

FARMER'S ADVOCATE

AND HOME MAGAZINE.

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THE FARMER'S ADVOCATE & HOME MAGAZINE

WILLIAM WELD, EDITOR AND PROPRIETOR.

THE LEADING AGRICULTURAL JOURNAL PUBLISHED
IN THE DOMINION.

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

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Our Monthly Prize Essays.

CONDITIONS OF COMPETITION.

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

Our prize of \$5.00 for the best original essay on *Farm Accounts*, has been awarded to W. A. Hale, Sherbrooke, Que. The essay appears in this issue.

A prize of \$5.00 will be given for the best original essay on *Spring Management of Cows*. Essays to be handed in not later than March 15.

A prize of \$5.00 will be given for the best original essay on *Farm Drainage*. Essays to be handed in not later than April 15.

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

Editorial.

The Central Farmers' Institute.

We attended the first annual meeting of the above organization, recently held in Toronto, our object being to ascertain its designs and tendencies. It was composed of delegates from the local Institutes, most of them sending two delegates in response to an invitation to this effect from the central authority.

The programme contained quite a variety of subjects, and we inferred from the discussions that the delegates were for the most part farmers who had a good deal of experience in municipal matters, as they discussed municipal politics much more intelligently than agricultural questions.

It is rather difficult to find a seat for the Central Institute, amongst all the other agricultural associations organized under the auspices of our Government. Every branch of agriculture, except grain growing, is already organized; the Institute does not appear to supply this deficiency, and it cannot be regarded as representing the mixed husbandry farmer. In some respects it appears to approach the objects of the Experimental Union, being, however, more political and less scientific; the resemblance lies mainly in the breadth of subjects discussed. It differs from the Dominion Farmers' Council in the following particulars:—1. It seeks to accomplish by Government expenditures what the Council attains through the instrumentality of a powerful and independent organ. 2. It works from the circumference to the centre, instead of from the centre to the circumference; that is to say, the central authority is a creation of the component parts, while the Council, originating as a central authority, accepts all local clubs who desire amalgamation under its rules. In the former case, the Institutes can make or destroy the central authority, while in the latter, the central power exists independent of the affiliated clubs. 3. It is aggressive; that is, it presupposes that industrial and political force, exercised through professors, lecturers, etc., is necessary to organize the farmers and keep them organized, while the Council presumes that permanent power can only be attained through free impulse on the part of the farmers. 4. The Central Institute does not, and cannot, exercise censorial authority over the other agricultural organizations.

Nobody recognizes the necessity of farmers' organizations more than we, but we cannot see how success can be achieved without a definite aim and a vigorous policy. We even go so far as to say that our farmers are burdened more than they should be, and that they are as much entitled to

their share of the spoils as any other portion of the community. But we have strived to educate them to the conviction that the greater the Government expenditures the greater the burden upon themselves, and that the best "plan of campaign" is to abolish the spoil system altogether, thus forcing each class of the community to work out its own political and industrial salvation. Then agriculture, being the fittest to survive, would flourish, and the necessity for elaborate organizations would be diminished.

We regret the action which the Central Institute took on the question of Commercial Union. They laid down the principle that all questions pertaining to the interests of our farmers should not be further discussed in the local institutes after they became political issues, thus giving the politicians an opportunity of choking discussion when it serves their purpose to do so. The presumption is that the life of an institute depends upon the presence of hot-headed politicians. We believe it would be to the advantage of the institutes to lock the noisy politicians out, permitting all questions affecting the farmers' interests to be discussed, thus fostering and strengthening the spirit of independence, and, by the fact of their organizing, they would weaken the force of partyism. The spirit of the times is with them; partyism is losing its bitterness, as every keen observer of current events must know. The harmonious organization of our farmer M. P. P.'s strikingly illustrates this tendency.

The members of the Central Institute have not yet learned how to evade the audaciousness of designing men, neither have they distinguished themselves for modesty in their demands. Before demanding so large a Government grant as \$1,000 annually, they should have been able to show that they have accomplished some useful work. We question if their discussions are yet worthy of the expense of publication and distribution as a part of the Government literature. However, they have made the demand, although they have arrived at no sound conclusion on any important question they discussed. There is a possibility that the Institute may be turned into a side-show for our dairymen, who attempted to place the local institutes under the control of the professor of dairying at the Model Farm, by which means our dairy industry would receive the lion's share of the Government expenditures.

To Our Legislators.

It is our impression that a very large proportion of the beverage sold as cider in Canada is made from drugs, and that such decoctions are not as beneficial to the human system as that of the apple. A more rigid attention to the enforcement of the Adulteration Act in this particular would be in the interest of the orchardists of the country, as well as beneficial to the general health. We believe that some of the M. P.'s and M. P.'s are already aware of the existence of these adulterations, and it would be adding to their usefulness to take the necessary steps to have the evil remedied.

A Noted Clydesdale Stallion.

"Bold Lyon," owned by Mr. M. T. Buchanan of Ingersoll, is a beautiful bay with white legs; has good action and flat, clean bone. He was imported in November, 1886, and is one of the handsomest Clydesdale stallions in the country. He is registered as 4964 Vol. IX, Clydesdale Stud-Book; foaled 1884, bred by James Wood, Laird of Lungair, Stonehaven, Kincardineshire, Sir Garibaldi III (316), dam Jip (1853) by Lord Lyon (489).

"Garibaldi III" (316) his sire, after having won several prizes as a one and two-year-old, received the Banffshire premium in 1874 and 1 75. He was awarded the silver medal at the

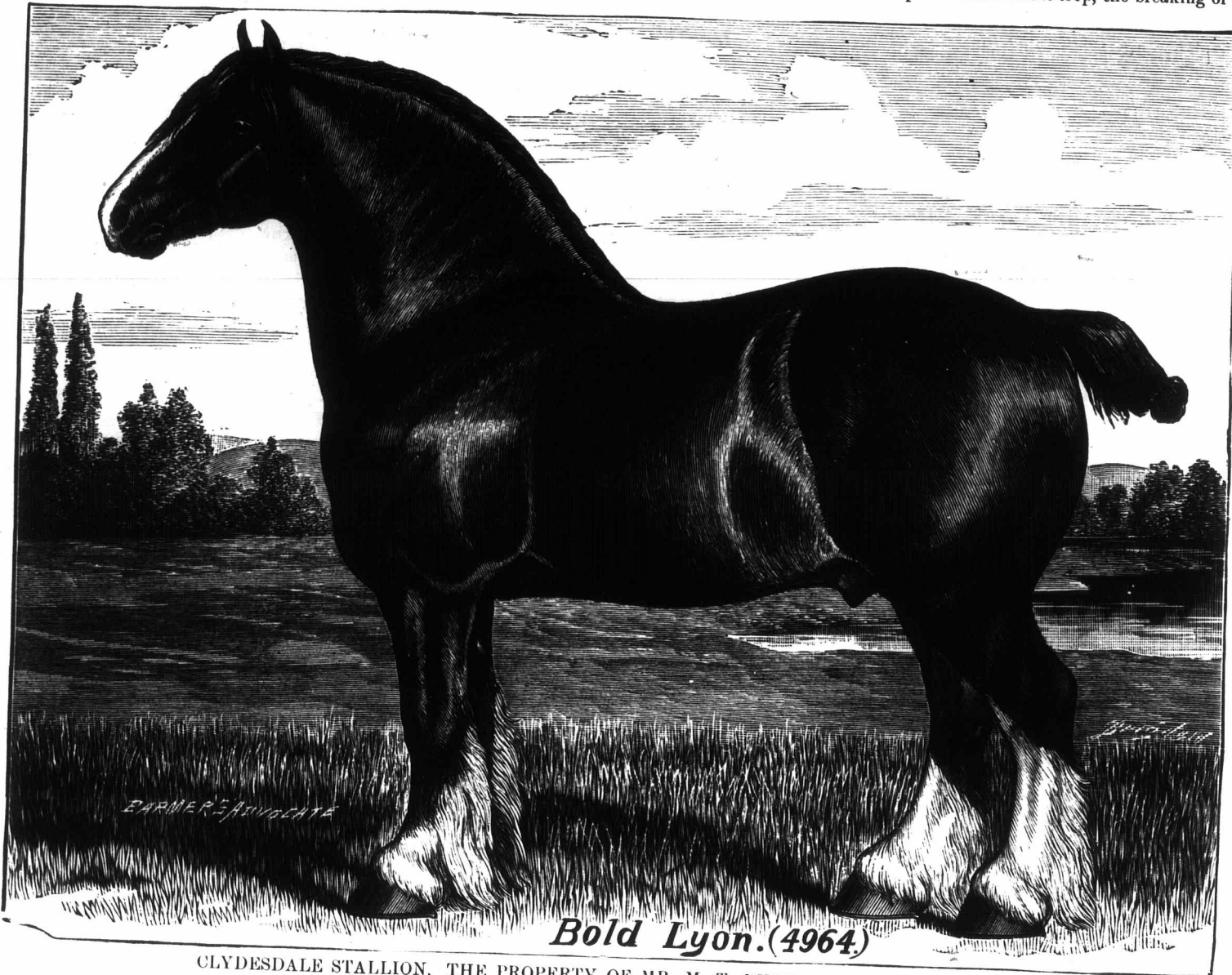
"Farmer's Fancy" (298), his g. g. sire, won the first prize at the Highland and Agricultural Society's show at Glasgow, in 1844, also receiving numerous other prizes. His ancestors were also distinguished prize-winners.

"Maggie," the dam of Garibaldi III, won 8 first prizes at the Lower Ward of Renfrewshire, in 1864 and 1865, and the second prize at Sterling, open to Scotland, in 1868.

"Salmond's Champion" (727), the sire of Maggie, took first at Stranraer, as a one-year-old; first at Barhead, Paisley and Johnstone, as a two-year-old; the Renfrew premium of £40 in 1860, as a three-year-old; the Kircudbright premium of £40 in 1861 and 1862; the Hamilton

Our National Highways.

There is much in Mr. Anderson's address, which appears in another part of this issue, deserving the consideration of every farmer. Having but recently travelled over the C. P. R. to the Pacific coast, I have been astonished at the magnitude of this our main artery. I found the track and the rolling stock in much better order than I had expected, from the conflicting reports I had seen in various party newspapers. The scenery, the road-bed, the cars and the accommodation were all far superior to what I found on the Southern Pacific line. The C. P. R. Company is still carrying on necessary improvements. The unprecedented wheat crop, the breaking of a



Bold Lyon. (4964)
CLYDESDALE STALLION, THE PROPERTY OF MR. M. T. BUCHANAN, INGERSOLL, ONT.

Highland and Agricultural Society's show at Kelso, in 1872. He was the premium horse of the East of Fife Agricultural Society in 1879, and gave the Society so great satisfaction that they engaged him again in 1880 and 1881.

"Young Garibaldi" (972), his g. sire, gained the Haddington premium of £40 in 1867; Stranraer premium of £60 in 1867; Dalkeith premium of £40 in 1869; and the silver medal at the Highland and Agricultural Society's show at Glasgow in 1867, and Edinburgh in 1869.

"Garibaldi" (312), his g. g. sire, won the first prize at the Highland and Agricultural Society's show at Perth, in 1861, and was the Battersea National Prize Horse, besides gaining many local prizes and premiums.

Farmers' premium of £40 in 1863; and was afterwards sold at the then very high price of £350 and went to Melbourne.

"Lord Lyon" (489), grandsire of "Bold Lyon" on his mother's side, was very famous for his "get."

Amongst other valuable stock Mr. Buchanan has, besides the above stallion, "Bright Boy" 5587 (Vol. X), three-year-old; a handsome bay of fine bone and good substance; also "Pride of Oxford," brown color, five years old, imported, son of the famous "Barnley."

Please find enclosed \$3 for the ADVOCATE for past two years and for 1888. I would not be without it for twice its cost. Please change my address from Rounthwaite to Bellevue P. O. after March.
- JOHN E. ROSE, Bellevue, Manitoba.

bridge and the depth of snow, have prevented the forwarding of this season's crop as fast as the company or the farmers could wish. A little patience should be exercised, and a fair and reasonable time allowed them. The interest of the projectors and shareholders of the road should be considered, while any discrimination or undue oppressive wrong should be duly brought before the notice of the directors and of the public. I found that in the Western Division, under the management of Mr. White, much greater satisfaction is expressed. We well know that many of the farmers and citizens of Ontario have been greatly deceived by the advocates of competing lines, and would gladly rid themselves of the debts that must remain on their land. The advantages ex-

pected from the bonus system have generally gone into the pockets of the manipulators, and the farmers have been mulcted. It is my belief that if Canada is to remain united in one bond, and if the British nation is to be our ally and friend, the C. P. R. must be maintained, either by a company or by the Government. Whichever way it is maintained you may depend on it the farmers will have to pay mainly for its support, directly or indirectly. Perhaps it may be better to bear the ills we have than fly to those we know not of. If railroad companies or any other bodies do not guard the interest of the farmer, immediate remedy should be applied, and the farmers should be the judges without the interference of paid officials of any sort.

The Grand Trunk Railroad did a good work in connecting Ontario with the Atlantic. The Great Western was a very necessary and useful line. Although both of these necessary roads were constructed by British capital, it is to be regretted that the original enterprising stockholders never received a remunerative return for their investments, and that if reports are true, competing lines have been promoted and fostered by purchased members of Parliament. The British Columbians expect the Grand Trunk will soon connect Victoria, their capital, with the Atlantic, and will run far north of the C. P. R. through what they claim is a much finer and more productive country than that through which the C. P. R. now runs. The real value of the northern parts of our North-west Territories is as yet but little known, but time will yet unfold a much more valuable possession than the majority of Canadians are aware of, and, be it said to our sorrow, that some of our people are aware of it, and yet they attempt to deny it.

The County of Middlesex stands second to none as a fertile county; the inhabitants stand second to none in general information. The members of the County Council of that county have inaugurated steps to reduce the number of officials and of the salaries paid to others. The City Council of London have also introduced measures having a view to the decrease of officials and of the salaries paid to them. These steps will, we have no doubt, be generally approved of, and followed up by the farmers of Ontario generally. The receipts of many officials that have not brains enough to earn their own living honestly, receive from double as much as a farmer can make to fifty times as much. Salaried officials have worked together to oppose these changes, but time will rectify them to some extent.

In choosing seeds for your spring crop, you should select seedsmen of standing and probity. Your success or failure may depend on this choice. There is an enormous quantity of trashy seed in the country, and you should specially avoid acting on the representations, or rather the misrepresentations, of all classes of oily-tongued agents. Deal only with parties in whom you have implicit confidence.

Notice.

We have had such an unexpected demand for our January number, that we are now unable to supply them, and only a few February numbers are left. Those persons subscribing now will commence with the March issue.

Notes of the Central Farmers' Institute.

The first annual meeting of the above Institute, composed of delegates from the local farmers' institutes, was held in the Court House, Toronto, on the 21-23 ult., Mr. Valancey E. Fuller, president, in the chair. There were about 80 delegates present. The invitation called for two delegates from each institute, but 15 institutes only sent one delegate.

The president, in his annual address, pointed out the influence and usefulness of the institutes, and adverted to the subjects on the programme for discussion. He pointed out the good they had sought to accomplish by giving evidence before the Royal Railway Commission, and the steps that had been taken towards securing a practical farmer as Minister of Agriculture for Ontario. He spoke of the unanimity with which the institutes had passed resolutions with reference to commercial union, and hoped that discord would not be awakened and the institutes weakened or wrecked by discussions of party questions.

In discussing the president's address, there was found to be a wide difference of opinion as to whether commercial union was a fit and proper question to be discussed at farmers' institutes, some contending that the question was a fiscal, not a political one, and that the marketing of our crops was as much of an agricultural question as raising them.

After considerable discussion the following resolution, moved by Mr. James McEwing (West Wellington), was carried by a vote of 61 to 13:—"This meeting desires to place on record its high appreciation of the value to this country of unrestricted trade or commercial union with the United States, and we fully endorse the action of the institutes which have discussed the subject and passed resolutions favorable thereto, and it is of opinion that as soon as it is introduced into the Dominion Parliament and becomes a party question, its further discussion in the institutes should be discontinued." A motion to the effect that farmers should demand a pledge from candidates of both political parties to support commercial union was voted down.

In the discussion of this question we observed that the delegates had not studied the matter very thoroughly. They did not seem to understand the difference between commercial union and unrestricted reciprocity, and there is a very wide difference between the two schemes. Unrestricted reciprocity is an extension of the old reciprocity treaty to the extent of free trade in all the products of the land (including the waters) and the manufactory, Canada to retain its existing rights with reference to tariffs on importations from other countries; whereas, under commercial union, although we would also enjoy unrestricted reciprocity or trade with the United States, we would lose our independence in our tariffs against other countries, there being a pool arrangement between the Canadian and the American Government. It is, therefore, quite consistent to be in favor of one of these schemes, and against the other.

A paper on "Statute Labor" was read by James Cochrane. Having spoken of the evils of the commutation of the statute labor tax, and of the small quantity of work performed in the time expended, he suggested the following changes in the municipal law:—"That the law in reference

to statute labor be amended and consolidated with a 'positive' instead of a 'permissive' enactment in reference to the performance of statute labor to the following effect:—"That no road division in any municipality shall be of less extent than 10,000 acres; that the council shall appoint one road commissioner in each such division; that all statute labor shall be performed under said road commissioner, and in any part of the road division which he shall direct, but so that every person shall have an opportunity to perform their labor at the place nearest their residence at which work is being done at the time they performed such labor."

He then went on to argue, in support of his scheme, that under this system any work, with, perhaps, the exception of building bridges or boundary line roads, could be taken up by the commissioner and completed. He could see no good reason why all road making in townships should not be done with statute labor, and one-half the present tax now taken from the farmer in cash to make roads, left in his pocket. The commutation money derived from non-resident lands and from those who would prefer to pay cash in lieu of work would go towards paying the commissioner. The taxes in some townships where heavy railroad bonuses were being paid were burdensome, and the relief that could be obtained in this way would be a great boon. It had been a very common way under the present system to use the statute labor to do the repairing of roads only; and if any considerable piece of work was to be done, the pathmaster would wait on the council and apply for a grant of money; and it follows that if one division got a grant all the others had an equal right, and would purposely refrain from working so that they might get a share of the money expended.

He further enumerated the following advantages:—1. Instead of 50 or 60 men, with perhaps as many different plans of road-making, we would have but four men, all working under one plan laid down by the council or their engineer. 2. All would be required to pay to the commissioner, either in work or cash, in the time prescribed—which should not be later than July 15th—the full amount of the statute labor tax, being a direct saving of the \$1,176 that would otherwise have been levied in cash from the ratepayers. 3. It would do away with the annoyance councils are subjected to of having fifty or sixty applicants for grants on their road divisions, as each commissioner would have the sole charge of the roads in his division. 4. It was often inconvenient for all in any one road division as now constituted to turn out on the day appointed by the pathmaster, but under a commissioner a day or two earlier or later could be arranged for with a material advantage to the ratepayer and no loss to the township.

In the discussion on Mr. Cochrane's paper, there was found to be a great variety of opinion, some declaring the statute labor law to be a relic of barbarism; others defended it, and some declared that the proposed scheme would be a hardship on the back townships. One delegate defended the present law, but insisted that it should be more strictly enforced. He was opposed to the appointment of more officials, there being too many already. A resolution and amendments in sympathy with the above views were placed on the table, but after the discovery that the members did not understand the law, the discussion was postponed for a year.

Agricultural Booms

are not beneficial for the masses. They may sometimes elevate a man, or even a few men for a time, but unless the boomers stand from under before the booms break, they are very apt to get left. We can instance cities that have been boomed by speculators whom the masses took for millionaires during the boom. Their names now are scarce remembered, and their places are not known. These booms have burdened us and our posterity with heavy obligations that will shortly be felt severely, and the result will be to drive many a struggling, industrious farmer and his family off their hard-earned farms. Have we, the farmers, any power to nip their growth? The continued increase of public officials, and the increase of salaries of unnecessary Government officials should be jealously watched and opposed by every farmer, and everything that can be accomplished by private enterprise should be left in the hands of the people by Government. Both the Dominion and Provincial Governments should take decided action to guard and protect the farmer and his interest, the chief factor in our national prosperity, and every official receiving pay from the hard earnings of the farmer should enquire into his wants and necessities. The boom in agricultural expenditures is a mere farce. It is in reality a political fight so far as Canada is concerned, and some orators, lacking in veracity or honesty, are now too blatant in the land.

Look at the dairy conventions—Was not the good done by the originators, and were they not more thoroughly progressive before the political parties seized them as a power for their own purposes? Do they not attempt to cloak the fact that their plans were commenced and they were doing all the necessary work before the Government seized them? Is not the Dominion agricultural expenditure introduced and carried on to serve, or rather fan into flames the party strife, rather than for the benefit of agriculturists, as pretended? It is our duty to expose these pretensions. Perhaps there does not exist in Canada at present any greater humbug than our public agricultural expenditures. The late Thomas Scatcherd, M.P., was considered to be one of the most influential thinkers and one of the best workers in either House, and one whose words had as great weight as those of any member of the Legislature, although not as fluent an orator as many of his fellows. He said that the farmers' duty was to keep down taxation, and that the Government should leave agricultural affairs in the control of the farmers. Where is the control now? In the hands of jobbers, dealers and political partizans, orators or favorites; and what must the result be? Every partizan paper must be hired or bought to laud the acts of the two contending parties, and instead of agriculture being the peaceful occupation, it bids fair to be the grand target and mark for a bitter struggle, in which it may be necessary to let slip the dogs of war. We would by all means advise the cessation of increased expenditures in the name of agriculture until their necessity is established by due inquiry and representation by practical farmers. When meetings have been held under the auspices of either political party only one-party views are obtained. When truth and honor are disregarded, evil results must follow.

(TO BE CONTINUED.)

The Globe says it is proved by statistics that more money is expended for eggs than for flour.

Farmers' Clubs.**Dominion Farmers' Council.**

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

Farmers and Railways.

The following paper on the above topic was read by President Anderson at the last meeting of the DOMINION FARMERS' COUNCIL, held on the 16th ult. Owing to the absence of the reporter, who could not be present, a report of the proceedings and discussions was not obtained.

As farmers pay millions annually to railroads and other public carriers for conveying their produce to market, it is evidently of great importance that they should get this done at a fair price, and it is a serious question well worth our consideration—How can this object be best attained? In all business transactions it takes at least two to make a bargain, and in all contracts it is essential to secure fair play, that each party should have free option to accept or reject the terms.

In our dealings with the railroads there is nothing of that kind with us; it is Hobson's choice; we have practically no voice in the matter; we must submit to pay whatever is demanded. The whole community is completely at the mercy of huge corporations, whose sole object is to extract the utmost possible for their services. We say not a word against railroads. We know they are indispensable to the trade and welfare of the country. Nor can we blame their managers for high charges; we had no reason to expect anything else. It is natural—indeed it is inevitable that directors would do all in their power to increase the revenue of their companies at the expense of the public. The fault, if there is one, must lay with our representatives in the Legislature. When they granted railroads charters, the greatest care should have been taken to provide sufficient safeguards against extortion. There are clauses in the charters ostensibly for this purpose, but they have been entirely inoperative and useless, and the consequence has been that the public has been fleeced for bonuses, and immense sums of money spent to build competing roads for the purpose of securing fair rates by competition, and in the great majority of cases these attempts have failed and the money has been thrown away, as in general the new roads were soon bought up by the large corporations, or otherwise a joint agreement would be made by the companies to fix rates as high as ever, and the public were no better off than before.

Where roads are built through new parts of the country, the accommodation to the locality may be sufficient to justify the expense of their construction. But it seems perfect insanity to build three or four parallel roads near each other, when one road with a double track would be safer and afford ample accommodation for all the traffic required. And then the railroad men feel aggrieved if the rates are not high enough to pay interest on the cost of all these roads, and to maintain three or four sets of officials when one would be sufficient.

There must be fortunes for the projectors and contractors of railroads, otherwise it is incomprehensible how our Legislature could have been influenced to sanction the expenditure of enormous sums of money to secure competition for the purpose of cheapening transit, when surely they had the power to provide some cheaper and more efficient remedy. Our Government seems to have had some indistinct idea that something of the kind was necessary, and appointed a Commission to enquire whether it would be expedient to appoint a Railroad Commission to regulate traffic. I believe that enquiry was totally unnecessary, except as a means of evading responsibility. Surely there could be no question of the

necessity for some independent body of men endowed with authority to represent the interests of the people in their dealings with the railroads.

The American Government has asserted its authority and taken a step in the right direction by its Interstate Commerce Bill. I am not acquainted with the details of this measure, but judging by the complaints of the railroads, their profits have been curtailed, and we may assume that their customers have reaped a corresponding advantage.

As long as Government Railway Commissioners maintained their independence and impartiality, and had power to enforce their regulations, all would be well. But we foresee the difficulty of relying on the independence of the Commissioners. In dealing with large corporations with unlimited money, power and influence, they would be exposed to great temptation, and if they failed in their integrity they would be worse than useless, as they might give the apparent sanction of the people to measures diametrically opposed to their interests. I believe that ultimately the whole of the railroads will be under the direction of the Government. It seems natural that the immense interests and power of the railroad corporations, affecting as they do all classes, should be entirely under the control of representatives elected by the people, otherwise as they collect tribute from all classes, it is really taxation without representation. And we should not forget that an intense jealousy of gigantic corporations is a strongly marked feature of public feeling at the present time, and unless great care is taken that the masses shall have no reasonable cause of complaint, it may result in an explosion by which the whole framework of society may chance to be wrecked.

A great many things may be said in favor of the Government assuming entire control of the railroads. Then we should have a right to expect that they would be managed entirely for the benefit of the public, instead of for the interest of the corporations who own them. Then the profits would accrue directly to the community, and the losses would be equally borne. Now the railroads are in the position of the man who was tossing with his friend for a wager, and who made the terms, "Heads, I win; tails, you lose." If their speculation proves remunerative and they make great profits, they go to enrich the company; if they are losers, they are never at a loss for an excuse to apply to the Government for assistance.

But whether Government control of the railroads would be a benefit or the reverse depends entirely on the character of the Government. As long as Conservatives and Reformers will vote blindly for their party, it is folly to expect honest or economical government. Until farmers pay more attention to questions affecting their welfare, and are honestly and impartially prepared to support or condemn either party according to their merits, their influence will never be felt, or their interests consulted either in this or any other question, but they will have to remain as they have been, like sheep dumb in the hands of the shearer.

If these thoughts should tend to induce farmers to think more for themselves, instead of accepting their opinions ready-made from the political papers, I shall be amply repaid.

A writer draws attention to the fact that many horses are subjected to much pain by the bits being put into their mouths on very cold mornings, without precaution being taken to free them from frost. He makes the following remarks on the subject, which are certainly worthy of consideration:—"The bits should be carried into the house and thawed out by the kitchen stove, or dipped in a pail of water. If you want a lesson you will not soon forget in regard to this matter, put your tongue against a bit that has been exposed all night to a zero temperature. It will stick fast, and you will not get it free without leaving some of the skin behind." Giving horses ice cold water is also cruel, and not calculated to conserve the health of the most useful helper man has on the farm.

The Farm.

Grasses and Clovers.

NO. II.

JUNE GRASS or Kentucky Blue Grass (*Poa pratensis*), the native grass of this country, is a very widely distributed natural variety, frequently sown on cultivated lands. It grows on almost all soils. But on high-lying, poor, sandy soils it barely gives a return, only sending up here and there a few short seed calyxes, with but a few short leaves at their base, while on rich, deep, low-lying soils, it produces, if the season is favorable, a very fair crop of nutritive quality, superior to Timothy or Orchard Grass. These very different returns on the various soils have led to a very varied opinion as to its value. Under different conditions this variety presents a very varied appearance in color, which, together with the varied returns, has caused numbers to believe that the different names given to this variety represented so many different grasses. The common names that Professor W. J. Beal finds for this variety in his valuable work of "Grasses of North America," are, in addition to those used above, Spear Grass, Green Grass, Smooth-stalked Meadow Grass, and Blue Grass. This last name is, however, also frequently applied to a different, although apparently similar variety of grass, botanically known as *Poa compressa*, the common names being Wire Grass, Blue Grass, Flat-stemmed Meadow Grass, and Flat-stemmed Poa. June Grass is a very valuable pasture grass, for it is very hardy; produces a fine herbage; withstands trampling on it well; grows continually, if the circumstances are favorable, from early spring to late fall; forms a close, even, dense turf, and produces seed but once a year. These qualifications make it also a very desirable grass for seeding down lawns. The roots being creeping, somewhat similar to those of Couch Grass, form, in the course of time, a dense network, thereby crowding out other grasses that do not possess this habit.

PERENNIAL RYE GRASS (*Lolium perenne*) is a very favorite variety in central Europe, where it has been cultivated for centuries. In England it is the oldest cultivated variety of grass. It produces large returns of nutritious food from rich moist soils free from stagnant water. Like Timothy, it, however, soon reduces the fertility and productiveness of the soil, and then disappears for want of proper nourishment. It is especially liable to die out after having once borne seed, which it produces in large quantities, sometimes as high as 40 bush. per acre. It is generally liked by cattle, and is a good crop in a rotation, in a climate which does not suffer much from extremes of temperature, especially heat. Prof. Beal, in his "Grasses of North America," says of it: "It has been quite extensively tested in various portions of the older States. It is emphatically a lover of rich land and a moist climate, without very great heat. In many portions of the interior of our country, subject to great extremes, this grass has not proved of much value."

ITALIAN RYE GRASS (*Lolium italicum*) is a beneficial variety very similar to the perennial, from which it differs in being biennial, giving a larger return, for which it requires heavy top dressings.

RED TOP (*Agrostis vulgaris*) is a grass which thrives especially well in wet soils, but also grows

on high grounds. It is very hardy and fairly productive, but commences growth rather late in the spring. It is ready to cut at about the same time as Timothy, which is recommended to be sown with it. After being cut it is rather slow to start growth again. In nutritive qualities it ranks next to June Grass, and like it possesses creeping roots, by means of which it spreads and crowds out weaker varieties. It is better able to withstand pasturing than mowing. The close network of roots help to bear up the hoofs of the stock pasturing on it, thus preventing the injuries to the sod which would otherwise occur on the wet soils on which it thrives. In Britain the grass known under this name is condemned as a worthless one, but that should not hinder us from acknowledging its true value in this country.

MEADOW FESCUE OR RANDALL GRASS (*Festuca pratensis*) is a variety of grass that thrives well on all soils, producing a heavy crop of nutritious food, and is well adapted for both pastures and hay lands. It grows about to the same height as Timothy, is inclined to grow in tufts and has a bunching top (panicle) somewhat resembling chess. Its roots penetrate the soil to the depth of ten to fifteen inches, thereby enabling it to withstand dry weather effectually. It does not give its best returns until the third or fourth year after seeding, and is therefore best adapted to fields which are intended to remain in sod for a longer period of time. In spring it commences its growth as early as Orchard Grass, which is considerably in advance of Timothy. It is difficult to obtain the seed of this variety true to name, for they are very frequently mixed with those of Perennial Rye Grass, which resemble them very much and are much cheaper.

MEADOW FOXTAIL (*Alopecurus pratensis*) is a plant that in general appearance resembles Timothy, being, however, somewhat smaller, softer and smoother. Its head is a spike, a little shorter than that of Timothy, and slightly curved. In spring it is about three weeks in advance of Timothy and an equal period at harvest time. Like Orchard Grass, it thrives in the shade, quickly resumes its growth after being cut, and produces a large percentage of leaves, but its hay is finer and more nutritious. A heavy soil is best adapted for its cultivation, and three or four years are necessary to fully establish it. It does not thrive on a very dry soil, and stagnant water is very injurious to its cultivation. The seeds of this grass being very small and light (five lbs. to the bushel), must be sown on a well prepared seed-bed, in order to ensure germination; and as the soil especially favorably to its growth is difficult to get in such a condition, a "catch" is frequently lost. Its roots are not spreading and it is not very sensitive to frost. The weed known as Foxtail must not be mistaken for this grass, for the two are entirely different. The former is an annual and not at all related to this valuable perennial.

[TO BE CONTINUED.]

The numerous experiments of bonanza farmers, made within the last twenty-five or thirty years, have one by one been broken up. Their owners have failed, and after repeated trials to hold it in large tracts under one management, this land is now being generally cut up into moderate sized farms, and either sold or rented.

All industrial depression can be traced to monopoly.

Selection of Seed Grain to Secure Best Results with Least Exhaustion to the Soil.

BY THOS. ELMES, PRINCETON, ONT.

Concluded.

But to return to the subject of red and white wheat in their relative exhaustion of the soil; white wheat always has a broader blade than red, consequently is enabled to extract more from the atmosphere, does not occupy the soil quite so long, and the berry of the red is found to contain more that goes to make up the fertility of the soil than the white; in fact, I have come to the conclusion that two crops of red wheat will take as much from the soil as three of white, and the white is less liable to disease, as the larger the lungs the healthier the plant and the stronger to resist the many vicissitudes through which our grain has to pass.

This coming season all are going to rush into barley raising, as it has been the best paying crop the past year. This is not advisable, as we always find if we rush into producing any article that is a great price, we will find it is like pursuing a Will-o'-the-Wisp, and we will find when it rains porridge our dish is always upside down. My experience has been that it is always safer to produce whatever is a drug on the market, as it invariably commands the highest price the following season when produced. Making specialties of any kind of produce is not advisable; natural rotation is the best, or, at least, that to which our different soils are best adapted.

Perhaps barley takes as little nutriment from the soil as any crop we can raise, as it is a broad-leaved, strong, atmospheric feeder of exceedingly rapid growth, and consequently adapted to dry, loamy, quick soil. Much has been done, but little accomplished, to improve our common six-rowed Canadian barley. Russian, Mensury, Empress, six-rowed, and many others have been tried and rejected. At the present time, according to my repeated tests, Imperial (six-rowed) is the best and Peerless next.

Now a word on spring wheat. This grain has been steadily declining, until this past season in Ontario it has fallen upwards of 5,000,000 bush. of an average crop. This is very much to be deplored, as there are many parts that cannot grow fall wheat, and it becomes a serious question to them. When a farmer is obliged to buy his bread, it is rather a serious matter. Now the best we can do is to select those varieties which we know are best calculated to resist the rust and blight, which has been the ruin of this crop, viz., those of strong habits, broad leaves, sap vessels well covered with fibre of straw, so as to resist rust, and I find it is safest to select bearded varieties, as these resist blight best. Those that have stood the test best this past season are:—Rio Grand, Italian, Wild Goose, McCarling, Pearl and Silver Chaff. If these are sown very early (I find it is useless to sow later than April 25th), they are a sure crop, especially the first mentioned. I tested the Riga wheat imported from Russia (latitude 60) by Professor Saunders, and consider it a wheat of great promise, although not quite satisfactory this season.

I pass on to oats. This grain is denounced as being extremely exhaustive to land. I quite believe this if a proper selection of seed is not made. Any oats that are late in ripening always have very small leaves and derive much of their nutriment from the soil, and early oats always have broad open leaves like barley, and, like it, de-

rive much of their nutriment from the atmosphere, and their time of growth is that in the season when the atmosphere is full of richness and the air full of moisture, and when this season is past they are ripe, while late oats occupy the land during the dry month of August and part of September, and extract much nutriment from the soil direct during that time. Oats that ripen about the same time as barley are no harder on the soil than that grain, especially if sown early—that is, before it is safe to sow barley. Early oats are always a sure crop, while the late varieties are always a lottery. The best early oats to raise at the present time, I consider, after repeated experiment, are:—Early Blossom, Egyptian, Canadian Triumph and English—all white varieties. Of the black varieties, which are always later and harder on the soil, although at times may yield a little more, the best are:—Black Tartarian, Black Champion and Buckingham Black. The worst varieties for exhaustion of the soil I have found to be New Leland or White Russian, White Tartarian, Black and White Maine, and all old worn-out varieties.

Peas are one of the least exhaustive of all. The future for this grain looks as bright as the past. The bug has almost disappeared, but many have lost their crop this past season by late seeding. The best varieties seem to be at the present time:—Egyptian, Golden Vine, and Partridge.

Perhaps in no part of the history of our country has the selection of proper seed been of more importance. The past season has been one especially trying to the germinating powers of grain, which will have an injurious effect on the coming crop if great care is not exercised in the selection. Much of the grain is light and shriveled, and the germ injured by excessive heat, while many oats are little heavier than the straw. The best and plumpest should be selected.

When we deposit a grain in the soil we not only plant the germ, but we also deposit its infant food as well, on which it depends in its early stage for support. Consequently, it is essential we should select the best and plumpest procurable.

If proper selection is made and sown at the proper time, and the land receive thorough cultivation, the vast advantage the country will assuredly receive is almost impossible to estimate. But if by our neglect we fail to do this, we will unnecessarily exhaust our soils, impoverish ourselves, and hand down to posterity a worthless and ruined country.

Condition of the Farmer.

DEAR ADVOCATE,—As one of the rank and file of practical farmers, I crave the favor of a little space in your columns. The apostles of humbugs have long enough monopolized the press and platform to disseminate their absurd theories. The real agriculturists "long enough have acted dummies." Voluminous matter called agricultural literature has been scattered profusely over this wide Dominion to enlighten the ignorant farmer—to tell him what he should do and what he should not do.

Not long ago these sages held up stock raising as the great panacea for all our woes. Hosts of advisers, who are as ignorant of farming as an embryo, howled about the ignorance and stupid stubbornness of the farmers whom they said persisted in raising wheat, whereas wealth and happiness stared them in the face, simply by raising cattle. The method was easy, forsooth; all there was to do was to breed to the best registered stock. "Where are those dreams

now?" As an actual fact, I here emphatically assert that I have offered for sale some of the very best high grade Shorthorn cattle in splendid condition for 2½ cents per lb., and could not sell even at that. Such cattle, according to the very best authorities, cannot be raised for less than 7 cents per lb. As an authority I refer to some of those gentlemen who have made actual lists: Mr. Rennie, of Scarborough; H. and P. Groff, of Elmira, and Mr. Gillette, one of the foremost breeders of the U. S.

Recently, however, the agricultural philosophers have undertaken to tell the farmer just how matters are progressing with him. In this letter I will refer briefly to but two of them. Mr. Beall, writer of the prize essay published in Jan. number of *ADVOCATE*, certainly made of himself a target. He has attacked the practical farmers with but little regard for their opinions, and does not think it out of place to brand them as "pessimists," "promulgators of discontent," and so forth. Now, with all due respect to this writer and his opinions, let us examine some of his statements. Mr. Beall gets his estimate of the average farm from the Ontario Bureau of Industry; so does Prof. Brown. Mr. Beall says the average farm contains about one hundred acres, but the Prof. put it one hundred and ninety. This leaves that part of the subject somewhat hazy. These gentlemen ought to come a little nearer than ninety acres. Perhaps, however, the estimate is at least equally as correct as the other estimates. Here is another sample from the prize essay:—"This farm yields products to the value of \$588.76 annually, almost 13 percent on the total value." In the interest of reason and common sense, I ask what has that to do with the subject? The profit of the farm will consist in the difference in the cost of production and the value of the product. By growing certain products a farm could easily be made to produce even double the value of the whole concern; but would it necessarily follow that because of this the farm would be immensely profitable? It would be more likely a losing business, on account of the cost of production. But, says the essayist, even if the whole was mortgaged there would still be left \$270. What about seed, what about feed for horses, cattle, and food for farmer and his household? Then the eternal leak of cost of new implements, buildings, fences, and a thousand things which the uninitiated never dream of. Prof. Brown makes an allowance of \$500 for household expenses alone. This leaves \$88 for all other expenses, according to his estimates, and they are correct, no doubt, as they were mostly taken from the infallible Bureau. Mr. B. then includes some extras, and calls it a total "of \$883, or over 18 percent on the investment, a very large advance on the percentage given by the Chairman of the Farmers' Legislators," who had said that over two percent could not be realized on farm investment. Without a doubt the Chairman refused to state at that meeting that after the cost of production was counted that two percent was the most that could be realized. Yet Mr. Beall makes a comparison where a comparison should not be made, his 18 percent being the amount of the product without costs, while the two percent is the amount with costs.

Having investigated this matter with diligence, I agree perfectly with the Chairman that two percent is a very near approximate of what may be realized on investment in farm property. It is, therefore, evident that a farmer could do immensely better to sell his farm and invest in mortgage or other securities, which would bring him at least six percent—200 percent more than he

gets while holding farm property. This is the actual state of affairs, and instead of farm property increasing in value in Ontario, the reverse is the case, as a natural consequence of so much farm property being in the market. For want of space I am forced to let Mr. Beall's other statements go uncriticized.

Prof. Brown's estimate of the average farm differs from Mr. Beall's, but it is equally as deficient in correctness. For example, he reckons oats at 55c. per bushel. How the Prof. gets that price for oats as an average for five years, is a great mystery to me, when I have sold them for some years back at from 20c. to 30c. per bushel. Oats are generally lower in price west of Toronto than in the city, and I challenge any man to point to the day during the last five years when oats brought 55c. in Toronto. The Prof. winds up his article by saying "he (the farmer) is second to no profession I have ever known."

I submit, if farming was half as profitable as these gentlemen would have us believe, why do they and others waste their energy in eternally advising young men to stick to farming? They, however, take good care not to farm themselves, but seem terribly anxious to get everything on two legs into the business, while they take a totally different process to make a very superior living.

Not long since an essayist received a prize of \$100 for an essay on "How best to keep the boys on the farm." Thousands of good men, who have been deceived by the vapors of these false teachers, have left a good business, went farming, and courted ruin. Other trades and professions know better than to be forever advising every man into their trades and professions.

Again, I submit, if farming was so lucrative, why is it that no capitalist outside of the walls of a lunatic asylum goes into farming on a large scale to make money? The farmers have no opposition in that line, and not much danger of getting that kind of opposition. If a banking concern or a mercantile house fails, it is a matter of note. As an actual fact, however, hundreds of farmers go to the wall every year since the depreciation of farm produce which set in five or six years ago. This is a matter of small account. There is but to toil and slave, while others reap the reward.

JAMES HAWKINGS, Florence, Ont.

The Beet Root Sugar Industry.

BY W. SCRIMGEOUR.

The last article on this subject told of its establishment and growth. This will treat of it from an agricultural and industrial standpoint.

Sugar-beets for industrial purposes are grown all over Europe, but mostly in the more northerly and interior localities, as these are best suited to the development of the saccharine qualities of the plant, which is the all-important point.

The required climatic conditions are sufficient moisture in the spring and early summer to ensure the growth of the plant, and dryness and sunshine in the fall to develop the sugar. Bright sunny days and cool nights during September and October are very desirable.

Beets can be grown in nearly every variety of soil, but by far the best is a deep, friable loam, that has been in cultivation for some time. In heavy clay and new land beets are apt to develop other qualities than sweetness. The sweetest beets are small in size with plenty of large leaves.

The cultivation required is extremely simple, consisting of preparation of the seed-bed, sowing, hoeing and thinning.

The seed should be sown in rows 20 inches apart, as early in May as possible, but not before the mid-day temperature is from 50° to 60° Fahr. From 10 to 13 days are required for germination, and as soon as the rows are well defined the horse-hoe or cultivator should be used. When the stems are about the thickness of a

pencil they should be thinned out; about eight inches apart, from centre to centre, is what is generally recommended.

The most successful growers are in favor of close growing, and aim to have the ground entirely covered by the leaves when the plant has reached maturity. They claim three important advantages from this; (1) sweeter beets, (2) containing less of mineral matter, and (3) greater yield per acre.

The hand hoe is used for thinning, just as turnips are thinned in Scotland, and a little skill is required to leave, at regular intervals, a good, strong plant, and destroy the others. At least three hoeings should be given, more, if time will permit, for the work of cultivation must be over by about the first week in July, and the plants should not be disturbed again until harvesting, which takes place just before severe frost. Like other crops, the result will depend very much upon the care and skill with which it is cultivated. A day's work with the cultivator at the right time, or the neglect of it, may make all the difference between success and failure.

A great deal has been written regarding the application of manures to this crop, and a great many experiments have been made with every known kind of plant food to determine which will give the best result in the sugar-contents of the plant. "In the multitude of counsellors there is wisdom," but in this case it is hard to find it, so many and so varied are the theories advanced.

The writer's deduction, after careful study, is, that sugar being a carbonaceous product, is elaborated in the plant by the sun's action on the leaves during the ripening period, and is to a certain extent not dependent on manures. This is why a dry, sunny fall is so important, and the localities where such prevail so suitable for the culture of this plant. But this sun-action depends very much on the condition of the plants, those having the most vigorous growth of leaves being most subject to its influence.

The purpose of manure then, is to nourish the plant in its earlier stages so that it will be fully developed. Well-rotted stable manure thoroughly wrought into the soil is found to be as good as any, but may be supplemented very beneficially by the addition of a small quantity of superphosphate.

The yield per acre depends very much on the variety of beets grown; those grown in France yield on an average about 20 tons per acre while those grown in Germany only yield about 15 tons, but the former contains only about 10 percent of saccharine matter, while the latter contains about 15 percent. These are the standards, and there are also other kinds, which rank between, and all are subject both in quantity and sweetness to the varying conditions of climate and culture.

The minimum quantity of sugar obtained from the produce of one acre of land should not be less than 2,000 lbs., while as much as 7,000 lbs. is quite possible when all the conditions are favorable.

This industry can not be carried on in a small way, the machinery required being very costly, and the work can only be entrusted to thoroughly trained sugar chemists and a competent staff of sugar boilers and engineers. It requires at least the product of 1,000 acres before it can be made profitable, and double that quantity could be worked at comparatively little extra expense.

Some factories in France have a capacity for working 200,000 tons of roots in the season, and there the work can be carried on very economically.

In Europe the manufacturing company usually undertake to grow about half the required quantity, and contract with the neighboring farmers for the other half; in some cases the farmers are part owners of the factories. Just at what price sugar can be produced is difficult to say, so many different influences bear on the subject, and so much depends on the manner in which the work is undertaken. A recent Belgian official publication stated that granulated sugar could be made at the factories there for three cents per lb., and the current market reports quote granulated sugar for export, free on board steamer at Hamburg, at 18 shillings per 112 lbs., which is about four cents per lb.; raw sugar for refiner's use is quoted same terms at 14 shillings per 112 lbs., or just 3 cents per lb. Advices to hand report the estimated product from the crop of 1887 as 2,280,000 tons, which is 420,000 tons less than the estimate of 1886.

As already mentioned, this important European industry is one that benefits a large number of the community, not only those engaged in the field and factory, and in the business of distributing the product, but also to those engaged in the many trades allied to it.

It has also proved of great advantage to general farming; wherever the factories exist, there is to be found an improved system of farming. The beet pulp from the factories is found to be a very valuable winter feed, and every stranger remarks the sleekness and fatness of the cattle fed on it. Farmers are thus encouraged to keep all the cattle they can to be fattened, thus securing abundance of manure for use on the land. The cultivation required by the beets is found to benefit the succeeding crop very much. The introduction of this crop has done away with all fallow lands, which used to be considered so necessary in European systems of farming. Where rents are as high as they are in the sugar districts, this is a matter of considerable importance.

As farmers are so much benefited by the beet-root sugar industry, it is to their interest to help to have it established in this country. For this purpose clubs should be formed whose members would each undertake to grow, say one acre each, all using the same variety of seed, so that by comparing notes at the end of the season, they would have a good idea of what they could do, both as regards yield and cost of culture. The prime cause of the failure of this industry here has been the want of sufficient roots to run the factories. If capitalists were only sure of getting plenty of beets there would soon be plenty of factories, and if farmers knew just what they could raise an acre of beets for, they would be in a position to make contracts with the manufacturers.

There should be no difficulty in getting say 20 tons of the French varieties, and manufacturers would likely be willing to pay about \$4 per ton, so that it is worth while to make a combined effort, as very little can be done individually in this matter. Farmers can not expect to see factories started unless they show their willingness and ability to grow the roots in large quantities. The roots grown while experimenting can be very profitably fed to stock, being more fattening than fodder, beets or turnips.

The whole success of this industry may be credited to technical education, without which it never would have amounted to anything, but Napoleon the Great and the King of Prussia hit the nail on the head when they decreed that part of the money granted to further this industry was to be spent in establishing schools of instruction, where the art of making sugar was both studied and taught.

The people of continental Europe are far ahead of us in this respect, and most enthusiastically devote themselves to scientific research.

The question naturally arises: Is this industry to be established in our country, or are we to go on paying out millions of dollars to foreigners for sugar that could be profitably raised on our own farms? The answer lies with the farmers, who by united action can solve the problem.

Injurious and Beneficial Birds— The English Sparrow.

The following paper on the above subject, for which we are indebted to Dr. Burgess, Hamilton, Ont., was read at a recent meeting of the Biological Section of the Hamilton Association, by Mr. T. McIlwraith, F. O. S. The subject is one of great importance to our farmers and fruit growers, and must sooner or later push its way to the front:

Economic Ornithology is at present receiving a good deal of attention in various parts of the world, and its importance increases as we are favored from time to time with the result of investigations which have been made regarding the food of birds in relation to agriculture, horticulture, and forestry. Mammalogy also claims a share of attention in this connection, and though we in Canada have no special grievance to complain of in this department at present, yet in the far distant lands of Australia and New Zealand the amount of damage which has been done by the introduction of the English rabbit is almost incalculable, and may well serve as a warning to other countries, to exercise due care when introducing strangers to reside within their borders.

In Canada, when the settler has cleared a patch and raised a log house on his bush farm, one of his first steps towards making a home is to raise a few chickens, which usually appear in due time, but scarcely are they permitted to become familiar with their surroundings before they are scooped up by the hawk. This, of course, enrages the settler, who brings powder and shot into immediate use, and takes revenge on every hawk and owl which comes within reach. This serves for a time to allay the irritation caused by the loss of the chickens, but a better knowledge of the food habits of the birds would have showed him that the greater number of the hawks never touch poultry at all, and that the service they render by the destruction of mice far more than compensates for the few chickens destroyed.

As it is with individuals, so it is with communities; hasty conclusions are arrived at which may be acted on for a time, but eventually they must yield to increased knowledge of the subject under consideration.

As an instance of this may be mentioned the "Pennsylvania Scalp Act" which was passed so recently as 1885. This Act provided for the payment of a bounty of 50 cents each on all hawks, owls, minks, and weasels killed in the State, with an additional 20 cents each to the Justice taking the affidavit. This Act was in operation for a year and a half, but it was urged by a few close observers that the killing of the hawks and owls removed the check which nature had placed on the mice, which were now on the increase, and doing so much damage that eventually the Act was repealed.

Dr. Merriam, in his report to the Department of Agriculture at Washington for 1886, goes into figures on this question which will surprise those not used to making such calculations. Here is an extract:

"By virtue of this Act about \$90,000 have been paid in bounties during the year and a half which has elapsed since the law went into effect. This represents the destruction of at least 128,571 of the above mentioned animals, most of which were hawks and owls.

"Granting that 5,000 chickens are killed annually in Pennsylvania by hawks and owls, and that they are worth 25 cents each (a liberal estimate in view of the fact that many of them are killed when very young), the total loss would be about \$1,250, or for a year and a half, \$1,875. Hence it appears that during those 18 months the State expended \$90,000 to save its farmers from a loss of \$1,875. But this estimate by no means represents the actual loss to the farmer and taxpayer of the State. It is within bounds to say that in the course of a year every hawk and owl destroys at least one thousand mice or their equivalent in insects, and that each mouse or its equivalent in insects would cause the farmer a loss of 2 cents per annum. Therefore omitting all reference to the enormous increase in the numbers of these noxious animals when Nature's means of holding

them in check has been removed, the lowest possible estimate of the value of each hawk and owl to the farmer would be \$30 for the year and a half. Hence in addition to the \$90,000 actually expended by the State in destroying 128,571 of its benefactors, it has incurred a loss to its agricultural interests of at least \$3,947,130 in a year and a half, which is at the rate of \$2,631,420 per annum, or in other words the State has thrown away \$2,105 for every dollar it has saved. And even this does not represent fairly the full loss, for the slaughter of so large a number of predaceous birds and mammals is almost certain to be followed by a corresponding increase in the numbers of mice and insects formerly held in check by them, and it will take years to restore the balance thus blindly destroyed through ignorance of the economic relations of our common birds and mammals.

Among birds the two which are securing most attention in the United States at present are the rice bird or bobolink, and the house sparrow. Of the former we have little to say. He is here a summer visitor, and during his stay makes our pasture fields ring with his merry jingling song. Early in the fall young and old gather together in flocks and pass away to the south, and it is then he makes his presence known in a way that is most disastrous to the rice growers. Hundreds of men and boys armed with shotguns are employed to guard the fields, but as the vast flocks of birds arrive from the north, they find themselves quite unable to either scare them off, or sensibly reduce their numbers. A recent calculation has made out the loss to the planters from this cause to be about two million dollars annually.

As regards the economic status of the house sparrow, the case is somewhat different. He is comparatively a recent addition to American birds, and for the first few years of his residence was here in limited numbers, and attracted but little notice. It was in 1850 that eight pairs were landed in Brooklyn, housed over the winter and turned loose in spring. In 1852, and again in 1858, other shipments were received at adjacent points in N. Y., all of which were turned loose and appeared to do well. But it was not till about 1870 that the species seemed to be fairly established, and generally distributed throughout the cities in the Eastern States, soon after which it commenced its march westward, arriving in Hamilton in 1874. Here it was welcomed as an old friend by many of the citizens, who had been familiar with its appearance in other lands, and a commodious house was erected in a prominent position at the expense of the city for the use of the birds. In this they remained till it was filled to overflowing, and the surplus finding suitable accommodation throughout the city, made it apparent that the birds were quite able to shift for themselves, and the house was taken down.

From that time till the present the rapid increase and distribution of the species exceeds any thing which has heretofore been known in the history of birds. Along the Atlantic coast it extends from Southern Georgia north to the Bay of Chaleur, while inland it has got as far west as central Kansas and Nebraska. A colony is also established at New Orleans and another at Salt Lake City. On the Pacific Coast the only point where they have gained a footing is at San Francisco, but small settlements have been observed at many intermediate points, which will no doubt in time join together and make the chain complete across the Continent.

Among the explanations given of the diffusion of the species over so large a territory in so short a time, may be mentioned its extraordinary power of reproduction. Dr. Merriam tells us that "in the latitude of New York they raise 5 to 6 broods in a season, with 4 to 6 birds in each brood, making say 26 in all at the end of the first year. If we assume that all live together, the sexes being equally divided, they will thus, at the end of ten years, have reached the extraordinary number of 275,716,983,698."

The house sparrow thrives best in proximity to the dwelling of man, finding there both food, shelter, and exemption from the attacks of birds of prey, which do not often visit cities. It is also hardy in constitution, and capable of enduring the extremes of temperature, as seen in its

being found from New Orleans to Lake Superior.

On reaching a new section of country they first fill up the towns and villages, after which the surplus moves off in different directions, and so keep on appearing in districts where they have not before been observed. Much has been written about the migration of birds, and the wonderful instinct which enables them to travel with such certainty between far distant places, but the sparrows, though not migratory in the ordinary sense, go ahead of all other birds in this respect, by getting into empty box cars, travelling hundreds of miles, and being let loose in a new country free of charge. In this way the first individuals reached New Brunswick in 1883, in empty box cars from the west, and in like manner several have been carried to the north of Lake Superior on the line of the Canada Pacific Railway.

(TO BE CONTINUED.)

Farming in Manitoba.

Editor Advocate:

SIR,—As I see you never get tired publishing statements coming from settlers in this part of the Dominion, it might perhaps not be out of place for me to let you know what I think of the country after my few years' experience. In the first place, I will enumerate what I consider to be a few of the greatest disadvantages which the new settler has to contend with in the Prairie Province. I think the first and greatest is the prairie fires every spring and fall, which keep the settler in anxiety until they have passed, and his hay stacks and everything else are safe, by being burned outside of the fire guards, or until a fall of snow stops it in the fall, or the green grass in the spring. Although there are severe laws against setting the prairies on fire, it does not hinder it from running in the least. So long as the wild grass is allowed to bleach with the frost the fire will run in spite of the arts of man. Considerable damage is done every fall from its ravages, in the way of burning haystacks, and sometimes buildings; and it is the chief agent in destroying timber and making firewood scarce.

Settlers experience greater difficulties in getting buildings and out-houses than in other parts of Canada, on account of the scarceness of building timber. The great adhesiveness of the soil along the Red River valley is sometimes a great nuisance; it is so loose and friable from the effects of the winter frost that when there comes a shower in summer it will stick to our boots in cakes, and it is very hard to scrape it off. It will adhere to the plow when it is wet, to the reaper, or to the wagon wheels, so that it is almost impossible to travel in wet weather.

There is great objection taken to the severe cold in winter, but I think it is much over-rated generally. True, the cold is very keen during the months of December, January and February, but, with a good warm house well built to keep out the cold, and a stable likewise, it is not felt much worse than in Quebec or Ontario. True, there are some days which are not comfortable to be out, but when the weather moderates we have the advantage of good roads, never blocked with snow drifts, nor are we ever obliged to turn out and shovel snow. We can go for our hay out on the prairies all through the winter, and the snow does not bother us except around the hay stack. I do not think we are more subject to summer frosts here than in other parts of the Dominion, but when they do occur they are keener and take more effect; in fact, so far as the inclemency of the weather is concerned, we do not suffer more than in other countries, and, indeed, not so much from what I can see.

I consider we have many advantages here that are not to be found elsewhere. The land is very level, generally leaning towards the river; consequently, easily drained. There are no stumps to pull out or stones to pick up. A man can break and plow as much land as he can manage, and its fertility is almost inexhaustible when carefully cultivated. Summer fallowing is of very great benefit and makes a great difference in the yield. Drought is not so dire in its effect here as in other parts of the Dominion, except on the prairie grass where the ground is packed hard, but where it is plowed it retains the moisture to an extraordinary degree, and I think the great depth of frost in the ground helps in a dry season very much.

The summer season is short, but the country is so well adapted for all improved farming implements that we can do our work easier and quicker than in many other parts of the Dominion where the farms are rough and unlevel. We can also keep as many cattle as we can manage, as they have the wide prairie to pasture on, and to cut hay to winter them. The grass growing on the high ridges is very nutritious, and, I think, is as healthy food as any hay we can get for cattle. As for the great yields per acre of grain which we hear about, I think they are the exception and not the general rule. I have seen 42 bushels of wheat to an acre, but very seldom. Such statements ought to be taken with caution.

Such, Mr. Editor, is a very fair account of my experience of the country, and if you think it is worth anything you may give your many readers the benefit of it.

JOHN KENNY, St. Norbert, Man.
Jan. 23, 1888.

PRIZE ESSAY.

Farm Accounts.

BY W. A. HALE, SHERBROOKE, QUE.

In keeping farm accounts the main thing is to find a system that combines accuracy with the greatest possible simplicity, for, unlike most other occupations of the present day, that of farming seldom or never allows of a professional accountant being engaged, and whether he be pressed for time or not the farmer has, through force of necessity, to be his own Secretary-Treasurer.

I have found from experience that a complicated system of books is not the one suited to the requirements of the case. The form known as double entry is far too intricate and requires more time and thought than can well be spared or than is in most cases necessary. Neither would I recommend opening an account with every field cultivated, every individual purchaser, nor every separate department of the farm, as is so often recommended.

The two great questions to be decided by keeping farm accounts are, first, whether we are making money by farming or not, and, secondly, by what particular branches we are adding to or taking from our bank accounts. For the main or general system of accounts one book, such as is known as, or ruled like, a journal, is sufficient, and will last for many years, and by reversing, it can be used also as a farm diary, a very important companion to the account book. For accounts or estimates of separate branches or specialties, such as market gardening, dairying, stock-breeding, cattle-fattening, sugar-making, fruit-growing, cordwood, lumber, &c., &c., &c., I would depend on a separate small pass book for each, and trust to a great extent to estimated charges for and against each, as it is too laborious

keeping an accurate account of every hour or fraction of an hour spent by a hired man on each of the many occupations he may be engaged in.

On the first of every year an inventory of the capital invested should be made, so as to see whether the property is increasing in value or not. Putting down the actual value of the farm, including the dwelling house, for as the prices of farms as generally quoted includes the house, it seems best to charge the whole value as capital, and to give the farm credit every year for the value of the rental of such a house as would be required by the farmer and his family if they were engaged in any other occupation. This would represent the capital invested. Then make an inventory of all movables, other than household furniture, such as live stock, implements, wagons, harnesses, tools, &c., &c., with their actual values. This represents the working capital, and this, added to the value of the farm, should bear an annual charge against the farm, say for the present time of 7 percent, less the rent of the house, for which the farm should get credit, as it, the value of the house, is charged against it in the capital account.

All ordinary repairs and improvements, such as shingling a barn roof, putting new floors in stables, renewing sills of outbuildings, &c., &c., should be entered as current expenditure, while any special improvement such as building a basement barn, costing from say \$300 to \$3,000; tile draining a large portion of the land, should be added to the capital account, and only the interest on the cost be charged from year to year. In making entries in the account book, all articles sold for cash should be marked paid. Those not so marked remain as a charge against the purchaser till paid, then by turning back to the entry and marking it off, it closes the transaction, the same being done with articles bought (thus saving the keeping of and posting into a ledger), as follows:—

January, 1888.	
Paid.	
Sold John Smith 2 tons of hay at \$9.00	\$18 00
Sold Chas. Brown 5 bus. potatoes at 60c	3 00
	————— \$21 00
Paid James Anderson on account wages	5 00
Paid.	
Bought from John Brown, 1 logging chain	3 00
Used 150 lbs. pork, at 7c	10 50
“ 1 doz. eggs, 20c; 4 lbs. butter, 88c	1 08
“ 7 qts. milk, 28c; 5 lbs. wool, \$1	1 28
	————— 12 86

All entries I would class under four heads. Under “sold” would appear all produce actually sold for cash or on time; under “used” would appear all articles used in the house, such as milk, butter, eggs, meat, fruit, vegetables, fire-wood, &c., &c., at a fair market value; these two would appear to the credit of the farm. Under “bought” would appear all purchases of farm movables, blacksmith’s work, grain for stock, seeds, ordinary repairs, insurance on farm property, taxes on the same, &c., &c. Under “paid” would appear all wages of farm hands, and also the cost of their board, if they lived in the house or boarded with the head man in his cottage; these two would appear to the debit of

the farm. Now, by adding the sums total of the first two items together, and also of the last two, and subtracting one from the other, we can see at a glance whether we are making or losing money by our operations.

Now, suppose this balance shows a profit of say \$600 on a 100 acre farm, and that the value of the farm, stock, movables, &c., is \$6000, it is inaccurate to say, as one often hears, that so-and-so is “making 10 percent on his farm;” he is only really making 3 percent, equal to about sixty cents a day for the combined work of himself, his wife and his family, barely enough to feed them; or if the profit appears to be but \$300 a year, he is really losing 2 percent a year and giving his work for nothing, and of this latter condition of things I know of too many examples. Were his balance sheet to show a yearly profit just equal to the interest on the value of his capital, then it would appear as though he would be as well off if he sold out and he and his wife and family went to work for their board.

I have noticed for many years past a disposition amongst those holding land to ignore the yearly value of the interest on the land they hold, and when a man wishes to buy a farm for which he has not the money to pay, his first thought is to “work out” till he can save enough money to pay for it, feeling that it would be impossible to make payments on the land and meet his interest as well by farming; he waits till he can well nigh pay cash for it and then takes no heed of what interest the value of his farm would represent were it invested in something else.

There are many incidental items which may be brought to bear to make a more favorable showing for the condition of this, the noblest secular calling in which a man can invest his energies. His property may be increasing in value year by year in a greater ratio than his capital would were it invested in mortgages or bank stocks. Health may be his and his inheritance to his succeeding generations, and of far more value to them than bank stocks or shares, the freedom from possible immoral contamination of his children to which they might be subjected in crowded towns and villages, and the pleasant, healthful life, full of the knowledge that he is his own master, that the portion of the earth on which he lives is his own, and that what he works and plans for is his own and born of his own industry. These and many other like things may go to make some compensation for a small financial farming profit, but which can hardly be included in the balance sheet of the actual farm accounts.

A distinguished physiologist says:—“Fattening, when not carried to excess, causes a fine fiber, with not too much connective fibrous tissue. The fat accumulates between the fibers, causing atrophy of some, and hence the superabundance of fat, causing a less number of fibers to the fascicules than in the lean meat. . . . My idea of getting fine eating beef is moderate exercise; enough to have the fibers keep themselves in muscle substance, but not enough to thicken the membranous substance (as in the case of the working ox), food enough to build this and just surplus enough to produce a moderate amount of fat outside the muscle fascicules, but not within them. . . . The membranous surroundings of the fibers lose their substance through the pressure upon them of the infiltrated fat. . . . Excessive fattening destroys the muscle substance and leaves only the membranous covering of each fiber.”

Improving the Farmer's Home Surroundings.

BY HENRY IVES, BATAVIA, N. Y.

Although a farmer may occasionally be met with who will claim to be indifferent as to looks, but the number who really are so are too few to take into the account, and I think we may fairly reckon on most of our farmers agreeing with us that the average farmer's home should be made more attractive in its surroundings. But their excuse for not thus improving their own is for the want of time, or they can't afford it, or some like excuse. Now my sympathy is with this class of farmers, and I want to say to them most assuredly that they do have the time, and that they can well afford to make such improvements, if they will but think so, for if made judiciously they will add many times their cost to the current value of their farms, so that, on the principle of working where it will “pay the best,” as we farmers usually claim to do, we cannot afford to neglect doing more or less of this class of work to beautify and improve our home grounds.

We all look on approvingly to see the resident of a town or city grade up nicely about his house, and for the lawn using such breadth of land as he can command for this purpose, stocking it well with grass and trees and flowering shrubs, besides planting a row or two of fine shade trees, hardening his front along the highway. But the farmer can do all of this class of improvements to much better advantage in every way than the townsman can, for he has the team and tools and the breadth of land required, and by having the work properly laid out and decided upon he can improve odd spells and broken time for doing it, so that it need really only cost him a nominal sum, while such improvements will count for much more in his case than for the resident of the town. The farm-house being necessarily so isolated, and so rarely showing in its surroundings much, if any, attempt at adornment, that even an ordinary effort made in this direction by any farmer at only a slight expense, might not only make his premises look much more attractive, but really add materially to their selling value.

In proof of this, we can see in almost any neighborhood farms which have been allowed to run themselves, as the saying is, or been managed in a slipshod, slovenly manner, when they come to be sold they will not realize as much, by five or ten dollars an acre, as adjoining farms of no better soil, but showing more thrifty management and more attractive surroundings, and in “fixing up” a farm to sell, improvements of this kind which the farmer can make himself, will count for more than improvements in buildings and fences, though they may cost many times more.

To show more readily what improvements I would make, and how I would make them, allow me to state a little of my own experience on two farms, the first bought 45 years ago, what was called a poor, run-down farm, and after a pretty thorough overhauling and improvement, it was called one of the best farms “in town,” and sold 20 years later for three times as much an acre as I paid for it. Then I bought another, an old farm, nicely located, but had been badly managed and the grounds about the house and barn occupied by the accumulations of more than one generation, consisting of the remains of carts and wagons, plows, drags, ox-sleds and hayracks, and lumber, and litter, occupying an acre or two of the most valuable part of the premises, besides

furnishing the nuisance of burdocks and dock and much other foul growth. The first work was to clear the land of these and the old fences along the road front and those inclosing the old-time 7x9 front yard, besides some old trees and bushes, making all into firewood and old iron, and preparing a large breadth of land about the buildings, first for tillage to thoroughly subdue it, preparatory to being properly graded and stocked with grass, and shrubs, and trees for a good breadth on the farm front, bordered on the rear by the garden, the farm buildings and the orchard of both small and large fruits. The front fence, if one is required, should be of wire, and all division fences should be avoided as far as possible to a great breadth on the front and to either side from the farm house. To utilize this land devoted to grass and lawn I stock it in front of the house with any fine lawn grass, to be kept short; on one side, an acre, more or less, to orchard grass, and on the other side to timothy, to furnish green forage for the work team, and, possibly, a cow or two, kept on the soiling plan. I would just say, too, in this connection, that in planting quite liberally of sweet corn, both early and late, for the family use, fast as the ears are picked the stalks are cut close to the ground, and they go also to the stock in the barn for a sweet, green ration.

Another opportunity for improving our farm surroundings will offer itself to most of farmers in properly dressing up the sides of the road adjoining his farm. This should be treated about the same as the lawn, as it is really only an extension of that, to the carriage track or the middle of the road; then instead of planting out a variety of trees promiscuously as on the lawn, set a row or two of hardy forest trees along the roadside, the whole breadth of the farm front, the first row put a foot or two inside the road-line, on to the farm, and the other 8 to 10 feet into the road. Then if fencing is wanted it can be made by stretching galvanized wires and staple them to the inner row of trees. Use long galvanized staples only partly driven in. Then as the tree grows draw them out with pinchers once in a year or two. This will give a permanent, imperishable fence, and at a light cost. This space between the rows is the legal place for the sidewalk, and the grass of the roadside can be used as that from the lawn or to make into hay; by common consent if not by law, this will belong to the adjoining farm-lands, and it can be cut with machine as readily as the meadow, while the work doing it will seldom be more than would be required of the farmer before in keeping down the front growth on the same.

Now it must be acknowledged that more or less of the above management might be practiced to advantage on almost any farm, adding not only attractiveness to the old homestead, but a real cash value to the farm, and it will be noticed that it is a class of improvement that the farmer can do himself at a very slight expense, and one which he will be most sure to find great pleasure in doing, if only he will once ordain to do it, and then make the beginning.

P. M. Augur, in answer to how he had obtained \$1,200 worth of strawberries per acre, says:—1. Use only such varieties as will respond to generous treatment. 2. Plant early of kinds as by feeding will give a pint and a half of berries from a plant. 3. Apply and mix thoroughly with the soil 100 tons of best horse manure. 4. Set the plants in rows two feet by one and a half, and nip all runners. 5. Hoe, up to freezing, and then mulch until the ground ceases to freeze in the spring, and re-mulch when the fruit is half grown. 6. Allow plants to fruit but once; and 7. Get stock plants from those not allowed to fruit.

Seventy tons of Canadian turkeys, says the Mass. Ploughman, were shipped in a single day for Liverpool and London.

Farmstead Sanitation.

It is a strange fact that the virulent types of some filth diseases are more common on farms than in cities. Yet investigation shows why diseases like typhoid fever and diphtheria are more likely to be found, and, when found, more likely to put on unusual virulence in the farm house than in the city. It is not, however, the farm house alone in which such is the case. Small or large villages without drainage are also haunts of these plagues; and the cause, both on the farm and in the village, is much the same.

Typhoid fever most commonly has its origin in well contamination. Diphtheria is pre-eminently a sink-spout and slop-hole disease. Both of them are contagious and infectious, though the last is much the more so. But it must be understood that in both cases the origin of the disease is specific. By no means all foul wells, nor all sink-spouts and slop-holes, let them be ever so foul, will cause these diseases. Yet they are always liable to do so, for they furnish the conditions under which the germs of those diseases have ready and abundant access to the systems of those who drink the poisoned water and breathe the poisoned air. Uninfected filth will not give origin to a specific disease of this class, no matter how foul or how offensive to the senses it may be. There is reason to believe that mere dirt and stench—pure dirt and stench, if such an expression can be allowed—may, in many cases, not be capable of causing ill-health of any kind. Yet foul airs and offensive odors are warnings of dangerous possibilities, and in feeble or sensitive constitutions they will, unaided, indirectly, by weakening the appetite and impairing digestion through the disgust they produce, cause serious and even fatal illness.

The grounds of convenience upon which the location of farm houses is commonly determined, such as handiness to water and to the out-buildings, shelter from prevailing winds, richness of soil and evenness of surface, are often all more or less unfavorable to health. A house in a level springy spot, under an abrupt hill or high, rocky bluff, is very likely to prove unhealthy. In fact, no spot which cannot be easily and thoroughly drained, and where the air cannot freely circulate on all sides, can long be occupied as a home for human beings without accumulating around it, and within its buildings, great and constantly increasing dangers to health. The handy well, its water within a few feet of the surface; the sodden soil, from which surface water can escape only by slow percolation or evaporation; the damp, undrainable cellar, the thick and fast-growing yard trees, which exclude light and air; and the protecting elevation near at hand, all tend to make human tenants very familiar with sickness and death. An experienced physician, riding through an entirely unfamiliar region, can yet point out, with almost unerring precision, the houses in which the most ill-health and most numerous deaths have occurred. The ease with which this is done seems almost miraculous to the uninitiated, yet the grounds of his verdict are covered by the above statement of conditions unfavorable to health.

These damp, unventilated locations are the favorite houses of consumption. Statistical sanitary investigation long ago determined that fact beyond a doubt. When it has happened that the location was not absolutely undrainable and unventilated, deep and thorough ditching and the removal of trees have made such dwellings comparatively healthy.

The contamination of wells usually arises from privy vaults, barn-yards and cesspools. In porous or ledgy land, liquid filth from these percolates, or, following seams in the ledge, may be directly conveyed into the well. If this is shallow, and near to any such depository of liquid or semi-liquid organic matter in a state of putrefaction, its early infection is sure; but often in such a case the water becomes so manifestly foul as to be rejected. The greater danger exists when the leaching is so slow and through such a distance that neither the clearness nor the taste of the water is impaired. Such water may be brilliantly clear, sparkling and pleasant to the taste, yet be extremely unwholesome, and even deadly.

The farm privy is a difficult problem for solu-

tion. Unquestionably, so far as soil contamination is concerned, the common shanty, at a distance from the house, unsheltered by trees or shrubbery, in which the droppings fall upon the surface of the undisturbed soil, is preferable to any sort of vault or cesspool where large quantities of liquid putrescible filth accumulate in the most favorable of all states for the infection of the soil, water and air. On the whole, it seems to me that some modification of the earth-closet principle, within or very near to the home buildings, is best suited to the needs of a rural family.

The slop-hole must be positively tabooed under all conditions. Free and unimpeded drainage, for some distance away from the buildings, should be provided for all the waste water of the household. The clogging of such drains, either by the accumulation of solid waste or by freezing, must be provided against, and this is often difficult. The solid waste which cannot be utilized otherwise, ought to be burned daily. A grating should be so arranged as to absolutely prevent such matter from entering the house drain. If the latter is made deep enough to escape frost, and is carried eight or ten rods away from the house, with its outlet in a gully which will not allow it to collect, the danger will be overcome. This outlet should not be made opposite to the prevailing winds, but the reverse, if possible, and to effect this a turn may be made, if necessary.

Perfect cellar drainage must be secured under all circumstances so that the cellar bottom shall be absolutely dry at all times. This should be attended to when the house is built, but if it has not been done no time should be lost in attending to it. A flowing spring in a cellar, if it has an open and free outlet, and is conducted to it by a defined channel, is not ordinarily objectionable.

The same sanitary rules that apply to the dwelling are equally applicable to the barns. The great thing to be avoided is the accumulation of putrescible matter under circumstances that admit of its contaminating the soil, the water or the air. Fortunately by the use of ordinary absorbents, by its frequent removal, and by other well-known precautions, this is not difficult to accomplish. The barn-yard is usually the worst spot; but the wise farmer is the one who has the dry barn-yard, even if it is to be secured only as the result of considerable labor. It is, at any rate, a job that needs to be done but once, and pays from the start in convenience alone, and aside from sanitary conditions.—[T. H. Hoskin, M. D., in Rural New Yorker.

Professor S. A. Knapp gives this summary of the science of mulching: "The value of covering the soil has been known so long and so commonly as to become a proverb, 'Snow is the poor man's manure.' Science and experiment have shown what is beneficial in winter is even more advantageous in summer, and that few things can be more harmful than to denude the soil and allow it thus to remain for a length of time. They have demonstrated that the soil is increased in fertility by covering much more than the amount of material placed on the ground as a mulch. 1. A large amount of atmospheric ammonia deposited by the rains retained. 2. A certain proportion of water in the soil is necessary to the best conditions for chemical action, to make the largest amount of plant food available and to enable the fibrous roots of plants to feed to the best advantage: mulching retards evaporation. 3. Our torrid suns acting upon the black prairie soil, produce an amount of heat injurious to the fibrous roots of many plants; mulching cools and equalizes the temperature near the surface. 4. Sudden extremes of temperature affect plants, as animals, unfavorably; mulching equalizes condition, retards the action of frosting and allows the plant to adapt itself to the change. 5. Mechanically it breaks the force of the rains and prevents them from compacting the soil. Other advantages might be named."

Clover Sickness.

Sir J. B. Lawes contributes the following account of his experience on the above subject in the *Abany Cultivator*;

Considering the immense difference in the amount of fertility which is found in different soils, it is not surprising that those who farm in the most favored localities are sceptical in regard to the failure of the clover plant. Having farmed all their lives without having experienced any failure, they see no reason why disease should ever occur. The cause of clover sickness has attracted almost as much attention as the source of the nitrogen in plants, and, as far as I can see, both are likely to form subjects of inquiry for a long time before the final solution of the problem will be arrived at. Although clover sickness has occupied our attention almost from the commencement of our experiments, for a long time we hardly advanced beyond the fact that no combination of manures, natural or artificial, would cause clover to grow upon land which was clover sick. Of late years we have gathered two or three scraps of knowledge which have enabled us to mount a step or two up the long ladder on the top of which is the solution of the problem.

In the first place, we have grown red clover continuously for 35 years upon an old garden soil without the application of fresh manure. The soil and subsoil to the depth of 18 inches was exceedingly rich in nitrogen, and it is evident that dung in large quantities had been trenched into this depth into the soil. The top soil has lost an enormous amount of its nitrogen, but it is still very much richer than the soil of the farm. The subsoil, in fact, contains much more nitrogen, even now, than the surface soil of the farm. This large reduction in the fertility of the surface soil is contrary to what takes place when red clover is grown on the farm, although the crops grown are made into hay and carried off the land; and even when the roots of the clover are, as far as possible, picked out of the soil, we still find an increase of nitrogen to have taken place.

Although the crops of clover grown on this garden soil are equal to, if not larger than, those grown on the farm, they are very inferior to those grown in the earlier period of the experiment. At first the clover did not require to be re-sown for four or five years, now it is re-sown every alternate year. We have evidence here that while red clover has been grown for 35 years without the appearance of disease on the farm, it is hardly safe to repeat the crop until from 8 to 12 years have elapsed since the previous crop was grown.

We have a field which has been under experiment for nearly forty years. Part of this field received no manure during the whole of the period. Another part received mineral manures (phosphate and potash), and a third part has been very highly manured with rape cake, salts of ammonia and minerals. Turnips are grown, or rather an attempt is made to grow them, every fourth year, but the unmanured turnips ceased to form a bulb after the second crop. The turnips grown with mineral manures yield eight or nine tons per acre, and the highly manured turnips yield over twenty tons per acre. Upon one-half of each experiment all the turnips are carried away, and on the other half they are cut up and plowed in. The wheat, barley and clover or beans which are grown during the other three years of the four rotation crops are all carried off.

The soil which has only received mineral manures, and from which the turnips, as well as all the other crops grown, have been removed from the commencement of the experiment in 1848, must be, so far as organic matter and nitrogen are concerned, in a very impoverished condition. Where the turnips were plowed in once in four years, the condition of the land would be a little better, while upon the highly manured land the soil must be full of fertility both where the turnips are removed and where they are plowed in, and in the latter case the fertility would be much the greater.

In 1874, and again in 1882, we grew crops of red clover over the whole of this land which was under experiment. In both years the crop was very large. Upon the highly manured plot it amounted to four tons of clover hay each year;

upon the land receiving minerals it amounted to nearly three tons each year, and upon the unmanured land it amounted to rather more than 1½ tons each year. We now decided to take a crop of red clover again in four years. Wheat was grown in 1883, turnips in 1884, and barley in 1885. The clover was sown in the spring, shortly after the barley. There was a very good plant upon all the plots during the autumn and winter, but in the spring disease began to show itself on both the highly manured plots, being rather the worse where the turnips were plowed in. As is usual in these cases, the plant died off, bearing bare patches. Sometimes considerable strips were not attacked, in which case the plants that remained were very strong and vigorous, and the yield of hay in two cuttings amounted to 1½ tons per acre. It is probable that more than one-half of the crop was destroyed. On the two lands which had received mineral manures, and where the turnips and all the other crops grown had been removed since the experiment began, there was no disease whatever. On the portion where the turnips were plowed in there was some slight disease, though the crop appeared the more vigorous of the two. The yield, however, was slightly below the other, as the first yielded two tons two cwt. of clover hay per acre, and the other two tons four cwt. per acre. Upon the unmanured portion the plant may be said to have died of starvation, plantain and coltsfoot having taken its place. The plants that remained were barely high enough to cut with a scythe, and the whole produce, including the weeds, amounted to only half a ton per acre in the two cuttings.

The interest of the question lies now in the two manured plots. For all practical purposes the fertility of the unmanured land has been so much reduced by the removal of thirty-eight crops that it has ceased to grow either turnips or clover. If we compare the condition of the land where there was no disease and where the disease was the worst, we find that where there was no disease no organic or nitrogenous manure had been applied, and all the vegetable matter grown had been removed; while the mineral manures applied contained more phosphoric acid and potash than what was carried off in the crops.

The land where the disease destroyed a large portion of the crop received, with the mineral manures, every fourth year, 2,000 pounds of rape cake and 200 pounds of salts of ammonia, the large crop of roots and tops being also plowed in. As compared with the other soils, this soil contains vegetable matter in a different stage of decay, and provides suitable food for a great variety of underground life. We find that the application of rape cake is followed by an immense increase of wireworms. It is said among farmers that where the corn crops are attacked by wireworms an application of the rape cake will kill them, the fact being that they cease to eat the young corn, and feed upon the cake.

(To be continued.)

The easiest and quickest way to reduce bones, known to me, is to break the large ones into pieces about the size of a boy's hand, place them in a large iron kettle (the larger the better), then fill the kettle with strong lye made from wood ashes and boil them. In a few hours all the softer bones will be dissolved; the harder ones may be returned to the next batch. After the dissolution is accomplished, the liquid may be mixed with the leached ashes, with an equal quantity of well-dried and pulverized muck or other earth. On land where there is a fair amount of humus, this compost is one of the best known. A half pint of the mixture on a hill of potatoes or corn works wonders; and there is no better fertilizer for the vineyard, where it has the effect not only to produce large clusters and large berries, but to greatly improve the quality of the fruit. There is nothing better for onions than this, applied or sprinkled along the rows after the first weeding. Hen manure should not be mixed with this compost, as the potash decomposes it, discharging the ammonia into the air, entailing the loss of its most valuable ingredient.—*Cor. N. Y. Tribune.*

Poultry.**American Poultry Association.**

The long looked for meeting of the above Association, at which the standard of excellence was to be revised, was held in the parlors of the new Denison Hotel, Indianapolis, Ind., opening on Monday, January 23rd. By commendable enterprise the only poultry publication in Canada gave the minutes of this meeting to the Americans and Canadians before any of the many American journals. We acknowledge our indebtedness to the *Poultry Review* for being able to give our readers this month a summary of the proceedings. The Association have made some radical changes, many of which were in the right direction, but some were not. We cannot see the propriety of admitting every sport from a distinct breed and calling it a breed, as was done in the Plymouth Rocks and Wyandottes. The following varieties were admitted:—White Plymouth Rocks, Peacomb Plymouth Rocks, white Wyandottes, golden Wyandottes, white and black Minorcas, white Javas, Jersey Blues and Red Caps. While Pea-comb Partridge Cochins were stricken off. This latter was decidedly a proper step, and some of the new breeds were entitled to a place, but others were not, and some of the changes made were seemingly to fit the birds as some breed them rather than to increase their utility or beauty. Strange to say, a notion prevailed to admit Pit Games, and a standard was formulated, but the matter was afterwards reconsidered, and, on being submitted a second time, was lost. The last end of the matter was certainly better than the first, and it seems strange that it should have been entertained at all by the Association. There were other changes made, which we may refer to at some future time.

Seasonable Hints.

Get the chicks out as soon as possible after the first of April. It will cost a little trouble for the first few days, or perhaps even weeks, but the April pullet will lay three months earlier than those hatched out in May. The reason is, they develop much faster in warm weather. Last season a pair of pullets hatched on the 5th of April, laid eggs amounting to forty-five cents each, or enough to pay for raising them to that date (last of October), while those of the same breed and strain, hatched in May, did not begin to lay until January. The warm weather seems necessary for early development of the organs.

While this season of the year is not particularly favorable for vermin in the poultry houses, it is well to examine the fluff of the fowls and see that there are no large body lice on them. These are vastly different from the little red louse that infests the poultry born in warm weather. The latter never leave the house, but congregate in myriads on the lower side of the perches during the day, and suck the life fluid from the birds by night. The former live continually on them, and may be seen by parting the feathers of the fluff. Apply a little sulphur, parting the feathers, and sprinkling it on with the thumb and fingers. It is not necessary to apply except on the fluff, and lower parts of the body. A good preventive is to saturate the perches occasionally with crude carbolic acid—one gill to a pail of water. Crude acid costs 25c. per pint at the drug stores, and should be kept on the premises at all times. It is invaluable as a disinfectant. Any cesspool or other foul place may be rendered inoffensive by an application of the above solution.

If the hens are not laying examine them and see if they are too fat; if not, feed scalded beans and shorts in the morning and wheat in the afternoon, giving a head of cabbage or other green food twice a week, and a little fresh meat as often. If too fat, or, indeed under any circumstances, it is well to give them their grain in straw twenty inches deep on the barn floor and make them scratch for it, thus securing exercise. If fat, feed oats instead of wheat.

Garden and Orchard.

Ontario Fruit Growers' Association.

The winter meeting of the F. G. A. was held in Ottawa Feb. 8 and 9.

The first subject on the programme was "Experience with Russian Fruits in the Cold North," by Mr. A. A. Wright, Renfrew, Ont. He had received quite a number of varieties from Prof. Budd, of Iowa. Very few of them had proved hardy, but Mr. Budd had sent long-keeping varieties without much regard to hardiness. They should not, he said, be allowed to grow too rapidly during the latter part of the season, or they would not ripen up fully to stand our long, cold winters. He named Yellow Transparent, Duchess, Alexander, Scott's Winter, and Peach, of Montreal, as the most hardy and satisfactory for the colder parts of the Dominion.

Mr. P. E. Bucke, Ottawa, said the Alexander and Peach apples blighted badly at Ottawa.

Mr. Charles Gibb, of Abbotsford, Que., who perhaps has had more experience with Russian apples than any other man in the Dominion, said his choice of those varieties sufficiently tested to warrant an opinion were:—Yellow Transparent, Duchess, Golden White, Raspberry, Titovka and Arabka.

Mr. P. E. Bucke gave a very interesting paper on Raspberry Culture for the Ottawa Valley. The canes should not be pinched back in summer, but allowed to grow upright and laid down in the fall, and held firmly by placing sods on them. They would thus get the protection afforded by the snow which covered the ground all winter in that vicinity. Cuthbert was the best variety, but all sorts that grow from suckers could be grown if treated in that way. Blackcaps had not been successful. Shaffer's grew so strong that it would not bend down sufficiently to be thus protected, and was not hardy enough to stand without protection.

The question drawer being opened, Mr. Gibb was requested to name five or six of the best apples for this locality. He gave Yellow Transparent, Duchess, Early Strawberry, Crab, Wealthy, Scott's Winter, and Haas, as his selection.

Mr. Gibb was asked to name five of the best crab apples suitable for this locality, which he gave as follows:—Early Strawberry, Gibb (of Wisconsin), Whitney No. 20, Orange, and Late Winter.

Mr. R. B. Whyte, Ottawa, gave a paper on Grapes in the Ottawa Valley. All grapevines, he said, should be laid down in winter. They should be pruned in such a way that would enable them the most readily to be laid down. He thought the two-arm system with short spurs was the most satisfactory. Summer was so short and nights so cool that they must get all of the sun possible, and not be shaded by trees or other obstructions. Some summer pruning should be done, but not too closely. It was difficult to lay down a rule. Wilder was good, soon as black; Burnett good until last year; Brighton, Rogers' Nos. 9 and 15; Dempsey's No. 60; Martha and Ottashaw were all good varieties; did not think much of Delaware.

Hon. R. W. Scott could not agree with what had been said regarding the Delaware. He regarded it as one of the best; it had only failed once with him in twenty-five years. Lindley (Rogers' No. 9), Agawam (Rogers' No. 15),

Adirondac, Eumelan, Israella, Moore's Early, and Creveling were all good varieties with him. Iona was good, but had to be thinned to ripen its fruit early enough. It would keep until March. Mr. Scott showed some very fine Agawam, Lindley and Iona grapes. His method of keeping was to gather the fruit on a dry, sunny day, and pack direct in barrels in cork dust. The fruit was very easily cleaned by holding under water-tap; all dust was thus washed off, the bloom remaining without injury.

D. O'Connor said Delaware was good, but wanted good cultivation. Brighton was a good and constant bearer. Lindley was a standard variety with him. Moore's Early was ripe soon after Champion. The latter was so poor in quality that it should be discarded, as many people appeared to think all varieties grew on one vine, and when once tasting Champion did not want any more grapes. Worden was one of the finest black grapes he had. Delaware, Brighton, Lindley and Agawam were shown by him in good condition. They had been packed in shallow paper boxes and kept in cool cellar: red grapes kept best.

Mr. Wm. Mosgrove, an extensive grape grower, advocated deep planting ten to twelve inches deep, trained by the two-arm system, but the arms should be started below the ground; when laying down the vines a trench four or five inches deep be made, and the vines should be pegged down and covered four or five inches deep with soil. He thought it best in pruning to leave all surplus wood on the trellis, as it formed a windbreak which helped to hold the snow on the land. The Riparia family, in his opinion, was the class we would have to look to for grapes for this section, in which remark he was strongly backed up by Prof. Macoun.

Mr. A. A. Wright contributed a paper on Roses. Madame Plantier, Gen. Jaqueminot, Alfred Colomb, Coquette des Alps, La France, Paul Neyron, American Beauty, Persian Yellow and Harrison's Yellow were all choice varieties for climbers. Queen of the Prairie, Gem of the Prairie and Baltimore Belle were the best. Best winter protection was evergreen boughs first, then leaves and more boughs to hold the leaves on.

The evening session was opened with a brief address of welcome to the members from the Mayor, after which some lively discussion was entered into on grape culture, strawberry growing and apples for export.

Mr. Allan said there was a great change coming over the English market. Formerly a showy apple was looked for with little regard to quality. Now quality was the main thing sought. This he thought would drive some present favorites to the wall. He would name as best varieties to ship:—Ribston Pippins, Blenheim, Orange, King, Gravenstein, Northern Spy, Cabashea, American Golden Russet, R. I. Greening and Baldwin. The Baldwin had been the best paying apple, but he would not be astonished to see it go out altogether on account of quality. Quality was gradually going up in the Old Country markets. Apples grown in the Old Country did not get more than one-half the size ours did, and they would not at all compare with ours in color. The Fameuse would bring good prices if they could be shipped in good condition. Duchess would sell at very high prices if it could be sent in good condition. It required to be picked on the green side for shipping.

Mr. Dempsey had received high prices this

season for Ben Davis and McIntosh red apples, which were of poor quality but fine appearance.

Hon. R. W. Scott thought we should plant evergreens in our orchards. About every fourth or fifth tree in every row should be an evergreen. He was sure that a great measure of his success was due to the large number of evergreens planted among his fruit trees.

The cultivation of flowers and shrubs on school grounds was the subject of much discussion. A. A. Wright, L. Wolverton and Prof. Macoun each made strong points in favor of so doing.

The meeting opened next morning with a large attendance. The first subject was "Plums for the Ottawa Valley." Mr. Greenfield was called on to give his experience. He said he had tried a great number of varieties and found none of the improved varieties that would stand the climate here. Native seedlings were the most satisfactory.

Mr. R. B. Whyte had, by continued selection, procured some native plums that were of good size and quality, with small pits. He thought more attention should be paid to making a collection of the most promising native seedling.

Mr. Gibb said De Soto was a decided improvement on the Wild Western plum.

G. C. Caston, Craighurst, Muskoka, said top grafting the improved varieties of plums on native seedlings often gave good results.

Mr. Brodie, of Montreal, had found wood ashes the best manure for an orchard.

Mr. Dempsey said ashes were good, also stable manure. He had found that planting corn in the orchard, sowing clover seed therein, and the following June plowing under the crop, dropping potatoes in every third furrow, and giving good cultivation, were the most satisfactory methods of working an orchard.

Prof. Saunders gave an address on General Fruit Culture in the Dominion.

Mr. Greenfield was called upon for his experience on Gooseberries for Carleton County, as he was an extensive grower. He had grown many varieties, and preferred Houghton, Downing and Smith's Improved. All English sorts had mildewed except one.

P. E. Bucke said the "Conn" was the best gooseberry in Canada; it was large, good quality, a great bearer, hardy, and free from mildew. White Smith was good while the plants were young, but would mildew when they got aged.

Mr. Brodie said White Smith was the most extensively grown around Montreal, and succeeded very well.

Transplanting Evergreens.

As to the proper season for transplanting evergreens, writes Mr. W. Goldring in the Horticultural Times, practical men are divided in their opinions, some contending that autumn is the best time, while others, and these probably form the majority, prefer spring. Advocates of autumn planting contend that if the work is done early, say in September, the plants have time to recover before winter, and are better prepared to withstand a dry summer than when transplanted in spring. The advocates for spring planting argue that it is better not to risk the possibility of a very severe winter, which, without question, is most injurious to autumn transplanted trees and shrubs that are necessarily but partially established. For my own part, I advocate spring planting, and I would rather chance a dry summer than a severely cold winter; no season is

better for transplanting all sorts of evergreens than the latter half of April and the first half of May, especially if, as is usual, the weather is warm and showery. But so many circumstances have to be considered that there really can be no rule of universal application, and those who wish to transplant evergreens throughout September or the first half of October may be perfectly successful.

Raising Cabbages and Other Plants.

To successfully grow tomatoes, cabbages, celery, and some other plants, it is necessary to germinate the seeds and have the plants a certain size before placing them on the plot on which they are intended to mature their growth. This growing of small plants is frequently done in hot-beds; but, unless a farmer intends to extensively grow these vegetables, it will be more advisable for him to grow them in boxes on the window sill, or some shelf on which they receive as much sunlight as possible. These boxes are made about three inches deep, and of such a size that they can be conveniently handled and nicely fitted into the place in which they are intended to stand. The bottoms of these boxes should be perforated so that they afford perfect drainage to the soil they contain, which should be a light fertile sand mixed with some vegetable mold. The seed should be planted in these boxes about 6 weeks before the time at which the young plants are intended to be "planted out." The young plants should receive as much sunlight as possible. If they grow towards the light, they may be kept straight by turning the box around occasionally, so that the plants which were nearest the light are placed furthest away from it. Whenever the weather is warm and pleasant, the boxes of young plants should be placed outside, so that the plants become hardy and stocky. Very great care must be used not to expose them to the slightest frost, for, if it does not entirely kill them, it at least materially weakens them. They should, therefore, always be taken in at night if there is any possibility of night frost. If early vegetables are desired, the plants should be ready to be "planted out" as soon as the weather will permit. To obtain very stocky plants, some gardeners transplant the young plants while kept in the boxes, once or twice in order that they may develop better roots and always have a rich soil to grow in. This is especially recommended for tomato plants that have been sown a little too early. For they, if large, will soon exhaust the soil, thereby retarding their growth, which if once checked by starvation, will materially injure the plant. Under ordinary circumstances it will, however, not be necessary for the farmer to transplant his young plants while in the boxes; for, if the proper soil is used, the plants will not be large enough to extract the readily available plant food it contains.

Small Fruit-Growing for Farmers' Use.

The following paper by Mr. W. W. Hilborn was read before the Experimental Union:

What a small number of farmers throughout the country make any pretensions to keeping a small fruit and vegetable garden, except what their wives can attend to, which is usually a small piece of land in some out of the way place, where all the work has to be done by hand. Only a few of the most common vegetables and perhaps a few strawberries and currants are planted.

If you ask a farmer why he does not set out a plantation sufficiently large to supply his family with all they can use of strawberries, raspberries, currants, gooseberries, blackberries and grapes, he will tell you that he has no time to attend to

them, that they take so much care and attention to grow them that it does not pay for the trouble; that it is all right for city people who can afford to buy those luxuries, and all very nice for those who write papers to tell what should be done, but they cannot be bothered with them.

Farmers, did you ever stop to consider that your wives and children could appreciate good fruits and vegetables just as well as people living in the city; and that it will not cost you one half what they have to pay for them? They have to pay the whole expense for plants, planting, cultivation, picking, baskets or other packages, carriage to market, a profit to the grower, and a fair percentage to the fruit-dealer who distributes them; while you, on the other hand, have only to procure plants, plant out and care for your plantation, which is a very small item compared with the amount in the other case.

Many of you have boys, who, with a little encouragement, would take hold of such work with a will; they would naturally have some failures, but experience is the best teacher, and in time they would be able to surprise even themselves with the results. If they were allowed to grow more than was wanted for family use, having a share of the fruit to sell, it would materially increase their interest in the work. Give the boys a chance to earn money; teach them how to use it and there will not be so many financial failures amongst them when they become men. They are naturally independent and must learn by experience for themselves; hence, the earlier they begin, the sooner they are ready to fight life's battles successfully.

I will now give a few hints on growing small fruits: First select a piece of land good enough to grow a crop of potatoes or corn. If it is not naturally well drained, it should be underdrained to give best results, and a liberal amount of stable manure applied.

Plant everything in long rows, so that they can be worked with horse and cultivator. Plant in early spring; do not wait for the weeds to start before you start the cultivator; they will require less time and hard work if you do not give the weeds a chance to grow, but keep the cultivator going through them as often as once a week until mid-summer, when cultivation may cease with all (except strawberries), to give the new wood time to fully ripen before winter sets in.

About twelve rows two hundred feet long would give an ample supply of fruit for a family of ten persons, which would occupy but little more than one third of an acre of land.

To aid those wishing to make a plantation, I have carefully prepared the following table for twelve rows two hundred feet long:

	Total No. of Plants in each row.
Row 1. GRAPES: 6 Concord, 6 Worden, 4 Wilder, 4 Delaware.....	20
" 2. GRAPES: 5 Brighton, 5 Lindley, 5 Niagara, 5 Jessica.....	20
" 3. BLACKBERRIES: 25 Snyder, 25 Taylor's Prolific.....	50
" 4. RASPBERRIES (Purple): Schaffer's (Red): 40 Turner, 40 Cuthbert.....	80
" 5. RASPBERRIES (Black): 25 Hilborn or Tyler, for early; 25 Mammoth Cluster or Gregg, for late.....	50
" 6. CURRANTS: 25 Lee's Prolific, black; 25 Ruby Castle, red.....	50
" 7. GOOSEBERRIES: 10 Houghton, 10 Smith's Improved; 10 Downing; 20 Currants, White Grape.....	50
" 8. STRAWBERRIES: Crescent Seedling.....	200
" 9. " Wilson.....	200
" 10. " Manchester.....	200
" 11. " Captain Jack.....	200
" 12. "	200

The distance between the rows should be for grapes ten feet, blackberries, raspberries, currants and gooseberries, six feet; strawberries four feet.

After an experience extending over a number of years with all of the leading varieties of small fruits, I have selected the above as the best "general purpose" list and most likely to succeed over a large area, taking into consideration hardiness, ability to stand spring frosts, and to give the most complete succession of fruit during the whole season.

After a plantation is once made it will last with good care for many years, strawberries alone excepted. I would strongly urge farmers to set out a new plantation of the latter every spring,

putting all of the work on the new plantation, and as soon as the fruit is gathered plow up and prepare for replanting the following spring. For this method you require two plots of land, but if taken side by side they can be very nicely managed; grow them in matted rows; a sufficient number of strong healthy plants can thus be obtained from the previous spring's planting for the new plantation, and will give much greater satisfaction than any other mode of culture I have tried.

Stock.

What is Thought of the Shorthorns in Germany.

Although the Shorthorn is not extensively bred in Germany, they have a few supporters in that country. Their admirers breed them to a greater or less extent, and some of them are extensive breeders and herd owners of the very noblest of aristocratic Shorthorn blood. Lately these breeders combined and tried to gain influence in the exhibition rings, where their favorites have not received the credit due to the high social standing of this breed, for they were classed with the baser elements of that country, and judged with them on points of merit without giving much attention to their better half—a long pedigree.

This amalgamation provoked discussion as to the merits of the Shorthorn for German agriculturists. The critics say that the Shorthorns in the early part of their history possessed a well-proportioned, massive frame, early maturity, good milking qualities, and having been built up from a heterogeneous mixture of stock, possessed a good constitution, combined with prolificness; but after the establishment of the herd-book, the continued practice of in-and-in breeding injured their constitution and reduced their weight, while the high feeding of the young stock, practiced by the stock-fancying nobility, diminished their prolificness and milking qualities. The Shorthorns of to-day, when kept pure, matured early, but their meat was coarse, inclined to generate into fat, and, therefore, not at all the article desired by the consumer, who was the final judge. The aim of the writers was to get animals possessing good individual merits, and if these were possessed by the immediate ancestors, so much the better. In the herd-books, the authorities continue to remark, a large number of errors must necessarily have crept in, and even if this had not been the case, what benefit would it be to keep the record of the progeny of some famous prize winner, if that progeny did not possess individual merit enough to speak for itself, more especially if the standard by which the ancestor of such stock was judged had been based upon popular ideas and fancies now supplanted by others differing from them? Their opinion was that if a well-built Shorthorn, with the flesh lowered well down to the hock, were used on the Dutch cattle, a beef animal superior to both could be obtained.

From our observations and experience we find that it is to the grades that the Shorthorn owes its popularity, and it is by the grades that it will be retained. The errors that can get into a herd-book are clearly illustrated in Mr. Rodden's report on the Dominion Ayrshire Herd Book, published in another column.

What has been said of the Shorthorn also applies largely to other breeds.

We don't object to the use of pure-bred stock; it is the abuse of them that incites us to wrath.

Canadian Horses for the British Army.

Editor Advocate:

SIR,—For some time past the people of England have been generally concerned regarding the falling off in the supply of horses suitable for army purposes, especially so as the present condition of the army as regards the want of horses is very serious, if the state of affairs is as bad as the newspapers report it. One cavalry regiment of 1,200 men is said to have only 820 horses.

Last September a royal commission was appointed to take what steps the members thought best to insure in the future the better supply of suitable horses, and the sum of \$25,000 was placed at their disposal to further this end.

The members went to work at once and decided to offer a special prize which is called the "Queen's Premium" to such thoroughbred sires as met their approval, the owners of which would agree to offer their service at \$10 per mare. The report recently issued by the commissioners shows that they have awarded Queen's Premiums to 22 horses in different parts of the country, and they hope to have next season more funds so that they can extend their work.

Farmers will thus be able to get sires of good blood and undoubted soundness at a very reasonable fee, and may look upon their prospective stock as almost sold to the army agents.

The work of the commissioners seems to have given general satisfaction to all but the breeders of Cleveland bays, Yorkshire coachers and Norfolk trotters, who seem to think that some of the prizes should have been open to the class of horses they represent.

The English, who as a people are undoubtedly the best judges and breeders of horses in the world, are greatly in favor of thoroughbreds and are fully aware of their great value as sires.

Buyers from every part of the world attend the regular public sales, and the British Government buy a number every year to send out to India. The prices paid for young horses of good family are rarely over \$1,500, and many are sold for much less. Of course high prices are often paid for fancy racing stock, as for instance in 1886, when fourteen yearlings, sired by the famous Sterling, sold for an average price of over \$5,000 (1,068 guineas) each. Sterling's service cannot now be had for less than \$750. Again, Londres borough was sold at these sales for only \$120, but afterwards became famous, and his service is now valued at \$250.

If Canadian farmers want to get up an export trade in horses with England, which is the best market in which to sell fine horses in the world, they should bring out more thoroughbred sires of good family, not necessarily of the racing type, but such as they use in England for racing hunters. Such horses crossed on our Canadian mares should give stock of great power and sound constitution, just what is wanted for all purposes.

A very much esteemed blood at present is a combination of that of Touchstone and Birdcatch, such as is represented in Chichester. Could it not be possible to get some of these Queen's Premium horses sent out to Canada? Their progeny as half-breds would be just what is wanted for cavalry purposes, and might be considered as good as sold to the British Government.

W. S., MONTREAL.

Our Ayrshire Herd Books.

We know from personal experience, as well as from other sources, that the Ayrshire is a remarkable milker, and deserves greater attention than the breed has received. The champions of this breed have been very tardy in coming forward to push its merits into public favor, and we can do very little without their co-operation. We have, therefore, learned with regret, if not with astonishment, that there is a split between the two Ayrshire Herd-book Associations, which must have an effect akin to the Shorthorn muddle, as published in our columns.

The Agriculture and Arts Association are the source of a great deal of trouble and annoyance in our herd-book history, and the part they have played in the Ayrshire Breeders' Associations is unworthy of our Province and our live-stock industry. We are pleased to see that the broken arrangements to amalgamate the herd-books and centre the entire business in Toronto have been rejected by the Canada Ayrshire Herd-book Association—not that we desire a split, but because we wish to see our Ayrshire register, placed on a firm, independent and honorable foundation. We admire the courage displayed by Mr. W. Rodden, president of the Canada Ayrshire Herd-book Association, and his following, in refusing to submit to the managers of the Government Herd-book, which is incomplete and contains a number of doubtful and spurious pedigrees. In all probability the two herd-books will be carried on as heretofore.

In order to acquaint our readers with the facts relating to the registration of Ayrshires, we take the following extracts from the president's report read before a meeting of the Eastern Ayrshire breeders recently held in Montreal:—

I may explain that there are two Ayrshire Herd-books, one published in Montreal by the committee of the Ayrshire Importers' and Breeders' Association, called the "Canada Ayrshire Herd Record," all animals recorded in it tracing to importations owned throughout Canada; the other published in Toronto by the Agricultural and Arts Association of Ontario, called the "Dominion Ayrshire Herd-book," having grades in it.

In September, 1886, some Ontario Ayrshire breeders met at Toronto to organize a Dominion Ayrshire Association that was to meet in January, 1887. The president of the Canada and of the Dominion Association corresponded with reference to the advantages of having but one organization and one herd-book, Scotland and the United States having each only one, and they were working well.

The correspondence resulted in an arrangement to have a committee of each Association meet in Ottawa on the 6th of April, 1887, at which were present a few members from both organizations. Various ways of arranging matters were discussed; some advocated adherence to tracing to importations, others desired that the standard "aimed at is imported Ayrshire stock on the side of both sire and dam." The opinion of the meeting was in favor of one Association and one book, and seemed to favor the Canadian record. A committee of three from each Association was named to examine the books and report on the pedigrees on record, to a meeting of both Associations to be held in Ottawa on the 27th April, 1887, to consider the reports and to complete the amalgamation. This revising committee met before the general meeting. Mr. Rodden reported he had found in the Dominion Herd-book several hundred erroneous pedigrees; some were grades with false pedigrees, some were said to be imported and others said to be from imported stock, but were not; some cows were credited with calves two or three months apart that they never had, others were said to be from imported

sires that did not exist at the time, others were said to be from sires and dams that had died two to four years before the dates given of the calves; some cows are entered that never existed, and other cows were credited with calves for two and three years after they are known to have been dead; others had few errors that might be corrected.

Mr. Wade reported a list of fifteen in the Canada book "which required verification." These are found to be clerical and typographical omissions and errors that are now corrected. It may here be remarked that a perfect herd-book free from slight errors of this kind is not existing.

The revising committee agreed to report in favor of the Canada book to the Associations meeting on the 27th April. The minutes of that meeting show what was then agreed upon as follows, word for word, as resolved on the 27th April: "That the Canadian Herd-book be taken as the nucleus of amalgamated Association herd-book, and that the revision of the pedigrees be left to Messrs. Rodden and Wade, with such assistance as may be required. Any difference of opinion between the revisers to be referred to the executive committee for final settlement."

This basis of amalgamation was agreed to by the meeting, to which was added, on motion unanimously carried, as follows: "That the herd-books of the two Associations and all necessary papers be handed to Mr. Rodden, the president, to be revised by him and Mr. Wade, and that after the revision was complete, all books and papers were to become the property of the Association, all fees to go to the said president, who shall only account for the same after deducting necessary expenses."

On these conditions the Montreal and the Toronto books were sent to Mr. Rodden, and assistance obtained to proceed with the work. The new pedigrees and fees did not come forward as expected, and for several weeks assistance had to be dispensed with to keep the expenditure within receipts. From the first of January the Toronto pedigrees and fees were not forwarded. Payment of assistants, stationery and stamps absorbed receipts. In December an offer from the secretary, Wade, was received by Mr. Lovell, to take the unsold Canada Herd-Books—"if at the January meeting the books, &c., be handed over to the Agriculture and Arts Association of Ontario for future management as to registration." This offer was looked upon as a desire to get the working of the Association out of the hands of the Ayrshire Breeders, particularly when taken in connection with the fact that constant efforts were being made to have entered in the Canada Record cattle bred from mixed breeds entered in the Dominion Book that some of the Western men on the committee were interested in. Of all the bad pedigrees, as yet only two were rejected by the committee.

The foregoing facts and the two resolutions quoted from the minutes of the joint meeting of Association on the 27th of April last, clearly indicate that the parties are bound to be governed thereby till the revision is complete and the doubtful pedigrees disposed of out of the way of future work. The members from Eastern Ontario and Quebec hold to this view, and claim that it was unfair to reopen the arrangements, and without notice carry other rules before revision was completed, particularly as the new rules confer a power on the secretary not consistent with the work provided for at amalgamation, but permit him alone to continue the revision and entering pedigrees, while the new rule says: "The committee shall investigate those pedigrees not considered up to the standard by the secretary, making the secretary the judge," and the by-law says: "This committee shall meet at the call of the secretary." Thus he may call or not. And the motion made by Mr. Wade as to the standard says: "Standard aimed at is imported Ayrshire stock." If he, as one of the revisers for nine months, would only reject two of the many found bad, and prevailed on his friends on the committee to accept other two cows that are in the Dominion Herd Book under a false pedigree, and have been traced to be of mixed grades Ayrshires and Durhams, what can be expected when he gets control of the books as he had of the Dominion book?

Sand Crack, Quarter Crack, Cracks in the Hoof Wall.

This is a crack in the walls of the hoof, commencing at the coronet and working downwards. It differs from false quarter in being curable, the crack being wider at the coronet than at the lower end, the horn not being so degenerated, and the borders of the crack presenting the same color as that of the remainder of the hoof. It may be caused by injuries to the coronet, alternate soaking and drying of the hoof, an uneven bearing on the shoe, and by rasping the outside of the wall.

Pare down the horn at the border of the crack to relieve pressure on the sensitive structure below, remove all dirt and sand that may have worked its way into the crack, and poultice the foot to remove inflammation. Shorten the wall below the crack where it comes in contact with the shoe, so that it receives no pressure on that part, and apply a bar shoe. Cut a groove at right angles to the crack, about an inch long, at the upper margin of the wall and right down to the quick; or, in other words, loosen the wall for about half an inch to both sides of the crack from the coronary ligament. This is done in order that there will be no connection between the newly secreted horn and that forming the margin of the crack, for the latter keeps moving more or less, and will prevent a healthy growth from above. Sometimes the wall, where cracked, is nailed together to prevent as much motion as possible. This is done by passing a hoop nail through the wall from one side of the fissure to the other, and at right angles to it. Care must, however, be used not to touch the quick, and in thin walled hoofs it will be better not to attempt it. Sometimes melted gutta-percha is poured into the crack to prevent dirt from coming in and the edges from moving. The same object is accomplished by covering the crack with an iron plate firmly attached to the horn on both sides of it by little screws not more than a line in length. If fungoid growths appear, do not try to remove them, for they will disappear of their own accord. Blistering the coronet will sometimes aid in encouraging a healthy growth of horn.

Canadian Ranch Cattle.

The shipment of 187 cattle from Calgary, says the Farmer's Gazette, landed at Liverpool last week, has been sold in two lots, the price per head being about £14 10s. Owing to their extreme wildness, it was deemed expedient to apply to the Privy Council for permission to remove them into the lairages reserved for store cattle, where better facilities for slaughtering are provided. We understand that from a butcher's point of view the appearance of the carcasses is considered objectionable, having much of the high color which distinguishes the Colorado wild pasture-fed animal from the more domesticated species. The percentage of dead weight to the live weight was on an average about 54 lbs. It is said three beasts of a similar lot, recently handled in Glasgow, dressed 60 percent.; but this we are not disposed to accept as a fair specimen, the animals, no doubt, having been specially selected with the view of encouraging buyers to speculate. A consignment landed at Bristol, and railed on to Deptford, were found to be very considerably bruised, the bodies making from 2s 10d to 3s per stone of 8 lbs.—or, say, 5d per lb., sinking. At this price we do not see that any

margin of profit can be left to the Ranch Company after charging the cost of transit from Calgary to Montreal—a distance of 2,300 miles—and an ocean freight of £2 5s per head. The experiment has been attempted, however, and, like the importation of stores at Aberdeen, will probably be considered by our colonial friends as having met with a certain amount of success.

Sore Shoulders.

Sore shoulders are generally caused by the pressure of an ill-fitting collar, or the draft being applied too high or too low on it. They consist of tumors and inflammation in the skin, and the underlying muscular tissues, and may for our purpose be considered under the four following heads:—

Chafing.—This, where it affects the shoulder, is most commonly seen in young horses put to work for the first time. It is caused by the sweat accumulating and drying in the hair under the collar, thereby matting it together. This, if not attended to, will cause the skin to inflame and finally produce a raw wound. The prevention is to cleanse the shoulders well with soft water and soap each evening after work, and then dressing them with oak bark tea, or salt, or alum water. These dressings can be advantageously applied before the colt is put to work. The remedy is to wash well, and bathe with a solution of sugar of lead ($\frac{1}{2}$ an oz. in a quart of water), or rub with oil, glycerine or camphorated spirit.

Siftast is frequently the outcome of neglected chafing, but frequently also arises from ill-fitting collars. It consists of a circumscribed portion of skin becoming thickened, very hard, and attached to the underlying tissues. Surrounding this is a raw and angry-looking inflammation. The only cure is to remove this abnormal growth by the knife, which should be left to a veterinary surgeon.

Serous abscesses.—These appear on various parts of the body that are subjected to continued bruises or pressure, therefore also on the horses shoulder. They consist of serum (a clear liquid excreted from the blood) enclosed by a membrane secreting it, and resembles a soft abscess. The place where they most frequently occur is on the knee, in the form of capped knee. They are removed by opening them and allowing the serum to escape. This opening must not be allowed to close until the walls of the cavity, which contained the serum, have grown together, thereby affecting the cure.

Fibrous tumors situated at the point of the shoulder, where they are noticed as a hard prominence, consist of a very thick fibrous wall encasing more or less puss. Smaller tumors of this kind are removed by giving exit to the puss, which is always situated exactly in the centre of the tumor, and then causing the remainder of the tumor to be partially sloughed away and partially absorbed by introducing into it a small quantity of equal parts of corrosive sublimate and arsenic rolled up in a little tissue paper. Larger tumors must be removed with the knife. Before the tumors have been completely formed they may be removed by first applying cooling lotions, as sugar of lead, and then absorbents such as iodine.

In all cases of sore shoulders work should be suspended, or if this cannot be done, a Dutch collar used. In the first stages of all the above diseases cooling the inflamed part is very beneficial.

Raising Calves.

At this season of the year, when most of the cows drop their calves, the above subject is one which should engage the attention of all stock-raisers; for unless the calves are well cared for, when young, they will not produce good, profitable animals when grown up, or at least not so profitable as they otherwise would have been. If the growth and thrift of the young beast is once checked it is difficult to get it into condition again.

Thoroughbred calves and those intended for the block are very frequently allowed to suckle their dam, or fed on whole milk, and when about three or four weeks old receive an addition of as much chopped grain, hay (of the very best quality) or grass as they will eat.

This method is, however, expensive, and with good care and attention a calf can be raised almost as well with skim-milk, grain and hay or grass. The only difference is that those fed largely on skim-milk may not mature so rapidly, and look quite as sleek when young, but when mature there will be, in the majority of cases, no perceptible difference.

It is, however, advisable, as has been proved by experiment, to give all calves the milk as it comes from their dam, for the first week or ten days. Whether it is better to let them suck during this period or feed the milk to them by hand very largely depends upon circumstances. The objections urged against the former method are that the calf, once allowed to suck, is more liable to do so again later on, if it gets the chance, is more difficult to teach to drink from the pail, while the cow is more liable not to let down her milk during milking. It has also the tendency to reduce the milking qualities of the cow. The advantages of letting the calf suck are that the cow is not so liable to get a caked bag, and the calf receives as early as possible, and in its most natural form, the colostrum (the first milk secreted after calving), which is very necessary for the welfare of the calf, as it, possessing a slightly purgative action, loosens the bowels.

If the calf is not allowed to suck it should be placed in a small box-stall by itself, if possible out of hearing of her dam. Here it should be fed regularly three times a day, for the first week, with about two quarts of fresh milk at nearly blood heat. At the end of this time, gradually replace the whole milk with sweet skim-milk, adding at the same time a little linseed meal, finely-ground oilcake, or oatmeal gruel. The linseed meal or oilcake should be soaked in water, boiled and stirred until it forms one even, gelatinous mass, before adding it to the milk. The linseed is used to replace to some degree the fat that has been removed by skimming. This ration may be gradually increased until at the end of a month three quarts per meal, or nine quarts a day, are given. At about this age induce the young animal to eat a few oats by placing a small handful into its mouth after feeding the milk. As soon as it begins to eat these, keep some in a box, where it can get them at all times. Bran is also very valuable for this purpose, although whole oats are generally preferable.

As soon as the weather is favorable and the calf is four weeks old, or over, turn it out into a small grass plot, provided with a small shed for shelter, where it will soon learn to eat the grass. Keep it well supplied with clean, fresh water. If kept in the stable provide it with well-dried and early-cut hay.

At three months it may consume about twelve quarts of skim-milk a day, given in two feeds. Care must, however, be used not to over-feed it. If a calf leaves milk in its pail, reduce its next ration, more harm being done by over-feeding than by under-feeding. Always feed sweet skim-milk if possible, but if this cannot be done wait until it becomes coagulated, or thick, for in this stage it is not nearly so liable to produce scours as when sour and still in its liquid form. Always feed the milk warm, about 80 or 90 degrees. Feeding it too hot, above blood heat, is, however, more injurious than feeding it too cold. Calves should always be fed at as near the same time of the day and as often as possible, thereby preventing too greedy drinking, which interferes with the digestion.

If a calf commences to scour, which is a symptom of indigestion, give it three times a day a reduced ration of whole milk, properly warmed, to which a tablespoonful of lime-water has been added. An egg, or parched flour, stirred into the milk, has often given good results. The lime-water is prepared by slaking a lump of lime about the size of an egg, in a bottle of water, corking it and letting it stand until clear, when it is ready for use.

Good calves have been raised which did not get a drop of milk after they were a week old, hay tea and oatmeal or barley gruel being substituted for it. But if possible, give them their natural food, milk.

A Chatty Stock Letter from the States.

(FROM OUR CHICAGO CORRESPONDENT.)

Scarcity of feed still prevails in the West, and the floods of cattle forced to market on that account and owing to lack of faith in markets of the near future, are only beginning to subside.

It seems strange, but many sections of the western feeding country were also unable to get stock water during February. Streams were very low to start with, and many creeks were frozen apparently to the bottom by the protracted cold weather.

A Western farmer of large practical experience, Mr. Geo. Whitcher, of Platteville, Wis., thinks the fine cutting of hard cornstalks to induce cattle to eat them does not pay. It is like grinding cob-meal. The amount of nutrition is so immensely small that it does not repay either the preparation or the wear and tear on the animal's digestive organs.

Wm. Heaton, of Newman, Ill., says:—"If the cattlemen will raise a smaller number of cattle and market only first-class stock they will make more money. My Hereford calves brought me last May an average of \$116 per head at 10 to 12 months. That beats scrubs." While Mr. H. is a breeder of fine cattle and it is his interest to talk encouragingly of fine stock raising, there is no disputing the fact that he has the correct idea.

There are evidences of a revival in the fine stock business this year, but the average stockman will wait until he is pretty well assured that the great depression in the cattle trade is really over before he takes hold of improved breeds very enthusiastically. Retrenchment has been the policy of stockmen during the past few years, regardless of ultimate ends.

A Montana horseman, Mr. Green, of Glendive, was here recently with a car of 2-year-old Clydesdale stallions bought in Scotland. They were what he called third-rate horses, and cost £60 to

£100 per head from the farmers direct. His object is to use them on the native "cow-ponies" of Montana. Mr. Green said the valuable prize-winning stallions he found to be worth more in Scotland than on this side the Atlantic.

Application was recently made to the City of Chicago for licenses to butcher horses for food. Prominent physicians gave the opinion that healthy horse-flesh is as wholesome as any other, but the license was not granted. There would be too much dealing in sick horses, though a horse butcher shop might solve the problem of what to do with the thousands of semi-wild horses in the far West that could be butchered as cheaply as hives. The prejudice against eating horseflesh, however, could not be easily overcome.

Railway freight rates are badly unsettled throughout the country. We hear of widespread evasions and infractions of the Inter-State Commerce law, which was designed to establish equitable rates on the basis of so much per mile and to prevent a railroad from charging more for hauling a car to a non-competing point 300 miles distant than for hauling a like amount of freight 1,000 miles. There are many ways of ignoring and evading this law, which also aims to have the poor man's freight hauled as cheaply as the capitalist's, and the railroads seem to be making a special study of how to follow the letter without the spirit of the law. As a rule, instead of reducing their "short haul" rates to the basis of their "through" rates, they have in all cases reversed the order, viz., raised the long-haul rate to the basis of the highest local tariff. This has so far made a bad matter worse. But it is hoped that the law may yet be made to have a salutary effect upon railway business. There are many "trunk" lines, for instance, from Chicago to the sea, but so far as real competition is concerned the pooling plan makes one road of many.

An important factor in the live stock transportation business is the crusade in the interest of stable or palace cars, in which animals can be fed and watered in transit, guarded against ordinary bruising and carried in special trains on passenger time, since all the new cars are fitted with patent air-brakes. The railroads, of course, have fought these patent cars bitterly, because (1) they are patent, and cannot thus far be controlled for the benefit of a few railroad directors at the expense of common shareholders; because (2) nearly all the roads have large supplies of old-fashioned live stock cars that would have to be remodeled, and because (3) the stock yards and intermediate feeding points have fought them, and, of course, the latter have mainly been owned and controlled by the powers behind each railroad corporation. Some of the roads, however, have taken up these improved cars, notably the Grand Trunk, and the other roads are slowly but surely being forced into line. Just as soon as the inside directors can turn around and manage to get enough stock in these improved car companies, no doubt they will be speedily adopted.

The Chicago stockyards are in favor of these cars, of course, since thousands of cattle, hogs, and sheep coming from the West are unloaded at Omaha, Kansas City and St. Louis to be fed and watered and often sold at these places, when, if they were in stable cars, the animals would be more likely to make the trip directly to Chicago.

The dressed meat men are still forced to pay a comparatively exorbitant rate to get their products hauled, and the producer is the one who seems to have the brunt of this to bear.

The Apiary.

Seasonable Hints.

The season in which it is perhaps the most difficult to manage bees is upon us, and the beginner is apt to make blunders which will decrease his honey crop, if not destroy his colony entirely. If bees are wintered in a cellar they should remain there if possible until some of the early flowers are out, such as the willows, or even later; colonies may have dysentery, which will be indicated by the spotted condition of the front of the hive, but unless this is very serious it is better to not take them out of the repository. The idea that a colony may be taken out of winter quarters and allowed a cleansing flight upon a fine day, to be again placed in the old quarters at night, has been a very general one, but however much our best apiarists may differ upon very vital questions, upon this they are almost if not entirely one. A colony loses by such treatment. By keeping colonies in proper quarters through the changeable spring, when it may be bright, warm and tempting to the bees outside one moment and raw and chilly enough another to cause the loss of all bees away from the hive, much is gained. Bees upon their summer stands may be examined if they appear to be weak and short of stores; if you are satisfied they are not, leave them alone. See that the entrances are kept clear, and if there are many dead bees upon the entrance board, you may upon a fine day when bees are flying, assist them in their house cleaning operations by pulling dead bees out with a bent wire. Avoid the exposure of any honey or any manipulation of hives that might tend to start bees robbing. Of robbing the inexperienced bee-keeper is perhaps more afraid than the expert are; all dread it after it has been commenced. By having your entrances facing the prevailing spring winds there is less liability to rob, the scent of honey, if any is at the back of the hive, being driven by the wind in that direction; if the opposite way it is at the front and only an additional guide to the bees to enter at the front; if at the back they can get no entrance even if they find their way there. If a colony has not lost all light, instead of contracting the entrance, leave it open, and this method is especially to be recommended if robbing has not yet commenced and as a preventative. By having your bees not black, but mixed with Italian blood, you will have a bee less liable to permit itself to be robbed out. Cyprian and Holy Land bees are excellent to defend their hive; they will actually fly from their alighting board to meet and fight an enemy, but their strains we cannot recommend even after ever so many crosses; they require very careful handling. The inexperienced are not in a position to do this and the least jar arouses them to such an extent that no smoke will subdue them, but they must be left alone until pacified; they are, when once aroused, most persistent in their attacks and will follow the unfortunate apiarist through several dark rooms. Then they have a great tendency to have fertile workers, a most difficult matter to handle by a novice. Fertile workers are workers which have the power to lay drone eggs; in these races they appear often in a few days after the queen has been lost, in a measure performing the function she has in the past, but she has the power to produce both worker and drone, but the fertile worker's eggs produce only drone, and in consequence the colony soon perishes. When such workers

have once obtained possession of a colony it is a difficult, and requires a skilful operation to get the bees to accept a queen. Many very simple remedies have been given for exterminating these workers, but practical experience is not always as kind as theory, and all the remedies suggested combined sometimes fail to exterminate the fertile workers, and the queen is again and again destroyed in introducing.

Never put anything at the entrance to confine the bees to the hive either indoors or out, such a method only makes matters worse and the bees debilitate themselves chafing under the forced confinement.

The Sectional Brood-Chamber.

In an essay read at the Ohio State Convention by Dr. Tinker, Philadelphia, O., he says:—

My first season's experience with sectional brood chambers seemed very favorable. It happened to be an extraordinary season with us, and any hive with good management would have made a fair record. The past season was not a good one, and the defects of the new hive were apparent in many things. As compared with the Simplicity hives, of which I had seven in use, they were a marked failure. The bees in the Simplicity hives of my neighbors also did better. They not only had more bees all through the season, but made more surplus, and stored enough for winter, while the bees in the sectional brood-chambers had to be fed for winter.

I am reluctantly compelled to make this confession, partly because of my own disappointment in these hives, and partly because of the kindly feelings I entertain for the inventor.

Now, my friends, I will give in detail my experience with the sectional brood-chamber, and my reasons for abandoning it. In the first place, the horizontal half of a brood-chamber is too small for a swarm, too small for a colony in the fall, and too small for wintering. It is too small for a swarm, since, with a queen-excluding honey-board, the bees will store much pollen in the surplus sections, and soon dwindle down to the size of a good nucleus. It is too small in the fall, since the bees are limited in space for stores and brood, and become too weak in numbers to winter to the best advantage. It is too small for wintering, since it will not contain sufficient stores to winter the colony and make a respectable start in brood-rearing in the spring. Thus it will be seen that one of the cases of such a hive, by itself, is of no value in the hands of the practical honey-producer. It is required that both parts of the brood-chamber be used together to make anything like a success of it. But if they are so used, the following difficulties arise: In the spring, the colony breeds up slowly, and without much attention will not get ready for the harvest. When at last it does get ready, if the honey flow is extra good, the bees proceed to fill up the horizontal space with brace-combs, and fill in with honey. The bee-keeper now thinks to interchange the sections and bring the brood to the top, but finds a strong lever is required to pry the hives apart. He quickly finds he can neither interchange the parts nor close the hives without killing hundreds of bees. They pile upon the broken surfaces, and a smoker is required in order to cut away the honey. If robbers are troublesome, it becomes a serious matter, and the bee-keeper soon gives up the interchanging business as a bad job. It seems that bees do not build brace-combs to the same extent between whole brood-chambers, tiered one upon the other, as between these shallow cases. After all, there is no advantage from interchanging the sectional parts, since bees will carry the brood upward and breed just as rapidly where no interchanging is done, as where it is. As the season advances, the bees put up all the honey, or nearly all, in the upper case, so that the whole brood-chamber is required for winter.

The "shake-out" function is a good deal easier to talk about than to carry out in practice. With black bees and a little smoking it may be done, as it does not take much shaking to get them out. With Italians, Syrians and Cyprians

it is a very difficult matter, and the bee-keeper is easily persuaded not to try it again.

Finally, sectional brood-chambers are objectionable because of the extra expense of so much rigging for the amount of honey they contain, and there are no advantages to compensate the extra cost.

Correspondence.

NOTICE TO CORRESPONDENTS.—1. Please write on one side of the paper only. 2. Give full name, Post Office and Province, not necessarily for publication, but as guarantee of good faith and to enable us to answer by mail when, for any reason, that course seems desirable. If an answer is specially requested by mail, a stamp must be enclosed. Unless of general interest, no questions will be answered through the *ADVOCATE*, as our space is very limited. 3. Do not expect anonymous communications to be noticed. 4. Matter for publication should be marked "Printers' MS." on the cover, the ends being open, in which case the postage will only be 1c per 4 ounces. 5. Non-subscribers should not expect their communications to be noticed. 6. No questions will be answered except those pertaining purely to agriculture or agricultural matters.

Correspondents wanting reliable information relating to diseases of stock must not only give the symptoms as fully as possible, but also how the animal has been fed and otherwise treated or managed. In case of suspicion of hereditary diseases, it is necessary also to state whether or not the ancestors of the affected animal have had the disease or any predisposition to it.

In asking questions relating to manures, it is necessary to describe the nature of the soil on which the intended manures are to be applied; also the nature of the crop.

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

Plowing Under Seed - Growing Cucumbers, Citrons and Pumpkins.—I take the liberty of asking you for some information concerning the plowing in of grain. My soil being a light sandy loam, I find the crops cannot stand the dry weather if the grain is sown in the usual way and harrowed in? Will you or some of your readers kindly give me your opinion on the advisability of plowing in grain from 2 1/4 to 3 inches deep and just rolling it. I noticed that some grains which came up on the breaking last year grew stronger and the kernels of grain were larger than the others. 2.—Could you give me the names of the earliest and most suitable pumpkins, citrons and cucumbers for this country. We sowed some last year on light sandy soil; they attained a good size, but not many of the pumpkins ripened; the season was too short for them here in Manitoba.—C. B. Birtle, Man.

[1.—The plowing in of grain, in conditions similar to yours, has given very favorable results. Under average conditions a depth of one to two inches has generally given the largest crops. The larger the seed and the lighter the soil the deeper it may be covered. 2.—To grow plants successfully, under your conditions, it will be necessary to germinate them in the house and transplant them to the open air as soon as the weather will permit. In order that these plants may not suffer from the transplanting, it is a good plan to sow them on a thick sod from a rich pasture field. Place this sod up-side-down in a box of the required size, pulverize the earth a little and then plant the seeds in it. When transplanting, cut the sod into as many pieces as the number of plants, leaving a plant in the centre of each piece. Transplant the plants with the piece of sod on which it grows. There is not much difference in the earliness of different varieties of these plants.]

Reducing Bones.—Some time ago I noticed a recipe in the *ADVOCATE* for making a "fertilizer" which ran thus:—Place alternate layers of broken bones and hardwood ashes on a floor, and then pour on a sufficient quantity of water to saturate it fully. I have followed those directions but find the larger and harder pieces of bone do not dissolve. What shall I do in order to soften and make them dissolve also? If I have not quoted the recipe correctly, please make it right, for perhaps I may have left out some ingredient. Would the use of potash aid the decomposition?—H. J. C. Cornwall, P. E. I.

[To reduce the bones in the manner you state, it will be necessary to take three or four times as large a bulk of ashes as bones; wet them, as stated; shovel them over occasionally, and keep them under cover to prevent washing by rains. If this process should leave any pieces of bones undissolved, treat these pieces in the same manner with fresh ashes, or boil them in ashes and water. Potash is

contained in the ashes, and is the substance which decomposes the bone. An addition of potash would therefore be similar to the further addition of good hardwood ashes.]

Leveling a Drain—Leveling its Bottom—The Fall Required for a Drain.—Would you be so kind as to give me through your valuable paper the simplest and best method of finding the level for underdraining? What would be the fall required to make a successful job of it, where the land is nearly level? Also the best means of keeping the bottom of the ditch the right level to receive the tile. I have seen the bulb used, but some say the plumb bob is better: how is the plumb bob made?—NEW BEGINNER, Wardsville, Ont.

[There are numerous cheap and efficient implements used for finding the level for drains. One of these is fully described in the Sept. issue of last year's *ADVOCATE*, page 262. It consists of a board, with one of its edges perfectly straight, and two legs, one nailed or bolted to each end of the board in such a manner that the straight edge of the board will be on top when the instrument is standing on its legs. Point the legs at their bottom. Place this instrument on and in the line in which the drain is to run. Let an assistant hold a pole straight up, with one of its ends resting on the level surface of the soil, at such a distance from the instrument that you can clearly see where the continued line of the straight edge strikes the pole. Then take the same observations in the opposite direction and the difference will show the rise or fall. If the spirit level is wanting, nail a piece of board (about 2 or 3 feet long) in the centre, and at right angles to the straight edge of the above instrument; on it draw a line exactly at right angles to the top line of the straight edge. As soon as this line is exactly perpendicular—as determined by the plumb bob—the straight edge is level. The bottom of the drain is kept level by observing that the water found in the drain is of the same depth in all parts of it, and flows uniformly towards the outlet. If there should be no water in the drain, consult the *ADVOCATE* at the above mentioned place. The fall required depends upon the size of the tile used, the amount of water to be removed and the rapidity with which it is to be carried off. To remove half-an-inch of rainfall from 1.6 acres by a two-inch tile in 24 hours, a fall of 1 foot in 150 is required. With the same fall a 6-inch tile would remove the same rainfall in the same time from 26.6 acres. The same rainfall would be removed in the same time from 66 acres with 6-inch tile, laid at a slope of 1 in 25. For a full table refer to the March issue of the *ADVOCATE*, volume 21, page 73.]

Lymphangitis—Shot of Grease, Monday Morning, Weed.—I have a horse, recently brought from Ontario, whose legs are badly swollen from the hock joint down to the foot. I think they were hurt in the car. They are quite hard and round, and exercise reduces their size but very little. The fetlock joint is a very little larger than the rest of the leg. What should I do for them? What appearance has a grease leg?—J. G., Boissevain, Man.

[Your horse is suffering from lymphangitis, also known as Shot of Grease, Monday Morning, and Weed. The treatment is to loosen the bowels with a 7 or 8 drachm ball of Barbado's aloes, giving every night 1 drachm of saltpetre, bathing the legs with warm water twice a day just before applying camphorated liniment to them, exercising the horse as much as possible, and as soon as the leg is reduced in size, bandaging it tightly at night.]

Soiling for Horses—Value of Coal Ashes.—1.—What kind of crop would you advise me to raise for the purpose of cutting and feeding green to young horses that are necessarily yarded? My land is a heavy clay loam. What quantity of land would be necessary to produce enough feed for one colt two years old. 2.—Have stove coal ashes any value as a fertilizer or for any other purpose?—W. S., Wooler, Ont.

[1.—In a proper soiling system a variety of succeeding crops should be grown, and to obtain the best results it is necessary to combine leguminous and graminaceous food; for instance, red clover and orchard grass, peas and oats. For full particulars see the prize essay on "Soiling and Soiling Crops," in the Feb. issue of *ADVOCATE*, p. 44. The amount of land required to feed a two-year-old colt depends upon a variety of circumstances, the chief of which is the productive capacity of your land, also the season, but half an acre should produce enough food for him. 2.—Coal ashes have very little value, being at the most worth 15c. to 25c. per 100 lbs. They have a beneficial mechanical influence on the texture of heavy soils.]

Ringworm on Cattle.—I have a calf that, about a month ago, lost the hair around the eyes and a little around the neck; it is entirely bare for about two inches all around each eye. It looks blistered and is inclined to crack. One of my cows is getting the same way. They are in good condition. What is the disease and what is the cure? My neighbor's cattle have all been affected the same way. By answering the above in your valuable paper you will oblige.—OLD SUBSCRIBER, Cass City.

[Your stock is affected by ringworm, a disease that, unless treated, will spread to your entire herd. An application of sulphate of iron (green vitriol) is used with very satisfactory results in its destruction. Tincture of iodine has even given better results, but being more expensive is not so commonly used for this purpose.]

Commercial Fertilizer for Potatoes—Phosphate Procurable in Montreal.—1.—What is the best reliable artificial fertilizer to use, combined with barnyard manure, for the cultivation of potatoes on a loamy soil? 2.—By whom is it manufactured? 3.—Can superphosphate be obtained in Montreal, and at about what price?—G. S., Allan's Corners, Que.

[To give a decided answer it would be necessary to know the previous rotation. Taking for granted that this has been such that it did not remove any particular plant food more than another, a potash fertilizer would give the best results. This can generally be applied cheapest in the form of unleached hard-wood ashes. These should, however, not be mixed with the farmyard manure before its application. They would be best applied the previous fall. 2.—If they are not produced in sufficient quantities on the farm, they can generally be bought in the localities in which they are intended to be used, either from the schoolhouses and churches, or from other farmers who are foolish enough to sell them or let them go to waste. 3.—The price varies somewhat, depending upon composition and the current price of phosphoric acid. Last season a superphosphate containing 32 percent of phosphoric acid, of which 12 percent were made soluble, was sold for \$25 per ton. Write to Messrs. Brodie & Harvie, Montreal, for catalogue and price list; also Peter R. Lamb, Toronto.]

Black Teeth in Pigs—Eation for Milch Cows—Sowing Eye for Pasture and Green Manuring.—1.—What is the cause of black teeth in young pigs; are they injurious; will pigs die from their effect, and what is the remedy? 2.—What is the best kind of food to give to milch cows in order to produce the most milk? 3.—I intend pasturing milch cows on rye and afterwards plowing it down so as to be a green manuring for the fall wheat. What is the best plan to do this? My soil is a clay loam. Please answer the above in the next issue of the ADVOCATE, which is worthy of its name on account of the valuable information it gives to the farmers.—S. K., Hickson, Ont.

[Black teeth are caused by disorders of the stomach, and are generally found in pigs not well cared for or fed with sour food. They are not a disease in themselves, but are simply the symptom of digestive disorders, and can therefore not cause death. The cure is to give them good, wholesome food, thereby curing the digestive derangement and preventing the further blackening of the teeth. But those once stained may remain dark for a long time. 2.—There is no one kind of food best adapted for milch cows, or any other animal, but a proper combination and variation of foods is necessary to give the best results. To combine the foods according to the latest investigation, consult pages 363 and 364 of the December issue of the ADVOCATE for the last year. A large quantity of milk, of inferior quality, may be obtained by largely feeding succulent foods. But a large quantity of water will cause a waste of the foods consumed. 3.—The time for sowing rye for pasturing depends upon the time when the pasture is to be used. Generally the object for sowing this crop for pasture is to get an early bite for the stock in spring, and for this purpose it should be sown about the same time, and in the same manner as fall wheat.]

Best Variety of Potatoes Potato Fertilizers—Barley Fertilizers Cost of Mammoth Clover—Value of an Agricultural Work.—1.—What is the best kind of potatoes to plant for a large yield in field culture? 2.—What is the best kind of artificial manures to use? 3.—The soil where I intend to plant them is swamp clay, having been timbered with black ash. 4.—The best artificial manures to produce a good crop of barley on clay land? Is salt a good fertilizer? 5.—Can you buy it in Kilmarnock for \$2.50 per ton? 6.—Is the mammoth clover a good kind to sow for green manuring, when should it be sown and what does it cost? 7.—Is "The Culture of

Farm Crops," by Henry Stewart, a good work on agriculture?—D. B., Beryie, Ont.

[1.—The value of the different varieties of potatoes varies in different localities, soils, seasons, etc. In our experience we have found the White Star, Morning Star, and White Elephant to be the most productive. 2.—If you mean a low-lying tenacious clay, it is not adapted to potato culture, especially if it is not well drained. Such soils should be made lighter and more friable by thorough drainage and green manuring, aided by a subsequent dressing of lime. If your soil is covered with a layer of vegetable mould, a dressing of ashes or lime would likely have a very beneficial effect on a potato crop. 3.—Barley is a shallow rooted crop, and requires a soil rich in all the constituents of plant food, and not knowing your system of cropping, a general fertilizer is the safest to recommend; the best of these for this purpose would be farm yard manure, if well decomposed, applied the same season; or, if rather coarse, applied the previous year. For the information on salt read our answer to our correspondent, T. R. H. W., Clarke, in this issue. 4.—Mammoth clover produces larger crops, ripens later, retains life longer, grows on poorer soils and is coarser than the ordinary red clover. It is largely used for green manuring, the price varies and is generally about 25 per cent. in advance of that of ordinary red clover. 5.—So far as we have had an opportunity to examine it, it is a valuable work.]

Experiments with Fertilizers.—There seems to be a lull in the soil exhaustion discussion. I believe the fertility of soil can be maintained without imported fertilizer, and can give good reasons both from theory and practice. But if you believe a profit can be made out of artificial fertilizers, please tell us through the ADVOCATE how we may experiment in that direction. I should like to try them on wheat, barley, corn and roots.—J. L., Meaford, Ont.

[For experimenting with fertilizers obtain land as even as possible. Divide this into plots of exactly the same size, in such a manner that each plot is as nearly identical with the other as possible. In these sow separately (one kind of fertilizer on each plot) phosphoric acid, potash and nitrogen. On other three plots sow two of the above fertilizers together, a different combination, of course, on each plot. Leave one or two unmanured plots in each set, and on one sow all the three special fertilizers combined. Sow the same crop on all the above plots, and give them all the same treatment. From the above set of experiments can ascertain what special kind of fertilizer is best adapted for that special kind of soil, crop and season. If different crops are to be experimented upon, the same experiments must be repeated for each, and the same holds good for the various kinds of soils. The farms in which you will find the constituents of plant food above mentioned will be found by consulting the articles relating to our experimental work, published in our Nov. and Dec. issues of last year. If you can show how the fertility of the soil can be permanently maintained without commercial fertilizers your fortune is sure, and your name will be handed down to posterity as the greatest benefactor of humanity.]

Seeding Down Wet Lands.—I have a piece of low-lying land, 15 acres, which has been broken up and partially underdrained, and I want to seed it down to grass, being quite a distance from my barns. The land is a black muck, with clay subsoil, and was burned badly about 20 years ago with fire, burning the timber down and destroying to a certain extent the vegetable soil. What grasses would you recommend, and how much per acre? Would red top not be a good grass? The ground overflows in spring and is wet until the drains can carry off the surplus water.—H. W. M., Wellman Corners, Ont.

[Red top would be one of the best permanent grasses you could sow in your position. Other varieties producing larger returns will thrive for a short time and may profitably be sown in combination with the red top, which will take their place as soon as they give out. The ordinary quantities of timothy and clover together, with from 6 to 10 lbs. of red top, will be found a good mixture to sow. There is another variety of grass called water meadow grass (*Poa aquatica*) which is specially adapted for wet lands, but it has not been tested very thoroughly in this country. It would be well for you to try it on a small scale; you can get the seed from W. Rennie, Toronto.]

The Condition of the Canadian Farmer.—

Will you please allow space in next issue of the ADVOCATE for a few lines on the subject of Mr. William Worden's letter, which was published in your February number. His letter contains some excellent advice to his brother farmers, and gives a favorable view of the condition of the farming community. I quite agree with you, sir, that "he speaks plainly and fearlessly!" and, I wish I could add, "courteously." This virtue, however, seems to have been laid aside while writing the first portion of his letter, for he there speaks of my paper as "the most untruthful report of the Canadian farmers' condition." And further on he advises his friends to read my essay again so that they "may see where the untruths come in;" and yet he does not attempt to point out a single instance of untruthfulness in my paper. Now, I submit with all respect, that when one writer accuses another of making untruthful statements, he should at least indicate which of them are untrue. Mr. Worden does nothing of the kind. He does, however, speak of two circumstances as being "too thin," whatever that may mean. He says, "in his figures from the Bureau of Industries as to the value of all crops grown, he adds the price of wool, eggs, cheese, creamery butter, horses (surplus) horses—Mr. W., please don't misquote, fat cattle and sheep." Why should not all the items here enumerated be mentioned? Are they not all products of the farm, as are wheat, oats, rye, peas, barley, &c.? Mr. Worden should have seen that the portion of my paper to which he referred dealt with the products of the average farm. If he had done so he would not have asked—"Friend, would you not want a man's wages all the year, and a man to help six months in the summer?" My answer is, if the occupant of an average farm cannot do all the work (with a few minor exceptions), on 50 acres of cleared farming land, he should seek some other occupation. Is it not as stated by Mr. Worden, that it is really necessary for the farmer of 50 acres of cleared land to pay out as wages every year \$585, or may this statement be considered "too thin?" Again, Mr. Worden states that the natural rise in the value of farm property, as mentioned by me, is "imaginary" on my part, and characterizes that also as being "too thin." The increase referred to by me in the value of farm property for the year 1885-86 of 3.17 per cent. is obtained from the sworn returns of the Assessors of the rural municipalities. Do you want any better proof? If Mr. Worden will carefully read my essay again, and will allow that fair play which he, doubtless, has inherited from his Devonshire ancestors, to have its proper influence, I think he will acknowledge that it contains no untruthful statements. I observe, Mr. Editor, that the prize essay for the March number is to be on Farm Accounts. I sincerely hope the subject may be equal to the importance of the subject, for I am quite convinced that the elucidation of that branch of the subject will be the key with which the conundrum of opinion existing as to whether farming does or does not pay, will be unravelled. Farm accounts is, in my opinion, the subject above all others which should engage the attention and have the most careful consideration of all farmers, for the reason that not one farmer in a thousand knows how much it costs him to live.—THOMAS BEALL, Lindsay, Ont.

Bark Separated from the Trunk of a Tree—Repairing a Split Tree.—1. What is the best thing to do with an apple tree, the bark of which has been separated from the trunk for some distance up, either by frost or otherwise? 2. Would it injure a tree to bolt it together when split?—G. E. C., Montreal, Q.

[1.—Remove all the loose bark and dress the wound with grafting wax or tar. The bark, if left, will be a harbor for injurious insects. 2.—Bolting the separated portions together is a good plan to preserve the tree or branch.]

Plowing Under Oats and Potatoes on a Prairie Sod.—Some few months ago I read in the ADVOCATE that it was a good plan to sow oats on unbroken prairie and plow them under. I am having some prairie land broken up this spring, near Regina, N. W. T. What quantity of oats per acre do you advise me to sow? I am also going to plant some potatoes on the same principle—simply turning the sod on them. I am greatly pleased with the ADVOCATE; it is the best agricultural paper I have ever taken.—H. C., Montreal, Quebec.

[We never recommended plowing under oats in the manner you mention, and we don't remember that any of our correspondents have done so. We have never seen the plan tried, and cannot therefore vouch for its success. Two to three bushels per acre will be heavy enough seeding. Potatoes, however, have been successfully grown on this plan.]

Fish for Manure.—My soil is a light sandy loam and I wish to know if fresh fish (suckers) would be a good manure plowed under in the spring for a root crop consisting of mangels, turnips and potatoes. Would the same be beneficial for a crop of fodder corn, or would fresh barnyard manure, except for the above? I could catch any amount of the suckers by simply making a rack in which to hold them as they come over the falls. I do not think it would be any sin to them as suggested, as thousands of them die in the river every season, they not being

able to return into the lake out of which they come. I will have to haul the manure 1 1/2 miles.—J. R., Sandfield, Ont.

[Fish, like farmyard manure, are a general fertilizer, supplying all the plant food to the soil. They are, however, much more concentrated than the latter. If they are small, they may either be applied to the soil as they are, or decomposed in a compost heap or a manure pile. If large, they should be decomposed in the above manner to insure equal distribution. Fish being more concentrated and containing more phosphates than the average farm-yard manure, are better adapted than the latter, especially for your root crops.]

Sowing Turnips—Destroying the Turnip Fly.—A Ration for Fattening Stock.—Will you please answer the following questions:—1.—What is the best time to sow turnip seed and what is the best application to keep off the little flies eating the leaves? 2.—What are the best varieties of beets or mangels for feeding to stock? Should they be grown in drills and how far apart? I could never grow them satisfactorily on my farm, which is composed partly of heavy clay and partly of light soil. I used farmyard manure freely, but no commercial fertilizers. 3.—I am fattening a thoroughbred Ayrshire bull; am feeding him daily 10 lbs. of peas and oats, ground, 5 lbs. of wheat bran, and all the hay he can eat; have no roots. Will this ration fatten him well in three months, his weight being 1,500 lbs. I have heard considerable about oil-cake, but have no experience with it. Would you recommend me to use it and in what quantities.—A. B., Glen Sandfield, Ont.

[Turnips are generally sown at about 10th of June in order that they may better escape the turnip fly. The fly you have reference to is the turnip fly (*Haltica striolata*). The best remedy is to keep the plants in as vigorous growth as possible, so that they will soon outgrow the stage in which these flies injure them most. Ashes, land-plaster and air slacked shell-lime have been used to good advantage if applied after the young plants appear above ground. Soaking the seeds in turpentine before planting them is claimed to be beneficial, but this remedy has not been thoroughly tested yet. 2.—Mammoth Long Red, White's Tankard and Golden Yellow Mammoth are all good varieties. If the field is weedy they are most conveniently grown on ridges; but if the land is clean, they can be raised as advantageously on the level field. Much, however, depends upon the soil and season. The proper distance between the rows is from 2 1/2 to 3 feet; the richer the soil the further apart. If your soil is rich, a dressing of lime or land-plaster might prove advantageous; if not, a dressing of superphosphate would most likely give good returns, especially on the heavier soils. An important thing is to have your land drained. 3.—Your ration is a good one. If you use a pound of oil cake per day you may largely substitute good straw for the hay; but if you intend to push him very fast, it would be well to add the oil-cake and retain the hay.]

Salting Pastures—Economy in Stable Manure—Destroying the Codling Moth.—1.—I have a field generally in pasture with cold sandy bottom which has some drier sandy knolls in it. In early summer the cattle eat the higher places very close, but refuse the low land. Last summer I sowed salt on the flat land and thought they ate the grass on it better. Now I would ask, do you think it would be still better to liberally sow salt two or even three times every summer? 2.—My cattle in winter are fed daily straw, hay and roots, so that but little straw is left for bedding. I ask would it pay better to keep less cattle and have more straw to mix with droppings of the cattle, as now my manure pile is small, but I suppose good in quality. The cattle are tied up all winter in basement. 3.—In addition to spraying with Paris green, I have seen accounts of kindling fires in orchards at nightfall for the destruction of codling moth. I would ask should this be done when trees are in full bloom or two weeks after blossoms drop, when the spraying is done?—T. R. H. W., Clarke, Ont.

[1.—Salt is not a direct fertilizer, it only makes the plant food more soluble and thus distributes it more evenly through the soil. In doing so, however, it very frequently forms injurious compounds. On low-lying pastures, these compounds do not exhibit their injurious actions so effectually as on higher cultivated lands. Lands to which salt has been applied produce more saline herbage, which is relished more by stock. On poor land it should not be used at all, or at least only very sparingly. If you have sufficient time, it is better to sow it twice a season and less at a time. Read last year's ADVOCATE, page 34, on this subject. 2.—Your feeding ration is too poor to give good returns, and it will be better to add some grain or oil cake. It is

better to feed a few cattle and feed them well. The manure will be better if it receives the straw as it is, for the latter can only lose in plant food by passing through the animal's system. 3.—The difference between spraying with Paris green and kindling fires at night in the orchard is that the former plan is intended to destroy the larvæ as soon as hatched, while the latter can only be successful if it destroys the moths before they have laid their eggs. Therefore the kindling of fires should be done during the time that the moth is flying about, which is usually from the commencement of bloom to the time when the young apples are nearly the size of marbles. The spraying should be done shortly after the fruit has set. One application, especially in a dry season, is generally sufficient, and is more effectual than the kindling of fires.]

Sugar Cane.—I have read a good deal about sugar cane, but I was of opinion that it could not be grown to advantage or profit in the northern parts of Ontario; but this last year I got one pound of seed from J. S. Pearce & Co., of London, to try an experiment with it, to see if it would grow to satisfaction, and was much pleased with it, and am satisfied that it can be cultivated to profit if it would not be too expensive to manufacture it into syrup. Can you tell me how to make it into syrup, or what a mill for pressing it would cost, or how the juice is extracted from it? From the one pound of seed that I planted I had four wagon loads of stalks.—J. R., Stony Lake, Ont.

[We know of no cane mills manufactured in Canada, and the American manufacturers do not advertise here, there being little or no demand. You can make a mill of your own for work on a small scale. Go to your nearest machine shop, get two iron rollers cast, also three or four cogged wheels, and by means of a horse attached to an arm, you make the rollers revolve in such a manner that they will tightly squeeze the canes and draw them through the rollers. The rollers are generally 12 to 15 inches long, and will take through about half a dozen canes at once. The rollers and gear are fixed firmly into a frame high enough from the ground to allow the arm to which the horse is attached to pass over the head of the person who is feeding the mill in a sitting attitude. The juice pressed out of the cane flows into a receptacle of any kind. The juice is then boiled down into syrup, just as in maple-sugar making, except that the scum which rises to the surface in boiling should be frequently removed by a skimmer. We have seen the above process in the Southern States, and a farmer who has such a mill often receives cane from his neighbors and makes juice, and sometimes also syrup, for them.]

Indigestion Resulting from Feeding Boiled Foods.—I should be much obliged if you would kindly inform me through your valuable paper how to treat a yearling colt, which keeps poor notwithstanding that I feed him well on boiled turnips and potatoes, mixed with shorts. He has a sort of eruption all round his legs, small lumps that come and go. He does not seem to eat his hay, which is of good quality, as he should. His dung seems to be too hard.—L. M., Woodville, N. S.

[Your colt is suffering from indigestion. This disease is very frequently the result of feeding boiled and sloppy foods, which is no doubt the cause in your case. Therefore, stop the feeding of such foods. Give once or twice a week, depending upon the looseness of the bowels, one pint of raw linseed oil, and every evening, for each alternate week, one drachm of saltpetre; in the evenings of the intermediate weeks give two drachms of sulphur, until cured.]

Condition of the Nova Scotia Farmer.—I have taken your valuable paper for at least 12 years and like its practical teaching very much, but regret that its teachings are not reduced to practice more than they are; but we live so near to Brother Jonathan, that fast going and rich people, our young people nearly all go there as they arrive at maturity or working age; they bring the habits of our more wealthy neighbors amongst us, as they keep going and coming, which is a heavy tax upon us with the markets we have, and nearly all our energies are used in keeping up to the style of the country. The making a rich field, the keeping of a good herd, or flock, or planting and keeping in order a good orchard, are things that are very much overlooked by our young men. The consequence, in the part of the country where I reside, many of our best farms are running down for want of labor and attention. In many cases when the first settlers cleared the forest and made comfortable and happy homes, when the second generation got hold, it was either sold or let run down so much in a few years that it was not worth cultivating. This is the condition of large districts in Nova Scotia. We want a change very much, but cannot tell at present how that change can be effected.—J. M. G., West New Annan, N. S.

I would not like to do without the ADVOCATE. It is one of the very best papers that comes to me.—E. N. MILLEN, Agricultural Editor Philadelphia Press, Feb. 8, 1888.

Commercial.

(Farmer's Advocate Office.)

Farm Produce.

PRICES AT FARMERS' WAGONS.

Table with 2 columns: Commodity and Price. Includes items like Wheat, fall, per bushel; Wheat, red winter, per bushel; Wheat, spring, do.; Wheat, goose, do.; Barley, do.; Oats, do.; Peas, do.; Dressed hogs, per 100 lbs.; Chickens, per pair; Butter, pound rolls; Eggs, fresh, per dozen; Potatoes, per bag; Apples, per barrel; Onions, per doz.; Do. per bag; Turnips, white, per bag; Rhubarb; Cabbages, per doz.; Celery; Beets, per bag; Parsley, per doz.; Hay, per ton; Straw.

ENGLISH LIVE STOCK TRADE.

We have nothing of a very encouraging character to report this week in reference to the condition of the live stock trade in any portion of the British islands, says the Mail's Liverpool correspondent of Feb. 28. Our imports have been heavier this week from your side, from Ireland, and especially from all Continental ports, and our markets have been glutted; and this in addition to all sorts of weather—that is to say, weather of all sorts except good—has affected the trade detrimentally. Last week there was what had the appearance of an improvement, but at the present time of writing everything is very dull and the outlook is bad. Prices have given way a little, and even at the reduction trade is quiet, the demand is unaccountably light and the markets depressed. Prices are varying and practically useless for quoting as a guide to your readers.

LIVE STOCK MARKETS.

Buffalo, N. Y., Feb. 25, 1888. CATTLE.—Receipts, 12,553 against 8,500 the previous week. The market opened up on Monday with 155 car loads on sale. The demand was inactive from all parts, Boston buyers being entirely out of the market and New York buyers taking only a very few, while all grades were 10 to 15 cents lower than on Monday week. Good 1,500 to 1,600 lb. steers, \$5.25 to \$5.50; good 1,400 to 1,500 lb. do., \$4.75 to \$5; good 1,300 to 1,400 lb. do., \$4.50 to \$4.75; good 1,200 to 1,300 lb. do., \$4.25 to \$4.50; good 1,100 to 1,200 lb. do., \$3.85 to \$4.25; good 1,000 to 1,100 lb. do., \$3.40 to \$3.90; cows and heifers and mixed butchers', @ \$3 to \$3.75 if choice. There were no fresh receipts on Tuesday, and 12 loads of common stuff left over sold out at weak prices. On Wednesday and Thursday the supply was light. The market ruled steady at about Monday's rates. On Friday the receipts were light, the market dull and weak, closing at the following

QUOTATIONS:

Table with 2 columns: Commodity and Price. Includes items like Extra Beeves—Graded steers weighing 1,300 to 1,450 lbs.; Choice Beeves—Fine, fat, well-formed steers, weighing 1,300 to 1,400 lbs.; Good Beeves—Well-fattened steers weighing 1,200 to 1,350 lbs.; Medium Grades—Steers in fine flesh, weighing 1,100 to 1,200 lbs.; Light Butchers'—Steers averaging 1,000 to 1,100 lbs. of fair to good quality; Butchers' Stock—Inferior to common steers and heifers, for city slaughter, weighing 900 to 1,600 lbs.; Michigan stock cattle, common to choice; Michigan feeders, fair to choice; Fat bulls, fair to extra.

TORONTO HORSE MARKET.

There has been no outside demand of any account, and trade has been more than ordinarily quiet during the past week, owing very much to the severe weather. The indications are, however, very favorable for a fair amount of business as soon as a break occurs in the weather.

On Tuesday, at Messrs. Grand's repository, twenty-one horses were sold at auction, but the range in prices was a low one.

The following were among the chief sales on the list:—

Table with 2 columns: Horse Description and Price. Includes items like Ch. m., 5 yrs., 15.1 hds.; Ch. g., 4 yrs., 16 hds.; B. g., 10 yrs., 15.3 hds.; Brn. g., 8 yrs., 16 hds.; Brn. g., 9 yrs., 16 hds.; Brn. g., 8 yrs., 15.3 hds.; B. g., 15.2 hds.; B. g., 6 yrs., 16 hds.; Br. g., 8 yrs., 16 hds.; B. m. g., 9 yrs., 15.2 hds.; B. g., 7 yrs., 15.3 hds.; Brn. g., 5 yrs., 15 hds.; Crm. m., 5 yrs., 14 hds.

The Household.

Sleeplessness.

The London Lancet says in regard to the proper length of time for sleeping and the cause of sleeplessness:

Practically, man should sleep until refreshed. The mistake many people make is in attempting to govern what must be a matter of instinct by volitional control. When we are weary, we ought to go to sleep; and when we wake, we should get up. There are no habits more vicious than adopting measures to keep awake, or employing artifices, or, still worse, resorting to drugs or other devices, to induce or prolong sleep. Dozing is the very demoralization of the sleep function, and from that pernicious habit arises much of the so-called sleeplessness—more accurately wakefulness—from which multitudes suffer.

That day is not the time to sleep is evident upon the face of the fact that nature has provided the night, wherein no man can or ought to work. Instead of trying to lay down arbitrary rules as to the length of sleep, it would be wiser to say: Work while it is day; sleep when you are weary, which will be at night if the day has been spent in honest energetic labor. When you awake, rise; and if the day's work has been sufficiently well done, the time of waking will not be earlier than sunrise. The difficulties about sleep and sleeplessness—apart from dreams—are almost uniformly fruits of a perverse refusal to comply with the laws of nature. Take, for example, the case of a man who cannot sleep at night, or rather, who, having fallen asleep, wakes. If he is what is called strong-minded, he thinks, or perhaps reads, and falls asleep again. The repetition of this lays the foundation of a habit of awakening in the night, and thinking or reading to induce sleep. Before long the thinking or reading fails to induce sleep, and habitual sleeplessness occurs, for which remedies are sought, and the mischief is done. If the wakeful man would only rouse himself on waking, and get up and do a full day's work of any sort, and not doze during the day, when next the night came round, his sixteen or twenty hours of wakefulness would be rewarded by a sleep of nine or ten hours in length; and one or two of these manful struggles against a perverted tendency to abnormal habit would rectify the error or avert the calamity. The cure of sleeplessness must be natural, because sleep is a state of natural rhythmic functions. You cannot tamper with the striking of a clock without injuring it, and you cannot tamper with the orderly recurrence of sleep without impairing the very constitution of things on which the orderly performance of that function depends.

How to Clean Dresses.

Get five cents' worth of soap-bark from the druggist's (about a teacup full). For one dress, take half of it and steep in about one quart of boiling water for about half an hour or more; then strain through a cloth.

For a silk dress, while the liquid is warm, take a piece of white flannel and dip into it at intervals, and rub the silk and satin with it till it seems cleansed. When done pull the material straight and hang it to dry; do not iron either the silk or the satin. If the dress is very much soiled, use clean liquor to rinse it, but do not use clear water for silk, or it will not stiffen up well.

For a woollen dress, dip the part to be cleansed or the whole of it, if needed, into the liquor. This can be rinsed in the same after washing, or in clear, warm water. If very dirty, put the dress to soak in a tub of the liquor, with more water added before cleaning or washing. The woollen goods should be pressed before they are quite dry.

Water in which potatoes have been boiled will cleanse delicate-colored woollen or worsted goods. The dress should be wet all over. Use no soap. Rinse in clear, warm water. Press while still damp. This will not injure the most delicate colors.

The liquor in which soap-bark has been steeped, when used cold, is excellent for washing blue lawns that are easily faded. They should be washed with more water than is used for woollens.

Minnie May's Dep't.

MY DEAR NIECES:—The season is coming on for taking an inventory of household articles, in the shape of table and bed linens, &c., and are you not glad the weather is usually such that there is not much temptation out of doors? It makes the work in hand seem less tiresome. The linen closet and clothes press must be inspected to see what requires renovating, mending or replacing. The coming month is a good time to do all this work, and then it may be considered fairly over and done with for the year. By laying in a pair of sheets and bolsters, two pairs of pillow cases, half a dozen towels, and table linen in proportion, each year, one keeps up the necessary supply, and is never, so to speak, in a strapped condition in this respect. A friend came to me two years ago with the remark: "We find now, that all our beds are in use, that we have scarcely a change of sheets; we must go to work at once upon a web of sheeting!" This was in July, not the pleasantest time of year for staying indoors and sewing; wearing apparel may come later, but it is best to get that done early, too, not later than April or May, so that you can have the comfort of wearing nice clean print gowns as soon as the house cleaning is over. A few simple calico wrappers are the best working dresses, for they are easily washed, and if made neatly one always looks tidy in them.

In fact, I think it the best plan to have all your summer dresses made early in the spring. The latest fashions are shown by April, and what use is there in waiting until half the summer is over before you get your sewing done, and thus have dresses left half worn and old-fashioned for the next season. I shall give you some fashions next month. Something simple and pretty in curtains and sash curtains is shown; and you who are wondering how you can replace the worn or faded curtains, may do so at comparatively little expense, and have something fresh and sweet, that will, besides, have the advantage of not fading, and of doing up as good as new. Get one dot white Swiss muslin, that is, with the dot almost the size of a ten-cent piece; cut the length required for sash, hem an inch wide at both ends and sew old gold, white and blue, or all white silk tassel fringe, sold for the purpose, on the two inner edges. Old gold fringe appears to be most admired. It takes one width of the muslin for each side of the sash, and can be tied back with ribbon of the color of the fringe, if desired. Full curtains of the same are also used, and look very pretty. Fringe the same as sash, only on the inner edges.

MINNIE MAY.

Rec pes.

CHOCOLATE JELLY.

Seven spoonfuls of grated chocolate, the same of white sugar, one cup sweet cream; mix well and let it come to boil. Put between layers of cake.

HOUSEHOLD HINTS.

Do not forget to put a good handful of sugar in your pancake batter some morning. It makes a nice change.

When you boil rice, to two cups of rice add one cup of raisins. It is nice for dessert with cream and sugar.

Rub a drop of honey upon the hands to keep them smooth, before drying them. It is better than glycerine.

For a squeaking hinge, rub a lead pencil on the hinge; it is better than oil and will not rub off.

The mica windows in coal stoves may be cleaned by washing in vinegar and water. If very much discolored, let them soak awhile. Burn vinegar, sugar or coffee to purify a room of unpleasant odors.

CHOCOLATE FROSTING.

Whites of four eggs, beaten to a froth, stir in one cup of sugar, one tablespoon of vanilla and two sticks of grated chocolate. Place over a kettle of boiling water until it has a shiny appearance. Cool before spreading on cake.

COCONUT PUDDING.

Soak one cup of coconut in one quart boiling milk one hour, then let boil again; add the beaten yolks of three eggs and one cup of sugar. Bake in a slow oven. Whip the whites light and spread over the top. Brown lightly.

FURNITURE POLISH.

One pint boiled linseed oil, one wineglass of vinegar, two of turpentine; shake in a bottle and rub well on with a flannel cloth. Polish with a linen cloth.

HUMBURGS.

One pint sugar, tablespoon of butter, half-pint boiling water; boil until it snaps in water. Stir in half a teaspoonful of oil peppermint and cut in small pieces with scissors.

The old favorite bread and cheese is now made quite a fancy dish of. Butter some slices of bread about half an inch thick, cut in long strips about one-quarter inch wide, pile around your dish like a snake fence, zig-zag, and having grated your cheese, pour it neatly into the centre of the dish, with the slightest dust of cayenne pepper over it. Serve with a fork and spoon; or another way is to grate the cheese upon a folded napkin on a pretty glass dish, and serve with celery alone. The end of the celery is dipped into the cheese and eaten instead of bread.

Hints to Housekeepers.

A morning hand bath in cold salt water is delightfully invigorating.

Good fresh buttermilk made from sweet cream is a serviceable drink in diabetes.

Salt and vinegar, applied hot, are good for cleaning brass, which should afterward be polished with fine ashes.

The best thing to polish eye-glasses and spectacles is with a bit of newspaper. Moisten the glasses and rub dry.

Yellow soap and whiting, if mixed together with a little water into a thick paste, will stop a leak as effectually as will solder.

Never use lye to clean tin; it will soon spoil it. Make it clean with soap and water, and rub with whiting, and it will look well and last longer.

To make glossy starch, melt together one ounce white wax and two ounces spermaceti. Make starch, and to a good-sized panful add a lump of the mixture about the size of a pea.

For ear-ache take a bit of cotton batting, put upon it a pinch of black pepper, gather it up and tie; dip it in sweet oil and insert in the ear. Put a flannel bandage over the head to keep it warm. It will give immediate relief.

Any kind of a bath, or any process that will produce a general perspiration, and thus bring about a reaction, will cure a cold. Simply inhaling fresh air largely, by deep inspiration, is sufficient to nip an incipient cold in the bud.

The very simple remedy of common salt has cured many cases of fever and ague. A teaspoonful taken in water, and a teaspoonful deposited inside each stocking, next to the foot, as the chill is coming on. This comprises the whole of the treatment.

Bread Making.

Who does not remember their small efforts at bread making? What a world of manipulation the piece of dough received from our small hands, and what a dull grey color it was in comparison with Sarah's large white loaves. The workmanship on ours was by far the most elaborate. If mothers would only try to study more the varied tastes of their children, they would find themselves well repaid for their trouble. Too often she is forced to dismiss the little enquirer with, "Oh, I am too busy now; you must go and play." So the wee mite has to content himself, and try to find amusement. But how? for that which would attract one child will not amuse another. A pencil, paper and transfer patterns to copy will amuse many a child by the hour; while a train of cars, a steamboat on wheels or a small steam engine will prove a source of delight to a child of mechanical tastes. And they are never too young to have their tastes developed, and mothers could not do better than study them, for their own comfort. A small pet, such as white mice, pigeons, rabbits, or a little puppy or kitten, is no end of delight to children, but they must be taught to be kind to them. If they show a disposition to be cruel or neglectful, take the pet away. Few children care to read, but all love to listen; so make the reward of each day. A story read aloud—something short, so it will not weary—this will teach them to think, and cultivate the taste for reading; and try to select such stories as will be instructive as well as amusing.

A Youthful Cook's Soliloquy.

When sister Sue was married,
Not quite three years ago,
She couldn't make a single thing,
Nor broil nor bake nor stew.
She looked like an angel,
In her pretty wedding dress;
And Fred looked gay and happy,
And felt so too, I guess.
But when they went to keeping
house,
And Bridget ran away,
She couldn't get a breakfast,
And Fred looked glum all day.
Their pretty home with gloom was
filled,
She cried till her nose was red,
And all the things she tried to cook
Were fit for pigs, she said.
So things went on from bad to worse,
Till Charity Jones came in
And staid and showed her day by day
How and where to begin.
And all Fred's smiles came quickly back,
And all his pleasant ways;
And Sue can cook like mother now,
Whether Bridget goes or stays.
But one thing sure I'll settle at once—
I never will risk such a chance;
I'll learn to bake and broil and stew,
And everything else in advance.
I'll make some cookies this very day,
And a merry tune I'll hum;
And if Jimmy don't flatter the other girls,
May be I'll give him some.

Washing Oilcloth.

To keep oilcloth looking nice it is essential that proper attention shall be given to the washing of it. Nothing will ruin it quicker than carelessness in this, and it will take but very few washings of this kind to do it. A good housewife is more careful of her oilcloth than of her best carpet, for the latter, not being in use as

often, she knows does not require as much care; while the former, being in constant use, needs to be looked after very carefully, in order to have it present as good an appearance as possible. An oilcloth that has been neglected, aside from its not looking as well, will not last as long as the one that has been cared for carefully.

Too frequent washing, no matter how well it is done, will not improve oilcloth in the end. Usually this is the kind of treatment it receives, for few housewives seem to recognize the difference between a dusty oilcloth and a dirty one, and treat both the same. After it has had a thorough sweeping, if it looks dull and dusty, go over it, a little at a time, with a dry mop cloth, frequently shaking the cloth outside to relieve it of the dust collected in its work, and it will look as bright as though washed, and will wear a great deal longer. Frequent dustings of the oilcloth

that only a very soft one should be used then. When an oilcloth has been neglected, and by faulty washings or dryings the water or suds has been allowed to settle and dry between the rough surfaces, a brush is the only thing that will thoroughly remove it; but it should be a soft one and used as lightly as possible, but just enough scouring done to loosen and remove the sediment.

Use clean, warm water, or milk and water, which is much to be preferred when it can be conveniently obtained. With a clean flannel cloth wash as large a space as you can without doing much reaching. Have a dry cloth of flannel or coarse crash for a wiper, and after wiping as well as the wrung out damp cloth will admit, go over it again with the dry cloth, being careful that no sediment is left in the corrugated surface, and wipe thoroughly dry. Go over the whole floor in this way, then let it stand until all the dampness has disappeared

and it is perfectly dry. Warm some linseed oil, and with a flannel cloth apply it while yet warm to the oilcloth. The trouble with most housewives when using oil is that they use too much, when a little is all that is necessary. Rub a very little into the oilcloth, just enough to give it a nice gloss. If too much is used it will be worse than none, for the cloth will be sticky, and catch and keep every particle of dust touching it. If linseed oil is not convenient, kerosene will do very well, but even this should be used sparingly, or like the linseed it will do more harm than good. In the country, skim-milk is often used for washing oilcloth, and is an excellent thing for this purpose, as it gives the cloth a beautiful gloss and dispenses with the use of oils altogether.

BAG FOR SOILED LINEN.

A receptacle for soiled handkerchiefs, cuffs and collars can be made by taking a Turkish towel of pretty design, sew it together until within six inches of the fringe on the wrong side, then turn the fringed ends over and make a hem in the folded part of about two inches,

leaving a space for strings on each side. Use satin ribbon two inches wide of two contrasting colors. Olive green and red look pretty. Make a large bow of the two colors, tie it and sew it on the side of the bag. Run the ribbon in at each end so that it will form strings to hang by of the two colors.

ANOTHER BAG.—A bag suitable for gentlemen can be made by covering a piece of pasteboard with satin or any material not too heavy. The board must be about nine inches deep, eighteen inches round. Gather a pretty strip of silk and sew to the covered band of pasteboard, run the edges together, and draw the end together to form a bag. Sew a tassel of silk to the end. The silk must be about seven inches in depth. Make three points of velvet six inches in width, and seven in depth. You can line these scallops, and work them in button hole stitch, or trim them with pretty tinselled cord. Sew these to the top of your bag to form a lambrequin. Hang by strings formed of cord or ribbon ten inches long. Sew the cord around the edge of the bag. Make a plain bag for the lining of any thin material and baste to the inside. If you use ribbon, use more ribbon and form a bow.



BREAD MAKING.

will save it many washings and the housewife also some extra time and strength. A long handled mop is just the thing for this work, for with its aid the floor can be gone over in one-half the time, or even less, than if done by hand, and look every bit as bright and clean.

Never use soap in the water when washing oilcloth; it is good for a great many things, but this is not one of them. It will, to be sure, remove any grease or dirt there may be; but with it, it will also remove the paint and fade the colors. An oilcloth that has been always washed in soap and water is easily discovered by its faded look. Ammonia should never be used in the water, which is one of the few things for which it cannot be recommended, although some women use it for this work. It may not injure the colors nor remove the paint, but deadens the lustre and gives to the cloth a dull, dead look. There are very few housewives that do not know that a brush should be used on oilcloth only on rare occasions, and

Uncle Tom's Department.

MY DEAR NEPHEWS AND NIECES:—As I have reason to think you were interested in your last visit to my studio, according to promise I again invite you to come with me and spend another evening in my picture gallery.

But you wish to turn to the pictures—the language of those eyes is, "Please, draw the curtain aside." Gladly, my boys and girls, for your will is my pleasure, now that I am host. You recognize the centre picture—it was the first we studied this year; to the right is the next we examined, while to the left here is the one to which I would call your attention.

You wonder what interpretation can possibly be read from a somewhat dilapidated building to the left of the background, and an apparently tasteful, commodious structure to the right. That is all you see in the first glance—look again—if the picture be a true one it will bear study.

Now turn with me to the inside view of the structure on the right. Our eyes are gladdened to see the large number of earnest, young faces—just such faces as I imagine my nieces and nephews to have. A band of busy workers they—ready and glad to second and assist any movement that will be to the edifying of either mind or heart.

are wearying somewhat with my story, and you want to know what all this has to do with you, girls and boys of our country homes. Let the portrait speak thus to you:—"People often say to me: 'I don't see how you accomplish so much. Where do you get the time to do the work you do?' but I can only tell them that all I have ever accomplished has not been owing to favorable circumstances, 'good luck,' so called, but to hard work—hard work.

UNCLE TOM.

Puzzles.

1—NUMERICAL ENIGMA. If a two-wheeled vehicle you would seek. Place in order my 1, 2, 4, 6. You'd have by placing in rank my 6, 3, 4. Something that quickly would burn with a roar.

2—ILLUSTRATED REBUS. A rebus puzzle consisting of a picture of a man, a picture of a woman, a picture of a child, and a picture of a dog, with the letters G, 2, a, L, E, 8, 8, A, L, I arranged around them.

3—HIDDEN QUADRUPEDS. Come for your music at twelve. Cedric owes me five dollars. Do girls attend this school? You go at six and I will go at twelve. I abhor seeing that boy.

7—BURIED GIRLS' AND BOYS' NAMES. 1.—Do, Ralph, tell Harry not to make a noise (2). 2.—The van the baker was in was painted red.

8—BEHEADINGS. My whole means to harmonize. Behead, and it means to give for a short time. Behead again, and it means the last part. Behead and prefix, and it means also. EDITH ROBINSON.

9—A CROSS. Diagram. 1—A pin. 2—Queer. 3—Since. 4—Competitor. 5—A port. 6—Encircled. 7—An animal. 8—A capsule. 9—A fish. HENRY REEVE.

10—NUMERICAL ENIGMA. My whole is an adage. My 5, 7, 10, 13, 14, 22, means to quiet. My 5, 6, 1, 4, 2, is a small animal. My 2, 4, 13, 16, 22, 23, is to scatter. My 20, 19, 6, 21, 24, means hues. My 9, 1, 18, 11, means to fret. My 17, 3, 15, 12, means delighted.—A. T. REEVE.

Answers to February Puzzles. 1.—Finger-ring. 2.—What's a table richly spread, Without a lady at its head. 3.—Want, wan. 4.—Standing still is childish folly, Going backward is a crime; None shall patiently endure Any ill that he can cure; Onward keep the march of time.

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

Robert Wilson, Libbie Hindley, Henry Reeve, Edith Robinson, Clara Witmore, Mary Robinson, Helen Connel, A. Hawkins, E. Eulalia Farlinger, Mary E. Sudden, Samuel Allright, Russell Boss, Emma Dennee, Emma Slicers, Arthur T. Beeve, Nora English, Cecelia Fairbrother, David Hunter, Carrie Bedy, Douglas Japp, Geo. H. Stokes, Frank Riddle, Lizzie Crerar, Austin McCradie, Alice Cousins, A. G. Ford, Nellie Samson, Thos. McGurdy, Eva Courser, Irvine Devitt, W. B. Anderson.

A man too busy to take care of his health is like a mechanic too busy to take care of his tools.

This soup, according to an Irish mendicant, "is a quart of water boiled down to a pint to make it strong."

The conquerer is regarded with awe; the wise man commands our esteem; but it is the benevolent man who wins our affections.

Go out of doors and get the air. Ah, if you knew what was in the air. See what your robust neighbor who never feared to live in it has got from it; strength, cheerfulness, power to convince, heartiness and equality to each event.-- [Emerson.

"You must not do that, my dear," said a mother to her four-year-old daughter. "Nice little girls never do so." "Yes they do, mamma, sometimes; didn't you just see me do it?" was the bright retort.

NOT EXACTLY ENGLISH, YOU KNOW.—An Englishman travelling on the continent had hired a smart servant, and on arriving at an inn in Anstria one evening, knowing well the stringency of the police regulations, he called for the usual register of travellers that he might du'y inscribe himself therein. His servant replied that he had anticipated his wishes, and had registered him in full form "as an Englishman of independent property." "But how have you put down my name? I have not told it to you." "I can't exact y pronounce it, but I copied it from monsieur's portmanteau." "But it is not there. Bring me the book." What was his amazement at finding, instead of a very plain English name of two y'ab'es, the following portentous entry of himself; "Monsieur Warrantedsolidleather."

A CAREFUL READER.—I happened in a Dacota sett'er's house one day whi'e we were waiting for something and noticed the first volume of "_____'s Cyclopaedia" on a shelf, each vo'ume of said work being about the size of one of the unabridged dictionaries and very closely printed. I casually suggested that it was a good thing to have in the house, or words to that effect. "Yes," he replied, "it's handy. I only got the first book." How does it happen you haven't the others?" "W'y you see I got it of an agent when I was livin' down in Iowa, an' 'bout six months after round he come again an' knocked at the door an' I opened it an' says he: 'Mister, here's the secon' book of your cyclopedy. 'Git out!' says I, 'I ain't got the first one read yet!' and I made him go, too. W'y, jes' think of it, that was nigh on to ten years ago, an' I ain't more'n two-thirds through this now, an' my wife is only jes' nicely started on the 'Bs'! It took a pile o' brains to make it; but for all that I don't mind sayin' that I think it's got it's dry streaks jes' ike other books."—[Chicago Tribune.

Never Mind.

What's the use of always fretting
 At the trials we shall find
 Ever strewn along our pathway?
 Travel on and never mind.

Travel onward, working, hoping,
 Cast no lingering look behind
 At the trials once encountered—
 Look ahead and never mind.

What is past is past forever,
 Let all fretting be resigned;
 It will never help the matter—
 Do your best and never mind.

And if those who might befriend you,
 Whom the ties of nature bind,
 Should refuse to do their duty,
 Look to Heaven and never mind.

Friendly words are often spoken,
 When the feelings are unkind;
 Take them for their real value,
 Pass them by and never mind.

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

—H. B. S.

A Woman at Dinner.

"Who are the best companions at a dinner?"
 "Women are almost invariably good company, but you should remember never to waste a good dinner on a woman. They have absolutely no idea of the delicacies and beauties of a thoroughly balanced dinner, and the younger they are the less able are they to appreciate the work of the accomplished chief. There is scarcely a woman in New York who would not rather put on a new gown and eat a wretched dinner amid the splendor of Delmonico's or the Brunswick than eat a capital one at a lowly restaurant. A man, on the other hand, had rather eat a good dinner in a hovel than a bad one in a palace. What the women like is lots of tinsel, gold, cut-glass, colored lights, gorgeous ice, graceful champagne glasses and strains of music. Give them these things and they don't care a rap for the rest. If you take a stupid friend to dinner you stand a very fair chance of having your meal spoiled, unless he is a very old friend. If you know him very well you may indulge in long periods of silence—the privilege of old friendship—and devote your entire attention to the dinner. In this case a stupid friend is often a blessing in disguise, for it is very annoying at times to be obliged to keep up a running fire of small talk when there is more important business at hand."—New York Sun.

WOODEN BOWLS.—In buying a new wooden bowl, it is well to remember that if you grease it well on the inside, and stand it near the fire where it will soak in, it will save it from cracking.

DANDRUFF.—J. B., Tompkins County, N. Y.: Dandruff is a scurfy matter which exfoliates from the skin. It is caused by a diseased condition, produced generally by uncleanness and the use of hair oils and grease on the head and by want of washing. To prevent it the head should be washed every morning with water and soap and rubbed dry with a towel. This will cure the trouble if persevered in. If any hair-dressing is used, a simple oil, as oil of almonds, mixed with an equal part of pure alcohol, or bay rum and a few drops of tincture of Spanish fly, may be rubbed on the hair and skin of the head immediately after the hair is rubbed dry. The rubbing is very beneficial to the skin.

In every human being there are many grains of gold. When one is down, even by indiscretions of his own, do not stoop to throw additional mud upon him. Strive rather to reach him a helping hand to extricate him from the mire in which he is wallowing. This is true manhood.

TO WASH BUCKSKIN GLOVES.—Make a suds and add a half a tablespoonful of the magical mixture to it and wash the gloves in it; or you may put them on your hands, taking a small piece of sponge or soft flannel and dipping it into the suds rub it over the gloves until they are cleansed, rinsing them with clear water. Hang where the wind will blow them dry, or pull them in shape and dry by the fire.

OATMEAL FLOUR BLANC MANGE.—Into one qt. of slightly salted boiling milk stir in 2½ large tablespoonfuls of oat flour, a piece of butter and a tablespoonful of sugar. Boil for twenty minutes and turn into a wetted mould, or it may be eaten warm. Cream and sugar form the best sauce. This is very nice for invalids or infants, being very light and easy of digestion.

A pretty receptacle for soiled handkerchiefs and laces is made by taking a palm leaf fan and covering it with cretonne plush or satin; make a pocket of one-fourth yard of the same material hemmed and shirred at the top to reach across the fan from the handle. Tack this across the bottom and trim. Trim all around with a pinked pleated edge of the same material, ribbon or lace. Tie a large bow on the handle, which is also covered with the same material as the rest, and fasten to the wall in dressing room.

COLORING WHITEWASH FOR INTERIOR WALLS.—Coloring matter may be stirred into whitewash to make any desired shade. Spanish brown will make a red-pink, more or less deep according to quantity used. Finely pulverized common clay mixed with Spanish brown makes a reddish stone color. Chrome yellow for ye'low color, and if small quantity is used, a cream. Use indigo for different shades of blue, and indigo and chrome yellow for green. Green pigments cannot be safe'y used with lime, as the lime will injure the color, and the green will cause the wash to peel off. For different shades of red, mix Venetian red and Spanish brown in various proportions. Lampblack will give a pretty gray if used in proper proportions with the whitewash.

The aroma of red cedar is fatal to house moths; the aroma of black walnut leaves is fatal to fleas. It is a matter of common observation that persons engaged in the business of making shingles out of odoriferous cypress timber, in m'arial districts, are rarely, if ever, affected by malarial diseases, and that persons engaged in distilling turpentine do not suffer from either malarial diseases or consumption. It is said when cholera was epidemic in Memphis, Tenn., persons working in livery stables were entirely exempt from it. It is affirmed that since the destruction of the clove trees on the Island of Ternate the colony has suffered from epidemics unknown before; and in times when cholera has prevailed in London and Paris, those employed in the perfumery factories have escaped its ravages.—[Boston Journal of Chemistry.

I think the ADVOCATE the best of all agricultural papers for the farmer. I have taken it for ten years, and find that it improves every year, and the more I see it and read the solid facts it contains the more I like it, and the more I would hate to part with it. Hoping that you will continue so valuable a paper many years, I remain yours truly,
 —PHILIP A. TOLL, Ouvry P. O., Kent Co., Ont.

Notices.

A NOTEWORTHY MACHINE.—In this number of the *ADVOCATE*, among our advertisements will be found a cut of the Toronto Light Steel Binder—manufactured by the Massey Manufacturing Co., of Toronto, the largest manufacturers of agricultural machinery in the Dominion—as operated in the field. This machine has played a prominent part in the harvest fields of the world and has given universal satisfaction. It is the latest production in this line of the Massey Co., and on its construction has been concentrated the most advanced and practical ideas yet developed in the scientific world as regards the manufacture of grain-saving machinery. Its sale has been very extensive, over 3,000 alone being sold in Canada last year; and for elegance of design, lightness, simplicity, strength, neatness, and ease of operation, it is considered to be the leading Self-binding Harvester yet produced. It can easily be handled by an ordinary farm hand, and in its construction special attention has been directed towards adapting it for the harvesting of all kinds of grain on all kinds of ground. In addition to all the Provinces of Canada, the Toronto Binder is used in the harvest field of nine different foreign countries. The Massey Manufacturing Co., with their accustomed enterprise, and in order to meet the demands of their numerous customers, and to facilitate shipment, have purchased the warehouse near the old Grand Trunk Station, London, recently occupied by the Joseph Hall Manfg. Co., and have also established show rooms at 143 King Street, in this city, where samples of their productions may be seen, and a full line of repairs and smaller implements are kept constantly on hand.

BREAK UP THE CLOUDS.—The Acme Pulverizing Harrow, manufactured by Duane H. Nash, of Millington, N. J., is a very valuable implement, and is highly spoken of by all the farmers we are acquainted with who have used it. Mr. Richard Gibson, of Delaware, the noted breeder of Shorthorns, has one. He says he would rather dispense with any implement on the farm than it.

The following Seedsmen's Catalogues have been received:

Jno. A. Bruce & Co., Hamilton; R. Evans & Co., Hamilton; J. A. Simmers, Toronto; Geo. Keith, Toronto; Steele Bros. & Co., Toronto; Wm. Rennie, Toronto; Wm. Evans, Montreal; R. Ewing & Co., Montreal; Jno. S. Pearce & Co., London; Geo. Leslie & Son, Leslie, Ont.; A. G. Hull, St. Catharines, Ont.; Peter Henderson, New York; Hiram Sibley, Rochester, N. Y.; Crosman Bros. Rochester, N. Y.; Ellwanger & Barry, Rochester, N. Y.; Jas. Vick, Rochester, N. Y.; D. M. Ferry & Co., Windsor, Ont.; J. T. Lovett & Co., Little Silver, New Jersey; S. Wilson, Mechanicsville, Pa.; Jas. J. H. Gregory, Marblehead, Mass.; J. A. Everett & Co., Indianapolis, Ind.; T. M. Lang, St. Paul, Minn.

We call attention to Mr. Patteson's sale of Shorthorns on the 28th inst., at Eastwood. It is an absolute dispersal sale, and about 50 head will be offered. Some of his best cows were purchased here on the London Fair Grounds at Mr. Richard Gibson's sale. Among them is Fame 3rd, of the Kentucky Filagree tribe, and two of her daughters, one by imp. 5th Duke of Hollar, the other by the equally famous sire Mazurka Duke, both high bred Bates Bulls. Mr. Gibson's grand cow Lady Lorne, with some of her descendants, will be offered. Also by Mazurka Duke (son of 17th Duke of Airdrie) and by Connaught Ranger. Also is Duke of Connaught, the best bull in England, and sold for the highest price ever paid for a bull of any breed, viz.: \$23,000. Some Alpheas, daughters of the cow sold at the memorable York Mills sale, are in the catalogue, and other Bates animals from the herds of Mr. James Cowan, of Galt, of Mr. F. W. Stone, and Mr. Smith, of Maple Lodge. Mr. Patteson has taken infinite pains with his herd for the past fifteen years, and is likely to reap the benefit now that he is selling out.

(See Stock Notes, pages 92 & 93.)

NEW ADVERTISEMENTS.

SPECIAL NOTICE.

THE FARMER'S ADVOCATE refuses hundreds of dollars offered for advertisements suspected of being of a swindling character. Nevertheless, we cannot undertake to relieve our readers from the need of exercising common prudence on their own behalf. They must judge for themselves whether the goods advertised can, in the nature of things, be furnished for the price asked. They will find a good rule to be careful about extraordinary gains, and they can always find safety in doubtful cases by paying for goods only upon their delivery.

AUCTION SALE OF
High Class SHORTHORNS

at Maple Lodge Stock Farm, on

THURSDAY, MARCH 29th, 1888.

Commencing promptly at two o'clock. I will sell without reserve at above place and time

18 CHOICE SHORTHORN CATTLE.—Including specimens of Cruickshank and other Scotch blood, and several very desirable animals chiefly bred from the best Bates' families. Eight of the number will be young bulls of extra quality and 10 females, from one to four years old, from our best milking families. All females of breeding age will be in calf to our grand young stock bull, Duke of Colonus—9,222. They are in good breeding condition, and will give satisfaction to the purchaser.

Terms:—Nine months' credit on approved joint notes, or eight per cent. off for cash. Morning and evening trains from east and west on G.T. Railway and from north and south on L.H. & B. Railway stop at Lucan Crossing, one mile east of our stables (28 miles west of Stratford and 16 miles north of London), and the Mail train from the east, arriving at 1 o'clock, will stop at the farm to let passengers off who wish to attend the sale. Every one who comes will be made welcome, whether he wishes to buy or not. Send for a catalogue.

JAS. S. SMITH, Maple Lodge P. O., Ont.
267-a

GREAT SALE OF

Thoroughbred AND Grade Stock

—AT—
GERMAN MILLS,

—ON—
March 14th, 1888,

—CONSISTING OF—
30 HEAD OF SHORTHORN CATTLE

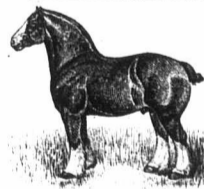
Cruickshank and other noted families.

IMPORTED AND CANADIAN-BRED
Percheron Stallions and Mares

—ALSO A FEW—
COACH STALLIONS.

All the animals are of high individual merit, a large number of them prize winners at Provincial and other exhibitions, making it one of the grandest sales of the season.

Sent for Catalogue to the undersigned,
T. & A. B. SNIDER,
GERMAN MILLS, WATERLOO, CO., ONT.
266-b



CLYDESDALES FOR SALE.

We have now on hand and for sale twenty head of imported STALLIONS AND MARES, among which are a number of Prize Winners at the leading shows of the world, and sired by such noted horses as "Lord Erskine," "Sir Wyndham," "Belton Knight," "Old Times," "Macgregor Warrior," and "Lord Kirkhill."

Catalogues sent on application.
Stables within ten minutes' walk of Bowmanville Station, on G. T. R.

ROBT. BEITH & CO.
267-a BOWMANVILLE, ONT.

AUCTION SALE OF

A. J. C. C. JERSEYS

I will sell at Public Auction in the
CITY OF GUELPH,

—ON—
Friday, March 9th, 1888,

—ABOUT—

25 HEAD OF JERSEYS

consisting of Bulls, Cows and Heifers. The cattle are now in quarantine, and were selected from the best and richest herds in the United States, including the best families.

Catalogues ready March 1st, giving pedigrees.

For place, time and terms of sale drop me a postal and catalogues will be forwarded.

D. T. ROGERS,
266-b CATUGA, ONT.

IMPORTANT AUCTION SALE.

WILL BE SOLD ON

Wednesday, March 21st, 1888,
at Woodlawn Farm, Ancaster, three miles from
Copetown Station, G. T. R.,

30 PURE-BRED BATES SHORTHORN CATTLE
(23 Females and 5 Males.)

10 HEAD OF DUREAM GRADES, 6 YOUNG
HORSES, ALSO 17 GOOD LEICESTER SHEEP.

The Cattle are a fine lot, with sound and reliable pedigrees, and well worthy the attention of the public. Sale to commence at 11 o'clock a.m. Seven months' credit will be given on all sums over \$10. Catalogues will be ready about the 15th February. Conveyances will meet all trains at Copetown Station. Lunch at noon.

JOHN IRELAND, COPETOWN P. O.
266-b WM. TEMPLAR, JERSEYVILLE P. O.

HIGHEST BIDDER!

Breeders' Live Stock Sale Association

GREAT ANNUAL SALE,
APRIL 3rd, 4th, 5th & 6th
LONDON, CANADA.

500 HORSES AND
IMPORTED CATTLE

Amongst which will be found the following imported Clydesdale and Canadian Bred Stallions:—
Sum and Substance, 1883; Sweet Home, vol. 8; Normandy, 5225; British Warrior, vol. 10; Lady Style, vol. 10; Pride of Oxford, vol. 1; a number of imported Clyde Fillies, rising three years, also General Purpose, Road, Carriage Matched Pairs, Hunters, Saddle, Hacks and Shetland Ponies; Imported Shorthorn Cruickshank Bull, Scottish Victor, 5770, sired by Romm Gauntlet, 35294, Dam Victoria, 58th. No Humbug. No Reserve.

J. H. MARSHALL, M.P., DOUGLAS H. GRAND,
267-a President. Manager.

CREDIT SALE

SHORTHORNS

The undersigned is instructed by Mr. T. C. Patteson, to sell at
EASTWOOD, ONT.,

—ON—
Wednesday, March 28, '88

his whole Herd of High-bred
Shorthorn Cattle.

The Proprietor having determined to devote his farm entirely to the raising of Sheep and Horses, the sale will be an absolute dispersal sale.

Terms: Six months credit on approved notes; six percent per annum off for cash.

Catalogues free.

T. C. PATTESON, Postmaster,
TORONTO, ONT.

or E. A. M. GIBSON, Auctioneer,
266-a DELAWARE, ONT.

AUCTION SALE.

Having rented my farm, I will offer for sale my **Holsteins, Horses, Cows and Implements**, on March 21st, 1888.

L. Haner, Aldershot, Ont.

TO AYRSHIRE BREEDERS.

Those who have pure-bred Ayrshires are invited to send their pedigrees to the undersigned for entry in

The Canada Ayrshire Herd Record. It is the only book of record in the Dominion that is devoted to *Thoroughbred Ayrshires*.

W. L. RODDEN, Plantagenet, Ont. For the Committee. 287-a

FERTILIZERS

For Grain, Vegetables and Roots, Fruit Trees and Small Fruits,

MANUFACTURED BY **The Standard Fertilizer and Chemical CO. (LIMITED.)**

SMITH'S FALLS, ONT.

The HIGHEST RECOMMENDATIONS from practical men. Descriptive Pamphlet free on application.

Address orders to **R. J. BRODIE, Manager, SMITH'S FALLS.**

Or BRODIE & HARVIE, Montreal. 287-c

EVERY FARMER HIS OWN MILLER.

LITTLE GIANT FEED GRINDER.



PATENTED DEC., 1886.

Grinds all kinds of grain into meal, coarse or fine. Will grind corn and cob into meal for stock feeding. Furnished with special Disk, which will grind corn into table meal and buck and wheat into flour.

Send for circular. **J. A. McMARTIN & CO.,** 637 Craig Street, MONTREAL. 287-f

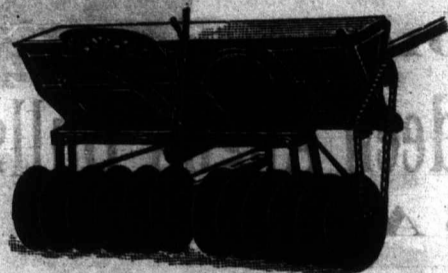


WHY let Fruits, Flowers, Trees and Vegetables be consumed when this practical treatise sums up the latest means for dealing thoroughly and cheaply with ALL common kinds. By Prof. Cook, Wier, and others. 125 headings, 148 remedies. Armed in time and millions of dollars in produce may be saved in 1888. For One Month. Further introduce our journal, devoted to all branches of Horticulture for profit and pleasure, (32 pages, \$1.00 a year) a specimen copy (10c.) and above treatise (25c.) will both be sent for only 10c. if ordered NOW, mentioning paper. "Popular Gardening & Fruit Growing," Buffalo, N.Y. 287-g

CALVANIZED WIRE
POULTRY NETTING
B. GREENING & CO.
HAMILTON, CANADA
SEND FOR PRICE LIST

287-d

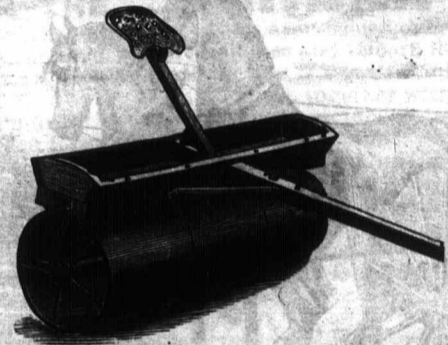
THE "CORBIN" Leads Them All!



This out shows the removable seeder attachment for the Corbin Harrow. Every harrow will take it. It sows all kinds of grain broadcast. It is simple, and easily managed. It is furnished with a perfected drive gear. The Harrow and Seeder is one of the most profitable implements a farmer can buy. It saves the horses, saves the driver, insures the crop. It does a great variety of work, and does it well. Every farmer who is not informed as to what this Harrow is, and what it will do, should drop us a card for particulars.

(See "Advocate" of January and February.) **THE LATEST!**—The Managers of the Government Experimental Farms, at Ottawa, bought two Corbin Harrows in preference to all others. Get a good machine while you are about it. The No. 30—Reversible—turns the soil either toward the tongue or away from it, and is having an immense sale. Read what the "Advocate" says about it. Read what all the leading agricultural authorities say about it.

THE CORBIN WROUGHT-IRON ROLLER



Has finished bearings, babbitted oil boxes, and weight box. It is silent running, easily turned, of light draft, and fitted with a grass-seeder. The cheapest Iron Roller in the market, and giving unbounded satisfaction. Sold in Manitoba for three seasons, with constantly increasing sales. Send for circular.

THE ST. LAWRENCE MFG. CO., OF ONTARIO, LTD. PRESOTT, CANADA.

GENERAL AGENCIES—Johnston & Co., Fredericton, N. B.; R. J. Latimer, Montreal, Que.; VanAllen & Aron, Winnipeg, Man.; Nicholles & Renouf, Victoria, B. C. Sold also by all agents of the Massey Manufacturing Co. in Manitoba and the North-West. Sold also by 150 local agents in Ontario.

"IT'S A DANDY."



No intelligent farmer would be without the "Dandy" Patent Bag-holder, which will last a lifetime and costs only 75 cts. Sold by agents. Territory still open. Circular free. Sample (free by express) on receipt of price. Address—C. W. ALLEN & CO., 67 Yonge St., Toronto; W. M. EWING & Co., Seed Merchants, Montreal, or J. H. ASHDOWN, Winnipeg.

THE DAISY CHURN

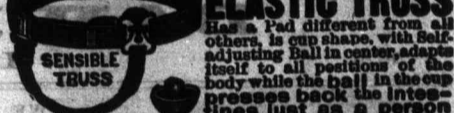


was awarded the Silver Medal and First Prize over all competitors.

AGENTS WANTED in every town in the Dominion. For Price List and Terms Address

WORTMAN & WARD MFG. CO., 288-d LONDON, ONT.

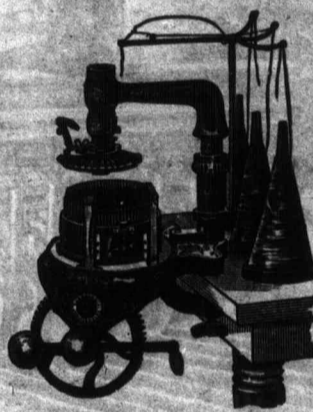
ON 30 DAYS' TRIAL!



ELASTIC TRUSS Has a pad different from all others, is cup shape, with self-adjusting ball in center, adapts itself to all positions of the body while the ball in the cup presses back the integument just as a person does with the finger. With light pressure the leg is held securely on, and night and a radical cure certain. It is easy, durable and cheap. Sent by mail, 10-15 cents free.

WORLD'S STAR KNITTING MACHINE

ORELMAN BROS., GEORGETOWN, ONTARIO.



NO HOME COMPLETE WITHOUT ONE. First prize at all the leading fairs: knit goods of all descriptions: plain ribbed or fancy knitting, beautiful full fashioned hosiery.

Knit goods of all descriptions, coarse or fine plain rib or fancy work. First prize at all leading exhibitions; 2,000 machines sold at the Colonial Exhibition; London, England. Send for circular. 287-2y-com

PREMIUMS! NEW WHEAT.

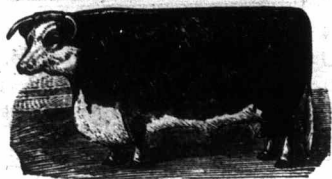


SAXONKA SEED WHEAT.

Probably the greatest demand this spring by farmers desiring to try new and promising varieties of wheats, will be for the Saxonka. This wheat was imported from Russia, and is now raised with success in Canada. By the reports we have received it ripened much earlier than the Red Pile; some claim that it has ripened from 6 days to 3 weeks earlier than other spring wheat, and that it is a wheat of superior milling quality; that it has a strong, stiff straw, and yields a very large crop. We have not as yet tested it on our land, but intend doing so this spring. We will send two pounds of this wheat, postage paid, to any P. O. in this Dominion, to anyone who sends us one new subscriber to the FARMER'S ADVOCATE AND HOME MAGAZINE for one year; the subscription price of \$1 must accompany the order; or one pound will be sent to anyone who will send us in 50 cts., accompanied with a new subscriber's name, for 6 months. All now have an opportunity of testing this wheat, and procuring the seed at cheap rates. With proper care 30 pounds may be raised from one pound. We shall not dispose of any of this wheat for cash.

LADOGA SPRING WHEAT

To all who will promise to report results to this office. This wheat is claimed by some to be even earlier than the Saxonka. It will only be sent with the 2 lb. lot.



35
CHOICE



Hereford and Aberdeen Angus Bulls FOR SALE.

25 Herefords and 10 Aberdeen Angus Bulls, varying in age from a few months to two years. A large number of them are one year old.

FOUR IMPORTED HEREFORDS, ALSO ONE ABERDEEN ANGUS.

The balance are our own breeding. Our stock are all choice animals, and will be sold cheap, as we have more than we care to keep.

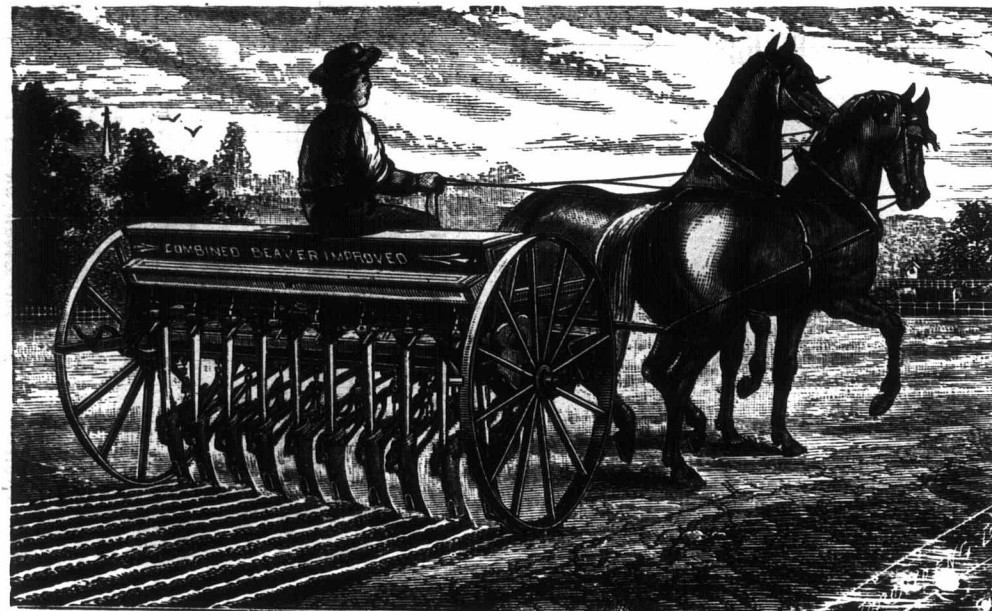
Correspondence solicited. Address

DAWES & CO.,
LACHINE, P. Q., CANADA.

267-b

—WE KNOW THAT—

The **BEAVER IMPROVED SEEDER and DRILL**



IS MANUFACTURED ONLY BY THE MASSON MANUFACTURING COMPANY, OSHAWA, ONT. We know that it has **Steel Drag Bars, Steel Frame, Steel Axle and Steel Distributor Rods.** We know that we use nothing but the best materials, and employ only the best workmen. We know that it is the only Seeding Machine manufactured in Canada that is **geared at both ends,** thereby overcoming all bunching and uneven sowing in grain. We know you can stop half the machine while your horses are in motion and go on sowing with the other half. We know that it will please you in every respect. We know you can change from drilling to broadcasting without removing a bolt, spring or nut. We know that if you examine the **BEAVER IMPROVED** before buying you will have no other. We know that it will afford us the greatest pleasure to send you our illustrated Paper free. 267-b

C. F. SMITH & CO.,
BELLEVILLE, ONT.

Manufacturers of and dealers in

FRASER'S GANG PRESS and HOOPS,
Vats, Card Mills, Curd Knives, Bandage, Rennet, Extract, Annatto, Scale Boards, and all other requisites. Prices low. Write us before buying. 267-c

FERTILIZERS!

LAMB'S PHOSPHATE MANURE

—GOOD FOR—

Wheat, Buckwheat, Cabbage, Rye, Millet, Onions, Oats, Barley, Potatoes, Corn, Peas, Beans, Tomatoes, Turnips, Carrots, Hops, etc., etc.

LAMB'S BONE MEAL

—GOOD FOR—

All Kinds of Grain and Root Crops.

Lamb's Phosphate Screenings

—GOOD FOR—

Trees, Vines, Shrubs, Asparagus and Strawberry Beds, New-made Lawns and all purposes requiring a very permanent manure.

Send for circular with price list to

PETER R. LAMB & CO.,

267-c MANUFACTURERS, TORONTO, ONT.

THRESHING MACHINES

THE NEW MODEL.

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

HALL THRESHING MACHINES.

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

OSHAWA 12-HORSE PORTABLE ENGINES,

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

PITT'S 10-HORSE DOWN POWERS.

WOODBURY 12-HORSE MOUNTED POWERS.

PLANET 10-HORSE DOWN POWER.

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

CALIFORNIA 12-HORSE DOWN POWER.

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

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

Joseph Hall Machine Works Oshawa

267-f JOHN LIVINGSTONE, Trustee.

AUCTION SALE of HOLSTEIN CATTLE

The Third Semi-annual Auction Sale of Thoroughbred Holstein Cattle will be held by the **WYTON STOCK BREEDERS' ASSOCIATION** at the

WESTERN HOTEL, RICHMOND-ST., LONDON, AT ONE O'CLOCK P.M., MARCH 20, 1888

There will be put up at auction and sold to the highest bidder

**3 HEIFER CALVES, 5 YEARLING BULLS,
1 TWO-YEAR-OLD BULL, 9 YEARLING HEIFERS,
2 THREE-YEAR-OLD COWS, 2 FOUR-YEAR-OLD COWS.**

All of this stock is of our own breeding, which we guarantee in every respect.

TERMS OF SALE: -25 per cent. down, balance three and six months joint notes at interest.

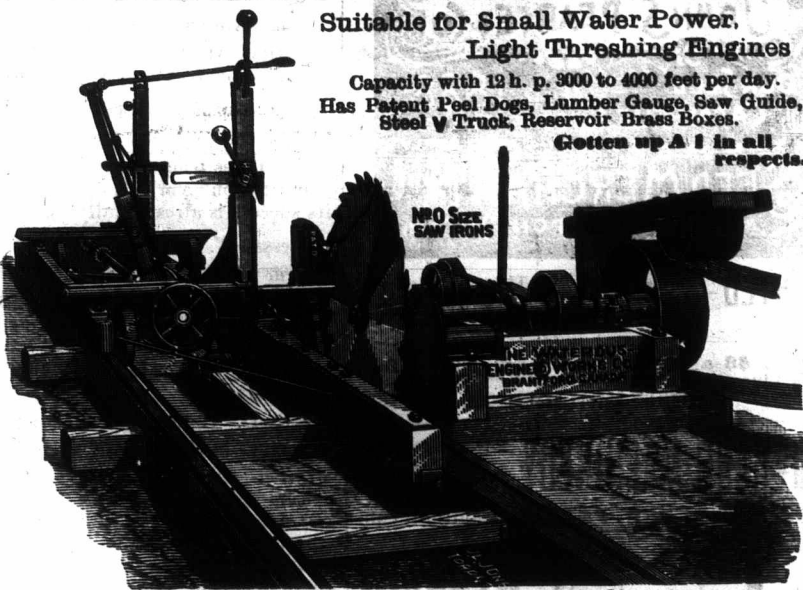
For further particulars and catalogues apply to

W. B. SCATCHERD, Secretary, Wyton, Ont.

267-a

CHEAP AND THOROUGHLY GOOD SAW-IRONS

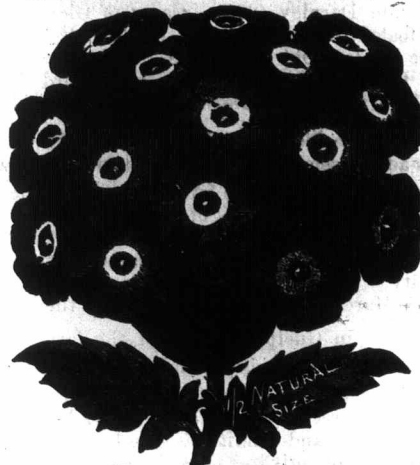
AUTOMATIC SINGLE MILLS. CHOPPING MILLS.
 LATH MILLS. DOUBLE EDGERS.
 SAWS, SAW TOOLS, and EWART CHAIN for conveying
 and elevating.



Suitable for Small Water Power.
 Light Threshing Engines
 Capacity with 12 h. p. 3000 to 4000 feet per day.
 Has Patent Peel Dogs, Lumber Gauge, Saw Guide,
 Steel V Truck, Reservoir Brass Boxes.
 Gotten up A 1 in all respects.

Waterous Engine Works Co., Brantford, Canada.
 St. Paul, Minn., U. S. A.

OUR MANUAL OF EVERYTHING GARDEN



is this season the grandest ever issued, containing three colored plates and superb illustrations of everything that is new, useful and rare in Seeds and Plants, together with plain directions of "How to grow them," by PETER HENDERSON. This Manual, which is a book of 140 pages, we mail to any address on receipt of 25 cents (in stamps.) To all so remitting 25 cents for the Manual we will, at the same time, send free by mail, in addition, their choice of any one of the following novelties, the price of either of which is 25 cents: One packet of the new Green and Gold Watermelon, or one packet of new Succession Cabbage, or one packet of new Zebra Zinnia, or one packet of Butterfly Pansy, or one packet of new Mammoth Verbena (see illustration), or one plant of the beautiful Moonflower, on the distinct understanding, however, that those ordering will state in what paper they saw this advertisement.

PETER HENDERSON & CO. 35 & 37 Cortlandt St., NEW YORK.



Grand Palms from Seed.

We are now able to offer for the first time, both seed and plants of that King of Ornamental plants, the new FILIFERA PALM. Stately and beautiful beyond description, it is the finest addition that can be made to any collection of plants, and can be grown in any window or garden as easy as a geranium. It is of a compact growth with elegant large leaves, from which hang long thread-like filaments, giving the plant a most odd and beautiful appearance. In fact there is nothing like it in cultivation and good specimens sell for enormous prices. Plants are easily raised as the seed are large, germinate quick and grow rapidly. Per packet 25cts. 5 for \$1.00. Year old plants 40cts. each, 3 for \$1.00, 7 for \$2.00 by mail postpaid. Will also mail 8 Storm King Fuchsias for 50cts., 12 Excelsior Pearl Tuberoses for 80cts., 12 Choice Mixed Gladiolus for 80cts. Our Giant Excelsior Pansies, best in the world, 20cts. per packet. New Primrose Verbena, yellow, asterling novelty, 25cts. per packet. True Pygmae Aster, 50cts. per packet.

Our Seed Catalogue for 1888

Is the most elegant ever issued. Illustrated with 10 colored plates, stipple-litho. covers and hundreds of fine engravings. In it is offered a great variety of Flower and Vegetable Seeds, Bulbs and Plants of all sorts. New Fruits and Rare Tropical Fruits suitable for pot culture, such as dwarf Oranges, Pine Apples, Bananas, Figs, Guavas, Sugar Apple, &c. This elegant and Expensive Catalogue will be sent FREE to any who order anything here offered, or who expect to order after getting Catalogue. We have a branch office in Canada and DELIVER GOODS BY MAIL DUTY AND POSTAGE PAID. Special Offer. For 50 cts. we will send Palm, Pansy, and Primrose Verbena Seed and Catalogue. Write at once as this offer may not appear again. To every order we will add an elegant Seed or Bulb novelty free.

Address, **JOHN LEWIS CHILDS, FLORAL PARK Queens Co., N. Y.**

RELIABLE
SEEDS
 FOR THE
Farm & Garden.

Our Illustrated and Descriptive Catalogue FREE! Every Farmer and Gardener should send for one. Address,

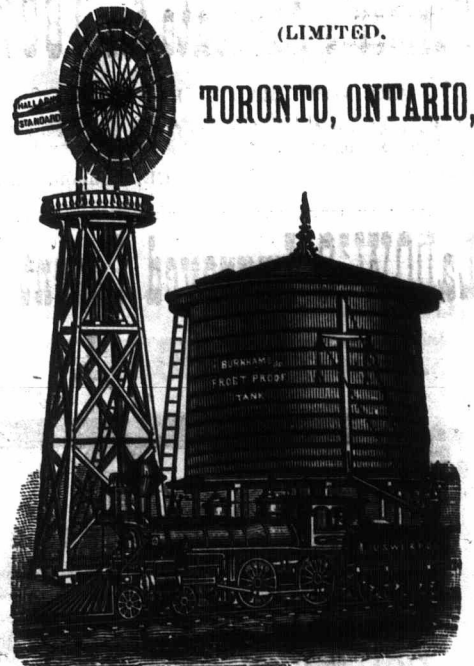
J. A. SIMMERS,

Seed Merchants and Growers, Toronto, Ont.

ONTARIO PUMP Co.

(LIMITED.)

TORONTO, ONTARIO,



MANUFACTURERS OF
WIND MILLS, FEED GRINDERS, HAYING TOOLS, IRON & WOOD PUMPS,
 AND A FULL LINE OF
 Railway, Town, Farm, and Ornamental Water Supply Materials.
 Geared Windmills for driving machinery, pumping water, &c., from 1 to 40 horsepower. Send for Descriptive Catalogue. 255-y

THE INTERCOLONIAL
 Railway of Canada.

The Royal Mail, Passenger and Freight Route between Canada and Great Britain
 —AND—
 DIRECT ROUTE BETWEEN THE WEST AND ALL POINTS ON THE LOWER ST. LAWRENCE AND BAIE DE CHALEUR.

—ALSO—
 New Brunswick, Nova Scotia, Prince Edward Island, Cape Breton and Newfoundland.
 NEW AND ELEGANT BUFFET SLEEPING AND DAY CARS RUN ON THROUGH EXPRESS TRAINS.

Passengers for Great Britain or the Continent, by leaving Toronto by 8.30 A. M. train Thursday, will join outward mail steamer at Halifax a.m. Saturday. Superior Elevator, Warehouse and Dock accommodation at Halifax for shipment of Grain and general merchandise. Years of experience have proved the Intercolonial in connection with Steamship lines to and from London, Liverpool and Glasgow to Halifax, to be the quickest freight route between Canada and Great Britain. Information as to Passenger and Freight Rates can be had on application to ROBERT B. MOODIE, Western Freight and Passenger Agent, 98 Rossin House Block, York Street, Toronto. D. POTTINGER, Chief Superintendent. Railway Office, Moncton, N.B., Nov. 22nd, 1887. 257-y



BOUND VOLUMES

Farmer's Advocate for 1887

ARE NOW READY. PRICE \$1.00.

We have also a few volumes of 1884 and 1885 left. Price \$1.00. Address FARMER'S ADVOCATE OFFICE, London, Ont.



WANTED - Choice samples of Timothy, Red and Alsike Clover, etc. Correspondence invited. 267-a

\$5 to \$8 a Day. Samples and duty FREE. Lines not under the horses' feet. Write BREWSTER'S SAFETY REIN HOLDER, HOLLY, MICH. 267-v

2nd-HAND MACHINERY. - Descriptive Catalogue sent free on application. Address E. W. PETRIE, Brantford, Can. 256-y

Stock Notes.

The spring show of the Clydesdale Horse Association, will be held in Hay Market Square, Toronto, on Wednesday, March 14th.

From the present aspect of affairs with reference to the Breeders' Live Stock Association sale, which takes place on the Exhibition Grounds in this city, on April 3, 4, 5 and 6, we hear that its success is already fully assured.

Messrs. T. & A. B. Snider, of German Mills, inform us they have arranged with the Grand Trunk Railway and Canada Pacific for single fare and one third return tickets, from any one station along their lines of railroad where ten people buy tickets to attend the sale on the 14th day of March.

Mr. D. T. Rogers will dispose of 25 head of Jerseys in the City of Guelph on March 9th. Messrs. Dawes & Co., of Lachine, P. Q., are offering a large number of their choice Herefords and Aberdeen Angus bulls for sale. They are very extensive breeders and have many of the most noted strains in their herds. The stock is all in excellent condition. See advt. in this issue.

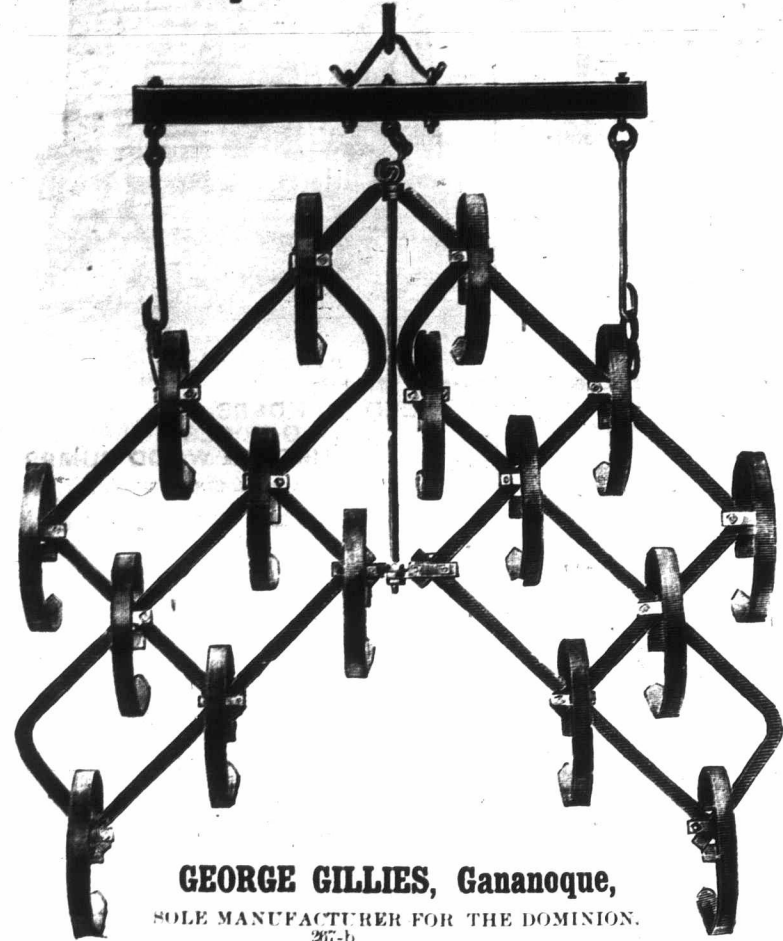
Mr. Wm. Rennie, of Toronto, reports having sold the following imported Clydesdale fillies to John E. Smith, Beresford Farm, Brandon, Man. - Lady Kenmuir, vol. 10, foaled June 9th, 1886, sire Kenmuir Prince (1459), sire of dam Darnley (222). Carry of Glengall, vol. 5, foaled 26th May, 1886, sire Cromwell (3542), sire of dam Old Times (597). Mayflower, vol. 9, foaled 24th May, 1886, sire Laird Darnly (3748), sire of dam Darnly (222).

Mr. J. S. Smith gives a general invitation (see his advertisement) to all farmers and others wishing to view the fertile farms located in the best 100 square-mile block of farming land on this continent. This offer is a good opportunity, as he has just the stock that is suitable for this locality. Remember the date is changed to the 29th March. We will endeavor to be there. - Ed.

While in Guelph we visited the farm of Mr. Thos. McCrae, who is probably the most extensive importer and breeder of Galloway cattle in Canada. His recent importation of 22 head are in good health and condition. He has made quite a number of private sales in Canada and the United States at paying figures, and he does not complain of depression, as is the case with the importers of other breeds. We confess that we never saw a herd of such uniform quality, and it would require an expert to make a choice. Judging from the ages and weights, we cannot see that the other beef breeds have much advantage. Mr. McCrae is not a heavy feeder. His ration is uncut straw with 1 to 1 1/2 lbs. of oil cake per head per day, and 30 to 40 lbs. of roots. This ration keeps the stock in good condition and in excellent health.

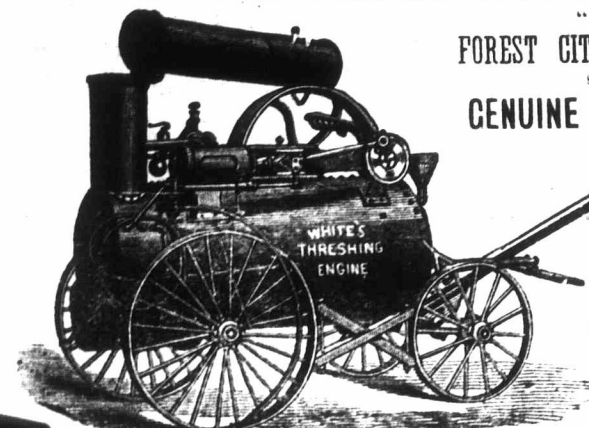
Mr. Jno. Hope, manager of the celebrated Bow Park Herd of Brantford, writes: Our show herd have arrived home from the Point Edward quarantine, and are looking fine. Our stock is going through the winter in splendid shape, sales are good, and we never had as many inquiries for bulls, and never had as good a lot to choose from. Among recent additions Fame 7 has a CC, Darlington 25 a red BC, Roan Duchess 25 a red BC, Bushbury Countess of Barrington 2 a white CC, Haverling Nonpariel 2 a roan BC, Waterloo Duchess 5 a red CC, Welcome 9 a roan CC, Marnhill Duchess 5 a red BC, Blanche 14 a roan CC, Knightly Grand Duchess 13 a roan CC, Lady Isabel a roan BC, Kirklevington Duchess 36 a red BC, Duchess of Clarence 18 a red CC, Lady Aberdeen 5 a red CC, Isabella 2 a roan CC, Roan Duchess 35 a red BC, Roan Duchess 28 a red CC, Roan Duchess 36 a red CC, Duchess 46 of Woodhill a red roan CC, Evenlode 10 a roan BC, Roan Duchess 29 a roan CC, Julia 21 a roan BC, Julia Baroness a red and white CC, Wave Foam, a roan BC, Waterloo Duchess 3, a roan CC.

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SOLE MANUFACTURER FOR THE DOMINION.

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H. B. J. WHITE, Sec. - Treas.
A. W. WHITE, Asst. Manager.
F. J. WHITE, Asst. Sec. 267-11

If any of our readers from the Atlantic to the Pacific desire to procure some really first class stock, we do not think a better opportunity was ever presented to those desirous of improving their stock at fair prices. In this issue will be found a number of auction sale advertisements by some of our best breeders; also offered by private sale. Send for a catalogue for what class of stock you require. We feel satisfied from what we have seen of the stock offered, and of the integrity and truthfulness of the breeders, that superior stock may be purchased from them at one-quarter the cost that much of the imported stock we have seen has cost. The stock offered by our advertisers is acclimatized, and there is no danger of introducing contagious diseases, as they have never existed on any of the breeders' farms advertised in this issue that we have ever heard, nor have they procured stock from any farm where infected cattle have been known to exist. See Messrs. Dawes & Co.'s advertisement. A trip to the east would be beneficial to many of our farmers; also a trip to the west would be of advantage to many of our eastern farmers, even independent of the advantages of the introduction of the best stock from distant parts. Mr. Smith's stock in the west is sure to draw the western breeders to his sale. The Messrs. T. & A. B. Snider's stock has in the show ring carried off the laurels years ago, and now the descendants are prepared to do battle anywhere. We doubt if a cow and bull we have seen there would have been fairly beaten at the Royal Agricultural Exhibition in England. Mr. T. C. Paterson intends to devote his farm to horse raising, and is determined to sell his Shorthorns. You never have had a better opportunity to procure pure bred, choice animals at such reasonable or fair prices, and perhaps may not again. Thirty head of pure bred Bates Shorthorns, six young horses and 17 Leicester sheep, the property of John Ireland and Wm. Templar, will be sold at Copetown on the 21st inst.

There is a craze, says Hon. T. C. Jones in Rural New Yorker, in favor of forcing cattle to a condition of extreme fatness at the earliest ages, as already mentioned, because it is assumed from experiments made by extravagant feeding and care, such as the general farmer cannot afford, that stock fed at the earliest ages is the most profitable. A great fat-stock show in the West, acting upon this assumption, disqualifies from competition all the cattle over three years of age; and yet with glaring inconsistency animals that are ripe for the butcher and taking prizes as such in the class under one year old, are allowed to compete the next year in the class under two, and the next in the class under three years! It is surprising that among a people so intelligent and so practical such classifications should be established. What justification is there for the "Baby-Beef" class? Veal, that is, the flesh of a well-fatted calf at the age of four to eight weeks, has a tender delicacy which makes it highly relished by connoisseurs, while at six to eighteen months the flesh is neither veal nor beef. It is without the rich juices and high flavor of matured beef, while it has nothing of the tender delicacy of the flesh of the young calf.

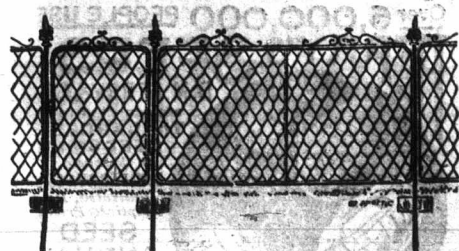
T. B. Terry says, in the Albany Cultivator, that timothy sown early in fall is the best for the good of the grass itself. If sown in the spring with the clover, the wheat and clover are given the best possible chance; but the timothy may be expected to catch, so as to fill up any vacancies in the clover, and to show itself somewhat all through the field. This is just the position he wants timothy to take on his farm, as he wants wheat and clover surely and a little timothy in the hay if he can get it. Clover hay is good enough, and clover sod the best of all.

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Rotation of crops is important in the garden as well as the field.

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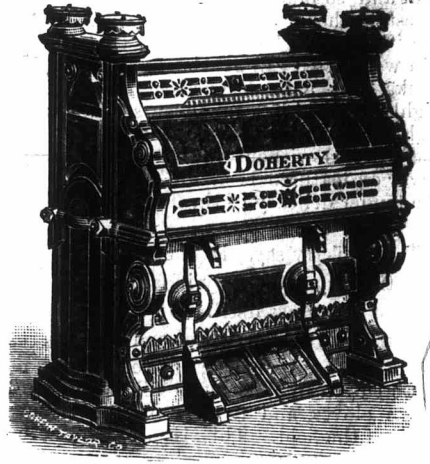
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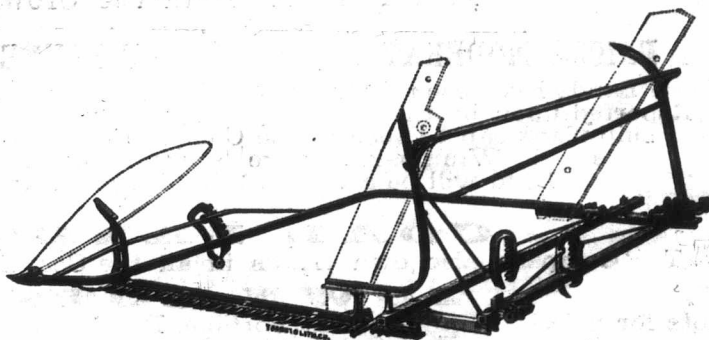


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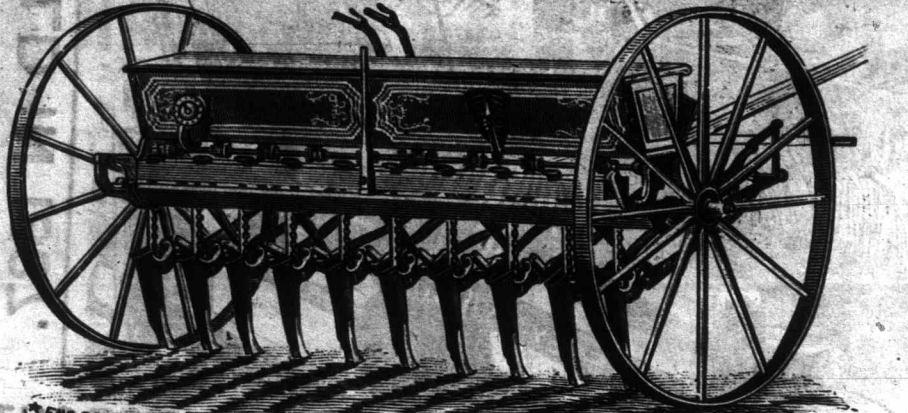
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