,

Patentee and Assignee, Stratford, Ont. 171-c

ESTABLISHED 1840.

PETER B. LAMB & CO.
Toronto, Ont.

Manufacturers of

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

Diploma was awarded to us at the Provincial Exhibition, Sept. 23, 1882, for the first Bone Mill established in Upper Canada.

170-D AGENTS WANTED.

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

Provincial Fair



A Special Prize of \$50 in Cash

Is hereby offered by Thorley Horse and Cattle Food Co., of Hamilton, Ont., for competition at next Provincial Fair, to be held in Hamilton September, 1889, for the best fat ox, steer, cow or heifer of any age.

Also, 100 lbs Thorley's Food for best Durham, Devon, Hereford and Ayrshire bull calf under one year.

Also, 100 lbs Thorley's Food for best pair fat sheep, any age or breed.

All animals competing to have been fed Thorley's Cattle Food four months prior to exhibition.

Intending exhibitors should order food at once, direct from the Company, 48 John Street south, Hamilton, Ont.

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



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-LHCW Toronto, Ont.

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 arly opp. Cathedral. 170-D



E. L. CHURCH'S HAY ELEVATOR
And Carrier.

THE BEST IN USE.

WORTMAN & MORROW
MANUFACTURERS,
LONDON, ONT.

Send for descriptive Circular and Price List.

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

FARMS FOR SALE—A FULL DESCRIPTION of over 200 improved farms, also of wild lands, throughout the whole of Western Ontario, sent to any address upon application to **GEO. F. HARRIS & CO.,** Real Estate Agents, London, Ont., or to our Branch Office, Temp Chamber, Toronto street, Toronto. da-1f

DON'T FAIL TO SEE

The Best Cultivator



Ever Produced.

THE Spring-Tooth Harrow

—MANUFACTURED BY—

PATTERSON & BRO., Patterson, Ont.,

Patentees for the whole Dominion. Also manufacturers of

The Patterson Improved Reaper, Combination Mower, Ithaca and Ont Horse Rakes,

And the best line of WROUGHT BEAM PLOWS in Canada.

172-tf Send for Circulars and flattering testimonials.

THE OSBORNE

THE GREATEST Labor-saving Machine On the Farm.



No Longer an Experiment, but an ASSURED SUCCESS.

Self-Binding Harvester

Fifty made and sold by us in Canada last season, giving the highest satisfaction. Five thousand made and sold in the United States in 1879. Send for Pamphlet giving full particulars and testimonials from those who used them last harvest. The Osborne Binder saves the work of six men in the harvest field; saves time, saves money, saves grain.

Kirby Mowers and Reapers,

In styles, sizes and prices to suit all purchasers. All goods warranted.

"The Kirby Advertiser," a paper full of valuable information, sent free to any address.

A. HARRIS, SON & CO,
Brantford, Ontario, and Winnipeg, Emerson, and Portage la Prairie, Manitoba.

NOTE.—Parties moving to Manitoba or the Northwest can secure everything they require in the implement line at our warehouses in any of the above places. We keep full supplies of Mowers, Reapers, Binders, Waggon, Plows, Harrows, Seeders, Horse Rakes, Threshers, Agricultural Engines, and everything else required by the Manitoba Farmers. It will not pay to take half wornout implements to the Northwest. The freight is just as high as on new goods, and besides many implements in use in Ontario are not adapted for the Manitoba soil.

All our goods are made specially for the Northwest trade, and are shipped in large lots, thus securing low freights, and enabling us to sell new goods, perfectly suited for the country, at lower prices than emigrants can take out either new or old implements for. 172-c

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,**

114 DUNDAS STREET WEST, North Side, LONDON, ONT.

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

1880

THE

Great Immigration Year!

Thousands are going west, and the majority

SETTLE IN NEBRASKA

All Eastern Farmers when coming West are pleased with the

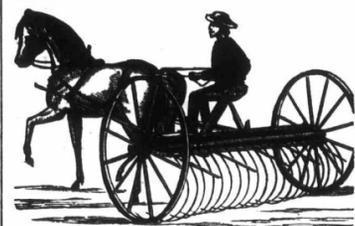
Burlington & Mo River RR Lands

17,000 have already purchased, and there is yet for sale by this Company enough land to make

10,000 Eighty-Acre Farms.

Send postal card for a CHART showing all the LANDS FOR SALE, January 1st, 1880.

Address **GEN'L AGT B. & M. R. R.,**
172-B OMAHA, NEB.



THE CENTENNIAL HAY RAKE

THE BEST IN USE.

It carried off all the most important Prizes last season.

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

J. O. WISNER & SON,
Brantford Ont

DR. W. E. WAUGH. Office—The late Dr. Anderson's, Ridout Street, London, Ont. 169-tf

"BELL" ORGAN

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

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

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

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

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

Signed, **G. HAGUE,**
General Manager Merchant's Bank of Canada, Montreal, January 24th, 1879.

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

W. BELL & CO.

41-47 E. MARKET-SQ.,
GUELPH, - ONT.
71-tf.

My Annual and Flower ings from phot sent FREE to a need not write collections of v House in Ameri grown on my si cultivation on e to be both fresh should it prove gratis. The or Squash, Pinney Mexican Corn, invite the patro have their seed true, and of the **NEW VEGET.**
JAMES J. H.
dl-6

Brantf
Corn a paying
THE

CORN

Same style as
Moline, Illinois, v actual use, sold h have been teste three seasons in selves invaluable corn.

NO MORE
It entirely does and a boy can the ten acres a day. Corn is brought t by thorough culti

It has no equ adapted to ever attaching an extr splendid Follow C **Price, rigged d**, with ex

These cultivat class men on the they fail to fill it of the season.

JAMES
172-tf

FIRST PRIZ

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Over five Compet SEND FOR CIRC

GEO. S

463

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171-tf.

GURRIE

Es

BOILERS

New

Portable Engines for farmers' use, fr

Hot-houses, and f

specialty. Turni

ing Machines, and

sale.

dc-12

SPECIAL

During month

Tracts, Sma

Great

Circulars giving p

cation. **S. R**

Willard Tract De

TORONTO,

171-c



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

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

Brantford Plow Works.
Corn a paying crop at 25 cents a bushel.
THE WESTERN
CORN CULTIVATOR

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

NO MORE USE FOR THE HOE.
It entirely does away with the use of the hoe, and a boy can thoroughly cultivate from eight to ten acres a day. By its use the Western Dent Corn is brought to perfect maturity, being forced by thorough cultivation.

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

Price, rigged for Corn is \$30 do. with extra Beam for Field \$35

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

JAMES G. COCKSHUTT,
172-tf BRANTFORD, ONT.

FIRST PRIZE BRICK MACHINE
TORONTO AND LONDON, 1879.

FIRST PRIZE TILE MACHINE
OHIO STATE FAIR, 1879,
Over five Competitors. See Jan. No. page 8. SEND FOR CIRCULAR.

GEO. S. TIFFANY,
463 DUNDAS-ST.,
LONDON, ONT.
171-tf.

GURRIE BOILER WORKS
Established 1853.

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

NEIL CURRIE
Esplanade St., Toronto, Ont.

SPECIAL OFFER
During months of March and April we will sell our

Tracts, Small Books & Bibles

Great Reductions

Circulars giving particulars sent free on application.

S. R. BRIGGS,
Willard Tract Depository and Bible House,
TORONTO, ONTARIO.

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



ADDRESS WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.

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



ADDRESS WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.



ADDRESS WATEROUS ENGINE WORKS CO., BRANTFORD, CANADA.

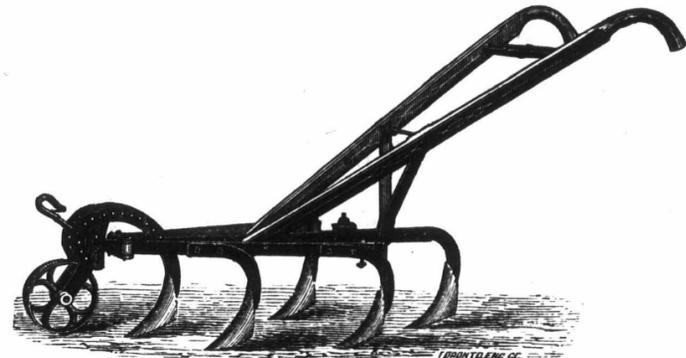
FARM ENGINES, PORTABLE SAW AND GRIST MILLS OUR SPECIALTY.
172-tf

Plows! Plows! Plows!

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

TWO-HORSE CULTIVATORS.

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



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

REAPERS & MOWERS.

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

CANADIAN NEW MODEL MOWER.

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

B. BELL & SON,
ST. GEORGE P. O., ONT.
171-fw

HONEY'S IMPROVED FANNING MILL

MANUFACTURED SOLELY BY
W. T. Dingle, Oshawa, Ont.,
For the Dominion of Canada.

This Celebrated Mill has taken
FORTY-SIX FIRST PRIZES

Since it was patented in 1878. It also took the ONLY MEDAL awarded at the Industrial Exhibition, held at Toronto last September. It has been selected by the Government Superintendent of Indian Agencies for Indian Farms in the Northwest.

The Mill has no Equal,

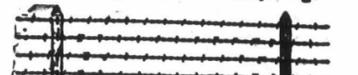
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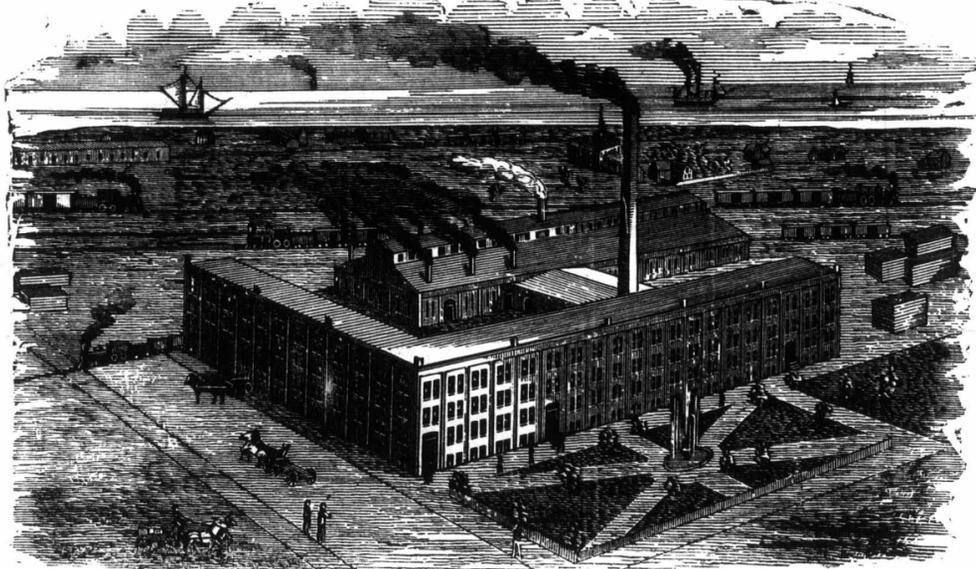
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