

FARMER'S ADVOCATE

AND HOME MAGAZINE.

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THE FARMER'S ADVOCATE

Home Magazine.

WILLIAM WELD, Editor and Proprietor.

The Only Illustrated Agricultural Journal Published in the Dominion.

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The Month.

Our great body of snow has gradually passed away without much damage to bridges and fences, as many feared. The wheat has been well protected; the plant looks all right. There are some heavy drifts yet lying near the fences. There may be damage done to the wheat so covered, as it is not yet visible. Give it air by punching holes through the snow. Perhaps it may all be gone by the time this reaches our northern readers. In this part of the peninsula there was not half as much snow in drifts as to the north of us. Run over your wheat-fields with a harrow and roller when the ground is fit. Try part of a field, if you doubt its efficacy, and watch the results at harvest time. Do not be in a hurry to plow up a field if it looks thin. The recuperative powers of thin, poor, miserable looking pieces of fall wheat have astonished us more than any crop we have seen. Sow salt and plaster liberally. The English farmers find it profitable to send here and purchase our superphosphate. A few judicious experiments in each neighborhood might be beneficial. Good seed wheat is scarce; reports of different kinds are so conflicting that we are at a loss to know which to recommend as the best. Most varieties are badly shrunken.

Try and raise as much young stock as possible this spring. If we can keep infectious diseases from this Dominion, we may expect a great increase in the prices of all classes of stock.

Young calves generally do well this month; but have a care for them. A little extra mash for the cows, and a few roots and a little grain will tell well on your stock during the summer.

There is a difficulty in procuring peas free from

bugs this year. Do not sow buggy peas if you can procure sound ones.

We hope our readers are fully prepared for the labor of the month, having everything in readiness to commence with the opening of spring. See that your implements are all ready, so that it won't be necessary to waste half a day visiting the blacksmith shop.

Select the best seed grain. Have you a change of seed? If not, it is very necessary to do so. Sow none but the best. Always try to be a little ahead. In keeping well ahead with your work this month greatly depends the keeping ahead the whole season.

We need not caution you about sowing too soon this spring. The season is getting well advanced. Sow when your land is in order.

See that the fences are made up good and strong, so the cattle will not be troubling you during the summer by breaking into your crops. Do not let the cattle go tramping all over the meadows in search of a bite of grass; it will do both the cattle and the meadows more harm than good.

The ladies may soon be in the garden. Have it well dug and manured for them. Arrange your flower-beds, and sow your onions, carrots and lettuce as soon as possible. Be sure and buy good stocks, from reliable men. You can have any garden seeds sent direct to your post-office, from any part of the Dominion.

Send to any of our reliable seedsmen, whose advertisements are in our usual columns, for one of their catalogues. They give much useful information, and you can there see all the new and staple varieties of field, flower and garden seeds.

Manitoba.

We are pleased to record the completion of the through railroad route to Manitoba. — Trains now run through from this city in four days, and the fare is placed at about \$50 for first-class, \$37 for second, \$23 for third; a car loaded with freight costs \$220. On the 25th and 26th of March 395 emigrants left London station for our Far West. Many of them were from the counties of Huron and Bruce; some were from near Brockville and others from Ottawa. We passed through the cars and conversed with many of them. The majority are young men; there were some farmers with their families. A finer lot of enterprising and energetic emigrants we never saw; they are just the right sort to develop the country. Many took their horses and implements with them. Some had been up there and selected locations; others had friends there. Some had no idea of where they were going, or what they were going to do—mere adventurers. Of this class some were well-to-do. We have no doubt that some will soon become disgusted if they do not meet with immediate success; they will come back if they can, write all manner of disparaging letters, and tend to do more harm than good. Others will put

their shoulder to the wheel, meet hardships and conquer them, and build up permanent homes of comfort for themselves and their families. Some have left their wives and families in Ontario, who will follow them as soon as houses are erected for their reception. We hope to go there in the summer, and give you our opinion about it from observation. We know of hundreds who will leave in a few weeks, or as soon as the weather is a little warmer. We have heard it estimated that 20,000 will go there from Ontario this year; large numbers will also go from Quebec. We hope the Manitobans will have ample accommodation for them, at reasonable rates, and that fleecing and robbing of immigrants will not be countenanced there, and that sharpers who attempt extortion, such as we have heard of in Ontario and the States in former years, will be looked closely after.

In our next issue we hope we may be able to report arrangements made by the railroad companies for excursions to and from Manitoba, as there is now a strong desire expressed by many to visit that part of our Dominion. Many wish to make homes there for themselves and families. We trust that success may attend the pioneers and those who may follow.

The Agricultural Exhibition in London, Eng.

The Royal Agricultural Society of England will hold a great agricultural show in London, June 30 to July 7 next. Special efforts are making to insure a successful exhibition. Several classes are open to Canadian competition. Entries must be made on printed forms, to be obtained of the Secretary of the Society, Mr. H. M. Jenkins, No. 12 Hanover Square, London, W., England. No entry fee is required for Canadian exhibitors. In view of the importance of England as a market for our farm produce, the advantage of being well represented at the coming exhibition need not be enlarged upon. In most cases the entries must be made by producers and owners, so that farmers cannot rely on dealers and exporters to make a display for them.

The Western Fair.

The Western Fair Association met on the 27th ult. as usual at London, Ont., to discuss the coming Exhibition. The President, Mr. Andrew McCormack, with Mr. William McBride, the Secretary, and a good representation of directors and members were in attendance. Great interest and spirit was manifested, the standing committees were struck, and considerable routine business accomplished. The Exhibition will be held the week after the Provincial at Ottawa. The Governor-General and Princess Louise are invited. A most tempting prize list will be offered, and a great success will be scored for the pioneer Fair of the West.

Danger and Duty.

TOO MUCH LEGISLATION OF THE KIND IT IS OF—
TOO LITTLE OF THE KIND THAT IS NEEDED.

Some months ago we gave due notice of danger to our stock. We have for the past three months pointed to the necessity of immediate and vigorous action being taken. One judicious and prompt step has been taken by the Dominion Government, but there is just as important an action left undone by the Ontario Legislature. There has been a case of dangerous disease in one place on this side of the lines. Now it appears that the Dominion Parliament has no power to interfere in a local matter of stamping out a dangerous disease when found in one Province. In our last issue we gave notice of a case of unmistakable hog cholera being in Canada. Up to the present time nothing has been done to prevent the disease from spreading from the farm where we first discovered it. The owner of that farm says it has been \$500 loss to him already. It may be on any of your farms before you know it. Immediate steps should be taken to protect farmers from danger.

We are pleased to notice that the Minister of Agriculture at Ottawa is attempting to do what he can to keep our stock free from danger, but he cannot act alone; his power and the power of the Dominion Government is curtailed by the Provincial Governments now in the time of need, and danger may and does stalk unchained in one locality at least. Members of the Ontario Government are not ignorant of this fact. We have every reason to believe that some of the members of the Board of Agriculture and Arts of Ontario have been aware of danger to Canadian farmers, and have unwisely taken no preventative measures. Further, we have no hesitancy in saying that one of our Canadian journalists has been cognizant of danger to our stock, and that in his paper he has allowed veracity to be shown as falsehood—that he has not the honor to openly confess his errors.

A correspondent of the *Kansas Farmer* makes these remarks concerning "cholera-pork" and its products:—

"Throughout this whole district, as soon as the cholera appears in a herd, all hogs decently fit for market are shipped, and among them many that are diseased. The result has been to diminish the demand for the hog product. Nobody now eats pork unless they know who butchered it. The sausage trade is closed; the festive drummer no longer ventures on sausage; the traveller who sojourns in Chicago declines sausage, well knowing that in the pork house scraps he must get a liberal dose of cholera-pork. Doughnuts and crackers are looked on with still greater suspicion; they not only run the chances of diseased fats of the pork houses, but since all over this country rendering-houses have sprung up where the dead cholera hogs are rendered out into a passable grease, a grave apprehension is felt that this grease re-appears on the market as "choice family lard." If it does not, then what becomes of it? It is not good for the soap-maker, it is said, for it yields a soft soap, not marketable in bars. The practice of shipping diseased herds is a villanous piece of greed, and it reacts fearfully upon those who engage in it. First, it runs the hog-trade; second, it scatters the disease far and wide. We all know that the litter of stock-cars is scattered at side-tracks. Again, the diseased hogs are generally hauled to the station in wagons. The hog-owner gathers his neighbors with their teams to help him haul off his hogs. Generally, without disinfection, these wagon-boxes are used perhaps the next day for corn-gathering, with the result of laying up a bountiful store of the seeds of the disease upon the corn."

Both the Italian and the Spanish Governments have prohibited the importation of American pork, on hoof or preserved, for fear of trichinosis.

The trade with these countries was extensively carried on, and its stoppage will be considerably felt.

Does not this show the necessity of prompt and immediate action to prevent the introduction of these diseases or their spread amongst our swine? If we allow our stock to become infected as bad as our neighbors', our meat will be condemned as theirs, and our prices will not be half what we shall be able to realize if we maintain ours uncontaminated and pure. Let every legislator or would-be legislator immediately agitate this, and act at once, at any cost, at all hazards. If we can keep our stock pure and free from these numerous dangerous diseases, it will do more to make a nation of us than anything that has been done by any of the legislative bodies since Confederation. Up, act and sleep not until you have done your duty! Show this to the legislator you voted for and get him to use his influence. It is by numbers that any measure is carried. If you wish for fair prices for good meat, and no loss from infectious diseases, be up and doing.

Rennets.

BY J. SEABURY.

The season for saving rennets is now upon us, and my observation in various parts of the country has clearly demonstrated to me that a few hints on this subject will not be amiss, especially as there is an indication that rennets will be worth more money the coming season, and may well repay the trouble of carefully curing. The operation is so simple that any member of the family can perform it, and it would bring some of the younger members a nice little sum for pocket-money.

Every cheese-maker will tell you that he prefers domestic rennets if he can get them well and properly cured. The great bulk of imported rennets now used by the cheese-factories are Bavarian. These come from the German countries, and hundreds of thousands are imported every year. These rennets are very scarce this year. The principal reason assigned for this is that they have been very largely bought up for the manufacture of pepsine and also in making up dyspeptic medicines.

The importation of rennets is nearly made up of Bavarian and English, about two-thirds of the former to one-third of the latter, which come in under the style of foreign, dry-salted and pickled. The dry-salted have sufficient salt to cure them, and are perfectly dry. The pickled come in casks with a small amount of pickle. The Bavarian are cured without salt, being blown like a bladder and dried in the sun.

To have a good, strong, reliable rennet the calf should go at least twelve hours without food; twenty-four is better, but after twelve hours the calf is very liable to eat the dirt and filth on the floor of its stable, which spoils the rennet and makes it filthy. Take out the stomachs and separate the rennet, which is one of them, and if there is anything in it turn and carefully clean, but do not wash upon any consideration, as the soft, shiny substance on the inside is where the strength lies. Return to its former position and sprinkle sufficient salt to cure, but not more; stretch on a bent twig or hoop and hang up to dry, and you will then have a rennet that will be equal to the best imported, if not better.

When the calves are killed as deacons they should be five days old to secure a good rennet. The great objection to using butchers' rennets is that they allow the calves to go so long without food that the stomach becomes inflamed, which is very injurious to the cheese, making it huffy, and in some cases floating curds.

The New Tariff.

We have examined part of the tariff now enforced and consider it the best tariff we have yet seen for building up the agricultural interest of the country. We must draw a line between the inferior productions of the States and our products. Canada can and does produce better beef, mutton, pork, wheat, oats, peas, barley, potatoes, apples, butter and cheese, than the United States.

The Americans have been purchasing our best products and selling them as their own. They have also palmed off their inferior products under the name of Canadian products. The duties charged on most articles must tend to increase the value of our productions, and to put our produce in its true light in foreign markets. We shall thus be able to obtain better prices, and this means an enhancement of the value of every acre of productive land in this Dominion.

No doubt but our legislators have devoted great care in making these changes. Some may not appear quite right to one part of the Dominion that will be of great advantage to another. Our duty is to look to the millions of acres of the Dominion, and not to local or personal interests. No doubt but all would like some slight change. We should in one or two points; for instance, instead of allowing United States cattle, swine and poultry to be admitted by paying a duty, we should prohibit their importation to this country until there is no danger of their stock bringing diseases into our Dominion. We ask for prohibition. It is our impression that the admission of American corn free would be of benefit to us; we know of no disease or evil effects from corn fed to our stock. Every good farmer requires more coarse feed, and the farmers can pay for it by enriching their land and fattening stock. Corn is the United States staple cereal; they can raise it cheaper than we can. Our duty is to at once shift our sails to catch the full benefit of this breeze. Kill no young stock this year; feed twice as well as we have been doing; keep them fat and growing from birth. This will pay. We shall have much better prices for first-class products. Prepare to supply our markets and European markets with fruit of all kinds that thrive with us. It is required in a fresh, dried and preserved state to supply all markets. The United States vegetables will no longer interfere with our producers; there are now good opportunities for more enterprise in that department. Plant more small fruits; they have paid well and will pay better. Every village should have a good supply of small fruits growing near it. Those who attend to the fruit business right will make more money from five acres than wheat-farmers have from a hundred acres for the past three years. Raise more eggs and more poultry; they will now pay you much better than ever.

Healthy Stock.

Every farmer and stock-raiser ought to bear this fact in mind—that burnt corn, coal and wood ashes is one of the very best preventives of disease in pigs, and while such simple remedies are so good they should always be borne in mind and used occasionally, say once or twice a week—"an ounce of prevention is better than a pound of cure." Likewise give your horses and cattle free access to salt and a few ashes; and while they are kept in and fed, you will find it advisable, also, to give them some in their oats or chop at least once a week. It gives animals a general healthy tone. And while such are good, we want it firmly impressed on your minds, and, what's more—to put it in practice.

On the Wing.

(Continued from Page 57.)

OTTAWA.

At the time appointed we were admitted into the department of Hon. Mr. Pope, Minister of Agriculture. We found him seated at his desk, on which were numerous telegrams and letters, to which he had been attending. Mr. Pope appears quite a plain, unassuming, approachable gentleman. He is a practical farmer, and appears to understand our requirements much better than many other M. P.'s we have conversed with.

We explained to him our views in regard to the cattle and swine diseases in the States; we urged on him the necessity of more strenuous measures being adopted to prevent our stock becoming diseased. Mr. Pope said there were many interests to be considered. We conversed with him about the tariff, and we believe he will endeavor to protect and advance our agricultural interests as far as he can. We do not expect he will be able to have everything his own way, even if it were for the welfare of the Dominion.

Our position with England must be first looked at. Any step we may take is noticed with a keen eagle's eye, and Americans and their friends are ready to make a mountain of a plain, or any straightforward step we may take for our own interests. Then there are the conflicting interests of the provinces, each having power, which power appears at the present time to conflict with the interests of the whole Dominion; for instance, the Hog Cholera has been allowed to gain a fast hold in one of our provinces, and the Provincial Government has done nothing to stamp it out; this was known when the Provincial Parliament was sitting, and, in fact, it was known to members of that body months ago. Now it appears that the Dominion Parliament has not the power to enact a law to stamp it out, as our mysterious parliamentary arrangement confines that power to local legislation. We had not heard that a single instance of this dire disease had ever been known in Canada at the time we conversed with the Minister of Agriculture, but interested people have known it for months. We believe it is best to face the enemy boldly and stamp it out immediately at any cost. Any person should be heavily fined for allowing any infectious disease to destroy his stock and endanger his neighbors', without giving proper notice to proper authorities.

THE SIGHTS OF THE CAPITAL.

The high bluff rock overlooking the Ottawa River and the Chaudiere Falls is a very grand sight—one of the finest in Ontario. The side of this high rock is covered with trees, many of which are evergreens. The parliament buildings are spacious and grand, are substantially built, and are highly ornamental. We give every credit to the designer and architects. They are well worthy a visit from any Canadian or European; in fact, we admire the buildings and site more than any buildings we have seen, not excepting the British Parliament Buildings or the Tuilleries at Paris. We would advise any Canadians who can afford a trip to go there; they will be amply repaid if they have any taste for architectural beauty and magnificent scenery combined. The buildings are admirably arranged both inside and out; the Library is altogether the finest we have seen. We have not space to attempt to describe the magnificence of this gem of Canada. The immense quantity of well-arranged books will astonish you. This Library is free to the public. At different tables there were a few gentlemen of studious habits reading; at one table several ladies were seated. We had the curiosity to pass by this table; the books they were looking at were vol-

umes of gaudy and fantastically dressed ladies, having masquerade costumes of the most peculiar designs you could imagine. They were very nicely painted and got up in the highest style of art and fancy. Perhaps these were French, Italian, Spanish or Japanese productions; we did not stop to see, but we can assure you we had not seen such before, and we do not believe any Canadian that has not been to Ottawa has hardly dreamed of what might be seen there.

If we except the grand site for these buildings, and the buildings and contents, Ottawa would not compare with most of our Western cities. The people there are poor, very poor, and there are very few who may be termed well-to-do. We should judge that the people cannot compare to those of Western cities in average wealth, and in taste for beauty and ornamentation; in fact, we were informed that Lord Dufferin's ball ruined nearly half the citizens that tried to ape the style. In the city every attempt is made to add show and to go beyond the bounds of income. The hangers-on to Governments are too poor, too expensive, and often overpaid even then; but such is life! There are too many proud and poor in Ottawa ever to make it a desirable place to reside in. (At least our informant says so.)

(Continued on Page 59.)

Sugar from Maize and Sorghum.

We have received from Edward Lefroy Cull, of the Canada Company's Office, an article on this subject, by F. L. Stewart, from which we take the following brief extracts, on the possibility of manufacturing sugar from these products of our soil, in Canada as well as in the U. S.:

"There is no reason whatever why the British Provinces to the north of us should not share largely with us in the benefits of this new industry. Certainly no impediment exists in the climate of a vast area of that territory. It is important to observe that for sugar-making purposes it is not necessary that Indian corn or sorghum should ripen their seed. On the contrary, it is essential that the corn-cane should be cut before the grain has passed the milky stage of its development. Practical farmers in Canada have long ago determined where maize can be grown. To the west of you is a magnificent domain almost identical in climate and soil and physical features with our Minnesota and Dakota. The soil of the Red River Valley is as well adapted to sugar growing as it is to wheat. Sir John Richardson says that maize ripens well at Red River and Carleton House (lat. 52° 51 min. N.), and up to the 54th parallel generally in the Saskatchewan Valley.

"It is now determined beyond question that in the United States the beet-root, in no prominent respect as a sugar-producing plant, is at all equal to our own native maize, and that the latter is at least equalled in this respect by the Chinese sorghum. First, however, let it be said, to prevent mistake, that maize sugar is not the so-called and comparatively worthless 'corn sugar' made from the starch of the grain (or even from waste paper and linen rags) by a well-known chemical transformation, but it is a natural product of the juice of the immature plant.

"The stems of Indian corn, if taken at the proper stage of development, as well as those of the different varieties of sorghum, contain in great abundance a saccharine juice scarcely excelled in richness by that of the sugar-cane of Louisiana. The sugar produced by this process is true crystallized (cane) sugar. One hundred pounds of the stems of these plants, at the proper period of their growth, contain about 87½ parts of juice and 12½ parts of woody fibre and insoluble substances; 12 to 16 per cent. of the juice is crystallizable cane-sugar, nearly all of which can be extracted."

We have ere now spoken of sorghum and sorghum sugar, as well as of the sugar from the beet, which latter, we expect, will be pretty well tested in the Dominion this season. The manufacture from either can hardly be said to be, as yet, little more than an experiment.

Annual Meeting of the Agricultural and Arts Association.

The Agricultural and Arts Association of Ontario met at Ottawa on the 19th of March. The following members were present: Hon. D. Christie, Paris; Rev. Dr. Burnet, London; Jas. Young, Galt; S. Wilmot, Newcastle; L. E. Shipley, Ailsa Craig; W. Saunders, London; D. P. McKinnon, South Finch; D. McRae, Guelph; W. Roy, Owen Sound; J. C. Rykert, M.P., St. Catharines; O. Klotz, Preston; J. B. Aylsworth, Newburgh; J. Leggo, jr., Gananoque; S. White, Charing Cross; C. Drury, Barrie; Ira Morgan, Metcalfe; George Graham, Brampton; R. Lees, Ottawa; Prof. A. Smith, Toronto; and J. R. Craig, Secretary. Mr. S. Wilmot was called to the chair.

The following officers were elected: President, Samuel Wilmot, Newcastle; Vice-President, J. C. Rykert, M. P., St. Catharines; Treasurer, George Graham, Brampton; Secretary, J. R. Craig, Toronto.

The following is an abstract of the Secretary's report:

RECEIPTS.	
Balance on hand January 1st, 1878.....	\$5,054 15
Interest account.....	158 11
Miscellaneous.....	25 00
Rents.....	2,690 50
Prize account.....	139 40
Registration fees.....	363 75
Legislative grant.....	10,000 00
Exhibition receipts.....	22,570 21
Total.....	\$41,001 12

EXPENDITURE.	
Paid for prizes.....	\$15,419 04
Exhibition expenses.....	11,110 00
Miscellaneous.....	1,634 11
Printing.....	1,476 98
Salaries.....	3,022 50
Council expenses.....	2,313 00
Stationery.....	317 35
Veterinary museum and library.....	686 59
Veterinary College.....	536 50
Prince of Wales' donation.....	800 00
Plowing match.....	1,619 75
Postage.....	199 50
Balance on hand.....	1,865 77
Total.....	\$41,001 12

A letter was read from the Governon-General, informing the President that His Excellency would be pleased to become a patron of the Association.

Hon. Mr. Christie presented a report in favor of a Dominion Exhibition, changing the Provincial for the current year, the opening to be by His Excellency and Her Royal Highness, and embrace the following: A convention of manufacturers, a convention of agriculturists, a meeting of the Poultry Association, a meeting of fruit-growers, a meeting of the Dairymen's Association, a grand musical competition, a volunteer review and military competition, a Dominion rifle match, a cricket, lacrosse and athletic competition, a grand levee and presentation, a general illumination and fireworks, and a balloon ascension.

It is our opinion that such a course as the above would tend to introduce might be advantageous in increasing the receipts of the Association; but we much doubt if the expenditure should be charged to the agricultural accounts, as such an exhibition might amuse and enrich the railroads and the citizens of Ottawa, but the farmers of Ontario would fail to reap pleasure or profit from it. Is our Agricultural Exhibition to be turned into a colored minstrel show?

Farmers in Texas, as a class, are making but a sorry living. At least one-half of them are in debt and pay one to two and a half per cent. interest per month, and money scarce at that.—[Rural New Yorker.

Annual Report of the Ontario School of Agriculture.

The Fourth Annual Report of the Ontario School of Agriculture, now before us, presents in detail a view of the several departments of the Experimental Farm for the year 1878. The number of pupils now on the roll is 146. They are from different parts of the Dominion, Quebec province sending four representatives of her agriculture and P. E. Island one. The County of Wellington and the City of Toronto are represented by much the greater number, ten each. Of the number mentioned, 94 are directly from the farm or garden.

The expenditure for the eleven months ending 30th November, 1878, was, for food, household expenses, business, miscellaneous, experiments, salaries and wages, \$18,618.45; the expenditure for implements, permanent improvements, library, laboratory and museum, \$4,135.56. Total for eleven months, \$22,754.

The President's report enters fully into the operations of the institution and what has been accomplished during the four years of its existence as an experimental farm. From it we learn that "a large amount of wet, uncultivated pasture land, covered often with underbrush and logs, had to be broken up; a large portion of the farm required to be drained ere it could be worked; the land already cultivated had to be cleaned of weeds; the whole of the fields had to be re-modelled, re-fenced, put into right shape, and all placed under definite rotation." We turn to

THE FIELD.

The rotation is the seven years', thus: 1, peas; 2, wheat or oats; 3, roots; 4, grasses with barley; 5, hay; 6, pasture; 7, pasture. The "local peculiarities" of the farm had guided the selection, and these are a very irregular character of soil and subsoil—inclining generally to light loam and varying from pure gravel through gravelly loam, light loam, loam, light clay loam, to what is nearly a clay—but gravel and clay loam predominating.

Fall Wheat—Five varieties were seeded by drill and cultivated as an experiment. The plots received an application of 25 loads per acre of well mixed farm-yard manure in the first week of September. Rolling was done on the 8th of April. Some parts were considerably lodged by heavy rain on 3rd of May, and on 3rd of July; heading was prominent on 13th of June, and a week later the work of the Hessian Fly became manifest by bent and falling plants throughout. Rust was at its greatest development the last week of June. Harvesting, 20th July. The produce of the varieties of wheat was as follows: Soule, 33 bush.; Clawson, 33 bush.; Arnold's Victor, 27½ bush.; Gold Medal, 33 bush.; Silver Chaff, 11½ bush. The Soule was least affected with rust and had the greatest weight per bushel, though not more than 61½ lbs.; the Soule was least attacked by the Hessian Fly. Our readers are well aware of the fact that a variety of wheat, though yielding large produce and of good quality in one locality, may not be adapted to another.

Spring Wheat—The land was in good order for roots, actually greasy in richness. Anticipating a rush of straw, 400 lbs. of salt per acre was given in order to check the growth and strengthen the straw. The yield of good clean grain was as follows: Russian, 15½ bush. per acre; Lost Nation, 13; Gordon, 12; White Fife, 13.

Oats—Part of the roughest and richest land carried these. Fall plowing with the common and gang plows in spring made a good seed-bed for hand-sowing on the 17th of May, at the rate of 2½ bush. per acre. Harvesting commenced on 7th of August. In order of merit this season oats are:—Black Tartarian, from Scotland, 56 bush. per acre;

New Zealand, 51; Hopetown 50; Emporium, 40. Tartarian straw was strong and on its feet, when all others were badly lodged. Emporium behaved worst under storms, and the Hopetown had as much as 60 bush. per acre on some parts.

Barley of the six-rowed variety was sown on the 10th May and harvested 6th August. The land had been plowed in the fall 9 inches deep and cultivated with the gang plow 4 inches deep in spring. Crop badly laid with storm; had to be cut with mower and gathered with horse-rake. It produced 27 bush. per acre; straw short and grain a dark sample. This was certainly a very bad crop.

Oats and Barley with different manures—The land was plowed on 6th May, thrice harrowed, and on 13th May the following manures applied broadcast with hand, before sowing by drill machine: Brockville superphosphate, 600 lbs. per acre; nitrate of soda, 300; gypsum, 600; bone-dust, 600. On the superphosphate lot oats yielded of grain 28½ bush.; barley, 12½. With nitrate of soda, oats 22½ bush.; barley, 11½. With gypsum, oats 22½ bush.; barley, 10. With bone-dust, oats 11½ bush.; barley, 9½. The low yield of grain obtained in this experiment is certainly unaccountable. The land was in good tilth, and even were no fertilizers applied the yield would be accounted very light.

A. E.

Report of the Fruit Growers' Association of Ontario.

From the President's Annual Address:

THE YELLOWS IN OUR PEACH ORCHARDS IMPORTED FROM THE UNITED STATES.

"Another subject, and pressing, demanding the immediate and prompt attention of our members, is the ravages of 'the Yellows' in our peach orchards. Mr. A. M. Smith, nurseryman, Drummondville, deserves well of our Association in that he has been sounding the trumpet of warning in reference to this destructive agent. In a recent communication to me, he says: 'The peach-growers of Grimsby, and, I might say, of Ontario, are in trouble, and are in danger of a great calamity, and not only peach-growers, but all lovers of this delicious fruit as well.' It is spreading with fearful rapidity in Western New York, nearly all the orchards, in what was formerly the best peach section, being more or less affected. Some orchards are entirely ruined by it. Mr. Smith further says that he and others have been examining the orchards in and around Grimsby, and traces of the disease are found in several places. 'The Committee of investigation found out this fact, that in all the orchards where there were symptoms of the disease, there were more or less trees which had been imported from the States, and where the trees were all home grown, there was not one as yet affected. The disease is no doubt disseminated in diseased pips, buds, and young trees, and fruit of the present year. There have been hundreds of baskets of diseased peaches shipped from Western New York to Canada, and you will hear the universal verdict wherever it has been sold, that it is tasteless and almost worthless.

"I am old-fogy enough to think that good laws, well executed, are the characteristics of good government, and the instrumentalities of great benefits. When the Short-horn class of cattle, and other breeds, were threatened with Pleuropneumonia, what did the Government do? Why, they at once, on the advice of leading agriculturists, issued an order in Council to stop the importation of cattle. What was necessary in the case of cattle, seems to me equally urgent in the case of importation of diseased fruit and fruit trees. We must protect ourselves and our interests. Representation should at once be made to the Privy Council, consultation held, and action urged.

"Trees affected with Yellows have the pith as brown as a nut, which has led me to conclude after a deal of observation and thought, that the root of these, and kindred evils is to be found in the injury done by cold, and in being allowed to overbear. Tender shoots of the peach, especially those in shade, are first to show symptoms of Yellows. In late fall these shoots are found growing vigorously—they cannot resist the cold—the sap vessels are burst, the sap becomes frozen, the due elaboration of the juices is prevented, and disease is the consequence. Trees propagated from these diseased stocks propagate the disease. Fruit grown from such diseased trees bear marks, as Mr. Smith says, of the ravages of the evil, in its tastelessness, and worthlessness.

"It might justly be noted here that premature and diseased fruit from Ohio, and other States, anticipates our Canadian markets. These introductions lower the price of our Canadian horticultural products. Our fruit-growers are thus deprived of the benefit accruing from being first in the market."

THE GRAPE IN CANADA.

"Mr. Paffard, on a recent visit which I made to Niagara, showed me in his garden several exotic varieties, and among them a vine of Black Hamburgs, which has been in full bearing for six years, and produces yearly a heavy crop. It may not be generally known that Mr. Paffard secured a bronze medal for the grapes at the Centennial. The bunch weighed 16½ ounces. An esteemed correspondent writes of these grape vines, and says:—'The protection in winter consists merely in laying down the vine and covering it with a little garden mould, and the growth is as rapid and vigorous, and the bearing as full as any of the hardier kinds, while the shape, size, colour and flavour of the clusters and fruit will compare favourably with the best specimens produced under glass.'

From discussions by members:

THE CANKER WORM.

"The insect has made its appearance in some places in great numbers, doing great damage to the orchards by eating the leaves, often stripping the trees entirely, so that they are destitute of foliage as in the winter.

"J. J. Bowman had quite too much experience, having suffered severely from their depredations. The female moth is wingless, comes out of the ground in November, crawls up the trunk of the tree and lays her eggs. From these eggs the worms hatch out in the spring, devour the leaves, and disappear about the middle of June, going into the ground, when they undergo their transformations and come forth again as moths in the autumn. He had tried Paris green in water, sprinkled upon the leaves, and it had killed them.

"Linus Woolverton, Grimsby, had considerable experience with these canker-worms, and tried three ways of combating them. Had found the use of bandages, smeared with tar, pitch tar, not coal tar, the easiest and very successful. After a few days the tar hardens and it becomes necessary to make a fresh application. Had also used Paris-green mixed with water, applying it with a garden pump. This must be put on very early in the season, as soon as the buds burst, else the mischief will have been done. Had also tried fall ploughing, say in the end of October, with a view of breaking up and exposing the chrysalids, and thought this had a beneficial effect."

THE APPLE TREE BORER.

"Mr. Jones, of Rochester, N. Y., said that he heaped coal ashes around the tree at the collar, and had found this useful in preventing the borer from attacking the tree. Also that Mr. R. J. Swan spread coal ashes under his currant and gooseberry bushes, and believed that the application saved them from the attacks of the sawfly.

"P. E. Bucke, Ottawa, applied coal ashes which had been used as an absorbent of night-soil to the surface of the ground under his currant and gooseberry bushes, and had not been troubled with the sawfly."

PROTECTION TO PEACH ORCHARDS.

"Mr. Honsberger has been in the habit of planting his peach trees in the spaces among the apple trees, and letting the peach trees take their chances with the apples, but he was now growing a hedge of Norway spruce to protect his peach trees from the south-west winds.

"E. Morden would protect peach orchards especially on the west and north.

"W. Haskins would protect the west, south-west, and south sides, and thought protection preferable to planting on an elevated site."

THE BEST TREES TO PLANT FOR PROTECTION.

"On this subject there was a great diversity of opinion. The sugar maple, bass-wood, Scotch pine, Norway spruce, Austrian pine, Lombard poplar, were all recommended.

Among the varieties of fruits specially commended are Mr. Dougalls' seedling plum—Stem moderately long, flesh rather coarse, quality fair, fragrant, superior in quality to Yellow Egg, stone very small; very promising plum. Wahelings' seedling peach, a large and handsome peach, good rich flavoured, raised from the stone in Westminster.

Mr. Woods' crab-apple, just as pleasant eating as many of our dessert apples.

Stock.**DANGER!****Immediate Action Required.**

We have attempted to call the attention of our readers to dangers that threaten us. The warning has not yet been heeded or acted upon, and a case of "hog cholera" exists in Canada, and should immediately be stamped out. Hog Cholera is causing enormous loss in the States. **OUR STOCK MUST BE PROTECTED FROM THIS and other dangers.** Some person or persons are to blame for not taking action against this danger ere this.

If you do not wish for losses in this Dominion to exceed the figures shown in the article below, turn to your January, February and March numbers of this volume and read these articles: page 4, "Danger Ahead," 26, "U. S. Stock Diseases," 50, "Protect us from Danger," 58, "U. S. Stock Diseases," 70, "More Danger Ahead." Show them to the member of Parliament that represents your interests; enquire of the Board of Agriculture and Arts; obtain information from the School of Agriculture, or from your Reeve or Warden; ask them to do their part to prevent the spread of this disease. All should be able to give you information about this. It is of far more importance than the tariff or party politics. Look to your interests, farmers! Attend to it!

It is your duty to yourself, to your neighbor, your family, and your country. If you induce one M. P. to act, you will be a benefactor. This disease exists in our country, and may be nearer to you than you are aware of. Have it stamped out, and importations prohibited. We must keep our stock free from numerous diseases. Foot and mouth disease existed at one time in our Province. Post yourself about it, and about Hog Cholera, Pleuro-Pneumonia and Trichina, their symptoms, their causes; what they have done, and consider what they might do for Canada. Act at once; there is no time for delay.

On Cattle Plague Legislation.

The *Agricultural Economist*, England, says:—"Whatever protection there is in the recommendations of the Cattle Plague Committee, it is not protection in the objectionable and political sense of the term—it is simply protection for the consumer as well as the stock owner, a protection against famine prices for butcher's meat in town. The supply of live animals from abroad bears but a small proportion to the home production. If due allowance be made for the greater weight of the British animals, to say nothing of quality, the foreign proportion of the whole supply may be put down at five—certainly no more than eight—percent. But the disease introduced by the imported Live Stock has cost the country during the last fifteen years upwards of £100,000,000 sterling. Foot-and-mouth disease alone, according to the most competent authorities, has, during that period, cost us no less than £75,000,000. One County (Cheshire) in 1872 suffered a loss from this disease to its cattle, not to mention sheep and pigs, estimated at no less than £150,000 to £160,000, for in that year 52,000 cattle were affected with the malady, within its boundary. Foot-and-mouth disease is not a fatal malady, but the losses sustained by it are enormous, and most seriously affect the meat production of the country. But the deadly cattle plague has, since 1862, cost us £8,000,000, and the almost incurable pleuro-pneumonia no less than £30,000,000. In fact, the annual loss to the British farmer, and therefore to the country, from the presence of foreign contagious diseases, exceeds the annual value of all our Live Stock importations."

The *Economist* urges the slaughtering of all imported animals at the ports of debarkation as the only effectual means of protection against cattle disease. We urge that we could and would augment the number of our cattle and sheep without lessening in any degree the importation of meat from abroad. We believe that with killing at the ports made a fixed instead of a chance regulation the import trade in animals would be steady, and would increase until superseded by a larger and more lucrative traffic in dead meat, and that the

select Committee are justified in their conclusion in paragraph 33 of their Report to the effect that compulsory slaughter at the ports of debarkation is not likely either to discourage foreign importation or to diminish the supply of our large towns, or generally to raise the price of meat."

Sweet Corn as Stock Feed.

I can, from experience, fully indorse the estimate of sweet corn for feed. I learned its value for cows incidentally. We always cultivate a small patch in the garden for table use. After the ears were pulled, the stocks were cut off close to the ground and given to the cow. The quantity of milk was increased and its quality improved; there was more butter in it. This gave me a hint. I observed more closely the next year, and was satisfied the sweet corn did it. Since then I have each year raised a small patch on purpose for my cow. A small space will furnish as much as one cow can manage until the frost kills it, when it is harmed for feed. I communicated the results of my practice to several neighboring farmers, but while they will readily agree that it is reasonable and doubtless profitable, they have not yet adopted it. I tried several times to cure some of the feed for Winter use, but always failed, and finally gave it up. But as a succulent crop of feed in addition to short pasture in August or September, or as a main feed under the soiling system, I think there is no other forage crop equal to sweet corn, especially when the ears are left on the stalks. I repeat the exhortation—"Let every farmer try a piece of sweet corn for 1879."—Cor. N. Y. Tribune.

Preserving Sheep from Dogs.

On one sheep in every ten of the flock put a bell of the usual size for sheep. The instinct of the dog prompts him to do all his acts in a sly, stealthy manner; his attacks upon sheep are most frequently made at night while they are at rest, and the simultaneous jingling of all the bells strikes terror to the dogs; they turn their tails and leave the sheep, fearing the noise of the bells will lead to their exposure. The ratio of bells may be made to vary according to the size of the flock.

We hear of more sheep being killed in several localities. We have at various times directed our readers to the use of the bell, and again advise you to put a bell on one.

Early Maturity of Farm Stock.

By the common admission of all competent to form opinions on the matter, remunerative meat production cannot be ensured at the present day without early maturity and rapid fattening. Young pigs fed from birth rapidly, and sent to the pork shops at about six weeks old, may be made to pay, but the production of bacon can only be accomplished at a loss. Lambs taught to nibble oilcake as soon as they will eat anything, and kept steadily moving so that they fatten as they grow, may at about ten months old be brought to heavier weights of carcass than our fathers used to bring their sheep to after keeping them three or four years. And cattle-feeding, to be rendered remunerative, must be conducted precisely in the same way. The calf must never be stinted of food, but have plenty of milk at first, and then milk and meal with a little oilcake. As he grows bigger and devours more of the natural food of the farm, whether it be hay and root pulp or green food, a portion of the milk may be taken off, or skim-milk thickened with linseed meal, or linseed boiled to a mucilage, may be substituted for the whole milk, but when this is done the allowance of oilcake should be increased. The calf should at all times be fed so as to go on steadily putting on flesh more and more as it grows, never being allowed to have a check at any time, but to enjoy one continuous, progressive development, with greater and still greater allowances of oilcake or meal, the result of which will be the production of two-year-old beef.

Well-bred young steers and heifers, in short, may be ripened into tolerably good maturity at two years old, if only they are of the right strains of blood, for a great deal depends on this. Practical men of great experience are well aware what astonishing differences present themselves in the capabilities of animals to lay on flesh rapidly, and arrive at maturity quickly. Of a number of stock picked up indiscriminately at a fair or market, the proportion of "ne'er-do-well" ones would be large, while others would thrive to a wish. Here and there a few excellent judges of stock may be found capable of picking out the good

doers from the bad at a glance, ere their capabilities have been tried. But this is a rare gift, and can scarcely be termed a feat of skill to be acquired, consequently the necessity of graziers, who desire to produce two-year-old beef on a large scale, rearing their own stock, manifests itself. Those who do so can, with the exercise of ordinary skill, generally manage to rear the right kind of stock; for employing a good pedigree bull will alone do a great deal towards accomplishing the object in view. 'A bull forms half a herd' is a proverb often quoted in parts of England, and the extent to which calves of ordinary grade will turn after the sire if he be of high pedigree is astonishing.—[Abridged from an English Exchange.]

Wheat for Stock.

It is somewhat common on the Pacific coast to feed wheat to stock, and trials of it in remote points in the West have not been infrequent, but it seems a little strange to see it recommended now in England, on account of excessive imports and low prices, the home product being still cheaper this year because of inferior quality; for poorer qualities as low as 32 shillings per quarter, or a dollar a bushel, was paid. It is thought by some to be worth more than that for feeding, especially by farmers who are compelled to buy expensive feed at once.

It is recommended as a ration for horses in preference to barley, and cheaper than that grain for pig-feeding at current rates, which are about 10 per cent. higher than those for wheat. May not we on this side of the ocean yet condescend to grow wheat to send 5,000 miles for the sustenance of British pigs?

YOUNG BEEF.—Taking the top price of beef at 9d. per pound, the Hereford which weighed at 2 years and 4 months (that is, 121 weeks) 140 stone, or rather more than 9 pounds a week, returned in money for the period of his life 6s. 9d. per week; and the Shorthorn did almost as well. They had been sufficiently fattened, but were they fed for profit, and killed a little younger, they would have given the feeder quite as much beef per week at a less cost. Bulls that are properly finished off, and their flesh made firm instead of flabby, can hardly be killed too young. They gain more per week and pay the feeder better when killed under instead of over 2 years old. And the same general rule applies to mutton. Young mutton, like young beef, pays best.

TO TAN SHEEP-SKINS.—Sprinkle liberally with salt and saltpetre, and roll up while the skins are yet fresh; then wash them in soapsuds, with a little ammonia added. Next soak for twenty-four hours in salt water, in which a little alum is also dissolved, and then hang up to drain. As soon as this is done, nail with the wool side in against the side of a shed or any place that is protected from the rain; rub well with a mixture of alum and saltpetre. When the skin is quite dry scrape well with a knife and rub down with pumice stone.

AVERAGE WEIGHT OF BREEDS.—J. Bell, Sussex, England, says on this subject: "It may be interesting to some readers to know the weights of the animals of different breeds exhibited at the Smithfield Club Show this year. I have taken the weights of the steers exhibited and they stand thus: Increase of growth from day of birth, per month—Sussex, 54 lb. 7 oz.; Shorthorns, 53 lb. 10 oz.; Herefords, 52 lb. 12½ oz., and Devons, 42 lb."

POTATO WATER IN REQUISITION.—Potato water, or water in which potatoes have been boiled, is now recommended in various quarters as not only an effective, but an immediate remedy for lice on cows and other cattle, also for ticks. The affected parts are to be bathed with the potato water; one application is generally sufficient. This remedy (if remedy it proves) has the merit of being exceedingly simple, easily employed and without danger of injury to the cattle.

Pasture of the best kind will produce more milk of the best quality than any other feed. A quart of meal, twice a day, is worth something in promoting gentleness. Corn and oats, ground and mixed in equal quantities, make the most valuable meal, and a given quantity of such meal is worth more than any other; though barley and meal made in "pearling," and meal from making split peas, and shorts and ship-stuffs, are held as of great value to help sustain the yield of milk during the winter.

Garden and Orchard.

Seasonable Hints—April.

BY HORTUS.

As intimated in the March number of the *ADVOCATE*, we will proceed to give directions and illustrations for grafting, which, if carried on with any attempt at carefulness, cannot fail to be successful. To give force and value to our instruction, and to draw the attention of the reader to grafting, we state the fact that there are thousands of fruit-trees to-day in bearing condition, covering many acres of land, that bear fruit fit only to be made into cider, or to be thrown to the hogs, that could be made to grow valuable market kinds by grafting such kinds upon them. Another thing not generally known or practiced is that old, decaying trees may be renewed into fresh vigor and usefulness by re-grafting. To graft a tree ten to fifteen years old, select the younger branches and those in such a position that when grafted a shapely head may be formed. About half of the branches may be worked upon at one season, leaving the remainder to carry on the growth of the tree. It would be dangerous to remove all at once for grafting. The smaller branches may be worked on at any convenient position, while the large ones should be cut back to a diameter of two or three inches—no greater. Strong, healthy shoots of last year's growth of the varieties you wish to grow should be used for cions, and may be cut off for this purpose any time before the buds swell; they may be kept packed away in sand or sawdust till occasion calls for using them. As to the proper time to commence grafting, begin as early as settled spring weather sets in,

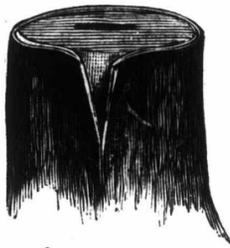


when the buds are swelling. If grafted too early, the alternate freezing and thawing will soon destroy the vitality of the cion; while, on the other hand, you can graft successfully up till the tree is in full blossom.

A great many methods of grafting are practiced, which it is not necessary to enumerate. Any one will do that will give the most surface exposure to the bark edges of both cion and stock. For grafting plums, cherries, pears, and the smaller branches of apple-trees, tongue or splice grafting is the most preferred. Cut the cions in pieces three to four inches in length, in manner shown in Fig. 1; shape the stock to correspond, as in Fig. 2; fit the cion tightly on to this, seeing that the bark of both cion and stock fits evenly, at least on one side, and your graft is made and ready for covering with waxed cloth, prepared wax or clay.

For grafting the branches two or three inches in diameter, the cion is made without splitting, the bark on stock is slit down about an inch and raised, as in Fig. 3, to allow the insertion of cion underneath, which should fit smoothly against the

bared wood; two or three cions may be placed on the same stock. To graft the wild plum stocks growing about the place, saw the stock off even with the surface of the ground, remove the soil to roots and prepare the stocks same as in Fig. 2, fitting the cion as before directed. Cover the graft



3

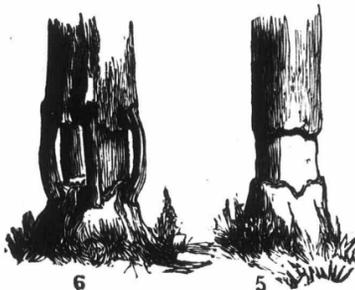
with waxed cloth, and draw back the soil carefully, leaving only top bud of cion exposed, as shown in cut 4.

GRAFTING WAX can be purchased, ready prepared, from seedsmen. A good composition, applicable in hot or cold weather, is made from four parts of resin, two of beeswax and one of tallow or fish-oil. Melt all together, and when boiling pour it out into cold water, then work it thoroughly to get the water out, and it is ready for use. The hands must be slightly greased, when applying it, to prevent sticking, but be careful and not put any grease on the stock or cion. To make grafting cloth, use worn-out cotton or other fabric that will tear easily. Tear this into strips and roll it up into neat balls, soaking these in the melted



wax till thoroughly saturated, then squeeze out the surplus wax, and the cloth is ready. We have been thus explicit about the operation of grafting, as many intelligent persons look upon it as a sort of magic art, and regard a grafter as a person gifted with wondrous power; whereas, if they would but try and do it themselves, following the foregoing instructions, they would find all the mystery vanish and the work resolve itself into a very simple operation indeed.

GIRDLED TREES.—In winters that there has been a heavy snow-fall, like the past, mice frequently cause great damage to orchards, so that the protection afforded the trees by the covering of snow has an offset, on the other hand, by the risk of mice girdling them. Trees affected like cut 5 may be saved by inserting small limbs of the tree in a notch made with a chisel above and below the girdled portion, fitting carefully as in grafting, the bark of the tree and that of the branches inserted, as shown in Fig. 6.



PLANTING.—Whatever trees you intend planting out this season get them planted as early as possible; do not plant, however, unless your soil is nice and dry—if not naturally so, be sure to make it so by draining. It pays in the end to thoroughly pulverize your soil by subsoil plowing and heavy manuring. When planting be careful

and not plant deeper than trees stood before; it is far better to plant shallow and give a good mulching on top.

GRAPEVINES will require uncovering to the sun and air; give the border the vines are growing in a good coating of manure and bonedust. When mulching fruit-trees do not place the manure in a heap around the base of the trunk, as is the custom with a great many. The working roots of a tree are about the same distance from the centre as the ends of the branches, and therefore cannot derive any benefit from the stimulant piled in heaps fifteen or twenty feet away. A far better plan is to spread the manure evenly on the ground, or, more directly, in the spaces between the trees.

The imposition of the new duties on all kinds of fruit cannot fail but increase the demand and price of the home supply; it will also give a greater impetus to the cultivation of the same, and it is desirable for the benefit of our country and the growers thereof that they obtain every information respecting their successful cultivation, and it is a necessity, therefore, that too much attention cannot be paid to the important matters of

PRUNING, MANURING, and otherwise taking care of our large and small fruit-trees and bushes. This month calls for all the work that can be done in this way as much as possible. Farmers will find it to pay them to give their gardens and orchards more attention than they have hitherto been doing. Thinning out and cutting back the old wood on currants and gooseberries, shortening raspberry canes and taking away the suckers to plant new patches; digging in manure in the rhubarb beds and dividing the roots; top-dressing asparagus with salt and short manure—all will be found pleasant and profitable work in this month, and will be sure to verify the old proverb that "The hand of the diligent maketh rich."

Tomatoes.

When an early crop of tomatoes is desired, set out the plants in a light, sandy loam, not too dry nor yet too rich. Prepare the land by thoroughly plowing, harrowing and rolling. Set the plants in rows laid four feet apart, and allow about the same distance between plants.

Water the plants previous to transplanting, so that they may be set with considerable wet earth adhering to them; a shovelful of finely-pulverized and well-rotted manure, applied in each hill at the time of planting, will greatly accelerate the growth of the crop. Cultivate with the hoe until the vines cover the ground.

To hasten the maturity of the first fruit that sets, pinch off the extremities of the tops, and all the secondary shoots which afterwards appear above the flowers.

On suitable soil, with ordinary careful cultivation, one acre of land will yield about four hundred bushels of tomatoes. In small gardens, where space is limited, a greater quantity of fruit can be obtained by elevating the branches of the plant from the ground with brush or on frames made for the purpose. But for market on a large scale this extra labor is not advised.

Seeding on Sod.

Mr. H. R. Wood, of New Lennox, Will County, Illinois, recently gave the *Prairie Farmer* an account of some experiments he tried last spring with seeding an old pasture sod. On the second day in February, when the soil was only thawed one and a half inches, he ran the harrow over two acres of tough sod, and sowed thereon one peck of clover seed, afterwards going over the ground with a roller. Notwithstanding the seed was of the crop of 1870, he cut a heavy crop from this land, and at the same time he talked with us, the second crop was nearly ready to be cut for seed. He also put in considerable Alsike clover seed, a few days after the common red clover was sown, and produced an excellent crop. In this instance he used the cultivator instead of the harrow in preparing the land.

Treatment of Grapes to Avoid Rot.

In grape culture all sorts of soils and exposures are not equally good, in spite of the fact that the grape will fruit almost everywhere. 1. Strong clay soil is worth little; 2. Marshy or low-lying land is worth still less; 3. Loamy soils yield well, but not giving a sweet grape, are worth little more for wine making purposes; 4. Exposures toward the north, northeast, northwest and west, should be considered out of the question; 5. Even the best of drainage is not as good as a soil naturally propitious, and should also be avoided. The land and exposures above indicated should never be taken if others can be had, as the result cannot fail to be bad in respect to quality and quantity of crop, the rot of the grape, and the production of a wine of little value.

Vineyards should be planted in the following positions in the order named: 1. Looking toward the south; 2. Toward the southeast; 3. Toward the east (but southwest as little as possible); 4. The ground should be level, if dry, and not retentive of moisture. To make a first class wine the soil must be dry, either stony or sandy, and as deep as possible.

But how to plant well is the question. To use the plow is more or less bad—always bad. I say take the spade. I am told it is impossible—too long and hard a task, ridiculous! This is because the process has not been taught or tried. When one knows how to use the spade, it is very simple and not hard—much more rapid and less costly than could be thought. An acre dug to a depth of 20 to 24 inches costs little relatively; the vines find ample support in a soil thus worked, and the grapes will not rot.

This, however, is not our only way of fighting the grape rot. The soil should be thoroughly worked in spring with a spade, followed by four or five hoeings in the summer, whether there are weeds or not, in order to keep the ground constantly stirred, and a path should be made in each row to work from, so as never to step on the soil itself. All cultivation and other manipulations should be done in fine weather and when the land is dry. Keep the ground worked always as deep as possible with the hoe; it will thus remain cool, the vines will grow wonderfully, and the fruit or the wine will be of first quality.

Canker Worm.

In those localities where canker worms were plenty last year, they will in all probability reappear this year, and as the cost of destroying them is trifling and the season to do it at hand, a few words of advice may be of use. Wrap the trunks of all apple and elm trees two feet from the ground with a band of tarred paper or felting, tied tightly with a tarred line. As soon as the ground begins to thaw six inches down go over the bands daily with a tar bucket and brush, so as to keep a fresh surface of sticky tar exposed.

The surface quickly glazes over in dry, windy weather and needs daily renewal. The female grubs, which lays the eggs from which the canker worm hatches, are wingless, and get stuck in the tar as they crawl up the trunk of the tree. The males have wings, but can do no harm of themselves. Sometimes considerable numbers go up the trees in November just before heavy frosts set in and during continued thaws in Winter, but the great bulk go in early Spring. The tarred band should be removed after the season is over, about April 15 or 20, and any drippings of tar removed from the bark, which would otherwise be injured thereby.

The patent oil gutters are a more expensive arrangement, adopted to those gentlemen who have few trees, little time to spend and plenty of money; they only need attention about once a week to prove effectual, instead of every day. If the tar for smearing the trees is mixed with one-fourth paraffine lubricating oil, it will not dry so quickly.

Norway Spruce used as a hedge makes a very dense and close protection for nurseries, and will turn cattle. It seems especially adapted to break the force of the wind. The *Bulletin* says that "in hardness and growth the Austrian pine stands first, the Scotch pine second, and the Norway spruce third." We have never found any harder than the Canadian balsam and the American cedar.

Basket Willow.

A correspondent of the *Massachusetts Ploughman* writes to that paper thus:—

To grow willow for profit you must grow them on good land; any land that will grow good grass (if not too high) will do. Many people will tell you how meadow-land that if it no good for anything else will do for willow. If you have meadow-land and want to plant willow on it, cover it with from four to six inches of gravel and then you may get a crop; without gravel they will not do well on meadow-land.

Willow, like any other crop, must be taken care of if you want to make it profitable, and you must get the right kind of plants and plant them as follows: Rows eighteen inches apart and twelve inches apart in the rows; keep them clean for the first two or three years, and after that time you will not have much trouble with them. If you can put them on manure it will pay you. Plant them as soon in the spring as you can plow the land.

Now we come to the harvesting of them. They should be cut in March or April, if you have a pit to put them in; if not, cut as soon in the spring as the bark is loose. About the first of May is the time to take off the bark; this must be done in two or three weeks or you will lose them. This is an important time of the year to willow-growers. Sometimes you can sell the crop as it stands (green); if so, it is worth from \$60 to \$100 per acre.

Railway Timber Planting.

What are our Canadian railway companies doing in the way of planting? The United States railways are enhancing the value of their property by planting along the lines. The B. & N. Railway in Nebraska has 186 acres planted—460,000 trees, and other railways in like proportion. This is done in the West not only as a means of inducing emigration by demonstrating the feasibility of timber-growing in a few years, but also as a protection from drifting snows along their tracks. On railway timber planting the *Nebraska Farmer* says:—

One of the great mistakes, as heretofore stated by us, is with the plantings for wind-breaks. The trees are usually planted in straight lines, often only a single row, seldom more than two or three, and almost always too near the track. The trees should be planted at such a distance that the drift, in lodging to leeward, will fall short of the track. They should also be planted rather open than close, and be of sufficient breadth that the drifts may lodge within them, or partially so. In fact, the breadth of the planting should correspond to the average depth of the snow-fall and the nature of the drifts to be contended against. Of course in certain localities nothing less than a forest would suffice, yet these are only isolated instances, as where tracks have to be walled in to prevent snowslides. It is to be hoped that a new impetus will be given to tree-planting for protection this and succeeding summers, especially by railway companies.

The Grapevine Flea-Beetle.

A correspondent at Pass Christian, Miss., complains bitterly of the work of the steel-blue beetle (*Haltica chalybea*) on his grapevines, and wishes to know what can be done to prevent its injuries.

The insects may be found very early in the season, before the buds expand. At such times they may be captured with a net and their numbers greatly decreased. The larvæ may be destroyed by buhach powder (Pyrethrum), or even by hellebore water. The latter may be applied by a syringe or sprinkler, and the strength of the solution need not exceed one pound of white powdered hellebore to 20 or 25 gallons of water. A great deal, however, can be done by gathering the leaves upon which the larvæ may be noticed at first to feed, as they are gregarious. Of course, burning all weeds, trees and rubbish about the vineyard in the winter time will tend to destroy the hibernating beetle.

It is with this as with so many other insects—it must be taken in time. The grape-grower should be on the alert for the first beetles, and also for the first larvæ, and not wait till they are upon him in full force, by which time it is almost always a fruitless task to endeavor to destroy them.—[Tribune.

Remedy for Apples and Peach Borers.

Wash the base of the trees annually during the last week in June with carbolic soap suds, made as follows: For a ten-quart pail of the liquid, take two quarts of soft-soap, thin it with two quarts of hot water, then stir in two ounces or four tablespoonfuls of crude carbolic acid. This costs only about twenty-five cents per pint at drug stores. If none but refined can be had, one third less will suffice. Now fill up with two gallons of cold water, and mix thoroughly. Apply with an old paint brush or a short broom, taking pains to wet the bark all around, and inside cracks or crevices for about a foot in height, and quite down to the surface of the ground. Of course if there is any grass or weeds in the way, they should first be removed. Any active man or boy, after a little practice, will apply the wash properly to 500 trees in a day. The odor of the carbolic acid is so pungent and lasting, that the moths or beetles will not deposit eggs where it has been applied, and if any eggs have been laid, they are destroyed by the touch of the liquid. Even if heavy rains occur the effect will continue for a month or two, until the season of egg depositing is over.

For the Western flat-headed apple tree borer the wash needs to be applied on the side of the trunk and large branches of the tree, wherever there is a spot of dead-looking bark, from sun-scald or other injury. These are the most common on the southwest side, especially where the trees slope to the East, as is usual in Western orchards.

The Quince.

Why it is that this fruit is not more generally grown seems unaccountable. It is scarcely known here by fruit growers, yet when offered for sale it commands very high prices. This season some quinces offered for sale in the market of London, Ont., were bought wholesale at \$2 per bushel. In fruit as in other garden and farm products a variety is desirable and profitable.

A writer in an American paper says:—"No American authors that we are acquainted with have taken special pains to promote the cultivation of the quince; although the best of preserves, syrups and jellies, and it imparts its fine flavor to other fruits, and is fine for pies, pastry and sauces. The quince is a dwarfish tree. It generally grows to the height of 8 or 10 feet, with crooked limbs and branches. The fruit is large, rather austere in its raw state, with a peculiar fragrance different from all other fruits. The quince tree, loaded with fine fruit, is quite ornamental. Were it possible for the most splendid fruits of our country to vie in appearance with the golden apples of the Hesperides, the quince, in suitable soil and under proper management, might successfully rival those fabled fruits. The tree with its large pink and white blossoms is highly ornamental in spring, and in fall the fruit, independent of its good qualities, presents a vision of golden apples in effect far surpassing all other fruits of the garden.

Soot in the Garden.

Those who have soot, either of wood or bituminous coal, should carefully save it for use in the garden. It is valuable for the ammonia it contains, and also for its power of re-absorbing ammonia. It is simply charcoal (carbon) in an extremely divided state, but, from the creosote it contains, is useful in destroying insects, and is at the same time valuable as a fertilizer for all garden crops. It must not be mixed with lime or its ammonia will be dissipated, but if the soil is dry and hungry a little salt may be used with it. Soot steeped in water, and allowed to stand and settle for a day or two, is also a most excellent fertilizer for house-plants, possessing precisely the same qualities that the paring of horses' hoofs do.

For flowers out of doors it is especially valuable, since it may be easily applied, and tends to increase the vividness of bloom; mixed with salt, it is an excellent fertilizer for asparagus, onions, cabbage, etc., in connection with compost, in the proportion of one quart of salt to six quarts of soot. For two bushels of compost this quantity makes a heavy dressing for each square rod, to be worked in next the surface of the soil.—[Prairie Farmer.

Peaches.

There are several new varieties of peaches brought before our notice this year—one hailing from Messrs. Ellwanger & Barry, of Rochester, N. Y., and another from A. Moyer & Co., of Jordan, Ont., deserving particular attention. Both these varieties are spoken of in very high terms.

The preserving of peaches by canning has become a very extensive business, particularly in the States, and large quantities of this fruit are used in our Dominion. There are a good many peaches grown in this peninsula, but not sufficient to supply the demand, if the duty is put on that is contemplated. Peach growers should at once prepare to supply our markets with fresh and canned fruit.

In peach culture there is a danger of losing trees by a disease known as

THE YELLOWS.

This disease has done immense damage in the States, and we fear it is already introduced into this Dominion. From what we have read about it, this disease appears to be most infectious. It is a species of fungus that fills the ground and spreads where introduced. It is conveyed by peach stones and even by the pruning-knife, by touch, etc., etc. The fruit turns yellow before it is matured; the leaves become yellow also, and suckers will spring up in the trees.

The only remedy appears to be the destruction of every tree as soon as it is noticed, as if allowed to remain it is sure to spread. Parties having peach orchards should be very careful about procuring new peach trees from any source where this disease has been known to exist. We do not know if the disease exists in the nurseries of Mr. Moyer, or in those of Messrs. Ellwanger & Barry. It would be well to ascertain before purchasing.

Insect Remedy.

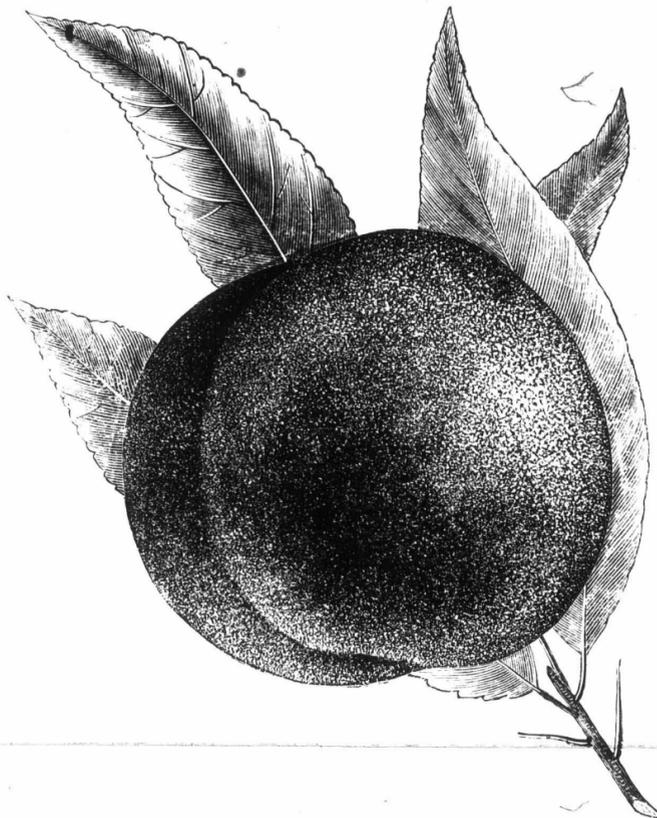
A correspondent of *Vick's Monthly* says: "Numbers of your readers are troubled by ants and other insects, and want advice. Tell them to use from one-half to one ounce of potash in a pail of water, and give the insects a shower bath, and they will go without saying good-bye. Near plants and roots I do not like to use this alkali; neither do I like to destroy ants as they are hunters after still worse insects. Then I use red pepper and create a flight that leaves not a little soul behind. For, or against, rats, mice, moles, &c., I also use a paste of potash, and put some in their holes or runways, where they have to walk. As they wear no shoes, they burn their feet, and like most people, when they burn a finger, put them in their mouth, then they burn their tongues and run for water, get suspicious and go away very fast. For cleaning trees, shrubs, &c., I use soft soap mixed with some potash and water and instead of a brush I take the garden syringe to give some good washings."

Root cuttings of blackberry plants should be planted early.

A correspondent of the *Gardeners' Record* says he has destroyed worms in flower pots without injuring the roots of the most delicate plants by sprinkling the soil with mustard-water—a table spoonful of mustard per gallon of water.

Barren Apple Trees.

"What can be done for them?" The answer uppermost in all minds is: "Cut them down. Why cumber they the ground?" But I would not do that. There is one thing you can do; you can *strike at the life* of the tree, but don't kill it. By wounding so as to check the wood growth of the tree you may throw the tree into fruitage. All know that to girdle a limb of an apple tree—that is, take out a ring of bark at the base of a limb in the early spring—will induce the formation of fruit buds that season, which the following year will develop in a crop of fruit. In many cases the failure to fruit is due to the rapid growth of wood. Checking the growth in any way—by seeding to grass, or by withholding manure, or by girdling, as indicated—will in many cases induce fruitage. In my practice I have done this: I have taken a saw and gone through the orchard and girdled each tree, say one foot from the ground, sawing through the bark in a ring around the body of the tree.



ELLWANGER & BARRY'S NEW PEACH.

This does little, if any, permanent injury. In the course of the season's growth the wound is healed, and the connection again made in the bark, but not till the fruit buds have formed, which is a pledge for a crop of fruit the following season.

It is sometimes the case with particular varieties, as for example with the Bellflowers, that they blossom full but set no fruit. The cause in most cases is the too rapid growth of the wood. Girdling the bodies of the trees—which is most conveniently done with a saw—is the remedy, and will generally cause the fruit to set. Even if injury should be done to the tree, so as to shorten its life for a few years, it is better—for a few years of usefulness is better than many years without any use. I have no doubt many who see this suggestion will recognize at once the good sense that is in it, and will act upon it, and as a result will profit by it in the end.—*Chicago Tribune*.

The degree of cold by itself has nothing to do with the destruction of trees or buds. A tree will retain its heat, which is its life, under a very low temperature sometimes, and yet die at others under a higher one.—[*Gardeners' Monthly*].

Miscellaneous.**The Farmer's Position.**

It is very true that farmers do not occupy the position to which, from their numbers and importance of their calling, they are entitled. Others have passed them in education, and in ability to manage public affairs. They see this and are beginning to interest themselves in the work of improvement. Farmers are, hereafter, to stand on a high level, and receive a more marked recognition in the political affairs of the nation. The farmers are not to remain content to follow the leadership of professional men whose interests do not always coincide with their own. But to take this stand a new departure is needed. Farmers must use their brains as well as their hands; they must educate themselves, so as to stand on a level with the legislators and statesmen of the land with no feeling of inferiority, but as those who

"Know their rights,
And knowing dare maintain."

They must more generally be known as reading men, who will be capable of understanding and discussing subjects of national interest. Farmers clubs must be utilized for educational purposes, and every opportunity which such organizations afford be well improved. As farmers come to know their own business better in consequence of a higher standard of education, they will be better qualified for managing public business. A new era in the history of agriculture will dawn and the agricultural class will take its proper place in society and the nation.—[*Exchange*].

It requires six quarts of broom corn seed to plant an acre.

No general crop grown in the United States yields so large a cash value to the acre as potatoes.

The Canadian farmers who furnish to the Boston market the finest lamb and mutton and the best coarse wool sold there, keep small flocks of Cotswolds, generally about fifty in each flock.

It is said that 6 bushels of peas are equal to 10 of corn to fatten hogs, and the peas yield a larger number of bushels to the acre than corn.

THE Des Moines *Register* says: "The truth is, there is too much machinery about State fairs, too many agents, assistants and bummers, who expect to make money enough in a week to keep them in spending money for months. Official expenses and incidentals, which really ought to be a meagre per cent on the gross receipts, frequently absorb nearly all the income. And that part controlled (or which ought to be) by the agriculturists of the country, is not exempt from the general charge."

SMALL bones in animals are an indication of good feeding quality, early maturity, and superior fine-grained flesh; while coarse, large bones, with prominent joints and angular projections of the skeleton indicate poor feeding quality, late maturity, and coarse flesh, in connection with a large proportion of offal and cheap pieces in the carcass, when reaching its final destination at the slaughter house.

BLOOD is about equal to flesh as a manure, the larger proportion of water which it contains being compensated by its greater facility for mixing with other substances, and with soil; and its tendency to decompose more rapidly. Its effects are more marked in light lands than in stiff clays.

On the Wing.

Having heard so much about the butter business and creameries, and never having seen a creamery, on the 5th of February we took the L. H. & B. R. R., and arrived at Wingham. Here the members of the

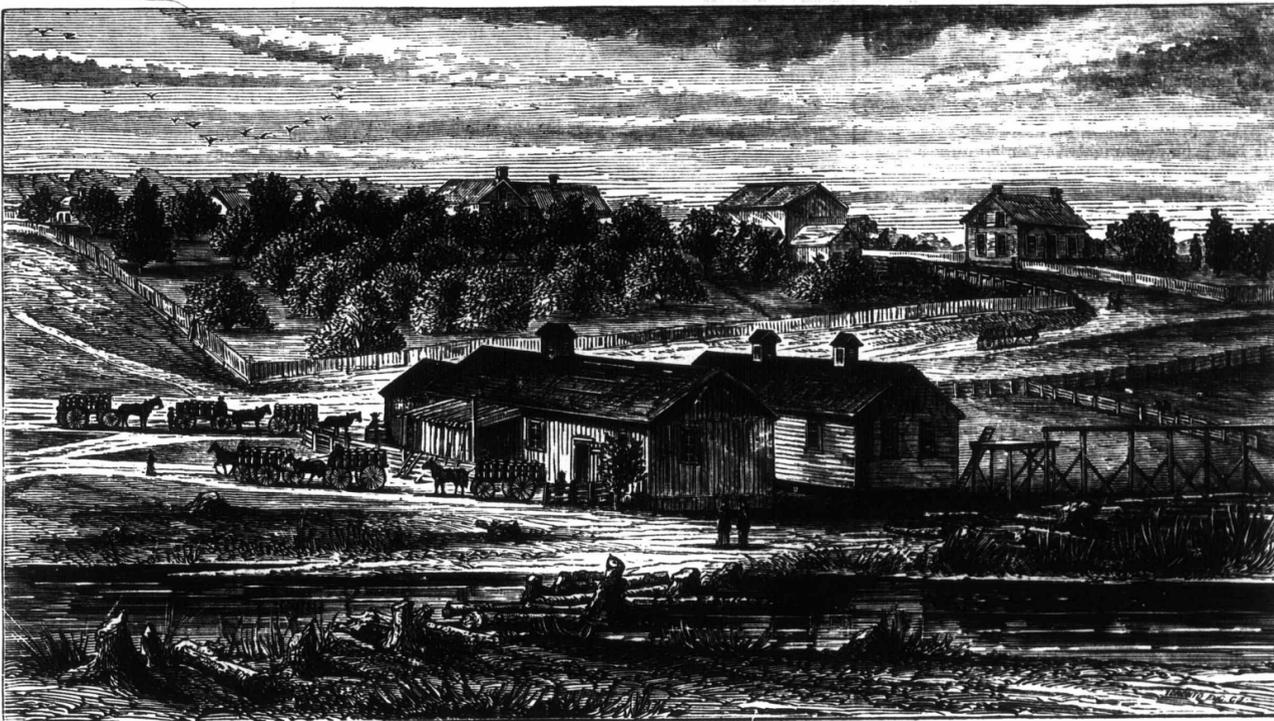
TURNBERRY AGRICULTURAL SOCIETY had their first Dinner. It was well attended by many of the most enterprising farmers in this part of the country. Many good addresses were given pertaining to the general spread of useful information on agricultural subjects. Songs interspersed enlivened the evening, and all appeared to enjoy themselves; we believe the assemblage separated pleased and improved in mind and spirits, without any bad effects resulting in any way. No doubt this society has taken its pattern from the Hullet Society, which is the oldest association that has established and maintained this custom of holding

factory; they then erected the first creamery in Ont. The first year, 1876, they obtained the milk from 130 cows. They realized such good prices for their butter and paid such prices to farmers for milk that the second year farmers sent the milk of 300 cows to them. In 1878 they had the milk of over 600 cows, and this year they expect the milk from 1,000 cows. The reputation and price of this butter have been continually on the rise since the first establishment of the creamery. They ship the butter to a firm in Glasgow, Scotland; for their last shipment they received 120s. per 112 lbs. Customers that have once used this butter require it again; the merchants that purchased it were eagerly awaiting its arrival, and it was at once taken from the docks by ready purchasers, and this at the very highest price paid for the best English, Irish or Scotch butter, realizing 20s. per 112 lbs. more than United States butter.

The whole of the butter made is shipped except that required for one hotel in Toronto. The farmers received 7c. per gallon for their milk. This is much more than was realized by cheese-makers last season. This creamery alone enabled the farmers

it; this is floated up and down each vat until the temperature is sufficiently reduced; then the milk stands from 12 to 24 hours, and is then skimmed and taken to the churn. They formerly used large upright dash churns, but these have been discarded and the Blanchard Churn is now used. They churn about 150 to 200 lbs. at a churning and churn twice a day. The churning is done by steam; it is commenced with 30 revolutions a minute, and then increased to 50. It takes from one to one and a quarter hours to churn. The butter is then taken to a worker, washed, worked, salted and allowed to stand one day; it is then worked over and packed in firkins that have been soaked three days, then steamed for three hours in salt and water, and properly prepared. A cloth is laid at the bottom of the firkin and another on the top; the top is then covered with a thin layer of salt. The keg is then put into the store-room, which is kept nearly ice-cold; there it is safe for shipment at any time.

There is another room in which the engine and boiler are kept. The engine is only a three-horse power, but it has proved itself of sufficient power



CREAMERY OF MESSRS. HETTLE AND INGLIS, TEESWATER, ONT.

an Annual Dinner. These agricultural gatherings, whether in the form of dinners or clubs, tend to do good.

In the morning we took a horse and cutter to go to the creamery, a distance of ten miles.

THE ROAD.

We have driven about this western peninsula for nearly forty years, but we never experienced such roads as we found here; the snow had worked into pitch holes in about this form:



The passing of teams was a dangerous affair. We saw one span of horses nearly buried in the snow when attempting to allow another team to pass. We noticed where many a load had been upset, and in several places parts of loads were left. Question: Would it not be well to have a little more of the statute labor expended in keeping the winter roads in order? A properly constructed leveler occasionally passed along the road would prevent the delay and danger to man and beast.

TEESWATER CREAMERY.

This is the first establishment of this kind erected in Ontario. Messrs. Hettle & Inglis, two enterprising store-keepers, had read about butter factories, went to the States to see how they were managed, and hired a man who had worked in a

in this locality to realize over \$5,000 more than they would have done in the ordinary way. Only one-quarter of the farmers in this township have been able to avail themselves of the use of this creamery. It is estimated that \$15,000 more might have been made in this township alone had all the butter been made on the factory system. The average price realized by farmers for home-made butter was 10c.; the factory butter brought 22c. Last year the ADVOCATE informed its readers that the price of home-made butter would be unremunerative, and commended the factory system. It is not too late even now to get up your factory this spring. There are several creameries going up in the vicinity of this one. Why not have more in other parts of the Dominion?

COST OF FACTORY.

This factory cost about \$4,000, which includes the cost of some expensive implements that have been discarded. It has been built at three different times, each year making it necessary to increase the size. The buildings are 76 feet long by 26 feet wide. One department has a concrete floor; in this building six wooden vats are set, about 15 feet long, 3 feet wide and 1 1/2 feet deep. Tin vats are placed in the wooden vat, leaving a space between the two vats to allow cold water to run at the bottom and sides of the vats. The milk is poured into the vats at a temperature of 80 to 90 degrees; it is then reduced to 60 degrees. In addition to the cold water running around the vats, a sink float is put into the vats having ice in

for the factory. Cheese is made from the skimmed milk, when the milk is only allowed to stand 12 hours. After the milk has been skimmed steam is put into iron pipes that are laid in the bottom of wooden vats. The water is soon heated, and the heat is imparted to the milk in the tin vats; when at a proper temperature the rennet is put into the milk, which soon coagulates. The process is then gone through as if cheese factories, and the cheese is taken to a drying room. The cheese sold from 4 to 6c. per lb., which we deem a high price, considering that the price of new milk cheese has been so low during the past season.

WATER.

A plentiful supply of good, cold, clear water is essential to a butter factory. On a rising ground near this factory is a beautiful spring of water; this is conveyed to the factory in wooden pipes, and thence into iron pipes. An ice-house is close by.

FARMERS AND FARMERS' WIVES, WHERE ARE YOU?

Ten cents per pound for butter made by old experienced hands, that have served a lifetime at it; twenty-two cents per pound for butter made by persons who never milked a cow! And this butter to be equal to the best butter made in the British Isles, and far superior to any made by any of the lauded factories in the States! We should feel proud of this honor; we should follow the pattern set to us. We must either progress or retrograde; we cannot stand still. Is the farm you now occupy to be occupied by your descendants or to be sold to some more enterprising person?

Dairy.

Floating Curds.

BY L. B. ARNOLD, SECRETARY AMERICAN DAIRYMEN'S ASSOCIATION.

A subscriber to the FARMERS' ADVOCATE some time ago asked what was the cause of floating curds, how they should be treated, and whether there was any means of preventing them. Circumstances prevented immediate reply, and we give now what ought to have appeared in a previous issue.

The immediate cause of floating curds consists in the formation of carbonic acid gas in the lumps of curd faster than it can escape. But our correspondent very likely would like to know why curd from some milk will float, while curd from other milk will not. All milk, as is well known, is not just exactly alike, and the milk which produces floating curds is suspected of being in some way very different from other milk; but such is not the fact. There is a difference, it is true, but the difference is slight. Milk which produces floating curds has usually a more intense odor than other milk, and sometimes so strong as to be offensive, and to suggest putrefaction; hence such milk has been denominated "tainted milk."

The common use of the word "taint" connects it with putrefaction, and hence it has become to be pretty generally believed that milk which emits the peculiar smell is in an actual state of incipient putrefaction. But this is not so. Putrefaction involves the decomposition of albuminoid substances, and the liberation of nitrogen. It has been demonstrated that the so-called "taint" given off from tainted milk is entirely destitute of nitrogen in any form, and, hence, that the cheesy matter, which is the nitrogenous part of milk, is not all affected, but is as sound as in any other milk. There is, therefore, nothing about it to prevent it from making good and wholesome and long-keeping cheese, if it is properly treated. The altered condition of the milk is confined to the milk fats, except in rare cases in which it becomes affected by absorbing foreign ferments, either after it is drawn by exposure to foul air, or by the use of infected food by the cow, or by other similar and unusual means.

In the great majority of cases in which floating curds occur, the milk fats, by a slight change in the condition of the cows, acquire a more than usual tendency to soften and become volatile. Such a tendency exists in the milk fats of all cows, whatever their condition. As the lighter milk fats become ethereal they absorb oxygen rapidly, and form carbonic acid gas. In ordinary milk the oils become slowly volatile, and oxidize so slowly that no more gas is formed than can escape readily, either in the form of milk or curds. But when they vaporize and absorb oxygen more rapidly, the volume of gas developed is so much increased that, though it may rapidly escape from the liquid milk, it does not in the solid, tenacious curd get away so fast, as it forms and swells out the curd just like dough in rising, till it becomes lighter than the whey, and it then comes to the surface. The characteristic odor of tainted milk comes partly from the vaporization of the light milk fats, and partly from the gases liberated in the formation of carbonic acid gas. Similar changes are constantly going on in the oily matters of all milk when warm, the difference being in one of degree.

Since we now know that the milk which usually produces floating curds is very little different from ordinary milk, varying from it only in a slightly increased tendency to absorb oxygen, it must be evident that it does not require to be treated very different from other milk when making it

into cheese; and this is so in fact. I find it necessary to treat floating curds but little different from any other. If there is more odor to the milk than is usual, I use less rennet, but cut, work and scald just the same. The whey is drawn sweet but is left on till it is well separated from the curd, and if the curd floats I draw the whey from under it, tip the vat, draw the curd to the upper end and up to the sides of the vat to drain, keeping it warm by covering, and so situated that the whey will drain away readily, and keeping all parts warm alike by turning occasionally, and thus leave it to ripen or digest under the influence of the rennet which has been used. Curds from any milk are best ripened in this way, and the main difference it is necessary to observe with a "floater" is to ripen it more than other curds. The increased or prolonged action of the rennet (before salting or cooling) by keeping the curd warm in the vat and clear of whey, changes the condition of the milk fats so that they no longer give off unusual odor, and are reduced to the ordinary condition of fats in cheese.

When milk is in its normal condition the curd may be ripened till it will give threads upon the net-iron from one to two inches long. When the milk shows odor, and the curd is inclined to be gassy, it may string from two to six inches, according to the severity of the case. The salting should increase with the length of the threads, and the curd be well cured before pressing. When considered ripe enough for pressing, the curd is ground fine enough to salt evenly, and if it is much gassy it is ground twice so as to have the salt strike through quickly, and is cooled and aired longer before pressing. No acid is used in any part of the process, either in the rennet or in the milk, and the whey is drawn before any acid is allowed to develop in it. If the whey which drains from the curd while it is ripening in the vat becomes sour, it will do no harm unless it is allowed to remain in contact with the curd—a circumstance which should always be prevented.

This course is adapted to all hot weather milk, whether curds float or not, and with a little experience and skill, and a temperate curing-room, fine, solid and good-keeping cheese can be made through all the heated season. But no treatment, however skillful, will insure a good cheese, if the cows become so affected as to be actually diseased, or injured by bad food or severe treatment, or if the vessels in which milk is kept, carried or handled—such as vats, carrying cans, milk pails, etc.—are allowed to become so foul as to infect the milk with the germs of fermentation and putrefaction. No cheese-maker need expect to escape the legitimate consequences of uncleanness or want of tidiness and pure air in and around his factory, nor patrons in neglecting to give the best care possible to secure the comfort and health of their herds, and the strictest neatness and best attention to handling their milk and to all the duties of management—in these will be found the best preventive of floating curds.

A recent number of the *Journal d' Agriculture Pratique* in speaking of the parsnip as fodder for all kinds of domestic animals, and especially for milk cows, says:—"In Bretagne 100 pounds of parsnips are considered an equivalent to 300 of beets, and sixteen to eighteen pounds of parsnips in the daily ration increases the flow of milk and the richness of the milk in butter; several authorities are quoted as making similar statements, and among them so trustworthy a writer on those subjects as Magné. As to richness in nitrogen, and proportionately in albuminoids, Corenwinder gives the following statement: Parsnip, 1.38 per cent.; sugar beet, 0.25; red carrot, 0.23; ruta baga, 0.24; white turnip, 0.16." On good authority the albuminoids are regarded as the most valuable constituent of fodder, and therefore, according to this comparison between these several roots, the parsnip is by far the most valuable one for this purpose."

Our Surplus Dairy Products.

"What is to be done with the great quantities of butter and cheese whose future production was lately foretold in the *Tribune*, when we can hardly dispose of the yield we now have?" This may be answered on general principles. With the facilities for transportation which the world enjoys, the accumulation in any locality of products valuable as human food, or clothing, or in the arts and sciences, will be sure to find their way to people desiring them, though it be on the opposite side of the globe. The eagle eyes of energy and enterprise are always on the watch for salient points on which to hinge schemes of wealth, and the world may be assured that so small a matter as a billion or two of butter, or even a few hundred millions of cheese, would not be overlooked, and ways and means be provided for placing them before parties who would be only too glad to purchase. It is but a few years ago that curious people were wondering what would become of our surplus beef. Nobody thought of taking fresh beef 4,000 miles to market. But enterprise saw an accumulation of cheap animal food, of which there was a dearth on the other side of the Atlantic, and the means at once developed, as if by magic, to place it where it was wanted, and now it is an easy matter to lay down our surplus beef, and pork, and mutton, and poultry and eggs, before the hungry people of Europe.

It will be a much easier matter to dispose of butter and cheese than fresh meat, when the necessity crowds itself upon us. Cheese that would endure a journey round the globe and lose nothing on the way, can be more easily made and of better quality than the short-lived stuff we are making now. To do the same with butter will not be difficult. The necessity for better means of preserving the freshness of butter in its early state, and better means for transporting it, have been felt, and progress has been made towards their accomplishment. A tin package has been fitted with a thin wooden lining, which is hermetically sealed by soldering on a tin cover, accomplishing nearly all that could be desired in this direction. We have a light stone package with a wooden envelope, which renders it safe from breakage, and with a double cover with an airtight fitting, affords a cheap means for preserving and handling butter in most any way desired. But a better means—one that seems to cover everything—has been devised. Mr. John Higgins, who a few years ago laid the country under obligations by developing the method of gathering butter in a granulated form, has made the obligation larger by devising a method for preserving and transporting butter to any market in the world.

The means are as simple as barrelling pork. He gathers the butter in the granular form in the churn, and as soon as the buttermilk is rinsed off, the granules are immersed in saturated brine, made of purest salt. When the cask is full it is headed, and is then ready for any emergency. Experiments made in putting up butter in this way, after making long journeys, and standing six or eight months exposed to summer heat, have shown that by cooling through before handling, and rinsing the brine off with cold water as soon as opened, the butter will have all the freshness it had when it came from the churn unchanged, and is ready to be seasoned and put in shape for the table. There is no doubt that butter made from good milk and put up in this way will keep as good as canned fruit, and for the same reason. Europeans have found it profitable to put butter in plain tin packages and to ship it to South America. That outlet is as free to us, and, we add, to Canadians, as to them; and as soon as dairymen are compelled to make good butter instead of poor, markets will be opened to swallow all we have to spare.—[N. Y. Tribune.]

The shipment of 4,000 sheep in two flocks, in two weeks, by a Canadian railway, for transport to England for a market, is a significant fact. These sheep were raised in Western Canada, and were chiefly grade Cotswolds. There is no more profitable animal than a sheep of the right kind and in the right place. These Canadian sheep are raised in small flocks, generally of less than 50, and rarely greater than 100. The average value at the farmer's door is \$6 per head.—[Rural New Yorker.]

Agriculture.

Home-made Superphosphate.

Superphosphate of lime is a special fertilizer which may be used profitably on more soils, and on a greater variety of crops, than any other special fertilizer. Nearly all of our clay loam, as well as some lighter soils, are deficient in this element. Especially is it needed on most farms from which large quantities of milk, live-stock or grain have been sold.

The habit which cows and young stock often form of chewing bones, leather or boards is a special indication of its deficiency in the soil on which they feed.

The cheapest and best way to obtain superphosphate of lime is to purchase the materials, consisting of sulphuric acid and fine-ground bone, using one carboy of about 175 lbs. (66° strength) to 500 lbs. of bone. Many newspaper men and scientific lecturers try to discourage farmers from making it themselves, telling them that it is better to buy it of phosphate dealers, but such advice helps to enrich the fertilizer men by increasing their business—at the expense of the farmer. There is little danger or difficulty in the manufacture of it, if due care be used in handling the acid to avoid spilling or spattering it on the flesh or clothes. It is well to wear old wooden mittens and overclothes which are not very valuable, so if you burn a few holes it will be but a small loss. If the acid is poured out with a steady hand, and quite slowly, it will seldom spatter. I am using one-half ton of fine-steamed bone and two carboys of acid every year. I buy the bone from a local mill, where I see it ground, and I know it to be pure.

I prefer steamed bone to any other form in which it is ground. It is better than raw bone because it contains less water, is more soluble, and the grease, which is not a fertilizer but a damage, is also removed by steaming.

In a ton of dry steamed bone we get more pounds of phosphoric acid, and if it is not steamed too long, nearly as much nitrogen as in raw bone, while bone-charcoal is entirely destitute of nitrogen.

In preparing superphosphate I use a round tub, two of which I make by dividing a molasses hog-head. It works very well, and will last several years if properly cared for; after washing and soaking it may be used for scalding hogs.

I put about 150 pounds or three-fourths of a barrel of bone in the tub, then stir in water enough to moisten it well. I then apply the acid by pouring it out carefully into an earthen pitcher which I keep for this purpose, and which holds about three quarts or ten pounds. I measure or weigh out 70 pound of acid and apply to the bone, stirring it with each new addition, and after making sure that it is well mixed from the bottom, I leave it till next day and then stir in the remaining 50 pounds or a quarter of a barrel of bone, adding more water to mix well if needed. After it has stood a short time I shovel it out on the barn floor and mix with sawdust, fine muck or other soil, occasionally shovelling it over and crushing the lumps until it is fine.

If made early in the spring, long before it is to be used, so as to give ample time to dry, there will be no need of using a dryer like sawdust or muck, but it may be used pure and in smaller quantities.

The best result I ever obtained from superphosphate was from a lot I made several years ago from fine, steamed bone, and used it without any dryer. I put only one-half tablespoonful of the pure dissolved bone in a hill for corn, and it went far ahead of corn planted beside it on a handful of hen-manure in each hill, but I took much care to cover the phosphate with dirt before I dropped the seed, as it would surely have killed the corn if they had come in contact.

It will be seen that I use 70 pounds of acid to 200 pounds of bone, but I apply all of the acid to three-fourths of the bone at first, so as to completely dissolve that much, and then mix in the remainder of the bone to take up any free acid which may be left in the mass. Probably 35 lbs. of acid to 100 of bone is not quite enough to render all the bone immediately soluble, and if a very quick action is wanted it works better to use more of the acid, but this gives very good results, and what is not available at first will become so in time by the action of the elements in the soil. I usually apply the phosphate in the hill or drill, covering it with soil before dropping the seed.

It is especially adapted to grain and root crops. For squashes, melons and cucumber vines, hen-manure or guano would be better. For corn I apply the phosphate from 200 pounds of bone per acre, which ought, if the bone is pure, to furnish soluble phosphoric acid enough for fifty pounds of shelled corn; and if the land is good, and has a fair dressing of stable manure spread on beside the superphosphate, it will give a good crop.—[J. W. P., in N. E. Farmer.

Onions.

Two parties having applied for information about onions and their culture, we give them this condensed extract from the *American Agriculturist*:—

The best soil for the onion is a rich, deep mellow loam, free from stones. It should be well drained and have but slight declivity, for if planted on land with much slope the heavy rains of early spring will sometimes wash out the seed.

The land is prepared to best advantage in the fall by plowing under a heavy dressing of manure, 10 to 15 cords per acre, and in spring applying in addition wood ashes or potash salts at the rate of 1,000 pounds of ashes to the acre, or about 350 to 500 pounds of potash salts—sulphate is the best.

In spring it is best not to plow deep for onions. A small plow or cultivator is used, followed by a harrow and roller, repeating the operation at least twice until the surface is thoroughly fine and mellow to the depth of three or four inches. After the last rolling the seed is sown with a hand-drill in rows 15 inches apart, at the rate of four to six pounds per acre. The sooner the land can be made ready in spring the better for the crop, as it is quite hardy and if sown early is more likely to escape injury by drought.

The quantity of seed sown per acre, as well as the quality, is of the utmost importance. If too much seed is sown great labor is required to thin the plants well, and the thinning is injurious to the plants left standing, while a poor stand from bad or insufficient seed leaves the land in possession of weeds instead of onions. If the seed has not been grown from selected onions with a "pedigree" the result will be a crop of scullions. It requires a great deal of care to raise the best onion-seed, and much of that sold is worse than worthless, while true seed is cheap at double the price at which it is generally sold—when sold at all.

As soon as the seed is fairly up the shove-hoe is kept going once a week, followed by hand-weeders, until the crop is too large to admit of further culture, which will generally be about the middle of July. About a month later the tops will begin to wilt and drop as the bulbs mature, and when about half or two-thirds of them are down the crop should be pulled and eight or ten rows thrown together into a windrow to dry. They should lie thus for two weeks or more, turning them with a wooden rake after every rain until the tops are well cured; they may then be carted to the storehouse on a dry afternoon, and kept with the tops on until required for sale.

If the crop is left standing in the field until all the tops fall there is danger in wet weather that the earliest ones will start to make a second growth, which will injure their keeping. In very dry weather there is no danger of this.

Onions are stored in a dry loft, provided with a stove to keep out the frost if it is required to market them continuously in winter; if not, they may be allowed to freeze and then covered deeply with hay to prevent them from thawing, and in this way they will be kept till they thaw, when they must be sold promptly, as they will not bear repeated thawing and freezing.

The tops are trimmed off by hand with a sharp knife by boys. The small onions are sold for pickling or saved to set out in spring, as will be described below.

The varieties of onions generally grown from seed are the White Portugal, of excellent flavor; the Yellow Danvers, yielding well and having superior qualities, and the Red Wethersfield, a very heavy bearer, and generally in good demand though of coarse flavor.

The "set onion" is simply a bulb which is dwarfed the first year by drought or poor land or heat, and when planted the next year, instead of throwing up a seed stem first completes its growth to a large onion. To grow onions in this way it is only required to sow the seed rather late—about

May 10 to 15—on rather poor and dry land, and very thickly, in order to grow as fine sets as can be found anywhere.

The sets are wintered over like ripe onions and assorted as to size, and the different sizes planted in separate beds so as to mature together. The planting is done very early in the spring as soon as the land will work fine, and the crop grows very rapidly, coming to market from May 25 to July 1. It is all sold green and bunched.

The potato onion, when the bulb is planted in spring, instead of throwing up a seed-stalk, divides at the bulb, forming three to ten or twelve new bulbs of considerable size.

The top onion, when the bulb is planted in spring, throws up a seed-stem, which bears a cluster of small bulbs about the size of peas, which will form a large bulb if planted the next year.

The onion crop is one requiring a great deal of labor to keep it clear of weeds, and should only be planted on land that is free from the seed of weeds. When once a piece of land is found to be adapted to onion-growing, it is usual to grow onions repeatedly for several years, as rotation with this crop seems not to be needed; indeed, they do better when planted on the same land successively. Upon good land, and with good culture, onions are very productive. A good average crop is 400 to 500 bushels per acre, and in rare instances they have been known to yield 1,000 or more bushels of good marketable bulbs.

Potato Culture.

The soil acknowledged as best adapted to the requirements of the potato-plant is a sandy loam, neither too wet nor yet too dry; heavy soils induce a watery insipidity of flavor, and render a dry, mealy product impossible. A rich, fresh sod yields probably the best-flavored potatoes and those less liable to disease. A calcareous soil produces good tubers and generally a sure crop, though if there is little lime present it should be added.

Salt, ashes and gypsum are excellent fertilizers, and have been known to produce on some lands astonishing results. A dressing of salt and unleached ashes applied in the growing season acts not only as a fertilizer but is a preventive of the grub prevalent in richly-manured lands. Bone-dust also greatly benefits a potato soil. Fresh barnyard manures are not advised. They are liable to affect the flavor of the potatoes and induce a luxuriant growth of tops at the expense of the tubers, which in consequence become an easy prey to blight. When necessary to apply manure it is recommended that it be scattered broadcast and plowed in.

The relative merits of whole or cut potatoes for seed agitates the agricultural world each recurring season. Both systems find advocates among successful growers. This fact proves that it is of little consequence which mode is followed, other things being equal. The general rule arising from conflicting experiences and their respective results is: Select for seed none but the best, and when the tuber is cut leave bulk enough to insure sufficient sustenance to the young plant.

The distance apart of both hills and drills depends on the character of the land and the variety of potato planted; some sorts grow much larger tops than others. Thorough cultivation during the early season is imperative. The young tubers require a suitable bed to swell in, and become irregular and fail to attain the desired size when they have to struggle with hard ground.

After the vines begin to bloom, when the potatoes are forming and near the surface, cultivation should cease beyond pulling out any weeds that may make appearance.—[N. Y. World.

A TABLE FOR LAND MEASURE.—The following table is given by an exchange to aid farmers in estimating the amount of land in different fields under cultivation:

Five yards wide by 968 long contains one acre.
Ten yards wide by 484 long contains one acre.
Twenty yards wide by 242 long contains one acre.
Forty yards wide by 121 long contains one acre.
Seventy yards wide by 69½ long contains one acre.
Eighty yards wide by 60½ long contains one acre.
Sixty feet wide by 726 long contains one acre.
One hundred and ten feet wide by 397 long contains one acre.

When and Where to Apply Wood Ashes.

Wood ashes, among the best of saline manures and also among the most economical, are coming to be more and more appreciated every year. Farmers now, as a rule, husband every pound made on the farm and buy them whenever they can be procured at a reasonable rate. The time has gone by with good farmers for exchanging ashes from good hard wood for a few pounds of soap.

Leached ashes, while less valuable, contain all the elements of the unleached, having been deprived only of a part of their potash and soda. Ashes benefit all soils not already rich in the principles they contain, and may be drilled in with roots and grain, sown broadcast on meadows or pastures, or mixed with the muckheap.

The quantity of ashes to be applied to the acre depends, as does that of all fertilizers, on the character of the soil and crop cultivated. Crops which exhaust the salts, as potatoes, turnips and all roots, clover, lucerne, peas, beans and the grasses, are benefited by ashes. The crops named thrive well under an application of ashes with bone-dust, and their effects are also strengthened when mixed with gypsum. Light soils call for light dressings, say from ten to fourteen bushels of unleached and twice that quantity of leached ashes per acre. Rich lands or clays bear heavier dressings. Repeated dressings of ashes like repeated dressings of lime or gypsum, without a corresponding addition of vegetable or barnyard manures, are not admissible, for they will eventually exhaust lands when applied alone. Where the entire surface of the soil is covered with vegetable growth, either of the three materials named acts with great effect. For this reason ashes may be applied unmixed with other fertilizers to meadow lands for a longer time than to any other crop.

In reply to questions asked at the Elmira (N. Y.) Farmers' Club in regard to the value of leached ashes and the best manner of applying them to general crops, as corn, wheat and oats, the following information was gained: Leached ashes vary so much in their character that no precise estimate of their value can be made. Heavy clay is liable to be injuriously compacted by liberal dressings of ashes, leached or unleached, unless the soil is sod, in which case ashes spread on the surface tend to increase the crop of grass. The safest and best use of leached ashed on most kinds of soil is spreading them on old meadow or old pasture. Working them into land on which potatoes are to be planted in the same season is also a good way to use them. Good ashes make a valuable dressing for wheat land and for corn, but the leached ashes are too uncertain in their character to recommend for such use.

Coal ashes are inferior in quality to those from wood and vegetables, but are nevertheless of value and are to be applied to the soil in a similar manner, as they tend with their abundance of cinders to the mechanical division of soils. Coal ashes are beneficial to heavy rather than light soils.

Farmers, in consideration of the above facts, cannot be too strongly encouraged to follow the practice of collecting and reducing to ashes all the rubbish of the farm not otherwise available, such as brush, old wood, sods, rags—in fact everything which cumber the place as useless matter. Burnt earth is not only a manure itself, but is most useful to mix with artificial fertilizers which cannot be easily distributed alone or too strong to sow among seed unmixed with other material.—*New York Herald.*

In all systems of manuring one fact should be borne in mind: that manure should be placed in as close proximity as possible to the plants it is to nourish, since in all cases of decomposition the disengaged substance enters into new combinations at the very instant it is thrown off, much more rapidly than it does at any subsequent period.

My experience is that in no way is farmyard manure more profitably employed than to meadow or pasture land, if it is spread the same day it is put out. Of manure applied to land, on which there was no crop, the nitrogen passed right down to the drains; but on grass the roots are there all the year round, ready to lay hold of the runaway food, storing it up for future use.—[J. A., in *Agr. Gazette.*

Common-Sense Ploughing.

The depth of soil can alone determine the depth of ploughing. When the soil is shallow the gradual deepening of it should be sought by the use of appropriate materials for improvement until the object is fully attained. The sub-soil ought not, as a rule, to be brought out of its bed except during the fall, winter and spring, or in summer fallow; nor even then except when such fertilizers are applied as are necessary to put it at once into a productive condition. Two indifferent soils of opposite character, as a stiff clay and sliding sand, sometimes occupy the relation of surface and sub-soil to each other, and when thoroughly mixed and subjected to cultivation they will produce a soil of greatly increased value.

Soils appropriated to gardens and horticultural purposes are often deepened to fifteen and even eighteen inches with benefit, and those for general tillage crop to about twelve inches with decided advantage. But whatever is the depth of the soil the plough ought to turn up the entire mass if within its reach, and what is beyond it should be thoroughly broken up by the sub-soil plough. When all circumstances are favorable to the use of the sub-soil plough an increase in the crop follows, as the hard earth below the reach of the ordinary plough has been loosened. This permits the escape of the water which falls on the surface, the circulation of air and a more extended range for the roots of the plants, by which they procure additional nourishment and secure the crop against drought. The benefits of sub-soil ploughing are most apparent in an impervious clay sub-soil and least evident in loose and leachy soils.

On low or strong land the experienced farmer prefers to see the furrow left on edge exposed to the action of air and harrow. Sandy or dry soil requires flat ploughing, which tends to consolidate the land.

As a rule those crops are the most productive which are ploughed the oftenest. Caution must be used, however, especially after the second ploughing of corn, when a surface-plough is less liable to injure the roots than an ordinary one.—[N. Y. World.

Cultivation of Sorghum.

As regards the cultivation, in the first place, it should be planted upon a rich soil which is both warm and dry, as sorghum will not grow and accumulate saccharine matter from a cold, moist or clayey soil, but it does grow to its greatest perfection where the soil is a sandy loam. The artificial preparation of the soil, so far as preparatory fertilization is concerned, is no different than for ordinary cultivated crops. It is better to have it follow some well-manured crop that has been perfectly—or as near as may be—clear of weeds. Then let the surface be well manured with decomposed manure previous to plowing, that it may be incorporated with the soil at plowing, which should be carefully done, so that the same may be thoroughly pulverized.

After plowing mark off for rows from three to three and a half feet apart, dropping decomposed manure, compost, or something of that sort, in the hills, which may be two and a half to three feet apart. A little superphosphate may be employed in the hill to give a quick start to the young plants. It should be kept clean, and its cultivation be thorough and frequent.

When matured, and before early frosts, it should be cut up and the leaves stripped off (which make very fair fodder), and the stalks tied in bundles, saving the seed, which affords an average feed for hogs. It is then ready to be taken to the mill, which consists of the grinding cylinders and evaporating pans.

The price for manufacturing was twenty cents per gallon, which is to be reduced to fifteen cents the coming season. The quantity produced from an acre varies according to the character of the soil, but averages six to eight barrels per acre.

As to value it has ever to be considered equal or superior to the average cane syrups of the market. The only trouble is that sometimes, if kept into the summer, there is a slight tendency to fermentation when kept in a warm place.

It would hardly be a profitable crop to grow further than is necessary for family use. The farmers here who engage in its cultivation plant ten to twenty square rods of ground, and from the latter surface frequently obtain a barrel of syrup.—[W. H. Y., in *Conn. Farmer.*

Poultry.

Chicken Gossip.

As Mr. J. C. wishes to know why chickens do not pay, we answer his question by a correspondence by C. E. S., which may invigorate some others to look about their poultry yards:

"Well, John, how are your chickens getting along?"

"Oh, not very well; they don't seem to lay like other people's I hear of. I don't know why, for I give them all they can eat, and they can always run around the barnyard and stack, and pick up something for a change."

"Yes, that seems rather strange, if they are having good care and feed, and no eggs. Come, let's look at them."

So we are led to a portion of the stable penned off for them, and so dark we could scarcely tell whether they were chickens that were bustling around or not; but soon our eyes got used to the comparative darkness, and we were prompted to ask a question or two.

"Well, John, how is it that you have such a small place for them? Why, this is not large enough for a dozen fowls, and you must have fifty here!"

"Yes, I reckon there are."

"Why keep it so dark?"

"I don't know; never got time to put a window in."

"How often do you clean this out? You should have it well cleaned once a week at least."

"Oh, that would never do; couldn't find time. I generally shovel it out once a year, and surely that is enough for chickens."

"Yes—if you do wish them to lay. Is that the sand-box in the corner?"

"No, that's an old box the boy had a hen setting in last year, and that's the same nest yet."

"Yes! Well, where do you keep the sand and gravel for them?"

"That's over on the side-hill, where they put in a loud time in the spring, and in the winter—why, they want no sand!"

"No, if you do not want the trouble of taking the eggs to the house. Have you given your chickens any fresh meat this winter?"

"Yes, last fall, when the hogs were killed, we gave them the ligh's; that lasted them some time, and I guess the cats helped them away with them!"

"I suppose that they were beginning to think it was time for more eggs, and hit on this instead; and I see no water-cans—a little water is very necessary. Well, now, in a quiet way I will give you my opinion on profits in fowls, to make them a profitable portion of the farm. They require a large, well-ventilated house; it requires to be well lighted and the fowls must have a variety of good food. Their houses require to be kept clean, and good, neat, comfortable nests for them are also required. We should always be about them two or three times a day; they always require sand and water; and if we ever want to make any portion of our farm profitable we must pay attention to it. Nothing pays to keep unless it is worth attention."

Doctoring.

A little dosing or doctoring may be a decided benefit to the health of fowls, if done when the disease first makes its appearance, but it is seldom of much avail when the ailments have once gained a hold. In cases of roup, gapes, etc., there are medicines which are very beneficial when administered in time, but many of the diseases and disorders which so perplex and annoy the poultry breeder could be avoided by keeping the house clean and pure, and by adopting a careful and common-sense system of management throughout. Preventives of this kind are invariably more satisfactory than dosing chicks after they have been attacked, and we shall always advocate that kind of medicine as being decidedly cheaper and more effective.

The Apiary.

Successful Bee-Keeping.

BY C. F. D., COLBORNE, ONT.

To be successful the apiarist must have a simple, movable frame hive of some kind, and for box honey the brood chamber should not contain over 1,550 cubic inches inside the frames. All know that bees gather honey, and that eggs laid by the queen produce bees; consequently the more eggs the queen lays, the more bees we get; and the more bees we have, the more honey they gather. In fact the queen is, indirectly, the producer of the honey; therefore, if we wish good returns, we must see to it that we have good prolific queens, and that they fill the combs with brood before the honey-season commences, so that when honey-harvest comes the bees will be obliged to place the honey in the boxes, as there will be no other place for them to store it.

But how shall we secure combs full of brood and plenty of bees to carry on the labors of the hive by the time the honey-harvest begins? As soon as spring opens our bees should all be examined by lifting out the frames of each hive, and if the stocks are weak the bees are shut to one side of the hive by means of a division-board, so as to keep up the necessary heat for brood-rearing, on as many combs as they can cover.

As soon as the queen has filled these combs with eggs we spread them apart, inserting an empty comb between those occupied with brood, and in a few days' time the queen will fill this one also; and so we keep on until every available cell is filled with brood. Thus it will be seen that, instead of the queen laying her eggs on the outside of the cluster, she lays them in the centre of the brood-nest, where they should be. After the hive is full of brood and bees it does not make so much difference if the weather is warm and bees are plentiful, so that the queen may deposit her eggs anywhere in the hive.

The Reason why Bees Work in the Dark.

A life-time might be spent in investigating the mysteries hidden in a bee-hive, and still half the secrets would be undiscovered. The formation of the cell has long been a celebrated problem for the mathematician, whilst the changes which the honey undergoes offer at least an equal interest to the chemist. Every one knows what honey fresh from comb is like. It is a clear yellow syrup, without a trace of solid sugar in it. Upon straining, however, it gradually assumes a crystalline appearance—it candies, as the saying is, and ultimately becomes a solid lump of sugar. It has not been suspected that this change was due to a photographic action; that the same agent which alters the molecular arrangement of the iodine of silver on the excited collodian plate, and determines the formation of camphor and iodine crystals in a bottle, causes the syrup honey to assume a crystalline form. This, however, is the case. M. Scheibler has enclosed honey in stoppered flasks, some of which he has kept in perfect darkness; while others have been exposed to the light. The invariable results have been that the sunned portion rapidly crystallized, while that kept in the dark has remained perfectly liquid. We now see why bees work in perfect darkness, and why they are so careful to obscure the glass windows which are sometimes placed in their hives. The existence of their young depends on the liquidity of saccharine food presented to them; and if light were allowed access to the syrup it would gradually acquire a more or less solid consistency; it would seal up the cells, and in all probability prove fatal to the inmates of the hive.

CLEANINGS.

The ravages of the Cut Worm seem to have been unusually severe the past season in many localities. Quite a number of our readers write that these worms have cut off the corn badly, in some cases compelling a second, and even a third planting, and remedies or preventives are asked for. The usual devices employed in gardens and small patches, such as hand-picking, paper funnels, etc., are not applicable, of course, to large corn fields. A wholesale method must be employed here, if any. The best we know of is salt and lime—two parts salt to one of lime—applying a handful to the hill after planting. Salt alone has been found efficacious when used the same way. We frequently see it recommended to soak seed corn in various solutions to prevent the ravages of this worm, but this will have no effect whatever, as the worm does not work on the seed, but on the young plant after it has pushed through the surface of the soil. A judicious application of lime and salt to the land, previous to planting corn, is also recommended, and we have known this to be very effectual in ridding land of this pest.—[Ohio Farmer.

At a recent meeting of the Dairy Committee in Chicago Mr. Dexter asked Prof. Piper if it was possible, under any condition whatever, to develop living organisms in fresh butter such as he had found in oleo under the microscope. The Professor replied that it was not. Scientists held that nothing exists except from eggs. You consider it demonstrated, then, said Mr. Dexter, that oleomargarine in its best state, made from the fat of perfect animals, will exhibit living organisms? As to oleomargarine from perfect animals, that would be a difficult question to decide, said the Professor. In the examinations I have made, extending over six months, I have never found a specimen which, on being treated with boiling water, and washed with ether to get out the fat, did not reveal very active living organisms.

"G. W. W." giving his experience on cows feeding and breeding says to the average farmer:—"Do not rush off to purchase an extra cow or a thoroughbred animal; but rather rush to the cow stable and see what is being done there. Learn first the art of feeding, by practical experiment, and by so doing you will learn the animals you now have. You may be surprised to find what great milkers you have. You may be surprised to learn how some of your cows will take on flesh while giving a little poor milk. Test every cow's milk; you may be surprised to learn how much butter some cows will make from a small quantity of milk. Should you find you had no good milkers, buy a thoroughbred bull, if the pedigree is right. If you make butter exclusively, have a pedigree for butter; if cheese, a pedigree for cheese; if beef is your object, a beef pedigree. But if the pedigree is for blood only, don't buy."

A well-drained soil is seldom injured by too copious a supply of water, but one that is imperfectly drained may easily be made in a quagmire. Good drainage, therefore, should be the first thing provided for. The only soils which do not require draining are those which do not overlay sandy or gravelly beds.—[P. E. B., in F. G. A. Report.

Canada is not the only British colony that stringently prohibits the importation of diseased stock. The Australian Government has issued orders that sixty days' notice must be given of all intended importations of live-stock into that country, and all animals are subjected to a rigid quarantine of ninety days after arrival; and if any disease has appeared among the shipment the entire lot must be slaughtered on landing.

The outbreak of pleur-pneumonia at Liverpool is by far the most important event of the week. There is no doubt whatever of the identity of the disease with contagious lung disease, of which we have had such disastrous experience here. It is anticipated that the importation of cattle from Canada will not be affected, as there has been a very efficient quarantine in force in that country.—[Agr. Gazette.

Experience with Seed Potatoes.

As potatoes have some years been quite scarce and dear, I have planted small ones, and the result convinced me that all the widely varied experience in the matter reported by different farmers was owing more to other circumstances than to the size of the seed. And now when a farmer tells me that his crop from small potatoes grew and yielded best, I almost invariably find that when he planted it was a very hot, dry time, generally rather late in the season; also that his large potatoes, cut a few days before planting, had dried up more or less, and were put into dry ground, and if dry weather continued there would not be vitality enough left in the cut seed to overcome all these adverse conditions, but the growth would be materially checked for the season; while the small seed, not being cut, retained its moisture, and the warm soil favored speedy germination and growth, so that the crop from small seed proved better than from the cut. But my observation has been that when all the conditions for both are equally favorable, the cut seed from large potatoes yields 8 to 10 per cent. better than small ones planted whole. Again, one will plant small potatoes too thick and too many in a hill, thinking they are so small and cheap he will use enough of them, while his neighbor, judging more correctly on the growth they will make, will plant them as far apart as he usually does better seed of the same variety, and put only one potato in a hill. The result will be the latter will have a fair yield of fair-sized potatoes, with perhaps twice as many little ones as from large seed, while the first only gets a lighter yield of nearly all small potatoes. So the product in either case would seem to be largely dependent on management. I believe it will answer occasionally to plant small potatoes for a crop; but when I do it I am particular to get such as were well ripened, and only use the largest of those too small to cut; mark the part of the field they are planted in, and be sure at digging time that their product is all sent to market, and that the seed for next year is saved from where the best seed was planted, and on those matured the best.—[Henry Ives, Genesee Co., N. Y.

Fowls in Orchards.

Last fall we visited an orchard in which fowl were kept, the owner of which told us that before the fowls were confined in it, the trees made little or no growth, and only a corresponding amount of fruit was obtained. But what a change was evident now. The grass was kept down, the weeds killed, and the trees presented an appearance of thrift which the most enthusiastic horticulturist could not but admire and envy. The growth of the trees was most vigorous, and the foliage remarkably luxuriant; the fruit was abundant, of large size, and free from worms and other imperfections. The excellence was accounted for by the proprietor, who remarked that the "hens ate all the worms and curculio in their reach, even the canker worm." He found less trouble with their roosting in trees than he expected, and that a picket fence six feet high kept them within bounds. His orchard was divided into three sections, and the fowls were changed from one to another, as the condition of the fowls or the orchard sections seemed to require.—[Planter and Grange.

CHEAP PAINT.—"Take a barrel, put in a peck of unslaked lime, a pail of boiling water, cover tightly and let stand two minutes; then add four quarts of gas tar and let stand two minutes longer. If the tar is thoroughly warmed put in more boiling water and stir thoroughly till the mixture is about as thick as paint; add four quarts of fine salt and the paint is ready. Take four or five quarts of this in about the same quantity of water, or what is better, skim-milk, and apply two coats to fences and posts. The color will be a light lead, but it can be made any color desired."

THE NEW YORK *Graphic* of a late date says: "Some scientific tests which have been in progress for several months by one of the most distinguished professors of agricultural chemistry in the country, have developed rather a startling fact that the sprouting qualities of last year's crop of No. 2 spring wheat, have been seriously damaged, owing to the excessive heat which prevailed just before the harvest of last year in various parts of the West, notably Minnesota.



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.

Making Superphosphate from Apatite

SIR,—In the March number of your valuable paper "Enquirer" asks for information about making superphosphate of lime from "apatite." As the term apatite may not be so well understood by our farmers as it should be, we may explain that it is a mineral phosphate of lime, and is chemically composed of the same elements as bones, and answers the purpose as a manure. It is largely found in the vicinity of Ottawa, in Kentucky and other Southern States.

In its natural state apatite is no more available for plant food than other stone, but by chemical action it becomes a valuable manure; and it is about this action that Enquirer desires information. But before giving this information it will be necessary to state that this phosphate of lime exists in three different combinations with phosphoric acid, and is known as the mono-calcic, bi-calcic and tri-calcic. This last, the tri-calcic, is apatite and not soluble. The value of any one of these applied in agriculture depends upon the quantity and condition of the phosphoric acid it contains. The apatite contains three atoms of lime and one of acid; the bi-calcic two atoms of lime, one of water and one of phosphoric acid; the mono-calcic, or the superphosphate Enquirer wants to make, is one atom of lime, one of water and one of phosphoric acid. Enquirer will see there is the same amount of phosphoric acid in each but in different combinations. The two latter are available as plant food, however, and the former is not. It will be noticed that water has taken a prominent place in the change. Now the change from the tri-calcic or apatite state to the bi-calcic and mono-calcic forms may be brought about by the action of sulphuric acid. But this may produce, according to its application, the bi-calcic form or the soluble, or mono-calcic or superphosphate Enquirer wants.

The production of one or the other will depend upon the strength of the acid and the length of time it is allowed to remain in solution. For 100 pounds of apatite 50 pounds of sulphuric acid, of 96.8 per cent. purity, is plenty and a little over, but plan in trying your first experiment to have enough, put this on your ground apatite and apply water sufficient to cover the material completely, and keep adding afterward as absorption takes place. In a couple of days the apatite will be reverted phosphate or bi-calcic, and in an available shape; but it will take four or five days to make it soluble and a proper superphosphate, or in the mono-calcic state. Mixing this with about its own weight of gypsum would get it into a better shape for handling, and also greatly enhances its value as a manure.

A READER.

Manitoba.

SIR,—Up to the present time we have had a beautiful winter. Sleighing commenced about the middle of November, and since then we have had the most delightful sleighing where there was enough traffic to beat the snow. We have an average of 12 to 14 inches of snow on the level.

As we had a large immigration into this part of the country last season, there are a great number of improvements going on this winter.

We have a fine settlement here, principally Canadians. Nelsonville is a flourishing little village of scarcely a year's growth, and contains a post-office, two general stores, a grist and saw mill combined, blacksmith shop, shoe shop, parsonage, land office, carpenter shop, a number of dwelling-houses, and we have a doctor.

J. G., Nelsonville, Belmont, Man.

Raising Geese.

SIR,—I would like to know if you could tell me how to raise geese. I have been trying for many years, but to no effect. When they are about half grown, or when they begin to shoot their quill-feathers, they seem to take some disease and wander from the flock one after another, sit in some secluded place for perhaps a day, and then die. In the course of ten days I have lost my whole flock of perhaps nearly a score; their dung is slimy and bloody. I have tried to raise them where there was a fresh stream of water, and at other times where there was none only what I gave them. I have tried them on green, wet food and also on grain of different kinds, but all to no purpose.

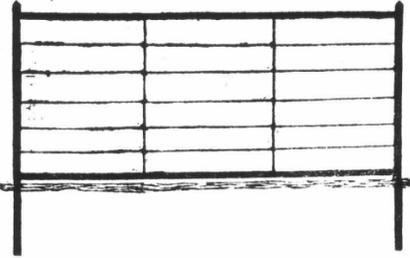
So my last resort is to call upon you for a remedy, as I see you have a cure for almost every disease. Please answer in your next issue, and oblige a subscriber. J. D., Napier, Ont.

[We think that the fault must be in breeding in-and-in too much, and would recommend a change or cross of stock.]

Fencing.

SIR,—I send you a few lines on the Stock Law, Wire Fences and Shade Trees. It is a fact admitted by almost all farmers that there should be something done to prevent stock-running at large. However, until farmers are willing to start the soiling system I don't see how they can do without a fence along the road, to keep their own stock in and also to guard against droves driven along the road.

I send you a rough draft of a fence we put up two years ago, which I think far better than any



wire fence I have seen recommended in the papers. The posts are flattened on two sides (except three feet that goes into the ground), and are 12 feet apart. A straight rail is morticed in at the top and bottom, and the space between is filled up with number six wire. Four feet from each post is a hole bored through the bottom rail and number nine wire fastened in it and wound around each strand of the wire in the fence, also through the top rail and fastened. This makes a splendid stock fence, and also a complete preventive of snowdrifts, which have proven so troublesome all over the country this winter.

If farmers could be induced to build such fences in front of their farms, and set out shade-trees every twelve or fifteen feet, they would be enhancing the value of their own property, facilitating travel and beautifying the country; besides, when the trees grew up they would have live posts.

R. McL., Blythwood.

Soaking Seed in Pickle.

SIR,—I read an account in your Jan'y number of soaking wheat in pickle and warning others not to do the same. Now I think the writer is wrong. I soak my wheat every season and my father did the same in pickle that would float a potato, and left it over night in the same, and our wheat never missed. We always dried it in lime or ashes. They do the same in England and Ireland; they also float their seed oats.

On another occasion I noticed a paragraph advising us to keep cows in the barn until the dew is off the grass. This is all right in frosty weather.

D. D., Dartmouth, N. S.

[The item in regard to pickling seed-wheat here referred to was a report from "N. B." St. Croix, of the result of his using the pickle. He offers no explanation. The pickle might have been too strong, or the seed might have been unfertile from the germ having been killed or not matured. In referring to an article in the ADVOCATE the number and page should be given.]

The Orchard.

SIR,—As regards the question of the bearing years of apple-trees I can only say I have no faith in odd or even years. As a general rule, when fruit-trees come into bearing they are allowed to bear at will, so that after bearing one year they require to rest the next year to recover their strength.

All the standard and many of the dwarf trees, both apple and pear, in my orchard were procured at the same time from the same nursery, in the fall, and planted out the following spring. They did not all come into bearing the same year, but when they began to bear they have borne every other year since. I do not expect so large a crop this year as I had last year, because the greater number of the trees bore well last year, and consequently I do not expect them to bear well the present one, however favorable the weather may be. Those that did not bear well last year did so the year before, and will again this year, provided the blossoms are not nipped by the late spring frosts.

My orchard is planted on nearly level ground, above a hill fronting the east, and exposed to the full sweep of the north and north-east winds from the Georgian Bay, yet I have never had a single tree of any description winter-killed, nor have I had any blight on my dwarf pear-trees, of which I have several varieties, and amongst others the Sertel, which appears the most unsuitable of any variety for this section of the country.

Whether or not a liberal top-dressing of stable manure every fall would enable the trees to bear every year I cannot say, as I have not tried it. All the manure I can make is required for the farm crops. I have had the orchard in cultivation ever since I planted the trees in 1865, but last year I laid it down in orchard grass and clover.

Black-knot among the plum-trees is not unknown in this part of the country, but the curculio is yet unknown and I trust will long remain so. The early snow, which froze as it fell in October, has inflicted some injury to the fruit-trees in nearly every orchard in this township, and the high winds in the fall shook down a large quantity of fruit and bruised a great deal of what was left before it was gathered. Some complained of their apples rotting on the trees, and also of their decaying some after they were gathered. I am inclined to attribute this to the excessive heat which ripened them prematurely; and the dry keeping apples such as Russets appear to have suffered most; but it does not necessarily follow that we shall have early falls of snow and heavy gales of wind early in the fall every year.

I notice that the M. P. P. for North Grey has introduced a bill in the Ontario Legislature to prevent the black-knot in plum-trees; he might as well have included the tent caterpillar and codling moth, which infect the apple-trees, at the same time, as I do not see how an Act of Parliament can prevent one more than the other. From all I have learned about the black-knot, the only way to eradicate the evil is to destroy the infected trees root and branch, and to plant only those varieties which are not liable to be affected by it; but how is such an act to be enforced? We have an act to prevent the destruction of insectivorous birds, but those who wish to have it enforced content themselves with writing to the newspapers and calling on the authorities to enforce it. Such persons ought to consider that no magistrate can act except on information laid before him. So it is with respect to Canada thistles and shoddy peddlers who sell without license—and yet farmers prefer to be imposed on rather than summon the offenders before the nearest magistrate. In fact, if people cannot be induced—even by considerations of self-interest—to protect themselves, it is their own fault alone, and Acts of Parliament, however stringent, cannot help them.

SARAWAK.

The Pea-Bug.

SIR,—You will oblige me and your readers in general if you can give some remedy for the pea-bug in the next number. Is there any kind of powder I can apply which will kill the bug and not hurt the pea?

F. B., Mitchell, Ont.

[Scald the peas for three minutes by dropping them into scalding-hot water. The bugs will be killed, but the peas will not be injured, unless allowed to remain in the water longer than the three minutes.]

The Western Fair.

SIR,—I saw some time ago a paragraph in a newspaper to the effect that the Torontonians were about to establish a three-weeks' Fair in Toronto, and the writer wanted to know why we should not do the same. The question of holding a two-weeks' Exhibition was fully discussed by the directors of the Western Fair some time ago, and it was found next to impossible to carry out a two-weeks' Fair successfully; and I think your numerous readers will come to the same conclusion when they consider the number of such gatherings that are held, not only on the same days as the Western Fair, but for weeks before and after.

The Guelph and Provincial Exhibitions invariably take place before the Western Fair, and, as is well known, most of the implements, stock, etc., are exhibited at these shows before coming to London, and the consequence is that the animals and implements very often arrive in a miserable condition for exhibiting. And it not unfrequently happens that inferior animals which had not been exhibited at other shows take prizes over what, under ordinary circumstances, are very superior animals. It is no wonder, then, that the owners of valuable animals should display such anxiety as they do to get their stock home even before the close of one-week's Western Fair.

It is becoming a serious question with many whether it pays, "for the mere chance of obtaining a prize," to have their stock sent round from one place to another, for it must not be forgotten that, besides the expense of transit, there is attendance and extra cost of keep to be considered; and to those who are not fortunate enough to take prizes it becomes a serious loss.

As one of the oldest members of the Western Fair Board, and one who up to the present has escaped the ordeal of being interviewed by members of the city press, I might be excused for giving you my idea with respect to the holding of our exhibitions. In the first place, then, I would advocate doing away with the perambulating Provincial, and would suggest that to such cities or places as could raise amongst themselves, say, \$800, the Government do grant a sum sufficient to bring the total equivalent to the amount now granted to the Provincial. This to continue for four years, and in the fifth year these places to forego their exhibitions and throw all their energy into one Grand Provincial Exhibition. And I would further suggest that, instead of money prizes in the leading classes, they should offer gold, silver and bronze medals; and as to the result, I for one have not the least doubt what it would be.

J. H. G., Westminster.

From Our English Correspondent.

SIR,—Respecting the exportation question, I am quite sure if the Canadian authorities are alive to the interests of their country they will stop all importations of cattle, sheep and swine from the U. S. You may depend that as pleuro-pneumonia is known to exist in Canada, the English authorities will stop all live importations of cattle from your country to England. I should like to see all meat importations into this country carried on in the dead-meat system. I think it would be more profitable to all parties.

The exporters of live-stock must be great losers in sending animals from America to England. I hear they have very often to throw more than half of the cargo overboard, from rough weather, etc. When a great number of animals are on board ship, and battened down in rough weather, the heat and stench of the animals for days in that state is enough to breed any disease. The argument in favor of the dead-meat trade is by far the strongest. I mean by the dead-meat trade that all imported animals should be killed at the ports of debarkation. Fish is carried dead all over the country; why not meat go the same?

I think pleuro-pneumonia is one of the worst cattle diseases we have to contend with. We never know when we have got rid of it. It is just as likely to break out again in a twelvemonth's time after you think you have got clear of the disease. So you cannot urge upon your countrymen too thoroughly to prohibit all live importations from the States.

We have had a very severe winter, and are much in want of fine weather to get on with our spring corn. There is a great breadth of wheat yet to sow; if we do not get favorable weather soon, it will be too late to plant wheat.

Beet Sugar.

SIR,—I have been a subscriber to your valuable paper for the last six years, and the more I have seen of it the more I have made up my mind that it endeavors to prosper the interests not only of the farmers of Ontario, but of the whole Dominion. I was much pleased with your articles in the March number, especially those headed "Protect us from Danger" and "On Political Economy." I think if our farmers as a class would study these articles more and trust to political office-seekers less, it would be better for them.

I also endorse every word said by a farmer from Wilmot Township, in regard to growing sugar-beets. I have grown them for the last four years, and find them a most profitable crop. From the experiments shown at our Agricultural College, we can grow sugar beets of superior quality in saccharine matter and a greater number of bushels to the acre, than they can do in France, where, I am told, they manufacture nearly all the sugar they consume in that country. Why could we not do the same in this Province? We have as good soil and as intelligent a class of farmers. Why could we not go into this branch of agriculture as well as the French? If our Government would give us a bonus of \$100,000 to start a sugar-beet manufactory, some enterprising individuals would at once go into it; and if we could get some one who understands the manufacturing of it in detail, we might make all the raw sugar we could consume in this Province. And what a boon it would be not only to our farmers, but also to the public at large, as I am told the pulp is ahead of turnips as food for stock. We have here a splendid centre for the cultivation of the sugar-beet, and if the Government would take the matter up, Allan's old distillery in this section would be the very place for it. We have all the water from the River Speed at our command, and being situated in the centre of the best root-growing section of Ontario, it could not be unsuccessful. By stirring up the Government by suggestions from such a valuable paper as yours, it will ultimately succeed, and if I can do anything in my humble way to assist, I will be most happy to do so.

A WELLINGTON FARMER.

Several Inquiries.

SIR,—Will you please inform me in your next number on the following questions:

Whether it would be better to buy several of the Leghorns and other game, or order a dozen or so of the eggs?

Whether it is much of an advantage to have hay cut for horses' feed, or is it profitable to feed according to the common practice—that is, without cutting?

Whether it is of advantage to cut hay fine? and what is it estimated could be saved in a winter's feeding of a horse by thus cutting hay, over the ordinary custom of feeding the hay as it comes from the mow?

Some writer, of late, has stated as his opinion that hay is better fed without being cut. Is he correct in saying that the hay does the animal more good to let him cut it for himself by the process of mastication?

By answering these questions as clearly and correctly as possible you will much oblige your readers, and in particular

A SUBSCRIBER, Lower Montague, P. E. I.

[The advantage of cutting fodder—hay and straw—for horses is now generally admitted. A correspondent of an American paper had, for a period of thirty years, personally superintended the feeding of horses, and during that time no horse died, nor was there much sickness among them. A straw-cutter with rawhide roller was in continual use. In this cutting of the food for two teams, enough is saved in one year to pay for its purchase. While the horses are eating, enough can be cut for the next meal, then watered to moisten and destroy the dust, and with it four quarts of meal is ample for each horse. The meal is one-third corn, one-third oats and the other shorts. A variety is made by giving a few small potatoes or carrots weekly. Of course, the same good quality of hay and grain is given when cut as when they cut it for themselves.]

As to inquiries about fowl we refer you to our advertising columns for particulars.]

Morbid Affection.

SIR,—I have a valuable horse nine years old. About six weeks ago he suddenly became very stiff, seemingly all over. He has a good appetite and is in good condition in flesh. He has a very dull look out of his eyes. About three weeks ago I took him to a horse-doctor, who said, after examining him, that he was threatened with yellow jaundice, and prescribed for him accordingly, but he has done his case no good whatever. Please tell me through the ADVOCATE the character of his ailment, the cause producing it and the best treatment for him.

T. B. W.

[This morbid affection and stiffness developed in your horse has been brought on or produced by exposure—that is, you have allowed your horse, while his system was in a heated condition, to stand in a draught of air uncovered, and he has taken cold. The treatment indicated in this case is the following: Administer a drench composed of 14 ozs. raw linseed oil, 2 drachms of powdered Cape aloes, 1 drachm each of antimonii et potassa tartaras, powdered carbonate of iron and colchicum seed. Mix and pour slowly down the throat from a common drenching-horn, or a smooth-necked champagne bottle. Repeat the drench on the fifth day subsequent to administering the first. To further facilitate the treatment and change the morbid condition, give him one large tablespoonful morning and evening of a powder composed of equal parts of powdered lac-sulphur, saffras-radix, cream of tartar, African ginger and gentian-radix. Mix through mash food, consisting of sound and sweet oats and wheat bran, equal quantities of each, with one pint of bruised linseed-meal added to each mess. Season the mashes properly with salt.]

Tree Planting—Municipal Officers.

SIR,—Tree planting is a most important subject. My idea is that, in all Western Ontario, black walnut, chestnut and hickory tree-planting should be encouraged. These are most valuable woods, and they are rapidly disappearing. Let farmers procure the nuts and raise small nurseries of these trees, and transplant at the proper age and season, either in plantations or in rows between their fields. Other timber may also be grown according to soil and situation.

We have too many governors and too many legislative bodies to support. I happened to be in Barrie during a session of the County Council of Simcoe, lately, and dined with some fifty-six members of that august body. These men receive, I think, \$3 per day, and their sittings generally last a week at a time. Only think of the expense—in addition to our municipal and other legislative assemblies!

With ten bushels of wheat per acre, at less than 80c per bushel; pork at \$3.50 per cwt.; butter at 10c per pound; hay at \$7.50 per ton; beef at 3c live weight, and other produce in proportion—these are about the ruling prices here, and very little to sell at that—what can the farmer do under the circumstances? I think the Deputy-Reeves might be left at home to attend to their private affairs, to improve their farms and increase their productiveness, thereby adding a little to the wealth of the country.

Verily I think we have too many representatives to support these hard times.

T. H., Meaford.

Cattle Salesmen in England.

SIR,—In the July number of the ADVOCATE I see a communication from W. O., Birchtown, inquiring for information with respect to some reliable parties as cattle salesmen in England. I herewith send you the address of a firm which is considered the most reliable of all the salesmen there are in Liverpool. These gentlemen do a large business as salesman for the Irish farmers who ship their stock to the English market. The following is their address:

Verdon & Cullen, Cattle Salesmen, James-st., Liverpool, England.

But I think it would be best to open up a correspondence with them before any consignment of stock is made. Their commission is 5 per cent.

Should your correspondent be successful, we would be glad to hear from him. But we have our doubts as to any single individual making it a success, on account of the long sea-voyage; yet, if the farmers were united in their efforts, it could not prove otherwise than a grand success. "Unity of purpose and effort" should be the watchword of the farmers of Ontario.

MUSKOKA.

The Grange.

SIR,—I would like to ask your opinion of the Grange. 1st. Do you believe they are a benefit to farmers, and if so, in what way? 2nd. Would you advise a young farmer to join them, and lose one or two evenings in each week? or would you not think it a wiser course to invest the amount of initiation fees and quarterly dues in good agricultural papers, and spend the time he would lose in attending Grange meetings in reading? 3rd. Do you think that Grange storekeeping will seriously affect the regular merchant?

By answering the above you will confer a favor on a

YOUNG FARMER, Avonport, N. S.

[In reply to your first question, we believe Granges are a benefit to farmers, as all farmers' clubs, farmers' leagues and such societies are. They bring farmers to compare notes of their work, and of what they learn every season in their business. Intelligent men in any calling improve each other by mutual intercourse.

2. It is not necessary to lose one or two evenings a week by joining the Grange. An evening spent at the Grange may be profitably employed, and the meetings are held but monthly. The initiation fees and quarterly dues do not amount to much. The information acquired may be worth much more if Granges confine themselves to their business. The amount of fees should not interfere with your purchase of good, useful books and papers.

3. Granges need not interfere with the business of storekeepers. That they have done so in some instances is admitted, but in this they step beyond their true vocation, and give cause for ill-will towards the Order, by not confining themselves to their own business.]

The Farmers' Interests.

SIR,—I am very pleased to see the active part you have taken in the interests of the farming community. I notice in your last issue figures stating the estimated loss by contagious diseases. I saw it stated in an American paper that in the last twenty-five years England has lost \$450,000,000 in this way alone, and likewise other countries where such diseases have not been stamped out by the Government. The greatest losers are those that have endeavored to cure it by quarantining the sick or inoculating the healthy. Palliative measures have in every instance failed to eradicate the disease.

Let us look at the countries where this means of quarantining has been tried. Under this head come England, Belgium, Holland, Germany, France, Prussia, Italy, Austria, Australia, etc. Now, taking the loss of England, which I presume is not over the average, or not as much, and the loss foots up an enormous sum. While in those countries where it has broken out at times, and the whole herds been killed by a compulsory Act of Parliament, and wherever it has been definitely exterminated, it is only by a strict enforcement of the law to kill them. We find this the case in Norway, Sweden, Denmark, Holstein, Switzerland, etc. How plainly this shows to us that due precaution is very necessary. We cannot be too careful in protecting ourselves from any disease that tends to injure our trade; and while we are free, let us keep so, and our meats will be gaining high favor in rightful markets. Canada beef will soon be at the head of the list, as healthy and good meat from a healthy and good country will be the cry, so let us be ready to give the supply, even now.

VIA TOR, Westminster.

Seed, Stock, etc.

SIR,—There were fifty-three bushels of "Lost Nation" wheat sown in the vicinity of this village last spring, and the result was an average of forty bushels per acre of very excellent quality.

Will you kindly inform me whether, in making fertilizer from bones and sulphuric acid, wood ashes will act well as a drier instead of gypsum, as recommended in your last issue.

Farmers here are beginning to realize the necessity for improving their cattle. Efforts will be made to secure from your Province some thoroughbred Durhams this spring. Working oxen and steers are being purchased here for the States; fair prices are paid for them.

J. P. G., Danville, Quebec.

[Wood ashes will answer for a drier for superphosphate, although they contain an alkali that would tend to injure the superphosphate.]

Swallow Manure.

SIR,—Would you be kind enough to answer the following questions?

1. If I can use swallow manure on a watermelon patch, or is it too strong? I have a wagon-load of it; we chopped a big hollow elm down, which was 5 feet across the stump; the swallows used to sleep in it at night in summer. It might be that you never heard of such a thing, but it is a fact.

2. How can I raise watermelons successfully on heavy clay soil, how far apart the hills, how many plants to the hill, and whether I am to keep off the suckers? Also, could I use bone-ashes on the watermelon patch (if I could not use the swallow manure), and of what value are they?

N. M., Chippewa.

[In your hollow elm tree you have discovered a valuable mine. Swallow manure is a guano. It is best to compost it with some other matter that is less fertile. Leaf-mould or dried loam would be greatly improved by an admixture of fowl manure. Heavy clay soil should be thoroughly cultivated for the growing of melons. The hills should be about four feet apart, and four plants in the hill. Bone-ashes or the swallow manure compost may be used as a fertilizer for the melon crop; but when it is put in the hill it must be well covered with earth before sowing the seed, so that the manure and seed be not suffered to come in contact.]

From Arkansas.

SIR,—Some time ago I let a mare into the fields when she was quite fresh, and when I went to feed her I noticed a very bad cut on the back part of one of her front feet. It looks as if one of her hind feet had caught in it and tore part of the flesh and hoof off. I then put her in the stable, dressed the wound with coal oil and turpentine, and bound the foot up. A neighbor said we should take the cloth off and let the mare out, but keep putting on the coal oil and turpentine. We did so, but the foot is not getting better. Another person told us to put on a paste of white lead to keep the dirt out. There is a piece of loose flesh and hoof; do you think it advisable to cut it off, and could you tell me how to cure it? There is no veterinary surgeon here, so I shall be glad of an answer through your valuable paper. I have tried to get you some subscribers, but did not succeed.

J. W. P., Charleston, Arkansas.

[We think it would be well to cut off this lump. Then dress the wound as follows: Apply Friar's balsam with a feather once a day; also apply once a day a mixture made of sulphate of zinc 2 drams, acetate plumbi 2 drams, carbolic acid 1 dram, soft water 12 ounces. It might be well, if the horse is working, to put some pine tar on the sore before leaving the stable, which will keep out the dirt.]

Bloody Flux.

J. S., of Wanstead, wishes to know the cause of and treatment for murrain or bloody flux, which is very common in his neighborhood.

[It is an inflammation having a tendency to terminate in ulceration of the mucous membranes of the large and sometimes small intestines. It may be caused by bad food or putrid water; some pastures, especially on low, flat ground, or where much shaded by shrubby trees, have a tendency to produce it.

The first signs are shivering, dullness, varied temperature of the body, quick pulse, the coat staves and dry, the animal will be hide-bound and grind its teeth; the back is arched, there is a disinclination to move, rumination is suspended, and at short intervals discharges a quantity of thin excrementitious material, mixed with pellets of hard faeces and blood. There is generally much straining and irritation of the rectum, causing it to protrude, when it will appear red and sore. As the disease advances the rectum becomes paralyzed, and the faeces (which are of a very offensive odor) will come away involuntarily; the eyes soon become dim and sunken, and the animal dies.

TREATMENT.

Give about a pint of raw linseed oil, followed by doses of opium and antacids. If these should not succeed, you will give doses of sulphate of copper or sulphate of iron or alum. Careful dieting is quite as necessary as other treatment. Any food may be given that is nutritive and easily digested.]

Manufacturing Sorghum.

SIR,—Will you please inform me how to refine sugar-cane molasses down to sugar, and I will be much obliged. We had one acre last year, and intend to go into it strong.

J. B., Crinan, Ont.

[In reply to an old subscriber, who asks what is the best sugar-cane, and how it is saved and the sugar manufactured from it, we give the following from a U. S. writer:

The cane sorghum should be perfectly ripe for harvest; the ripest will produce the best sugar. In the present season the cane which stood the longest made the largest proportion of sugar. If the cane is not ripe before frost, it will pay to cut, but the planter must not expect as good a quality of product. Do not, therefore, procure seed of a late growth. The Minnesota early amber is, without doubt, the earliest sort known, as well as the richest in saccharine matter. By letting the cane season a while in the field, after cutting and before pressing, a better quality of sugar is obtained. The useless properties seem to dry out, and nothing like as much green, gummy scum rises in boiling, as is the case if the cane is worked immediately after cutting. The leaves must not be stripped off during the cutting process, or a loss is occasioned; two or three weeks is about the time for curing. If not frozen, the cane will keep for two months. Freezing injures the quality. Frozen cane should be worked as soon as possible. If by splitting a cane the pith is found to have a greenish appearance, it indicates injury by freezing. The natural color is white. When going to the mill the seed-heads must be cut about one foot from the head and then dried. The cane should be dry when hauled to the mill or sheds. All broken cane will sour and damage the product.]

Mound-Builders on Cattle.

SIR,—Please inform me through your columns of the best way to rid my cattle of mound-builders or grubs in the back.

J. R., Ont.

[In order to wage a successful war against the mound-builders on the backs of cattle, it is a matter of choice whether to employ cold or red-hot steel. A narrow-bladed, small knife, or a pen-knife, or a darning-needle, may be inserted through the centre of the mountain, and will be sure to destroy the pest, whose contents may be squeezed out, or he may be left to depart piecemeal. Puncturing with a narrow, pointed hot iron will have the same effect, but is apt to cause more pain to the cow. Unless these larvae are present in large quantities, they are usually not of any importance to the well-doing of cattle.]

Swiss Oats.

SIR,—Last year I sent to Scotland and had one pound of the Swiss oats mailed to me. From these I raised 91 pounds. They are very early, and the straw is much whiter than the straw of all other oats I have seen. They will be of advantage on account of their early maturity.

A. K., Westminster.

A Stamp Duty.

SIR,—Don't you think it would be a good thing for the Government to place a duty on all patent medicines in the Dominion? It would raise a good revenue, and should the duty curtail the sale, I do not think the public would be injured to any great extent. Say from 10 to 12½ cents on the dollar.

C. P., Myrtle P.O.

SIR,—I have a horse nine years of age—a free eater, not hard to keep, but he is very tender-skinned and hide-bound, and at times for three or four days together is somewhat stupid. His belly is hard and drawn up. His blood is bad, for calks or galls do not heal readily, and when worked hard he sweats freely. If you can let me know through the next ADVOCATE what to give him, you will much oblige.

W., Fingal, Ont.

[Give your horse a dose of purgative medicine composed of the following: Six drams of aloes, two drams of carbonate sodaca and one dram of ginger. This is to be dissolved in a pint of warm water and given as a drench while fasting. Then give a powder every second night composed of the following: Sulphate iron, one dram; gentian, one dram, and ginger half a dram, in hot bran mash. It would be well to give him a little boiled flaxseed two or three times a week in his feed.]

Beets vs. Sugar Cane.

SIR,—Since the last issue of your paper I have received a number of letters from parties reading it in different parts of Canada, saying they saw my name in your paper. We know from the letters that the farmers value the *ADVOCATE* very highly as a guide in farming.

We would like to ask the farmers—What is the use of growing beets when they can grow the genuine sugar-cane itself? Beets require more labor, more machinery, more loss and less profit, than sugar-cane. We would like to give you a few varieties of cane that are best for farmers in Canada:

The Imphu or African sugar-cane came from the south-eastern coast of Africa. Mr. L. Wray, a well-known American writer on sugar culture, during his stay at Natal, in South Africa, in 1851, found in cultivation there some fifteen varieties of Imphu. He sent a quantity of the seed to France about the time sorghum was sent there from China, and from there it was introduced into the United States as a sugar-plant; and in crossing Oonsuana and Liberian, they have now what is called the Early Amber. The reason it is called by this name is that it is a little earlier and the syrup is the color of amber. Of the four different kinds we have tried in Canada we find the Oonsuana the best. We can with confidence recommend sorghum. Liberian, the Mearana, is a good Imphu. The Oonsuana is the best adapted to the soil and climate of Canada. The seed is planted in chick-rows, 3 ft. 6 in. apart, the same as corn, and from 8 to 10 grain; in a hill. The seed should be soaked in warm water four to six days before planting.

We would, through your widely-spread paper, advise the people of Canada not to grow beets, as they begin to sour as soon as cut, giving them a great deal of trouble for nothing.

C. W. W., Grimsby.

Influence of Stock on Graft.

SIR,—Has the stock any influence on the graft or bud? If so, please state what.

J. A. C.
[The influence is so slight, if any, that it practically cuts no figure in modifying the fruit. The top, however, does undoubtedly have a very considerable influence on the root, and the root on the top. As a rule, the root-growth corresponds to the top; and slender-branched trees have slender or fibrous roots. Strong-topped trees have strong and rugged roots. Hence it should be avoided, if possible, in grafting, to work a variety having a strong top upon a variety naturally of slender or weak growth. So we should not advise working the Northern Spy, for instance—which has an upright, rather sturdy growth—upon a variety of drooping or slender growth. In root-grafting the effect is not so characteristic, since the graft makes roots of its own, the section of root being in the character of a nurse until the tree is enabled to make its own roots.]

Ticks in Sheep.

SIR,—I bought some poor sheep in the fall. I do not like to use a wash, it is so cold. Would you give me the next best remedy through your valuable columns? S. H. O., Windermere, Ont.

[To kill ticks on sheep, throw into the barnyard a few small, thrifty, second-growth fir-trees. The sheep will eat the leaves and small twigs greedily, and often strip off all the bark. The ticks will all leave the sheep in a few days, the strong odor from the oil of the fir driving them away from the body of the sheep; then the cold soon kills them, or they fall off.—R. L. H., in Montreal Witness.]

SIR,—Please let me know if there is any remedy against sheep pulling their wool in the winter season.

W. H. D., Pounal, P. E. I.

[To Make Mercurial Ointment.—Take 3 ounces of quicksilver and 1 pound of hog's lard or refuse butter, put them into a smooth earthen vessel and mix thoroughly until every particle of quicksilver is blended with the grease, and the whole becomes a slate-color. (Some would add a little spirits of turpentine to make it work easier.)

This is sufficient for ten sheep, to be administered by shedding the wool in several places from the head to the tail on each side. The shedding is done by the forefinger and thumb of each hand, having a small tin affixed to the rest of the hand, in which you have the ointment.

Sometimes, in country places, quicksilver is dear; but you could always get it at respectable drug stores at one dollar a pound. This ointment will also cure the scab in sheep, if made strong enough.]

Grafting Wax.

SIR,—Please inform me how grafting wax is made; also how apple-trees are grafted, as I am desirous of learning.

J. K.

[A grafting wax, which may be used immediately or laid away and kept for years, is made by melting and stirring together four parts of resin, one of tallow and one of beeswax; then pour into a bucket of cold water. As soon as cool enough to be handled, work the mass over and draw it like shoemakers' wax until it is entirely pliable. Or take one pound each of resin, beeswax and tallow; melt all together and thoroughly mix; spread a thin layer on a cotton rag or paper, and wind firmly around the graft. For instructions in grafting see article by Hortus on page 78 in this issue.]

SIR,—Do you know anything about a kind of oats called here "English Centipede" oats. A man offers them for sale here; they have been grown in this section; they are white. He says half a pound is enough seed for an acre. I have not seen it grow. He wants \$2 per pound.

W. R., Reaboro.

[We know nothing about such oats; have not seen them advertised in any English or other catalogue. Be careful about purchasing new seeds, even from established dealers, but particularly from travelers. We have been informed of two or three unheeded of wheats having been sold this spring by travelers. If any one has a really good seed or implement it is pretty sure to be advertised, as it will stand the scrutiny of inspection. Talk alone will sell useless articles to green-horns.]

Sugar-Cane.

SIR,—The sugar-cane grown at Grimsby by me was planted about the same time as common field-corn. The seed should always be soaked in warm water before planting. Plant in hills the same distance as corn, and from eight to ten seeds in a hill. The cane should be hoed while very young, and kept clean until it is eight or ten feet high; it will do for itself. The cane will do to cut in the latter part of August and September, and should be worked while green. The yield of syrup is from 250 to 300 gallons per acre on good ground; and the sugar 5 to 7 pounds to the gallon of good, thick syrup. The sugar-cane is no more trouble to harvest than corn, and there is as much fodder, or nearly as much, to the acre—the leaves and seed are not used in making syrup; that is what you get for fodder. The stocks grow from 12 to 16 feet high; the juice from the stock is much sweeter than from cane grown in the South or Southern States. Here in Canada it takes about five gallons of juice to make one of syrup, while in the Southern States it takes about seven. Imphu is the best corn to grow in Canada, as it is better suited to this climate, and grows faster and ripens quicker than other canes.

C. W. W.

The Elections and the Requirements of Farmers.

Choose members that are farmers, or who have evinced their interest in the prosperity of agriculture, and the requirements of farmers. As a test, inquire of the candidate has he been a subscriber to an agricultural paper, and proved his desire for the advancement of agriculture by the interest he takes in all its requirements. If he does not let him not be your candidate—his interest is in some other line.

Farmers need encouragement in forming Agriculture Societies and Clubs in townships and counties. They require less expenditure of the country's money on high salaries, and superannuation grants to men who have never done good service to the country. They require the levying of a tax on patent rights vendor, and on unnecessary travelling vendors of wares. And they require a more searching examination into the standing and the accounts of insurance and all chartered companies.

On the Wing.

(Continued from Page 75.)

OTTAWA.

Many persons ask us—"Did you see the Princess?" We did not see either the Marquis or Princess. We might have seen the Marquis had we waylaid him on his way to the Parliament Buildings, but our mind was not intent on that

subject. However, curiosity prompted us to see the residence of the Queen's daughter in Canada,

RIDEAU HALL.

We took the street-cars; they run about 1½ miles from the Parliament Buildings, to within a short walk of Rideau Hall. The scenery along this road is not as pleasant as along a third quality avenue in this city; the houses were poor and dilapidated—nearly devoid of paint and floral decoration. We were informed that there were 900 houses to rent in that city, and that some of them were offered to any person who would pay the water-rates and taxes. We inquired at the waiting-room about the Marquis and Princess, and was informed that this was the main road from Rideau Hall to Ottawa, but that they had not yet seen the Princess, although the Marquis and Her Royal Highness and other ladies had walked past there frequently, but the Princess and ladies wore clouds over their heads and were not seen. The only way they knew the Royal party was by their walking-sticks and short walking-dresses. We were informed by highly respectable parties residing in Ottawa that they had not yet seen her; she seemed to court retirement and formed no acquaintances, but that she interested herself in some of the charities and schools.

There was a good body of snow on the ground at this time. We heard there was a plank sidewalk from the Hall to the City, but we could not see it; no snow-plow or shovel had been used to clear the walk, and the only way that the Princess and party had to walk was on the road, where the horses had beat down the snow. These Lower Canadian one-horse sleighs used by the habitants or French people are not very inviting to the eye, neither are the expressions used to urge their horses on very pleasing to the ear; in fact, we really thought of the danger there might be in walking this road, as we hear Her Highness is a frequent pedestrian on it. We walked past the lodge or gate-house, which is a very plain affair, not half as neat or tasty as the gate-houses of private friends we visited while in England. There are two roads for sleighs or carriages from the gate to the Hall—one to go there and the other to return. These roads are lined by trees that would look well in summer. There were some evergreens a short distance to the left of the last road. Not far from the gate is a plank walk to the Hall; this we preferred. The snow was taken off this walk. We entered the gate and approached the Hall. A plain wire fence of the cheapest kind, which was strung along on posts that had no paint on, flanked the walk to the Hall; to the right of this fence was a plain field. Near the Hall were some miserable specimens of ill-formed apple-trees, on which the borer had been reveling at will; the bark was off in many places, and the trees were really hard-looking cases. On the further side of this field there was some straggling-looking brush growing, which appeared to us like the neglected fence-side of a careless farmer. As we approach the Hall we expect the road to lead to the front of the building, but in vain; we pass a large unsightly building, which appeared to us like a country meeting-house; no adornment to relieve the eye, either on the top or side. We pause, look around; but this is the Hall or part of it; no road or chance to get around to the front, if front it has. We are obliged to remain content, and approach what we take to be a back-door or side-entrance. There is a kind of porch at this door, which has been painted on some previous occasion, but now decayed, rotten wood is visible. On the roof of the building two men were at work laying some rough pine boards. We suppose the shingles were so rotten that there was danger of our Princess being drowned or getting wet. Thus far the public are admitted without questions.

Notwithstanding the poor external appearance, we hear the interior is very comfortable.



The Family Circle.

"Home, Sweet Home."

Minnie May's Department.

MY DEAR NIECES, — While conversing with some of our nieces about school and lessons, etc., the subject of dress was introduced, which now leads us, to make a few remarks. If there is one place where simplicity should characterize dress, it is the schoolroom. The object for which children are here gathered is certainly not the display of the wealth of their parents. Anything which diverts the mind of the pupil from his or her duties is an injury to that pupil; and it will accord with the observations of teachers that fine clothes oftener work mischief to the wearer in this respect than mean clothes do. The highest minded children are oftenest found in plain garb, while those who are frilled and ruffled are generally destitute of home culture. Their mothers have been too busy with their clothes to pay much attention to their brains. While over-attention to toilet matters is a hindrance to study, negligence and untidiness are as carefully to be avoided.

Plenty of clean clothes, plainly made, need not be expensive, either of time or money, and a proper regard to personal cleanliness in all its details what every person owes to himself and his associates. It is very desirable that the pupil should have at least two school suits, for in the crowded schoolroom the clothing soon becomes saturated with the exhalations floating in the atmosphere, and an airing of the clothes every few days is necessary to keep them sweet and fresh. As a rule, the simpler a child is dressed the more attractive it is to all sensible people, and particularly in the schoolroom.

MINNIE MAY.

Our young friends will kindly excuse us for omitting story, illustrations, etc. Advertisements have encroached on your department this month; We will try and make amends in future numbers.

RECIPES.

CHOCOLATE CREAM.

Chocolate scraped fine, half an ounce, thick cream, one pint; best sugar, three ounces; heat it nearly to boiling, then remove it from the fire and stir it well. When cold add the whites of four or five eggs; whisk rapidly and take up the froth on a sieve; serve the cream in glasses and pile up the froth on the top.

SURPRISE LOAVES.

Mix four ounces of grated ham with one pound of mealy potatoes well beaten till quite light, add two spoonfuls of butter, a little cream and two eggs. Be careful not to make it too soft. Form into small loaves or balls, and fry in butter till a light brown. Serve with thick, brown, high-seasoned gravy; garnish with parsley.

TO RESTORE COLOR.

When color on a fabric has been accidentally or otherwise destroyed by acid, ammonia is applied to neutralize the acid, after which an application of chloroform will, in almost all cases, restore the original color. The application of ammonia is common, but that of chloroform is but little known.

ORANGES FILLED WITH JELLY.

This is one of the fanciful dishes which make a pretty appearance on a supper-table, and are ac-

ceptable when much variety is desired. Take some very fine oranges, and with the point of a small knife cut from the top of each a round piece about the size of a shilling; then, with the small end of a teaspoon, empty them entirely, taking care not to break the rinds. Throw these into cold water and make a jelly of the juice, which must be well pressed from the pulp and strained as clear as possible. Color one-half a fine rose-color with prepared cochineal, and leave the other very pale. When it is nearly cold, drain and wipe the orange rinds, and fill them with alternate stripes of the two jellies. When they are perfectly cold, cut them into quarters, and dispose them tastefully in a dish, with a few light branches of myrtle between them. Calves' feet, or any other variety of jelly, may be used to fill the rinds. The colors, however, should be made to contrast as much as possible.

POTTED HERRING.

Scrape and wash a dozen fish, and lay them in salt for three hours. Take an earthen jar and cut the pieces so as to fit it, season with a teaspoonful of salt, twenty whole peppers, ten cloves, two bits of mace and half a teaspoonful of ground ginger. Put the fish in the jar in layers, adding the salt and spices on each layer. Pack down tightly, then fill the jar with three parts of vinegar and one of water. Cover the top with a stiff crust of flour and water. Bake gently for five hours. Eat cold.

CUSTARD-APPLE PUDDING.

Pare and quarter six good-sized apples; pour them into a stew-pan with the rind of half a lemon, two tablespoons of water and four ounces of sugar. Let them simmer, and stir continually till the whole is reduced to a jam; then pour into a bowl, take out the lemon-peel and stir in three ounces of butter, a teaspoon of lemon-juice, and when cool add the yolks of five eggs. Bake in a buttered mould for half an hour, turn it out, brush it over quickly with the white of an egg, then cover with fine sifted sugar and return to the oven for five minutes for the icing to cool. Serve hot or cold.

TO RENOVATE BLACK GRENADINE.

Take strong, cold coffee, strain it and wring the grenadine out of it quite tight, after which shake out and fold up; then iron it with a moderately hot iron over a piece of any old black material.

AUNT ADDIE.

TO BLEACH GRAIN.

I would like to give you a recipe for bleaching grain for ornamental purposes. The barley, oats and wheat must be cut three or four weeks before it is ripe, placed in a tub or tank, and enough boiling water poured on it to scald it well. Take it out and let it drain, then take a tight box, large enough to let the top open with a tight cover; five or six inches below the top make a slat shelf, then take one-half pound of roll brimstone, pulverize coarsely, place it in a piece of paper in a dish, place the dish in the bottom of the box; after placing the grain on the bottom of the box, set fire to the paper, cover tight and let it smoke one night; spread in the sun next day, and the thing is done. This is the way rye straw is bleached for bonnets.

F. H. G.

Friendship.

What is it? Do smiles, words of cheer and kind actions constitute it? Are those who never upbraid, but meet all our deeds with words of praise, who flatter us on every possible occasion, to be considered true friends? Their attentions may be pleasant to our vanity and conceit, and keep us in the best of humor with ourselves, and we may think their company very desirable, yet they will not do to put faith in; for their amiable behaviour is often the cloak for self-interest. The person who will tell us our faults—kindly of course—who will try to teach us to see ourselves as others see us, who will show by acts rather than words that he kindly regards us, is more worthy of trust than one who agrees with all our sentiments, right or wrong, and who is equally ready to coincide with some one else, even if the subject should happen to be our shortcomings. Give me the friend who has the same love for me always, who is ready to "speak up" for me in the midst of enemies, and repeat what he considers my virtues as an offset to the failings they may rehearse, who will hold fast to his faith in my truth and goodness in spite of defamation. Such friends may be scarce, but when found are priceless treasures.

All Kinds of Annual Flower Seeds

May be sown in the months of April and May. For early flowering, sow the seed in boxes, and transplant into the open ground as soon as the weather becomes warm.



BALSAM (CAMELLIA-FLOWERED).

A very beautiful outdoor plant, producing masses of beautiful colored flowered in great profusion. The soil should be rich; set plants fifteen inches apart.



VERBENA (HYBRIDA).

Well-known and universally admired plants. Invaluable for summer decoration; blooms freely the first year from seed.



ICE-PLANT.

A pretty little trailing-plant, the leaves of which are covered with crystalline, thus giving it the appearance of being coated with ice. Half-hardy annual.

Mr. G. A. Sala, writing to the *Illustrated London News* of the higher education of women, holds that if clever girls were "taught to paint on porcelain, to model in clay and wax, to turn, to carve, and especially to draw on wood, they would be a hundred times better employed, and fifty times nearer the possibility of earning from three to ten pounds sterling a week than in 'spanking' the piano."

Our sight is the most perfect and most delightful of all our senses; it fills the mind with the largest variety of ideas, converses with its objects at the greatest distance, and continues the longest in action without being tired or satiated with its proper enjoyments.

Wit is not the produce of study; it comes almost as unexpected on the speaker as the hearer; one of the first principles of it is good temper; the arrows of wit ought always to be feathered with smiles; when they fail in that they become sarcasms.

Nucle Tom's Department.

MY DEAR NIECES AND NEPHEWS,—It is beginning to feel something like spring. However, we must not be too certain, for the cold April winds will certainly roar about our windows yet, but they are only the notes of preparation for the joyous spring time, and soon the sweet twitterings of our birds will replace the rude whistling winds, and the snowdrops and violets will spring up to gladden our hearts. I can fancy the delighted faces of some of our nephews and nieces with the thoughts of their sugar and taffy making. You perhaps have already made some, or are now busy preparing for it, getting the buckets scalded, the spouts scoured, an wood ready, while others will be preparing for gardening and cleaning away all rubbish which has accumulated during the winter. We hope all our young readers will cultivate the taste for flowers and gardening; it improves the mind, and is a healthy exercise.

Almost every one who lives in the country can have a small piece of land. Of course dwellers in cities can not always have a garden, not even in their back yard, but are obliged to be contented with house plants. The culture of flowers opens the heart and lets in kindness, which is one reason we want you to have a garden. You will have beautiful flowers to enjoy, so that you may wish others to have them too. Sow the little seeds in the earth after the cold rains are over, covering them very slightly.

Some seeds will break the ground in four days, others will not sprout for a fortnight after they are sown. You will perhaps go and see if they are up many times before you see them, and might possibly be tempted to dig where they were sown to find out what the matter is. But do not do any such thing. This is another reason for having a garden, it teaches us patience. Wait, for you have committed the seeds to the care of mother earth, and she will not be hurried. So let us have gardens; the flowers will please the senses of all, and to the more thoughtful they will bring lessons of kindness, patience, faith and love.

UNCLE TOM.

PUZZLES.

38—RIDDLE.

O! who can wonder at the sadness of my eyes,
Or who can wonder at my mournful, piteous cries;
For chains are ever most familiar things to me,
And, tho' to letters given, I'm made to swim the sea.

39—NUMERICAL ENIGMA.

The 1, 26, and 24 is sport or merriment.
The 3, 16, 25 and 8 is a beautiful flower.
The 10, 6, 13 and 30 is a young wild animal.
The 15, 23, 27 and 33 is a fragrant flower.
The 18, 2 and 7 is a small cake.
The 20, 29, 17 and 32 is a trick or artifice.
The 24, 19, 12 and 21 is a gift or favor.
The 28, 9, 4 and 11 is a large public room.
The 31, 22, 14 and 5 is the stalk of a plant.

J. E. C.

40—EASY SQUARE WORD.

1. An aquatic bird.
2. In contact with an upper surface.
3. A series of laws.
4. One of the timbers used in building a ship.

41.—CHARADES.

I.
My whole is part of my first, and
My second is the same;
Now try, and don't be very long
In telling me its name.

II.
Without my first I could not live,
Much less by my second;
But should I ever be my whole,
A fool I should be reckon'd.

III.

My first is all jockeys try to do
When riding in a race;
But, if they cannot do this, still
They strive to gain a place.
My second is made of tin,
For holding oils prefer'd;
And hundreds of them would not weigh
The one half of my third.

My whole a thriving market town,
In Somerset is found;
The main part of it being built
On elevated ground.

IV.

A beast of burden is my first,
Of very stubborn will;
My second many people do,
And then they take a pill.

My third a busy insect see,
For industry far fam'd;
And for a lazy man she once
A pattern was proclaim'd.

Nor, if a man should strike at me,
And try to crack my poll,
And you were near and witness'd it,
You must then see my whole. W. H. P.

42—LOGOGRIPH.

A place of great mortality
My whole will bring to mind;
Behold me, and delirious
I am sure you will me find;
Again behold, and I become
Part of a prayer, you see;
Behold and curtail me again,
A numeral I shall be.

D.

43—ENIGMA.

The sweetest, the dearest, the best;
The nearest to angels on earth;
No verse I could rhyme, no song I could sing,
Would describe all my value and worth.
In beauty, in virtue, in love,
In honor, and truth, I've no fear;
Search the air, or the earth, or the wave,
You never will find my compeer.
So loyal in sickness or health,
So gentle in sorrow or pain,
So tender, devoted and pure.
But reverse this fair picture again;
So deceitful, so artful, so bad;
Cold, and false, as a wave of the sea;
To be won by a gem, to be purchased by gold;
The earth holds no sinner like me.
I often caress where I hate;
I am black, yet pretend to be fair;
I drive men to horror, to death,
To murder, to madness, despair!
I incite to the bravest of deeds;
I bewilder, cajole, and beguile;
I freeze by the wrath of my frown;
I repay by the warmth of my smile.
Man claims the dominion of earth;
And loftily calls himself free;
He is bound by a thread, by a chain;
He is vanquished, the victor is me!

M.

44—SQUARE DOUBLE ACRONIC.

My first commands a mighty force,
His country to defend;
And he that would my second do,
Can never prove a friend.
I hope we ne'er be term'd my third,
So negligent and slow;
Nor even be impeached with fourth;
A word so base and low.
As long as we have got a fifth
Of victuals laid in store,
We scorn to think a dearth would then
Come to our cottage door.
My sixth will give a female name,
Also a man that's brave;
Why, then, are we so prone to seventh,
Since none are bound a slave?
See yonder fabric how it stands
Stretch'd across the foaming deep;
And all upon the eight depends,
To hold that work complete.
These parts before you now so plain,
Pray scan them o'er with care,
You'll find two ways they'll read the same,
When formed into a square. J. A. I.

"Whatever made you marry that old woman?"
said a mother to her son. "Because you always
told me to pick a wife like my mother," was the
dutiful reply.

Answers to March Puzzles.

28—1 K'night. 2 Wait. 3 Turn. 5 Pr'bed. 6 Peel.
7 C'log. 8 D'ice. 9 D'ash. 10 S'nail. R S'now. 12
Prussia.

29—
P O R C H
O P E R A
R E B U S
C R U S T
H A S T E

30—1 Wolf, ram. 2 Now, here.

31—1 Thomas Lord Macaulay's "Lays of Ancient Rome."
2 Sir Walter Scott, Bart.'s "Lay of the Last Minstrel." 3
George Lord Byron's "English Bards and Scotch Reviewers."
4 Alfred Tennyson (Poet Laureate's) "Idylls of the King." 5
Robert Burns' "The Cottar's Saturday Night." 6 James
Montgomery's, "A Voyage Round the World."

32—Wolf, fowl. Lobster, bolster. Ape, pea. Sole, shoe.
Rat, tar. Leek, keel. Palm, lamp. Canoe, ocean.

33—Keep no more cats than will catch rats.

34—
L a s H
O p e r A
F a u l t
E y e

35—
E
E A R
H O R S E
E A R D L E Y
P H I L O X
E E L
Y

36—
C u P i D
H a n A p e R
R a n N U
I n T e R
S O Y
T r a M m e L
M a n I l l A
A M r M a t i o N
S E

37—Intemperance.

Names of Those Who Sent Correct Answers to March Puzzles.

H B Howell, Eliza Douglas, Herbert Kitchen, G R Anderson, Minnie Hyde, Jas Miller, Fanny Sawyer, Joseph Williams, Susan Jones, Amelia Mann, George Chambers, Henry Frankfort, John Ferguson, Jessie Curry, Mary E Cameron, Theodora Summers, James Turnbull, Evans Darnell, Emily Cunningham, Ellen Roundy, Charles B. Jane Taylor, Emily Anderson, A J Willard, Edwin West, Thos Saunders, Henry Marling, George McKay, Sarah J Dutton, Noah Bayley, J K Kerby, Jennie Bradley, Alex McMullen, Maud Kinnon, Niven Cox, Agnus Harris, Henry Marling, Jave E Freshman, Eva Sinclair, Joseph Skinner.

Honorable mention is made of Minnie Hyde having answered the greatest number of puzzles correctly.

HUMOROUS.

When General V. was quartered in a small town in Ireland, he and his lady were regularly besieged as they got into their carriage by an old beggar woman, who kept her post at the door, assailing them daily with fresh importunities. One morning, as Mrs. V. stepped into the carriage, the woman began, "Oh, my lady! success to your ladyship, and success to your honor's honor; for sure I did dream last night that her ladyship gave me a pound of tea, and your honor gave me a pound of tobacco." "My good woman," said the general, "dreams go by the rule of contrary." "Do they so?" rejoined the old woman; "then it must mean that your honor will give me the tea, and her ladyship the tobacco."

A SLIP OF THE TONGUE.—"Martha, my dear, said a loving husband to his spouse, who was several years his junior, "what do you say to moving to the far West?" "Oh, I am delighted with the idea! You recollect when Mr. Morgan moved out there, he was as poor as we are; and he died in three years, leaving his widow worth a hundred thousand dollars."

A nigger servant sweeping out a bachelor's room, found a sixpence on the carpet, which he carried to his master. "You may keep it for your honesty," said he. A short time after he missed his pencil-case, and inquired of his servant if he had seen it. "Ees massa." "And what did you do with it?" "Keep it for 'im honesty, massa!" replied Sambo, exhibiting his ivories. His master exploded.

The other day, in Western New York, a would-be fashionable lady called at a neighbor's at what she thought would be supper-time. "Come in," said the neighbor; "we are having tableaux." "I'm so glad," said the visitor; "I thought I smelt 'em, and I like 'em better than anything for supper."

An old lady on the deck of a steamboat observed two men pumping up water to wash the deck; and the captain being close by, she accosted him as follows: "Well, captain, got a well aboard, eh?" "Yes, ma'am, always carry one," said the polite captain. "Well, that's clever. I always dislike this nasty river water, especially in dog days."

Commercial.

FARMER'S ADVOCATE OFFICE,
London, March 27, 1879.

What with unsettled weather, a quiet state of the markets, and the change in the tariff, trade and business the past two weeks has been very quiet and little or no change to note. Since the morning of the 15th the new tariff has been the one great topic of conversation. Conservative journals seem to be pretty unanimous in the opinion that the National Policy is going to give universal satisfaction, while the Reform papers, great and small, are denouncing the same in the hardest terms. The country decided in favor of this policy very decidedly last September, and the Government have done nothing more than their duty, and why should not these said journals accept the situation, put their shoulders to the wheel as good citizens, and give it a fair honest trial for a term of years. We think such conduct would be much more becoming and command for them the respect of the public at large.

Weather cold, and in some sections the sleighing has been good up to the time of writing.

WHEAT

has ruled steady and firm, but the past few days is a shade easier. Stocks on the whole are light throughout the country, and holders are firm and not disposed to sell unless they get their price, which, as a rule, is above what Liverpool markets will warrant shippers in paying, even with the present low freights. Deliveries are very light, and millers are quietly picking up a good many lots, and will pay a good price rather than let their mills stand idle.

What course the markets are going to take is very hard to predict, and whether the "bulls" or "bears" will come out right, time only will tell. The total visible supply of wheat is about 21,000,000 bushels. At the same time last year it was only about 8,500,000 bushels. The low price of wheat has no doubt stimulated its use abroad in place of corn. Probably the purchasers and holders of wheat in this country and in the west are justified in demanding higher prices for their stocks. The turn of events in this article will depend for the next two months upon the crop prospects both in America, England and the Continent.

PEAS

are pretty well cleared out, and what few are held holders are asking two to three cents above their market value. Seed peas are in good demand. If farmers were more careful in their seed peas and changed them oftener, keeping them clean and free from grey ones and mixed, they would be well repaid for their trouble.

BARLEY

continues dull, and holders have some difficulty in finding a market for their stocks, and many of them are clearing out at considerable loss.

CLOVER SEED

has been very quiet, and stocks are pretty well cleared out. There has been very little enquiry or demand from England this season. The bulk of American seed has gone to the Continent. The crop of English seed was very large and fine.

BUTTER.

Really choice butter is scarce for local trade, while the medium and low grades are well cleared out at prices ranging from 4c. to 12c. We hear of a good many butter factories being started this spring, and we hope soon to see them as plentiful as cheese factories, but would advise caution in building and starting them. There are

several very essential requisites to a butter factory that can be dispensed with in a cheese factory, and every advocate should know what he is about before he embarks in such.

CHEESE.

We think stocks are pretty well cleaned out of this country, and we have no sympathy for any one who has his cheese still on hand. The downward tendency of the market (the cable being 47s. to-day) will we think have a wholesome effect on the trade and tend to reduce the stocks well down before the new cheese is ready to go forward. We have been advising factories to delay starting as much as possible in order to get the old stocks well out of the way, and also avoid to a large extent the make of hay cheese, which in any case is no advantage.

Late English advices report the trade as very quiet for this season of the year. Glasgow advices report the best home dairies to be selling at 38s. to 40s. At these prices the tenant farmers will have difficulty in meeting their rents to say nothing of other expenses.

We look for a better tone and more confidence in the trade the coming season. We also hope salesmen will follow the advice given them at the conventions the past winter, and sell their goods as fast as fit for market. Sell every two weeks, or three at the furthest, take the market price and let your goods go forward.

Little Falls Cheese and Butter Market.

Reported for the FARMER'S ADVOCATE by PROF. X. A. WILLARD.

LITTLE FALLS, N. Y., March 26, 1879.

The cheese market this week has shown less firmness than last, while buyers are more cautious in selections, and prices are about a half cent lower on all sorts of cheese. It is estimated that there are at least 125,000 boxes of cheese in New York city. How much there is back in the country can not well be told, but the quantity must be considerable, as will be noticed from the large receipts from week to week. The near approach to the delivery of the new crop causes anxiety on the part of holders, and hence the general tone of the market is weaker. At Little Falls no "new cheese" has as yet been offered, but as many of the factories are now making "every-day cheese," the delivery cannot be long delayed. The offerings of old stock this week were 1,000 boxes, only a part of which changed hands. One factory having 400 boxes, mostly Octobers, was trying to sell at 7c for Octobers and 6c for Novembers, but the price was considered too dear. We quote: 100 boxes of fine quality at 7c, and another lot of 50 boxes at 6½c. These were the best sales made. Fair to good, "late ends," may be quoted at 5c to 6c, and anything above 6c is hard to sell, unless unquestionably fine. Farm dairies in small lots continue to come forward and sell for 4c to 6c, according to quality.

There has been a large delivery of butter this week—upward of 400 tubs—and prices are down about three cents lower than last week. Sales here ranged: for fair to good lots of new-milk butter at 16c to 19c, and for a few fancy lots at 20c to 21c—the latter price being an extreme rate paid by those buying for family use, not for shipping.

The weather still continues cold and stormy, with deep snows, which fill all the country roads leading to this market.

Cows are reported to be yielding good returns for the season, and a large number are in milk.

Late advices from England report a slow sale of English cheese, while Dutch is inferior in quality, and this forces consumption on American stocks, which are fast decreasing. Prices are as follows:

English Cheddar, 70s to 80s; Scotch Cheddar, 40s to 56s; Wiltshire, 58s to 66s; Cheshire medium, 50s to 60s, and fine, 68s to 76s per cwt.

Faultless American brings 53s to 54s; fine, 50s to 52s; good, 40s to 46s; secondary, 20s to 36s per cwt.

The London market is lower for all sorts of butter. Jersey butter, 100s to 110s; Danish, 130s to 144s; extra fine Normandy in baskets, 120s to 130s; English Dorsets, 160s per cwt.

American and Canadian butter sells for 40s to 112s, and American creamery from 110s to 116s per cwt.

There is a steady sale for oleomargarine or artificial butter. American brands, 50s to 60s; Dutch brands, 60s to 76s, and Swedish, 60s to 78s per cwt.

London Markets.

London, April 1, 1879.

GRAIN.	
Per 100 lbs	Per 100 lbs
White Wheat... \$1 60 to 1 67	Peas..... 80 to 90
Treadwell..... 1 58 to 1 64	Oats..... 95 to 98
Clawson..... 1 58 to 1 64	Rye..... 75 to 85
Red..... 1 55 to 0 00	Buckwheat..... 60 to 75
Spring..... 1 30 to 1 40	Corn..... 1 00 to 1 75
Barley..... 80 to 1 30	Beans..... 1 00 to 1 75

PRODUCE.	
Eggs, retail..... 18 to 20	Cheese, lb..... 6 to 6
Butter..... 12 to 22	Timothy seed... \$1 25 to 1 50
Potatoes, bag..... 70 to 85	Clover seed..... 3 40 to 3 75
Apples, per bush..... 40 to 60	
Commeal.....	\$1 50 to \$1 75

MEATS.	
Beef, per qr..... \$3 50 to \$5 00	Mutton, lb..... 5c to 6c
Pork, per 100 lbs 5 50 to 5 75	Lamb, per lb..... 5c to 7c

Montreal Markets.

Montreal, April 1.

Quiet and steady; prices nominally unchanged. Flour, from \$4 75 (highest price for superior) to \$3 (lowest price for middling). Oatmeal, \$4. Butter, Western Store packed, 7c to 10c; dairy, Western, fair to good, 9c to 13c; Eastern Townships, 17c to 19c. Cheese, 7½c to 8½c.

Toronto Markets.

Toronto, April 1.

Barley..... 50 to 68	Cheese..... 5 to 8½
Springwheat..... 80 to 93	Butter..... 8 to 15
R. Winter..... 85 to 95	Eggs..... 16 to 20
Treadwell..... 90 to 97	Poultry..... 50 to 60
Delhi..... 90 to 100	Flour..... \$3 70 to 4 15
Club..... 38 to 42	Beef..... 4 00 to 6 55
Peas..... 60 to 67	Pork..... 5 00 to 5 25
Corn..... 40 to 42	Mutton..... 5 00 to 6 00
Potatoes, per bu. 1 00 to 1 25	Apples, per bri 1 25 to 2 00

Liverpool Markets.

Liverpool, March 28.

s	d	s	d	s	d	s	d		
Flour.....	8	5	10	0	Barley.....	5	3	0	0
Wheat, spring, 7	8	0	8	2	Pork.....	53	0	0	0
R. Winter.....	8	11	0	2	Lard.....	33	0	0	0
White.....	8	10	0	4	Bacon.....	25	0	26	0
Club.....	9	3	0	8	Cheese.....	45	0	0	0
Corn, central, 4	5	0	4	6	Tallow.....	36	6	0	0
Oats.....	5	6	0	5	Beef.....	74	0	0	0
Peas.....	6	4	0	0	0				

Chicago Markets.

Chicago, April 1.

Wheat, red winter, \$1 01 to \$1 02; spring, 83c to 84c; Corn, 31½c; Barley, 65c; Pork dull, per bbl, \$10 10; Bulk Meats dull; shoulders, \$8 05; short rib, \$4 90; clear sides, \$6 05.

New York Markets.

New York, April 1.

Flour dull; No. 2 red, \$3 25 to \$3 78; super State and Western wheat, red, \$1 15; Corn, 44c to 46½; Oats, 31c, 32½c to 36c.

English Cattle Market.

London, March 28, 1879.

Trade very bad; the very best American beast only making 4s 6d per stone of 8 lbs; anything below first quality not quotable; sellers having to accept butchers' prices to effect sales; imported beef, 6½d to 7½d per lb; American beef, 6½d to 6½d; American mutton, 8½d; Scotch mutton, 9½d; Irish mutton, 9d; American hogs, light weight, 6d.

A Humbug.

An advertisement that appeared in our last issue about "Bee Culture," by Mrs. Cotton, we have reason to believe is a regular fraud. We hope none of our readers have been duped by it. We use great caution to protect ourselves against inserting frauds in our columns, but we cannot always be right in this age of wondrous achievements.

Stock Notes.

THE CATTLE TRADE.—A meeting of the Cattle Dealers' Association was held in the Rossin House, Toronto, on Monday afternoon. The President, Mr. James Britton, occupied the chair. Among others present were his Worship the Mayor, Dr. Smith, Prof. Buckland and Mr. Laidlaw.

The President opened the meeting by giving a brief sketch of the progress of the cattle trade up to the time of the embargo. A hopeful sign to be taken in connection with the shipment of cattle was the fact that two or three ships freighted with live stock had recently arrived at Liverpool without the slightest loss being sustained by the shippers.

The discussion which followed was taken part in by Prof. Buckland, Dr. Smith, and Messrs. Aikins, Reeves, Mooney, Laidlaw, Robinson, and the following resolutions were carried:

Moved by H. Dunning, seconded by William Aikens, that this meeting, feeling that the mode of ventilation on board the steamships is of a very faulty nature, and the cause of the greater part of the loss of cattle on the voyage, do urge on the Government the necessity for the immediate appointment of a competent inspector to examine each vessel prior to taking on any live stock as to its facilities for ventilation; and that a copy of this resolution be sent to the several shipping companies and also to the city members of Parliament.

Moved by Mr. Aikens, seconded by Mr. Rogers, that this meeting is of opinion that the steps taken by the Dominion Government for prohibiting the importation of American cattle was in the best interests of the country and the cattle exporters.

The meeting then adjourned.

The London Oil Refining Company, of this city, have for some time been buying cattle with the intention of shipping the same to the Old Country. The first shipment left on the 24th ult. for Glasgow via Halifax, and consisted of 120 head. The animals were in splendid condition, and were fed on the farms of Messrs. T. D. Hodgins and J. & R. Geary, London Township, and William Fal-lows, Nissouri Township. The cattle are under the care of T. D. Hodgins and six men. This is the first large shipment ever made direct from this city to the Old Country, and if they succeed, in all probability a large number of other capitalists will take up the business, and London will at some future day be the leading place for shipping and buying cattle in Ontario. It is stated that the company do not intend to ship any more animals until about the middle of May.

Mr. Robert Reesor, late of Markham, Ont., intends to enter into the stock-raising business at Rock Lake, Manitoba. Mr. Reesor, whose stock in Ontario compared favorably with the best, only intends raising thoroughbreds, and will take up stock during the summer from his Ontario farm. He purposes going into the enterprise in no small way, and will break up 100 acres in the spring. Manitoba is just the place for such enterprising men as Mr. Reesor, and he is just of the class of people the North-West wants.

We have received the catalogue of pure-bred Shorthorns belonging to the Right Hon. Lord Fitzhardinge, of Berkeley Castle, Gloucester, Eng., which will be offered for sale on March 26. The sale will be conducted by the well-known auctioneer, John Thornton, and from the high standard of the stock no doubt most magnificent prices will be realized.

Mr. Charles Skelding, of Nissouri, has sold his horse "Anglo Saxon" jr., to Mr. Robert Gaylor, of Brock, for the sum of \$800. He is now two years old. He is a handsome, powerful horse, and no doubt will prove of great value to the locality he is taken to. Mr. Skelding had cleared \$1,000 by him before selling him.

Mr. S. Beattie, Preston Hall, Annan, has sold to H. Allsopp, M. P., Hindlip Hall, Worcester, the young Duke bull Grand Duke of Airdrie, bred by Messrs. Avery & Murphy, Detroit, Mich., got by 4th Fordham Duke of Oxford, dam Airdrie Duchess 5th.

Bay Wyndham, by Lord Clifden, out of Violet, and for whom Lord Roseberry gave \$12,500 at Ep-som, 1875, when he was a two-year-old, was sold at Tattersall's, on the 27th of January, for \$210.

A HEAVY BULLOCK.—Perhaps the heaviest animal that ever came under the poleaxe of a butcher in Ireland was the Shorthorn prize-winner, Jove, the breeding and huge proportions of which brought so much celebrity to his spirited owners, Messrs. F. & W. Smith, Belmont, in all the principal cattle shows in the Kingdom. Its live weight was 3,696 lbs.

We are informed by Mr. W. J. Biggins, of Elm-hurst, Clinton, Ont., that he sold the bull calf advertised in the ADVOCATE to Mr. Courtice, of Goderich Tp., price \$110. Both the sire and dam of the calf are from imported stock from the celebrated herds of Amos Cruickshank, St. Hyton, Aberdeen, and Sylvester Campbell, Kinnellan, Aberdeen, Scotland.

L. Lewis, of Masonville, Ont., has purchased from Mr. Thompson, of the 5th concession of Lon-don township, a fine imported heavy draught Clydesdale stallion, for Messrs. J. W. Hoff & G. Sellers, Morrow county, Ohio, paying therefor \$1,500. The animal is to be used for breeding purposes.

The Canada West Farm Stock Association will hold a credit sale at Bow Park, Brantford, Ont., on the 10th April. The offers will be Shorthorns, Cotswolds and Berkshires, and, as usual, some excellent bargains in good stock may be expected. We hope to see a good attendance.

RATHER PROLIFIC.—On Monday, March 3rd, two Ayrshire cows, the property of Mr. Jas. Lawrie, of Scarborough, Ont., produced two calves each. On the same day three of his ewes produced five lambs. All doing well.

The first-prize three-year-old Shorthorn bull at the International Show at Paris, last year, had a girth of 8 feet, and stood 55 inches high behind the shoulders, the belly line being 25 inches from the ground at that point.

Agricultural Engines.

Mr. John Abell, whose advertisement appears in this journal, claims that he has produced the very best machines for agricultural purposes ever used in the Dominion. His portable engines have carried off the only two gold medals awarded for such at our Provincial Exhibitions; also the diploma of merit, silver medal and diploma of honor—also the medal of honor and diploma at Australia. These are high commendations. There is no doubt that agricultural engines will supersede the old horse-powers in each locality where grain is raised to any extent. In many of the best farming districts they have already been introduced; and wherever they have been used farmers will not now thresh with horse-powers. You will do well to dispose of your old horse-killers if a steam thrasher is at all within your reach. If you con-template purchasing, you should send for and read catalogues, testimonials, etc.

CHILLED PLOWS.—It is our opinion that chilled plows will supersede any we now have in use. They clean themselves much better than steel or iron plows. One chilled plow will outwear many steel plows. You should examine them; they are made by Levi Cossitt, Guelph. Mr. Cossitt is also making the prairie plow for Manitoba.

TO PATENTEES.—Mr. Henry Grist, the patent agent at Ottawa, formerly resided a few miles from our farm. Those wishing to obtain patents, or information about such, cannot do better than apply to him direct, as it is our opinion he understands more about them than most officials, either in that city or any other part of the Dominion. He is a gentleman of honor and reliability.

Messrs. Green Brothers & Co., of Waterford, have been enjoying an increasing demand for their Royal Harvesters. They made 300 in 1876, 800 in '77, 1,200 in '78. This harvester, we believe, is made from one of the highly improved American patterns, with recent improvements attached to it.

SEIZURE OF GOODS.—We hear that 1,100 boxes of American seeds have been seized at Toronto for undervaluation; also that a large number of chilled plows were seized at Stratford for the same cause, and that \$500 fine was imposed.

A subscriber from Mairo, P. O., has forgotten to sign his name to his questions. He will find answers in any seedsman's catalogue. We cannot spare time to answer all questions asked by mail. We ask and give information through this paper.

W. H. T., of Teeswater, asks how to prevent sheep pulling their wool out. Kill the ticks.

J. J. H. Gregory's Seed Catalogue.—Mr. Gregory is one of the very few seedsmen who combines the business of seed raiser and seed dealer. We presume this fact has a good deal to do with his seed warrants; for unless a man grew largely of the seed he sells, and hence knows all about them, he will hardly venture to warrant their freshness and purity; and what is of more importance to the purchaser, stands by it in every case, as Mr. Gregory has the reputation of doing.

New Advertisements.

TREES

We offer for Spring of 1879 the largest and most complete stock in the U. S. of **Fruit Trees, Grape Vines, Strawberries**, embracing all the new and valuable varieties. **Ornamental Trees & Shrubs**, deciduous and evergreen. **Roses** a specialty—all the finest sorts. **Green & Hot House Plants**, including best novelties. Descriptive and illustrative priced Catalogue sent prepaid to customers, **FREE**, to others on receipt of stamps as follows: No. 1, Fruits, with colored plate (new edition) 15 cts.; plain, 10 cts. No. 2, Ornamental Trees, etc., with plate, 25 cts.; plain, 15 cts. No. 3, Greenhouse, Free. No. 4, Whole sale, Free; and No. 5, Catalogue of Roses, with colored plate, 10 cts.; plain, Free. Address

ELLWANGER & BARRY, Rochester, N. Y.

SEEDS. My Catalogue of Field, Garden and Flower Seeds, etc., for 1879, is now ready, and will be mailed FREE to all applicants. **WILLIAM RENNIE.** Cor. Adelaide and Jarvis Streets, Toronto.

A NEW LETTUCE, "EUREKA."

A new variety of our own production, which we offer for the first time to the public, and can confidently say it is the best Lettuce for family use ever introduced. Possessing more good qualities than any variety we have ever tried. The entire stock of this valuable introduction is in our hands. Give it a trial. Price 25 cts. per packet, or 5 packets for \$1. Address, **CROSMAN BROS.**, Rochester, N. Y. N. B.—Our Seed Catalogue sent free on application.

FREE!

Seeds for 1879

SEED CATALOGUE & GARDENERS' GUIDE FOR 1879

Send **FREE** to any address. Send for one at once. Every FARMER, GARDENER, and all those having gardens, should have a copy.

Being practical seedsmen, we give our customers (through the medium of our Catalogue) the benefit of our experience and observations. We send Seeds (with a few exceptions, specially noted in our Catalogue) free of postage or express charges to any address.

SPECIALTIES. Clover, Timothy, Hungarian, Millet, Corn, Vicia, Canary and Hemp Seeds, Seed Grain, &c.

McBROOM & WOODWARD.

(Successors to McGill Bros.)

SEED MERCHANTS,

de-1 Molsons Bank Buildings, LONDON, CANADA.

NEW, RARE OR CHOICE.

TO FARMERS AND GARDENERS.—I offer the following NEW, RARE OF EXTRA CHOICE Vegetable Seed, postage paid by me.

Marblehead Early Sweet Corn.—Decidedly the earliest of all varieties of sweet corn. Per package, 15c.

Egyptian Sweet Corn.—Decidedly the sweetest of all varieties of white sweet corn. Per package, 10c; per pound, 35c.

Marblehead Mammoth Sweet Corn.—The largest of all varieties, and the earliest of the extra large kinds. Per package, 15c; per pint, 35c.

Longfellow's Yellow Field Corn.—Kernels and ears, extra large, not suited to the South. Per package, 10c; per quart, 55c.

Early Amber Sugar Cane.—Samples of the sugar, and full instructions for cultivation and making of sugar, sent with each lot. Per quarter pound, 16c; per pound, 45c.

Eastian's Early Blood Turnip Beet.—The best of the earlies; a great acquisition. Per ounce, 12 cents; per pound, \$1.25.

Hancock Early Peas.—The best cropper, and purest of all the extra early sorts. Per package, 10c; per qt. 60c.

Tailby's Cucumber.—Large, very handsome and very prolific. A prize for any garden. Per package, 15c; per ounce, 35c.

Marblehead Champion Pole Beans.—15c per package. The EARLIEST of all varieties.

Kentucky Wonder Beans.—15c per package. Compared with scores of varieties, they have PROVED THE MOST PROLIFIC.

Butman Squash.—20c per ounce; 10c per package.

Hubbard Squash.—20c per ounce. As the original introducer of these 3 splendid winter varieties, I offer seed grown specially for purity.

Cocoanut Squash.—10c per package, 30c per ounce. Excellent in quality, and an elegant ornament for the parlor; very prolific.

Danvers Carrot.—\$1.50 per pound; 15c per ounce. Forty tons have been raised to the acre.

SHI'S Melon.—A cantaloupe; sweet, spicy, delicious. Per ounce 20c.

Vick's Early.—20c per ounce, 10c per package. The best of all the early watermelons.

Excelsior Melon.—25c per ounce, 10c per package. Has been raised in Massachusetts to weigh 75 pounds. Quality excellent.

White Egg Turnip.—The new American turnip. Early, large, and of excellent quality. Per ounce 15c.

My Seed Catalogue, treating of all the above varieties in detail, and an immense collection of Vegetable and Flower Seeds, will be sent FREE to all who write for it. J. J. H. GREGORY, Marblehead, Mass. dd-4

CHEESE - MAKERS!
ATTENTION.

We would call the attention of all engaged in the manufacture of cheese to our

Cheese Bandage

One of the best things out. Also
RENNETS, RENNET EXTRACT, ANIATTO
and all kinds of Dairy Supplies—

Gang Presses, Refrigerator Vats, Curd Mills, etc.

Send for Price-list.
PEARCE & PICKERING,
London, Ont.

J. M. COUSINS'

WIND ENGINE
For Pumping Water.

The cheapest power in use for Farms, Dairies, Gardens, Lawns, Railways, Brickyards, and all places where large quantities of water is used.

Also all kinds of Pumps—wood and iron, force and lift.

Wells, dug, Cisterns built and Carbs made.

Water Pipes and Fanning Mills. Strawcutters made and repaired.

J. M. COUSINS,
Bathurst-St.,
London. dd-11



First-Class Short-Horn Bulls FOR SALE.

Calves, Yearlings, &c.

A NUMBER OF SPLENDID YOUNG ANIMALS are now offered at very low prices, as I must sell, being short of stable room. Amongst the number being the First-Prize Calf shown by Bow Park Co., never beaten as such last year. Also an own brother to the Gold Medal Bull at Western Fair last fall.

RICHARD GIBSON,
Hderton, Ont. dd-1

SEEDS! SEEDS! SEEDS!

Any of the following will be sent, to any P. O. in Canada, POSTPAID on Receipt of Price.

1 lb Hallet's Pedigree Wheat.....	25c
1 lb Trump Wheat.....	25c
1 lb Swiss Oats.....	25c
1 lb Longfellow Oats.....	25c
1 lb Sandy Oats.....	25c
1 lb Hopetown Oats.....	25c
1 lb Black Tartar.....	25c

The above varieties are imported stock.

1 lb White Russian Spring Wheat.....	20c
1 lb Gordon Wheat.....	20c
1 lb Lost Nation Wheat.....	20c
1 lb California Defiance.....	20c
1 lb Champlain Wheat } Am. varieties }.....	75c
1 lb Defiance Wheat }	75c

FIELD SEEDS

Ten varieties of Swedish Turnips. Eight varieties of Mangel Wurzel. Six varieties Field Carrots.

1 lb Swedish Turnip, any variety.....	30c
1 lb Mangel Wurzel, Beck's Champion (the best globe variety grown).....	50c
1 lb Mangel Wurzel, Norbiton Giant (the best long mangel grown).....	50c
1 lb Carrot, Burrell's Giant White (largest Carrot in cultivation).....	\$1.00
1 lb Vilmorin's imp. White Sugar Beet.....	75c
1 lb Compton's Early Field Corn.....	40c
1 lb Longfellow Corn.....	40c

GARDEN SEEDS

Twenty varieties of Kitchen Garden Seeds mailed postpaid for \$1.00.

GARDEN PEAS

2 lbs McLean's Little Gem, postpaid, 40c; 2 lbs Carter's First Crop, postpaid, 40c; 2 lbs McLean's Advancer postpaid, 50c.

FLOWER SEEDS

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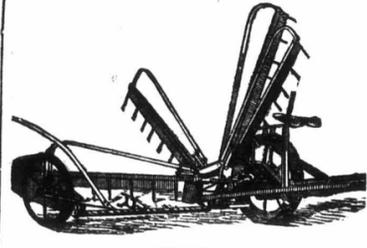
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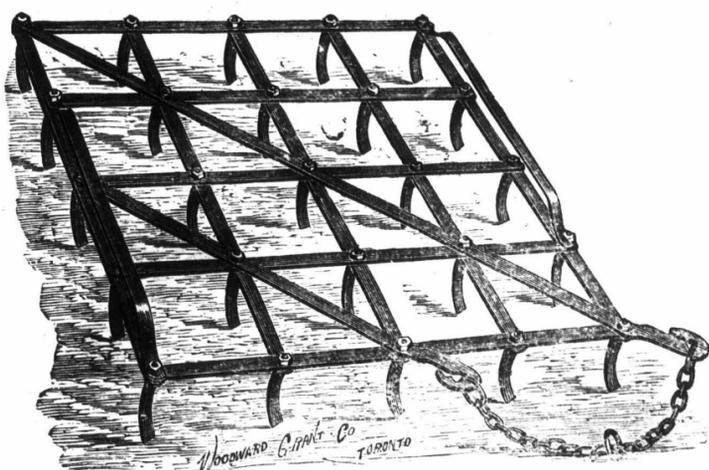
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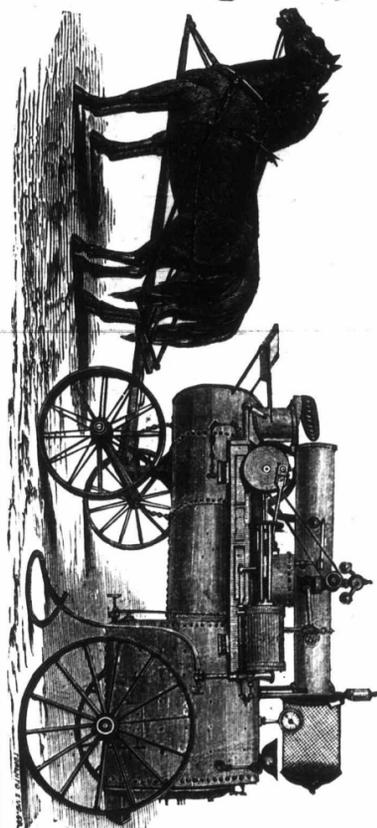
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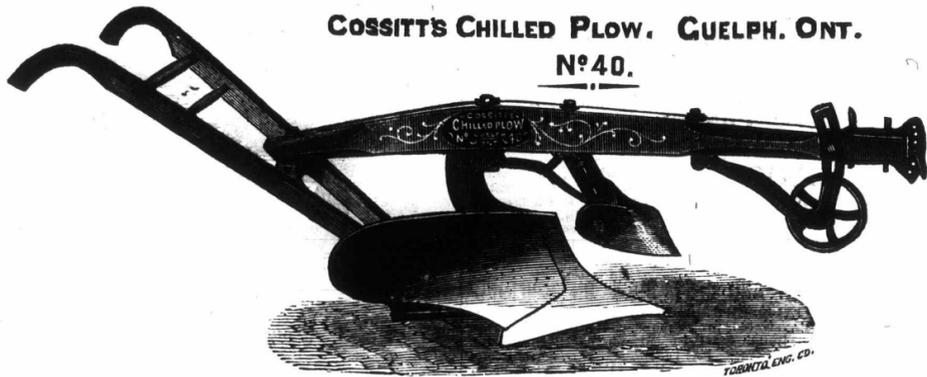
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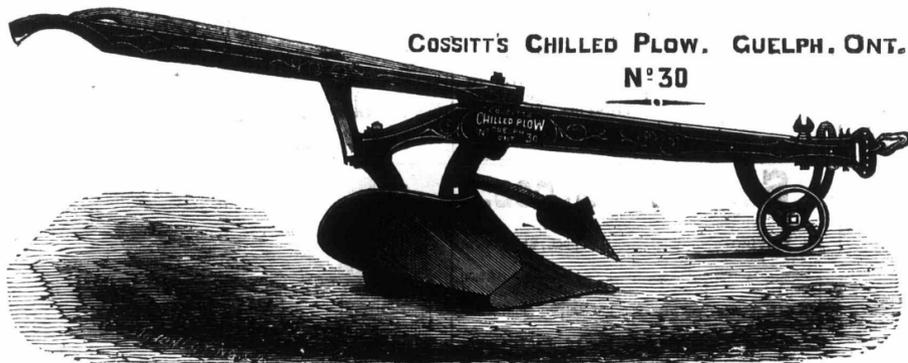
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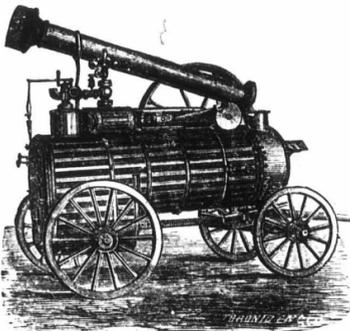
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